SRNT 2024

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Rapid Response Abstracts

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RAPID SUBMISSIONS: POSTER SESSION 1

POS1-152

RECRUITING SUBJECTS IN A DYADIC PREGNANCY SMOKING CESSATION RCT: COMPARING THE EFFECTIVENESS OF SOCIAL MEDIA AND MEDICAL SETTINGS

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Significance: Recruitment and enrollment in tobacco cessation trials among vulnerable populations is difficult and strategies that increase reach and enrollment are needed. We compare the efficiency and cost-effectiveness of social media (SM) versus medical setting (MS) study promotion on reach and enrollment in the SmokeFreeTogether (SFT) 2.0 effectiveness-implementation trial (R33HD103039). SFT 2.0 is a mobile health intervention to help pregnant smokers in Romania quit tobacco smoking by using the SFT 2.0 app and by engaging a peer supporter. **Methods:** To be eligible, women must be 18 or older, pregnant, a smoker, have access to the internet on their phone, and be willing to nominate a support person to download the SFT2.0 app. SM promotion included 9 paid campaigns, boosted posts, 3 giveaways, and collaboration with Facebook and Instagram influencers. MS promotion included the provision of flyers and posters to 30 family physicians, nurses, midwives, perinatal educators, and gynecologists throughout Romania who were asked to give this information to pregnant women who smoke. In SM and MS promotion, women were guided to the SFT2.0 team website through links or QR codes where women self-enrolled in the study after answering eligibility questions. The cost/enrolled dyad was computed by dividing the budget spent by the enrollment method (SM vs MS) by the number of dyads enrolled using that method. **Results:** Since January 2023, SM promotion reached 1,208,968 people and yielded 3,660 clicks on ads with a total budget of $3,756.76. Reach of the MS study promotion cannot be calculated.The total budget for MS promotion was $287. Overall, 2,160 women initiated self-enrollment and 1,699 reported how they learned about the study. 1,618 (95%) versus 81 (5%) women found out about the study through SM vs. MS, respectively. Few women were eligible for the trial. Reasons included: unwillingness to nominate a support person (39.26%), not having an Android mobile phone (9.97%), or being 32+ weeks pregnant (7.31%). Of those eligible (n=1,242), 17.39% consented to participate, including 17% of those enrolled thorough SM and 26% of those through MS promotion. The cost per dyad enrolled in SFT2.0 was $69.41 for SM and $56.35 for MS promotion. **Conclusion:** SM promotion yielded a very high reach. MS promotion was more cost-effective than SM. Requiring a support person at enrollment likely contributed to the low enrollment numbers early in the study. This led to the study relaxing this eligibility criterion.

FUNDING: State

POS1-153

COMPARING COMPLIANCE WITH 24-HOUR ABSTINENCE BETWEEN ADULTS WHO VAPE OR SMOKE DAILY OR NEAR-DAILY

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Significance: Our understanding of withdrawal from electronic nicotine delivery systems (ENDS) is limited, as there are few behavioral pharmacology studies of abstinence from ENDS, in part because biochemical verification of acute abstinence from ENDS is challenging. The present study (NCT05772845) examined compliance with 24-hour abstinence instructions among adults who regularly vape ENDS or smoke cigarettes. Based on limited evidence that ENDS produce less withdrawal than cigarettes, we tested the hypothesis that abstinence compliance, assessed by urinary cotinine, would be greater among people who vape. **Methods:** Participants were non-treatment-seeking adults aged 21-50, who reported using their product 5+ days/week (median=7 days/week, i.e., daily), including 16 people who smoked (31% female) and 33 people who vaped (36% female). Following a baseline visit, participants were randomized to abstain from nicotine for 24 hours before one of two 4-hour lab visits. Urine samples collected at the beginning of each visit were assayed for cotinine by liquid chromatography-tandem mass spectrometry. Participants received a $50 bonus if they achieved a 50% reduction in cotinine from the baseline visit to the abstinent visit. **Results:** On average, participants in the smoking group were significantly older than those in the vaping group (means[SDs]=38[8] and 27[6] years; $p<0.001$). However, baseline cotinine concentrations were comparable between the smoking and vaping groups (means[SDs]= 1434[850] and 1514[1016] ng/mL, $p=0.79$). Average percent reduction in cotinine between the baseline visit and abstinent visit were comparable for the smoking and vaping groups (38%[34%] and 33%[49%]; $p=0.70$), and a similar percentage of participants in each group met the 50% cotinine reduction criterion to earn the abstinence bonus (50% of participants in the smoker group; 42% in the vaper group; $p=0.76$). **Conclusions:** In contrast to our hypothesis, participants who vape were not more successful with 24-hour abstinence than participants who smoke. The present data illustrate the use of urinary cotinine to show that direct comparisons of cigarette vs. ENDS withdrawal may be unconfounded by group differences in abstinence success.

FUNDING: Federal

POS1-154

USING DATA TO PLAN TOBACCO TREATMENT PROGRAM & RESEARCH ACTIVITIES

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Significance: With an NCI infrastructure grant, Fox Chase Cancer Center optimized their TTP services and research (April 2021) and increased tenfold the number of cancer patients served. The TTP has expanded further, now providing services to the entire Temple University Health System increasing tobacco cessation efforts within a predominantly underrepresented population. This expansion allows for a deeper understanding and further program and research development to address the needs of diverse populations. **Methods:** All pts receive a baseline survey before their scheduled TTP appt. The survey collects demographics, smoking behavior and stigma, and barriers to cessation. An analysis of baseline surveys was conducted to determine what social and psychosocial determinants pts may be facing. **Results:** 239 pts (25%) completed a baseline survey since October 2022. 60% are women, 55% are White, 35% African American or Black, and 90% are Not Hispanic/Latino. Over 70% have at least a high school education. Over 50% have a household income ≤$50,000. Of the 239 pts, 111 are cancer (C) pts and 128 are non-cancer (NC) pts. C and NC pts had similar insurance enrollment with ~50% enrolled in Medicare, 30% enrolled in Medicaid, and 30% dually enrolled in both programs. C and NC pts had similar responses indicating stress as a major barrier (70% C pts and 65% NC pts). C and NC pts differed when it came to NRT, 15% of C pts indicated that the side effects of NRT are a barrier to cessation compared to <1% of NC pts. They also differed in terms of lack of support/resources: 10% of NC pts indicated that a lack of support/resources were barriers to cessation, while this was not a barrier for C pts. There were no differences in smoking behavior with over 90% of all pts reporting only smoking cigarettes and not any other tobacco products. They also scored similarly on stigma questions with ~50% indicating agree or strongly agree that people who smoke feel guilty, ~40% agreed or strongly agreed that people treat people who smoke badly, and ~30% agreed or strongly agreed that people who smoke keep it a secret from important people. **Conclusion:** These results, as well as assessment of these factors by race and income, will guide program and research activities to best serve our diverse populations. A large portion of our pts are low-income and are likely to experience churn, losing and regaining access to insurance. 50% have Medicare which does not cover OTC NRT, indicating need for continued free NRT funding. We will also need to address the unique barriers our C and NC pts face, tailor approaches accordingly across the health system, and track changes in the use of other tobacco products. Finally, the stigma scores indicate that many of our pts are experiencing stigma related to smoking, specifically self-stigma which may influence their interactions with their providers and cessation, validating planned research in this area.

FUNDING: Academic Institution

POS1-155

THE RELATIONSHIP BETWEEN SMOKING STATUS AND CHANGES IN WEIGHT AMONG WHITE AND BLACK SMOKERS

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Background: Post-cessation weight gain is typical when quitting smoking and contributes to relapse. Little is known if changes in weight secondary to smoking cessation differs by race. **Objectives**:This study compared Black and White individuals who smoke to assess: 1) whether baseline body mass index (BMI) predicted smoking cessation; 2) if weight changed from baseline to wk 12 among those who quit differed by race;and 3) if weight changed from baseline to wk 12 among those who reduced their cigarettes per day (CPD),but did not quit. **Methods:** This is a secondary analysis of Quit2Live,a prospective intervention trial that provided counseling and varenicline to Black and White individuals who smoked. Logistic regression assessed the BMI and smoking status relationship. Linear regression assessed weight changes by race among those who quit and weight change by reduction in CPD among those who did not quit. All models were adjusted by age and gender. **Results:** In our sample,155 individuals (53.2%) were Black and 156 (46.9%) were White. At baseline, Black individuals had significantly higher BMIs (Mean: 30.7, SD:7.9) than White individuals (Mean: 28.8, SD:7.0) (p<0.001). Using a completer's only analysis: 1) At 12 wks, 44.8% of White individuals and 22.6% of Black individuals had quit. Baseline BMI did not significantly predict smoking abstinence (OR: 1.04, p=0.09) and this did not vary by race. 2) There was a marginally significant weight increase post-cessation between baseline and wk 12 (B=3.65, p=0.05), not differing by race. Among those who quit, average weight increased from 192.2 lbs to 195.9 lbs. 3) Among those who did not quit,mean CPD decreased from 14.7 at baseline (SD:5.9) to 3.2 at week 12 (SD:4.4).There was no significant difference in weight change by % change in CPD (B=0.02, p=0.4), and this did not vary by race. **Discussion**: While Black individuals had lower cessation at 12 wks than Whites,and a higher BMI at baseline, higher BMI did not confer additional risk of failing to quit. Those who quit smoking gained weight, but weight gain was similar among White and Black individuals who quit,suggesting that Black individuals were not more susceptible to cessation weight gain despite having higher baseline BMIs. Reducing smoking without quitting was not related to changes in weight. A higher baseline BMI did not impact quitting and Black individuals were not more susceptible to weight gain,providing evidence for all individuals, regardless of BMI, to quit.

FUNDING: Federal

POS1-156

RETAILER COMPLIANCE WITH NEW YORK CITY'S MINIMUM CIGARETTE PRICE POLICY: FINDINGS FROM A FIELD STUDY

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Significance Higher cigarette prices are effective in reducing cigarette use. Effective June 1st of 2018, New York City (NYC) increased the minimum sales price of cigarettes to $13 per pack. This study estimated the extent of policy non-compliance in a representative sample of NYC tobacco retailers and examined associations with store type and neighborhood sociodemographic characteristics. **Methods** Data on cigarette price was collected in 2023 from a stratified, random sample of tobacco retailers in NYC's 59 community districts (n=486). Prices of Marlboro Red cigarettes (one of the most widely consumed cigarette brands and virtually ubiquitous in retail settings) were documented to enable standardization and comparability across retailers. Retailers selling Marlboro packs below $13 were considered non-compliant. Community district sociodemographic characteristics were obtained from the US Census Bureau. Linear and logistic regression examined how cigarette prices and minimum price non-compliance were associated with store types and sociodemographic characteristics of community districts in which each retailer is located. **Results** The average price of cigarettes citywide was $16.48 (sd: $1.97, range: $10-$21). No clear pattern was found for cigarette price in relation to neighborhood characteristics, but cigarettes were significantly cheaper (-$1.85 per pack, p=0.001) in smoke/vape shops. Overall, 6.8% of retailers sold cigarettes below the minimum allowable price. However, non-compliance was more prevalent in smoke/vape shops (aOR: 20.40, p<0.001) and in districts with a greater proportion of non-Hispanic Black residents (aOR: 1.05, p=0.070), and less prevalent in districts with higher educational attainment (aOR: 0.95, p=0.096). **Conclusion** Smoke/vape shops were more likely to have lower average prices of cigarettes and more non-compliant cigarette prices, which may threaten progress in reducing cigarette use. While no associations were found between the average price of cigarettes and neighborhood sociodemographic characteristics, policy non-compliance was more prevalent in communities with lower educational attainment and a greater percentage of non-Hispanic Black residents. These results suggest the need for improved retailer education programs and enforcement in order to address inequities in cigarette affordability, which may in turn help mitigate tobacco-related disparities.

FUNDING: Federal

POS1-157

EXAMINING SMOKING CESSATION INTERVENTIONS IN CARDIOVASCULAR DISEASE IN THE UK: INSIGHTS FROM ELECTRONIC HEALTH RECORDS POST FINANCIAL INCENTIVISATION

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Significance: Cardiovascular disease (CVD) poses a significant global health threat, with smoking as a prominent risk factor. Financial incentives for General Practitioners (GPs) in the UK (since 2004) increased smoking cessation advice documentation but lacked efficacy in increasing cessation in the general population. Our study aims to assess the frequencies of recorded smoking cessation interventions for individuals with coronary heart disease (CHD) in the UK and its impact on smoking cessation. ***Methods:*** We conducted a retrospective cohort study encompassing all adults in the QResearch registry diagnosed with incident CHD between 1996 and 2019. Smoking cessation interventions were categorised into smoking education, pharmacological support, referral to services, brief intervention, and cessation counselling. Interventions were coded if offered by GPs, independent of patient acceptance. Multivariable logistic regression was employed to assess the impact of interventions on abstinence rates within one year after the index event. ***Results:*** A total of 158,470 individuals diagnosed with heart disease and recorded as smokers before their initial heart attack (index event) were included in the study. Smoking education was the most common intervention (50%), while pharmacological support and referral were limited (3.4% and 2.7%). Within one year, 56.6% received an intervention, rising to 73.3% by year five. Abstinence rates rose from 34.9% (year one) to 47.5% (year five). Upon stratifying the population by the timing of the index event before or after financial incentives, 13.7% received an intervention before, while 86.3% were offered an intervention after the incentive. Smoking education increased year-one abstinence likelihood (OR 1.30, 95% CI [1.26, 1.33]), while all other interventions decreased it. Combining all intervention types into a single variable, interventions before financial incentives had higher abstinence odds (OR 5.09, 95% CI [4.84, 5.35]) compared to post-incentive (OR 1.27, 95% CI [1.23, 1.31]). ***Conclusion:*** Our findings suggest that people with CHD who received an intervention before the financial incentive were more likely to quit smoking compared to those after the incentive. Although smoking education was the most common intervention and effective in smoking cessation, external evidence emphasises that pharmacological and behavioural support proved more efficacious than smoking education in the general population. The observed effect in our study may stem from heightened CHD patient motivation. This study questions the effectiveness of financial incentives in increasing smoking cessation in people with CHD.

FUNDING: Nonprofit grant funding entity

POS1-158

ANALYZING PUBLIC SENTIMENTS AND TRENDS TOWARDS SMOKE-FREE LEGISLATION: EXPLORING SOCIAL MEDIA DISCOURSE ON SMOKE-FREE LEGISLATION IN CHINA FROM 2011 TO 2021

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Significance: China has implemented first city level Smoke-Free (SF) legislation closest to the requirements of FCTC in 2011. Social media serves as an effective platform to gauge public discussions on prevalent topics and attitudes. It is necessary to analyze the tobacco control issues and public sentiments expressed on social media. **Methods:** First, a list of keywords related to SF such as *"KongYan" (Tobacco control)* were defined by group discussion. We collect the posts from Jan 2011 to Dec 2021 containing keywords from "Sina Weibo", a popular social media platform in China. The topic model

clustering algorithm can categorize posts into distinct clusters and provide a summary of the main topic within each cluster, which offering insights into the main focuses of social media discussions. By examining attitude expression words within each topic, we can infer diverse sentiments around SF issues on social media. To analyze the public's attitude towards SF legislation, comments accompanying the posts under the "SF Legislation" topic were collected and analyzed. All the analysis were implemented by R 4.2.0. **Results:** In total, 102,733 posts were analyzed after cleaning from 275,925 posts initially collected. The most frequently discussed topics were "Smoker's image" and "Smoking in indoor public places". Over 90% of the sentiments toward those two topics were extremely negative, with "disgusting" being the most common used word. Among the 455,016 comments, the positive sentiments regarding SF legislation significantly outweighed the negative expressions with a substantial majority of comments expressed strong support. The number of comments supporting SF legislation has consistently increased, peaking in 2019 before showing a gradual decline from 2019 to 2021 during the pandemic. Notably, even within the negative critical comments, a significant proportion conveyed dissatisfaction with the existing state of SF legislation and enforcement, such as "SF enforcement is inadequate.", indicating a growing call for more stringent tobacco control measures. **Conclusion:** Public generally view smoking and smoking in indoor public places as an annoying behavior. Before the pandemic of COVID-19, the public's attention to smoke-free legislation continues to rise. The establishment of a national SF legislation has a broad public support base, because there is substantial public support for SF legislation, with an increasing demand for stricter tobacco control measures. **Health equity component:** Although this study does not directly address or highlight this aspect, 100% smoke free policy can contribute to health equity by reducing the health disparities caused by smoking-related illnesses, it equally treats everyone and protect their health from second hand smoke.

FUNDING: Nonprofit grant funding entity

POS1-159

CHEMICAL AND AEROSOL CHARACTERIZATION OF E-LIQUIDS: A 12-MONTH STUDY IN PARALLEL TO PARTICIPANT USE

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E-cigarette (e-cig) use is now commonplace. Generations of e-cig devices and multiple e-liquid flavorings and nicotine concentrations have been marketed in the United States. Understanding the stability of e-liquid constituents is critical to assessing exposures from e-liquids that contain various nicotine concentrations. The following study characterized multiple chemical constituents in five e-liquid nicotine concentrations, 12-month storage stability, and aerosol produced by a mod device. These e-liquid products ranged from 0 mg/mL nicotine to 6.0 mg/mL and were prepared by the University of Maryland using a nicotine-free base e-liquid (i.e., Mardi Gras flavor, AVAIL vapor, LLC). A mod device (Aegis Mini, Shenzen Geekvape Technology Co., Ltd) was used with specified settings from Battelle for aerosol generation. Nicotine concentrations were blind during chemical characterization, stability testing, and for the clinical study. Chemical characterization of the five e-liquids determined concentrations of nicotine, propylene glycol (PG), vegetable glycerin (VG), N'-Nitrosonornicotine (NNN), and (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK) over 12 months. Other chemical properties studied were: pH, free base nicotine, and PG:VG ratios. The aerosol studies measured yields of nicotine, PG and VG, carbonyls, and particle size distribution. Analytical methods spanned across LC-MS/MS, GC-FID, HPLC-PDA, and Laser Diffraction platforms. Aerosol collection was collected in accordance with CORESTA No. 81- Routine Analytical Machine for E-Cigarette Aerosol Generation and Collection. Results indicated that all e-liquids were stable under the prescribed conditions and that nicotine content remained within 5% of the Day 0 concentration over 12 months; therefore, these e-liquids are feasible for use in a long-term clinical study. PG:VG ratios also remained stable (i.e., 30:70 PG:VG). Aerosol yield provided differing characteristics for particle size, carbonyl content, and nicotine yield. The overall particle size average was 1.23 µm for each e-liquid at the Dv50 (distribution volume at 50%). Carbonyl yields ranged from below detection limits (acrolein) to 1.99 µg carbonyl per puff (formaldehyde). Nicotine aerosol yield ranged from 1.23 mg/g to 4.70 mg/g. This study shows that e-liquids ranging in nicotine content can be used in clinical studies over a period of at least a year without concern for overall product stability.

FUNDING: Federal; FDACTP

POS1-160

TRANSITIONS FROM EXCLUSIVE SMOKING TO E-CIGARETTE, DUAL, AND NON- USE AND THEIR ASSOCIATION WITH MODIFIABLE AND SOCIODEMOGRAPHIC FACTORS: EVIDENCE FROM ALSPAC

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Significance: E-cigarettes can aid smoking cessation and expose exclusive users to fewer carcinogens; however dual use may lead to similar levels of exposure. At present there is little longitudinal evidence that explores differences in modifiable and sociodemographic factors between young adults who sustain smoking, to those who quit smoking with or without e-cigarettes, or who dual use. Understanding this better could improve cessation advice regarding e-cigarettes and help tailor interventions to populations less likely to use e-cigarettes, or more likely to dual use. **Methods**: We aimed to investigate transitions from smoking (21 years [y]) to non-use, e-cigarette use, and dual use (22-30y), and examine how certain characteristics influence these transitions. Investigated characteristics include body mass index, exercise, education, other substance use, peer smoking, mental health, neighbourhood deprivation, parenthood, and smoking frequency. 859 of 3291 participants reported current smoking (21y). E-cigarette data was collected in the Avon Longitudinal Study of Parents and Children (ALSPAC) at 5 timepoints. Analyses were adjusted for sex assigned at birth, ethnicity, average household income, and parental smoking, and weighted to avoid selection bias. Multiple imputation was used to supplement missing data. We used logistic regression and competing risks survival analysis to investigate the associations of any transitions with the stated modifiable and sociodemographic factors. **Results**: Out of 804 participants 432 stated non-use, 120 stated exclusive e-cigarette use, and 193 stated dual use at least once from 22 to 30 years. Participants who smoked more than weekly (21y) or were parents (21y) showed decreased odds of any transition, any smoking cessation, and non-use, but increased odds of any e-cigarette use, exclusive e-cigarette use, and dual use. Participants with worse mental health (Mood and Feelings questionnaire scores >=12, 21y), or who were overweight (BMI >=25, 18y) showed increased odds of dual use. Participants who stated greater peer smoking (20y) showed decreased odds of any smoking cessation and non-use, but increased odds of any e-cigarette use. Participants who used cannabis monthly or more (20y), or other drugs (20y) showed decreased odds of any transition, any smoking cessation and non-use. Participants who did not have a degree-level qualification (20y) showed decreased odds of any smoking cessation, and non-use. Participants who exercised less than weekly (18y) showed decreased odds of non-use. **Conclusion**: Findings suggest that smoking interventions for people who smoke more frequently or are young parents may not be as effective as in other groups. These factors appear more influential to e-cigarette use than other substance use, education, or exercise. Efforts to improve mental health and BMI may reduce dual use.

FUNDING: Academic Institution; Nonprofit grant funding entity

POS1-161

FEASIBILITY AND ACCEPTABILITY OF A TAILORED TEXT MESSAGING INTERVENTION FOR SMOKING CESSATION AMONG LATINOS LIVING WITH HIV

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Introduction: Latinos living with HIV have high rates of smoking and low quit rates. Text messaging interventions are a promising mode to address tobacco-related disparities among Latinos living with HIV. **Objective:** To assess the feasibility and acceptability of a tailored text messaging intervention for smoking cessation among Latinos living with HIV. **Methods:** Ten Latinos who live with HIV and smoke were recruited via community-based organizations and clinics. Participants received a tailored text messaging intervention (available in English and Spanish) for 3 months and were offered nicotine replacement therapy (NRT) at no cost. We assessed self-reported 7-day point prevalence smoking abstinence at month 3, NRT utilization, and satisfaction with the program. **Results:** At baseline, participants' mean age was 49.9 years old (SD 12.8), 80% of participants were male, and 20% were transgender. Six participants (60%) were born in the U.S., three (30%) in Puerto Rico, and one (10%) in Venezuela. Four participants (40%) chose the intervention to be delivered in Spanish. Half of participants (50%) smoked 1-10 cigarettes daily and 30% smoked their first cigarette within five minutes after waking up. At month 3, seven participants (70%) self-reported 7-day point prevalence smoking abstinence (100% follow-up rate). Nine participants (90%) reported NRT use in the past 90 days. All participants reported being satisfied or extremely satisfied with the intervention (100%). **Conclusion:** A tailored intervention for smoking cessation resulted

in a noteworthy cessation rate at month 3, produced high use of NRT, and was well received by participants. Additional testing in a randomized clinical trial is warranted to assess the efficacy of the intervention.

FUNDING: Nonprofit grant funding entity

POS1-162

DEVELOPING ROBUST SURVEY MEASURES TO ASSESS AWARENESS AND USE OF HEATED TOBACCO PRODUCTS AND NICOTINE POUCHES AMONG YOUNG PEOPLE IN THE UK

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Significance: The UK nicotine market has changed considerably with the emergence of new nicotine products such as heated tobacco products (HTP) and nicotine pouches (NP). HTP, which although distinct from, share similarities with e-cigarettes and traditional cigarettes, and have potential to cause confusion in distinguishing different types of alternatives to smoking. NP, which do not contain tobacco, are a more recent addition to the UK market. Little is known about how young people respond to these products. There is an urgent need to ensure collection of valid survey data. **Aims**: To explore how young people's response to HTP and NP can be robustly measured in surveys by developing, piloting, and evaluating, new survey measures. **Methods**: We conducted a multi-stage study with 11-24-year-olds to inform the development of new survey measures on HTP and NP. Initially, 14 online focus groups (n=50) were conducted with young people across the UK in May and June 2022 to explore young people's awareness and understanding of these products. Next, a series of nine public involvement (PPI) discussion groups/interviews were conducted between June and September 2023 to help develop question concepts and appropriate terminology. Finally, in October and November 2023, draft survey questions were piloted through a series of 18 face-to-face cognitive interviews to test young people's understanding of the questions and ability to answer them. **Results**: The focus groups highlighted the challenges of asking about HTP and NP within surveys. There was a lack of awareness, confusion and misunderstanding around HTP. While there was some awareness of NP, this was commonly misreferred to as snus, which participants were unaware was a different product. The PPI discussion groups and cognitive testing confirmed that to explore young people's awareness and use, a carefully worded description of each product, plus accompanying images, were needed to ensure understanding and accurate survey responses. Further questions were developed as a safety net to ensure that participants respond appropriately, including follow up questions about makes/brands of products, and for those who have used NP, route of access, and whether they contained tobacco. **Conclusion**: As the nicotine market continues to develop and cause confusion among young people, it is crucial that survey questions are robustly developed and tested to ensure continued collection of accurate prevalence measures in surveys.

FUNDING: Nonprofit grant funding entity

POS1-163

IMPACTS OF COVID-19 PANDEMIC ON SMOKING CESSATION OUTCOMES IN HONG KONG: A SECONDARY ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Significance: The COVID-19 pandemic has affected health behaviors, including smoking. Given the association between smoking and increased COVID-19 severity, understanding the pandemic's impact on smoking cessation (SC) outcomes is crucial for supporting quit attempts. This study compares SC outcomes before and after three COVID-19 waves. **Methods**: This secondary analysis used data from two randomized control trials in Hong Kong, conducted from November 2018 to February 2021, including all participants (N=1,762). January, July, and November 2020 were defined as the cut-off points for 3 waves of COVID-19. Primary outcomes included biochemically validated and self-reported 7-day abstinence at 6-month follow-up. A subgroup analysis was also conducted. **Results**: Most participants were male (80.5%). The validated abstinence after COVID-19 was significantly lower at the 1st (Jan: 6.9% [62/893] vs. 13.1% [114/869], RR [95%CI] 0.53 [0.39, 0.71], P<0.001) and at the 2nd waves (Jul: 1.1% [1/92] vs. 10.5% [175/1670], RR [95%CI] 0.10 [0.01, 0.73], P=0.02), compared to before COVID-19. Self-report 7-day abstinence after COVID-19 (33.1% [296/893]) was significantly lower than before COVID-19 (41.5% [361/869]) at the 1st wave (Jan: RR [95%CI] 0.85 [0.75-0.96], P=0.008). Subgroup analysis showed that at the 1-month follow-up, the use of SC service (Jan: 25.1% [102/406] vs. 49.5% [212/428]; RR [95%CI] 0.51 [0.42, 0.62], P<0.001; Jul: 16.4% [10/61] vs. 39.3% [304/773], RR [95%CI] 0.36 [0.20, 0.64], P<0.001) and quit attempts (Jan: 35.7% [145/406] vs 51.9% [222/428], RR[95%CI] 0.69 [0.59, 0.81], P<0.001; Jul: 24.6% [15/61] vs. 45.5% [352/773], RR [95%CI] 0.54 [0.35, 0.84], P<0.001) after COVID-19 were consistently lower than before at both the 1st and 2nd waves. Participants sending posts or not before and after COVID-19 were similar at the 1st (Jan: 33.7% [164/487] vs. 36.3% [160/441], RR [95%CI] 0.93 [0.78, 1.11]) and 2nd waves (Jul: 29.0% [9/31] vs. 35.1% [315/879], RR [95%CI] 0.81 [0.46, 1.41]) but without significant (all P>0.05). **Conclusion**: The COVID-19 pandemic has negatively impacted quitting smoking success and SC services use. Although the pandemic is nearing its end, the likelihood of successfully quitting smoking and the use of SC services and quit attempts have declined during the pandemic. Additional measures may be needed to encourage and support smokers in their quit attempts during the transition period to post-pandemic life.

FUNDING: State; Other

POS1-164

ARE NICOTINE POUCHES "TOBACCO" PRODUCTS? PERCEPTIONS OF U.S. TOBACCO USERS AND NON-USERS

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Significance Oral nicotine pouches (ONPs) are marketed as 'tobacco-free' alternatives to cigarettes and smokeless tobacco (ST) products. Terms such as 'tobacco-free' may influence consumers' perceptions of nicotine and tobacco products, and ultimately use behavior. ONPs are relatively new and research on consumers' perception of them remains limited. We characterized adult tobacco users and non-users' perceptions of ONPs as tobacco products and examined demographic and tobacco-related correlates of their perceptions. **Methods** This is a secondary analysis of a randomized trial that recruited participants residing in Ohio, USA from April to September 2021. Participants were adults who use cigarettes, ST, dual users of cigarettes and ST, and non-users. In an online survey, the participants were asked if they consider ONPs to be tobacco products (Yes, No, Not Sure) after viewing images of ONP packaging. We examined correlates of perceptions of ONPs including sociodemographic, tobacco use status, and whether they had used ONPs in bivariate analyses and multinomial logistic regression. **Results** Participants (n=300) averaged 35.7 (SD 11.9) years of age, 76.7% were male, 97.7% were non-Hispanic, and 92.0% were White. Overall, 40.2% currently used ST, 17.6% smoked cigarettes, 16.3% were dual users, and 25.9% were non-tobacco users. Overall, 41.5% perceived ONPs to be tobacco products, 44.5% did not, and 14.0% were not sure. In the multivariable model, older age was associated with higher likelihood (Odds Ratio [OR] 1.08, 95% CI 1.04, 1.11) and ONP ever use was associated with a lower likelihood (OR 0.22, 95% CI 0.08, 0.58) of participants indicating they did not know if ONPs were a tobacco product. Males (OR 0.38, 95% CI 0.17, 0.84), ST users (OR 0.36, 95% CI 0.16, 0.81), smokers (OR 0.27, 95% CI 0.11, 0.68), and dual users (OR 0.34, 95% CI 0.13, 0.89) were less likely to indicate ONPs were a tobacco product than females and non-users, respectively. **Conclusion** Consumers' perceptions of ONPs as tobacco products were associated with sociodemographic characteristics, current tobacco use, and ONP use. Consumers' perceptions of ONPs as tobacco products may be influenced by claims used in manufacturers' marketing and may ultimately influence product trial and use. Continued research to monitor perceptions of ONPs in specific population groups (e.g., tobacco users and non-users), and how such perceptions are influenced by manufacturers' marketing, is warranted.

FUNDING: Federal; FDACTP; Academic Institution

POS1-165

YOUNG PEOPLE'S AWARENESS, VIEWS AND EXPERIENCES OF DISPOSABLE VAPES IN THE UK: FINDINGS FROM A CROSS-SECTIONAL SURVEY

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Significance: Since the introduction of a new generation of disposable vapes (e.g. Elf Bar) in the UK in 2021, there has been a rapid increase in their uptake and use by young people and concern about their widespread availability and marketing. There is limited insight into young people's awareness of, and views on, disposable devices relative to more established devices on the market. **Aims**: To explore young people's response

to different vaping devices in the UK **Methods**: An online survey of 11- to 16-year-olds (N=2,164) across the UK was conducted in July 2023. The questionnaire was modelled on the long running repeat cross-sectional Youth Tobacco Policy Survey (YTPS). Six online PPI groups with young people were conducted in September 2022 to inform development of new, and check relevance of existing, questions. Cognitive interviews (n=12) were conducted online in October 2022 to test young people's understanding and ability to answer. Measures included prevalence of smoking and vaping, types of vapes used, smoking susceptibility, vape brand awareness, views on disposal of disposable vapes, and perceptions of different vaping devices (a tank model and a disposable) and a cigarette across 11 items/attributes. **Results**: Prevalence of ever smoking was 9.3%, ever vaping was 17.5%. This represented a decrease in smoking prevalence from 12.2% and an increase in ever vaping from 10.1% compared with the 2020 YTPS survey. Vaping experimentation was not confined to young people who had already tried smoking: never smokers accounted for the majority of ever vapers (56.6%). Of those who had tried vaping, disposable vapes were the most likely device type, with 72.8% reporting having used a disposable vape the first time they tried vaping. Few young people were able to identify two established brands: Juul (1.4%) and Blu (2.6%). However, 11.4% were able to identify Elf Bar. Young people consistently rated disposable vapes more favourably compared with tank devices and displayed lack of knowledge around the safe disposal of disposable vapes. **Conclusion**: The 2023 survey was conducted approximately two years after the introduction of disposable vapes to the UK. The data shows the growth in vaping experimentation, that young people held more favourable views of disposable vapes relative to tank devices, and lack of knowledge around safe disposal. This suggests a product and marketing that appeals to young people. Further monitoring of vapes marketing and young people's response is critical.

FUNDING: Other

POS1-166

YOUNG PEOPLE'S RESPONSE TO STANDARDISED TOBACCO PACKAGING IN THE UK, PRE, DURING AND POST IMPLEMENTATION

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Significance: Standardised packaging was implemented in the UK between 2016 and 2017. Few studies have explored young people's responses to the change in tobacco packaging design over time. We draw on three waves of the Youth Tobacco Policy Survey (YTPS) to explore young people's reactions to tobacco packaging at three timepoints - pre, during and post the implementation of standardised packaging in the UK. **Aims**: To assess the impact of standardised tobacco packaging on young people in the UK **Methods**: Data were collected in the YTPS, a series of repeat cross-sectional surveys with 11- to 16-year-olds across the UK conducted in 2014 (n=1,203) (pre-implementation), 2016 (N=1,213) (during the one-year transition period) and 2020 (N=2,121) (three years after full implementation). A small number of relevant measures are also reported from a new survey in 2023 (N=2,164), which used the same methodology as YTPS 2020 but focused predominantly on e-cigarettes. The surveys in 2014 and 2016 were conducted using face-to-face interviews in-home accompanied with a short self-completion questionnaire to gather smoking behaviour measures. The 2020 and 2023 surveys were administered online. Measures included smoking behaviour, brand awareness and identification and ratings of branded and standardised cigarette packs. Visual images of branded and standardised packs were shown at each survey year. In 2014 the branded pack was rated against a standardised pack from Australia. In 2016 the standardised pack was an image of the final design of UK standardised packs. In 2020 a branded pack of Mayfair, was rated against its standardised version. **Results**: Young people rated images of branded and standardised cigarette packs in 2014, 2016 and 2020 and consistently rated standardised packs less favourably than branded packs. Prevalence of ever smoking was 20.3% in 2014 and 20.0% in 2016 and 5.5% and 3.6% of 11-16-year-olds were regular smokers in 2014 and 2016 respectively. At the first post implementation follow-up, in 2020, prevalence of ever smoking had decreased to 12.2% and decreased further to 9.3% by 2023. Prevalence of regular smoking also decreased to 0.8% by 2023. Brand awareness also decreased. **Conclusion**: Given that young people consistently rated standardised packs less favourably than branded packs it is not surprising to see that the introduction of standardised packaging in the UK has been accompanied by declines in youth smoking prevalence and brand awareness.

FUNDING: Other

POS1-167

CIGARETTE PACKAGE INSERTS AND SELF-EFFICACY TO QUIT IN ADULT SMOKERS IN CANADA

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Background Canada is the only country in the world to require cigarette package inserts to supplement exterior pictorial health warning labels. Inserts contain rotating messages on cessation benefits and tips, though smokers' responses to them are understudied. **Methods** We analyzed data from an online panel of Canadian adult smokers (n=3111) surveyed between February-August 2023. Participants were asked: 1) How often have you read the health information inside the cigarette packages? 2) How often has the health information inside of packages stopped you from having a cigarette? 3) How much does the health information inside of packages make you feel like you would be better off without smoking? We measured self-efficacy to quit using the SEQ-12, with responses summed (range=0-36) where higher scores indicate higher self-efficacy. Binary cessation outcomes included intention to quit in the next six months and making a quit attempt in the past three months. Linear generalized estimating equation (GEE) models regressed self-efficacy on engagement with inserts. Logistic GEE models regressed intention to quit and, separately, quit attempt, on engagement with inserts and on self-efficacy to quit. All multivariable models adjusted for potential confounders (wave, demographics, daily vs. non-daily smoking, and time to first cigarette after waking up). **Results** At each wave, 17%-19% of the sample reported having read inserts sometimes or more often, 10-15% reported that inserts stopped them from having a cigarette a few times or more, and 35% reported that inserts have made them feel like they would be at least moderately better off without smoking. Engagement with package inserts was significantly associated with greater self-efficacy to quit: Smokers who reported reading inserts a few times or more (b=1.18, 95%CI 1.18-2.18), reported that inserts have stopped them from having a cigarette (b=1.89, 95%CI 0.68-3.11), or reported that inserts have made them feel very much like they would be better off without smoking (b=1.69, 95%CI 0.74-2.64) had significantly higher self-efficacy scores. Logistic models revealed that reading package inserts was unassociated with intention to quit or making a quit attempt. However, smokers who reported that inserts have stopped them from having a cigarette (OR=2.26, 95%CI 1.67-2.68) or who reported that inserts have made them feel very much like they would be better off without smoking (OR=2.12, 95%CI 1.67-2.68) had significantly higher odds of intending to quit. Similar patterns were observed in models predicting making a quit attempt. Lastly, higher self-efficacy was positively associated with both intentions to quit (OR 1.05, 95%CI1.03-1.06) and with having made a quit attempt (OR 1.02, 95%CI 1.01-1.03). **Conclusions** Cigarette package inserts in Canada may increase smokers' self-efficacy, which is associated with cessation intentions and attempts.

FUNDING: Federal

POS1-168

IDENTIFYING PATTERNS OF TOBACCO USE AND ASSOCIATED CARDIOVASCULAR DISEASE RISK THROUGH MACHINE LEARNING ANALYSIS OF URINE BIOMARKERS

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Significance: Tobacco use poses a significant public health challenge as the primary cause of disability-adjusted life year losses in the United States. The complex and nonlinear cardiovascular damage caused by tobacco presents a critical issue, particularly with emerging tobacco product categories lacking a reliable method for comparing exposure and harm. Our study addresses the urgent need to understand how multidimensional biomarkers of tobacco exposure impact the risk of cardiovascular harm. **Methods:** The study employs cluster analysis, an unsupervised machine learning technique, to analyze tobacco use exposure biomarkers sourced from the Population Assessment of Tobacco and Health (PATH) dataset spanning six waves of data from 2013 to 2021. Two distinct clusters emerge, revealing patterns of tobacco exposure biomarkers. One cluster is closely associated with e-cigarettes, while another is linked to cigarettes and dual use. A reference group, consisting of individuals abstaining from tobacco products, is introduced to explore the connection between these clusters and clinical and subclinical cardiovascular outcomes. **Results:** The analysis reveals significant differences between the identified clusters. The cigarette and dual use cluster exhibits higher levels of harm-related biomarkers compared to the e-cigarette cluster. In turn,

the e-cigarette cluster displays elevated harm biomarkers compared to the reference group. Over 5 waves of follow up, individuals within the cigarette and dual use cluster also face an increased risk of cardiovascular conditions such as myocardial infarction, stroke, congestive heart failure, or other cardiovascular diseases compared to those in the reference group. Individuals in the e-cigarette cluster do not exhibit such elevated risks. **Conclusion:** Establishing a reliable biochemical signature for tobacco product usage holds promise for responsive, multidimensional research into the physiological effects of tobacco. The study underscores the importance of understanding the cardiovascular risks associated with different tobacco product categories. Furthermore, a defined biochemical signature could aid in examining emerging tobacco products before their effects are comprehensively understood, contributing to more informed public health interventions.

FUNDING: Federal; FDACTP

POS1-169

ENHANCED PREDICTIVE UTILITY OF ANTI-VAPING MESSAGES WITH EMOTIONAL APPEALS IN FORECASTING VAPING REDUCTIONS AMONG YOUNG ADULTS

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Significance: In the US, 26% of young adults (YAs) report ever using an e-cigarette, making them the nation's largest vaper group. Anti-vaping public service announcements (PSAs) reduce vaping among YAs; however, neurobehavioral mechanisms underlying message efficacy have remained less understood. We employed functional MRI (fMRI) to identify brain regions of interest (ROI) that exhibited significant activation when YAs were exposed to anti-vaping PSAs. Our goal was to assess how neural activity in these ROIs may predict vaping frequency 1 month later. **Method:** 47 non-smoking YA (18-29yrs) men and women (66% female) who vaped >15 of the past 30 days completed an fMRI paradigm that included pseudorandomized series of visual-textual PSAs with cognitive or emotional appeals and scrambled control images. We identified 11 ROIs with significant (FDR corrected $p<.05$, >10 voxels) activation response during either cognitive or emotional PSA viewing (vs. control). Among these ROIs, paired t-tests were conducted to identify those exhibiting significantly different activation between the cognitive and emotional conditions (Bonferroni corrected $p<.0045$). A linear regression was then performed to examine whether the magnitude of any significant condition differences predict vaping frequency 1 month later. **Results:** Left visual cortex (LVC; $t=-3.18, p=.003$), right visual cortex (RVC; $t=-6.64$, $p<.001$), and right anterior hippocampus/amygdala (RAHA; $t=-3.38, p=.001$) exhibited significantly greater activation when YAs were viewing emotional compared to cognitive PSAs. The regression analysis revealed that stronger activation during emotional vs. cognitive messages in these 3 ROIs was associated with lower vaping frequency 1-month post-scan ($Beta_{LVC}=-.30$, $p=.04$, $R^2=0.25$; $Beta_{RVC}=-.33$, $p=.02$, $R^2=0.26$; $Beta_{RAHA}=-.47$, $p=.001$, $R^2=0.36$). **Conclusion:** Results suggest that anti-vaping messages using emotional appeals (vs. cognitive appeals) elicit a stronger response in ROIs associated with visual and emotional processing. Furthermore, the magnitude of these effects predicted lower subsequent vaping frequency. We conclude that emotional PSAs may have enhanced value in forecasting future vaping behaviors by increased engagement of visual processing and emotional salience. Findings underscore the potential of complementary neural markers of vaping severity, offering valuable insights for informing e-cigarette policy and public health interventions aimed at reducing vaping among YAs.

FUNDING: Federal; Academic Institution


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RAPID SUBMISSIONS: POSTER SESSION 2

POS2-149

FACTORS AFFECTING RISK OF PRISM AND COPD IN THE UNITED STATES: AN ANALYSIS OF NHANES 2007-2012

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Significance: Chronic obstructive pulmonary disease (COPD) is one of the leading causes of death in the US and worldwide. Preserved ratio impaired spirometry (PRISm) is a form of early lung obstruction associated with respiratory symptoms, COPD development, and mortality. Our study examines the risk of developing COPD and PRISm in a nationally representative survey of the US. **Methods:** We used multinomial multivariate logit models and three waves of pre-bronchodilator spirometry data from the US National Health and Nutritional Examination Survey (2007-2012) to determine the risk of COPD and PRISm, as defined by spirometry. The analytic sample included adults ages 20 to 79 without missing data on age, sex, body mass index (BMI), race/ethnicity (White, Non-Hispanic Black, Mexican American, Other Hispanic, Other), smoking status, and spirometry. We defined COPD and PRISm using FEV_1/FVC cut points by the Global Initiative for Chronic Obstructive Lung Disease. We compared the risk of developing COPD or PRISm, adjusting for age, sex, BMI, race/ethnicity, smoking status, and survey wave where age and BMI were coded as continuous variables and all others were categorical. **Results:** We found that age, higher BMI, and being of Non-Hispanic Black or Other race were statistically significantly associated with increased risk of PRISm when controlling for other covariates. Specifically, the predicted probability of having PRISm for Non-Hispanic Black individuals was 0.33 (95% CI: 0.31-0.35), which was almost six times higher than that for Non-Hispanic White individuals (P=0.06, 95% CI: 0.05-0.07). The predicted probability of having PRISm for current smokers was 0.11 (95% CI: 0.09-0.13), similar to that for former smokers (P=0.09, 95% CI 0.8-0.11) and never smokers (P=0.10, 95% CI 0.9-0.10). The risk of COPD was also higher for men, older individuals, those with lower BMI, and current and former smokers. Among current smokers, the predicted probability of having COPD was 0.25 (95% CI: 0.24-0.27), and for former smokers was 0.15 (95% CI: 0.13-0.16). **Conclusions:** We found stark differences in risks of developing COPD vs PRISm, adding additional evidence questioning the progression from PRISm to COPD. Smoking was a prominent risk factor for COPD. Smoking was not associated with the risk of having PRISm. More research is needed to understand the relationship between smoking, COPD, and PRISm.

FUNDING: Federal; FDACTP; Nonprofit grant funding entity

POS2-150

GET FIT TO QUIT - RESULTS FROM A MULTIPLE HEALTH BEHAVIOR CHANGE INTERVENTION PILOT STUDY FOR INDIVIDUALS WITH OBESITY WHO SMOKE CIGARETTES

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Significance: Individuals with obesity who smoke are at disproportionate risk of morbidity and mortality and may benefit from multiple health behavior change (MHBC) interventions. Nonetheless, changing multiple behaviors is challenging and the efficacy of a MHBC (weight + smoking) intervention is unknown. **Methods:** We aimed to test initial effects on smoking and weight of a remote, group-based, MHBC intervention for this population. Participants (*N*=55) were assigned to 16 weeks of Self-Regulation strategies for weight gain prevention (SR) in advance of smoking treatment or to Lifestyle Education (LE) in advance of smoking treatment (control). Assessments were conducted at week 9 (beginning of smoking cessation treatment), and 1, 2, and 3-month follow up. Smoking was self-reported using the Timeline Followback and measured via exhaled carbon monoxide (CO). Body weight was measured via digital scale. **Results:** In both groups, participants smoked fewer cigarettes per day (CPD) over time (F = 85.0, p < .001) and reduced their CO (F = 14.5, p < .001). There were 48.1%, 40.4%, and 38.8% of participants with CO-verified 7-day point prevalence abstinence at the 1-, 2-, and 3-month assessments, respectively. Participants in the SR group lost weight during the intervention and maintained this loss while quitting smoking, with a mean weight at 3-month follow-up of 216.0 lbs (sd=56.8) and a baseline weight of 222.1 lbs (sd=53.5). In contrast, the weight of individuals in the LE group did not change significantly over time, with a with a mean weight at 3-month follow-up of 222.4 lbs (sd=50.3) and a baseline weight of 224.1 lbs (sd=47.8). **Conclusions:** Participants who learned SR strategies prior to quitting smoking lost weight in advance of quitting and maintained this over time, reflecting multiple health behavior changes being implemented successfully in the context of combined intervention. Individuals who were provided with LE information prior to quitting smoking had similar rates of success with quitting smoking but their weight remained stable over time. The current findings suggest that some individuals with obesity who smoke cigarettes are open and interested in a MHBC intervention. Participating in a SR-focused intervention may help this population quit smoking with minimal weight gain. Given data to suggest initial efficacy of the intervention, a fully-powered efficacy trial of a combined MHBC intervention with this population is warranted.

FUNDING: Nonprofit grant funding entity

POS2-151

A BAND-AID SOLUTION: EXPLORING THE INTERACTIONS OF HEALTHCARE INACCESSIBILITY AND SUBSTANCE USE AMONG BLACK AMERICANS WHO CO-USE

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Introduction Systemic and institutional racism pervade the healthcare landscape. Using a perspective focused on the transience of accessibility within and outside a healthcare environment, we examine how systemic discrimination permeates the healthcare field, particularly for Black/African American (AA)individuals. Our study explores the dynamic cycle of healthcare inaccessibility and substance use, and at the heart of our exploration is the impact of perceived accessibility of healthcare services on individual stress responses. **Methods** We conducted 7 focus groups stratified by ethnicity and gender (one group was mixed gender and ethnicity)(N=43), and invited participants to share their narratives regarding various social stressors, including any form of perceived discrimination and the impact on co-use of nicotine, cannabis, and/or alcohol. Thematic analysis was employed to identify recurrent patterns and themes. Data analysis followed a team-oriented inductive and deductive approach, utilizing independent open-coding and collective discussion. **Results** The focus group discussions identified several themes, including limited access to mainstream healthcare resources and reliance on substances as readily available responses to stressors. This response is seen as an affordable option to coping with distress rather than engaging in the healthcare system, given the financial constraints and other barriers to access to service primarily among Black/AA adults. **Conclusion** In the absence of effective, culturally responsive healthcare systems, Black/AA individuals may be motivated to use substances as an accessible option to cope with stress. This pattern emphasizes the reciprocity between stressors and substance use that exacerbate the challenges in achieving holistic health. Our findings emphasize the need for an exhaustive examination of the community-specific challenges faced by these communities in navigating healthcare microspaces.

FUNDING: Federal

POS2-152

DELAY DISCOUNTING EXACERBATES THE EFFECTS OF NICOTINE DEPENDENCE ON TOBACCO CESSATION

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Significance: Greater delay discounting (DD), a measure of impulsivity, is associated with less successful quitting in cessation trials. In a population-based cohort, we assessed whether DD contributes to disparities in smoking cessation. Specifically, we evaluated whether DD is associated with quit attempts, relapses, and duration of quit attempts as a moderator of nicotine dependence or lower self-efficacy (SE), two constructs that are in turn often associated with social vulnerability. **Methods:** In a cohort of Canadian adult smokers (n=1,183) having tried to quit, we surveyed relapse and duration of quit attempt (<= 1 day, > 1 - 7 days, > 7 - < 30 days, 1 - 3 months, > 3 months) at 3-month follow-up. At baseline, we administered a DD task (results log transformed), the heaviness of smoking index (HSI), a 10-item SE to quit scale, and sociodemographic measures. We regressed log DD, HSI and SE on participant characteristics to evaluate correlates. We also used separate logistic models to regress (1) having tried to quit by follow-up (entire sample) and (2) relapse (sample of those who tried to quit) on log DD

interacted with HSI (and separately, log DD interacted with SE), controlling for age, race, sex, education, and perceived income adequacy. We used ordered logistic regression in a similar analysis to estimate the relationship between log DD interacted with HSI/SE and (3) quit duration. These specifications assessed the moderating effects of DD on HSI and on SE for each outcome. **Results:** Smokers with higher HSI, lower perceived income adequacy, and who are non-White had greater impulsivity (higher log DD). We found that higher impulsivity did not moderate the effects of SE on any measured smoking cessation outcome. However, an interaction effect between impulsivity and HSI was found for quit duration ($p < 0.05$): At higher DD levels, HSI had a stronger, inverse association with likelihood of longer quit duration. Specifically, those with the highest DD level had a 6.8% ($p < 0.05$) higher probability of quitting for <= 1 day, and a 3.9% lower probability of quitting for > 3 months ($p < 0.05$). However, those with the lowest DD level had a lower probability (-2.4%, not significant) of quitting for <= 1 day and a higher probability (1.8%, not significant) of quitting for > 3 months. In turn, HSI was associated with social vulnerability such as older age and lower education, SE, and perceived income adequacy. **Conclusion**: Greater DD strengthened inverse associations between quit duration and HSI, itself associated with social vulnerability status. Cessation interventions may need to consider targeting vulnerable smokers with higher DD to enhance their cessation success.

FUNDING: Federal

POS2-153

THE IMPACT OF STANDARDISED TOBACCO PACKAGING AND WARNINGS ON RELAPSE PREVENTION: A LONGITUDINAL ONLINE SURVEY IN THE UNITED KINGDOM

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Significance: Despite being an aim of standardised packaging, and high rates of relapse in the United Kingdom (UK) and elsewhere, there is a dearth of research exploring the role of standardised packaging in helping prevent relapse among people who previously smoked. **Methods:** The 'Adult Tobacco Policy Survey' is a longitudinal online survey with people who smoke and previously smoked aged 16 and older in the UK, with one wave pre-standardised packaging (2016) and three waves post-standardised packaging (2017, 2019, 2022). Information was captured regarding sex, age, ethnicity, income level, education, and social grade. Participants who previously smoked at wave 4 (*n*=1,043) were asked the extent, if at all, to which the look of cigarette or rolling tobacco packs, and warning labels on packs, help them to stay quit, with response options 'not at all', 'a little', 'somewhat', 'a lot' or 'don't know'. Analysis of change in frequency of responses between survey waves was conducted in Stata version 17 using generalised estimating equations, with sociodemographic characteristics added to the longitudinal model to examine potential associations with perceived impact of warnings and packs on relapse prevention. **Results:** Although there was no significant change across the three post-standardised packaging waves, a third (*n*=354, 34%) of participants who previously smoked consistently reported that the packaging helps them stay quit a little, somewhat or a lot, with the comparative figure for warnings almost half (*n*=495, 47%). On average, across all survey waves, women were more likely to report the packs helped them stay quit (odds ratio [*OR*] 1.36, 95% CI 1.11 to 1.67), respondents aged over 40 were less likely to report packs helped them stay quit (*OR* 0.65, 95% CI 0.53 to 0.80), while people not from a white ethnic background were more likely to say that packs helped them stay quit than people from a white British background (*OR* 1.77, 95% CI 1.06 to 2.95). The same pattern was observed for warnings and sex (*OR* 1.31, 95% CI 1.08 to 1.59), age group (*OR* 0.74, 95% CI 0.60 to 0.90) and ethnic group (*OR* 1.96, 95% CI 1.13 to 3.38). There was no relationship for income level, education, or social grade. **Conclusions:** These findings suggest there may be a positive impact of standardised packaging and warnings on helping people who previously smoked to stay quit. Furthermore, the findings indicate that standardised packaging and warnings could be reaching different audiences.

FUNDING: Nonprofit grant funding entity

POS2-154

E-LIQUID FLAVOR AVAILABILITY SIGNIFICANTLY AFFECTS CIGARETTE PURCHASING IN AN EXPERIMENTAL MARKETPLACE SIMULATING A LOW NICOTINE PRODUCT STANDARD

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SIGNIFICANCE: Relatively little is known about very low nicotine content (VLNC) cigarette purchasing when people who smoke also have access to other sources of nicotine. This study evaluated whether e-liquid characteristics subject to regulation, including nicotine content and flavor, affected cigarette purchasing under marketplace conditions simulating a low nicotine product standard for cigarettes. **METHODS:** People who smoke daily completed four shopping trips in an experimental tobacco marketplace (ETM) on separate days (n = 67, recruited from Winston-Salem, NC). During each shopping trip, participants used a pre-allocated balance (based on the number of cigarettes they smoked per day) to shop for a week's worth of nicotine products. They could purchase any combination of packs of VLNC cigarettes (described to participants as having "95% less nicotine than usual cigarettes"; available in menthol and nonmenthol), 10 ml bottles of e-liquid (compatible with a refillable pod vape (which itself did not have a cost), and nicotine gum in 20 count boxes (available in fruit, cinnamon, and mint flavors). The nicotine content (2.5% vs. 5.0%) and flavors (Southern Leaf ["tobacco only"] vs. Southern Leaf, Artic Menthol, Island Mango, and Vanilla Wafer ["tobacco, mint, fruit, dessert"]) of e-liquid available in the marketplace varied across the four shopping trips per a randomized 2 x 2 design. Participants were told that one of their shopping trips would be actualized, meaning they would receive the products they purchased to use in the field for 7 days. Linear mixed models compared product purchasing across the four visits. **RESULTS:** Participants purchased fewer VLNC cigarettes (mean difference: -12.02 [95% CI: -21.87, -2.16], p = 0.017) and more mls of e-liquid (4.75 [95% CI: 2.02, 7.48], p < 0.001) when tobacco, mint, fruit, and dessert e-liquid flavors were available, compared to when only a tobacco flavored e-liquid was available. E-liquid nicotine content did not have a significant effect on the quantity of VLNC cigarettes or mls of e-liquid purchased. **CONCLUSION:** Using an ETM where normal nicotine content cigarettes were not available, we found that participants purchased fewer VLNC cigarettes when a wider variety of e-liquid flavors were available compared to when only a tobacco-flavored e-liquid was available. This result implies that the availability of fruit, mint, and dessert flavor e-liquids could moderate the impact of nicotine reduction in cigarettes on cigarette purchasing. The effect of e-liquid nicotine content on VLNC cigarette purchasing was not evident in this study. This complexity may arise from factors such as the ability to achieve similar nicotine intake with varying e-liquid nicotine strengths, the magnitude of differences in the nicotine contents tested, and/or the sensory experiences and expectations associated with higher nicotine content e-liquids among some users.

FUNDING: Federal

POS2-155

DESIGN, LIQUID COMPOSITION, AND TOXICANT EMISSIONS OF ELFBAR AND LOST MARY DISPOSABLE ELECTRONIC NICOTINE DELIVERY SYSTEMS

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ElfBar and Lost Mary are two brands of flavored disposable electronic nicotine delivery systems (ENDS) that emerged as high market share products following the 2020 FDA enforcement policy which phased out flavored cartridge-based ENDS products. Little is known about the characteristics and emissions of these high youth-appeal disposable products which are designed to deliver thousands of puffs before being discarded. This study investigates the design, liquid composition, and aerosol emissions of three popular ElfBar and Lost Mary products with different flavors and 50 mg/ml nicotine strength: ElfBar BC5000 (Blue Razz Ice and Watermelon Ice), BC5000_ULTRA (Watermelon Ice), and Lost Mary OS5000 (Blue Razz Ice and Strawberry Mango). Electrical characteristics, including resistance and electrical power were measured using a multimeter. Liquid composition, including total nicotine concentration and nicotine protonation, were analyzed using gas chromatography-flame ionization (GC-FID). Aerosol emissions were generated using a standard puffing regimen (15 puffs, 4sec puff duration, 1.5 LPM flow rate, 30 sec inter-puff interval). Total particulate matter, propylene glycol (PG), vegetable glycerin (VG), carbonyl compounds (CCs), and volatile organic compounds (VOCs) in the aerosol were measured using high-performance liquid chromatography (HPLC) and gas chromatography-mass spectrometry (GC-MS). pH was determined for both liquid and aerosol. Across products, electrical power ranged between 8.5-10 W and pH ranged between 4.43-4.76. Liquid nicotine concentration ranged between 46.14-48.81 mg/mL, and the nicotine was predominantly in the protonated form (>99% protonated across all products). Aerosol PG/VG ratios ranged between 53/47 - 60/40, while nicotine yield in 15 puffs ranged between 7.7-9.0 mg, with a corresponding nicotine flux between 128-150 µg/s. Carbonyl emissions ranged between 60-77 µg/session, while total VOC yields ranged between 226.8 - 412.4 ng/session. In 15 puffs, ElfBar and Lost

Mary devices emitted much greater nicotine than a typical combustible cigarette, and orders of magnitude greater CCs than previously measured in FDA authorized ENDS products such as Vuse.

FUNDING: Federal

POS2-156

EXPLORING VAPING MOTIVATION, HEALTH CONCERNS, AND PROVIDER ENGAGEMENT IN PRIMARY CARE: A PILOT STUDY

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The rise of nicotine vaping has not only transformed the tobacco consumption landscape but has also triggered increased scrutiny regarding its health implications. This shift in focus prompted us to conduct an early-stage study to explore (1) whether vaping and vaping cessation is being addressed in primary healthcare settings and (2) the reasons individuals engage in nicotine vaping, to establish profiles that can aid healthcare providers in recommending personalized treatments. Participants (N=14), recruited from primary care clinics in southern New Jersey, answered questions about vaping-related health concerns and whether vaping has been addressed by their primary care providers. They also completed a "Functional Assessment of Smoking for Treatment Recommendations" (FASTR) survey that was originally developed for cigarette smokers but was adapted for people who vape nicotine. When asked about their health, 10/14 (71%) participants expressed concerns about the health effects of vaping, 10/14 (71%) tried quitting previously, and 5/14 (36%) thought they would no longer be vaping one year from now. However, 8/14 (57%) participants reported being asked about their vaping by a healthcare provider, 5/14 (36%) reported that their doctors recommended quitting, and only 3/14 (21%) received guidance on vaping cessation. Little has been done to understand the reasons why people vape, and different reasons would dictate different treatment recommendations. To get a better understanding of these characteristics, we created unique profiles for each participant based on responses to the FASTR. For the majority of participants, the reasons with the highest ratings for vaping were positive reinforcement (PR) (e.g., I vape because I like the flavors; 7/14) and negative reinforcement (e.g., I vape to calm down; 5/14) whereas the reason with the lowest ratings was social reinforcement (e.g., I vape to socialize; I vape to control my weight; 1/14). Two participants rated more than one reason equally, suggesting their vaping is multiply controlled. These outcomes support the idea that different patients will require different treatment recommendations (e.g., sensory substitution vs relaxation training vs a multi-pronged approach). Further research is needed to understand why vaping is not being discussed in primary care settings, as well as a better understanding of the unique reasons why people vape to develop personalized vaping cessation recommendations.

FUNDING: Academic Institution

POS2-157

PICTORIAL LITTLE CIGAR AND CIGARILLO WARNINGS INFLUENCE ON INTENTION TO QUIT: A RANDOMIZED CONTROLLED TRIAL

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Significance: More than 9 million US adults smoke cigars which cause multiple cancers, including throat and lung cancer. The Food and Drug Administration (FDA) proposed rotating text-only warnings for cigars but those warnings were halted due to litigation and a lack of cigar specific impact of such warnings. The purpose of this randomized controlled trial (RCT) was to assess the impact of newly-developed pictorial warnings for little cigar and cigarillos (LCC) on intention to quit LCCs compared to the proposed FDA text-only warnings and a no-warning, control condition. **Methods:** US adults (*N*=1,029) who currently use LCCs some days or every day were recruited from a survey panel provider to participate in an online daily diary longitudinal RCT for 3 weeks. Participants were randomized to one of three study conditions: 1) six newly-developed pictorial LCC warnings, 2) six currently proposed FDA text-only LCC warnings, and 3) a no-warning control condition. On the first six days of each week of the study, participants received a daily survey that assessed LCC use in the previous day and, where applicable, an image of the assigned warning for that day (condition 1 and 2). On the seventh day of the study, participants completed an in-depth survey assessing their LCC quit intentions, LCC risk perceptions, and other secondary outcomes. The primary outcome was LCC quit intentions on day 21 (1= unlikely to quit - 4= very likely to quit). We used linear regression to predict the difference in day 21 quit intentions by condition assignment, adjusting for quit intentions at baseline. We used the Markov Chain Monte Carlo method to impute missing outcome values (n=89). **Results:** Participants were 56% male, 63% white, 21.1% Black or African American, and 83% non-Latino. The pictorial warning condition significantly increased quit intentions at day 21 compared with the control and FDA text only condition (beta = 0.28, p<0.001). The proposed FDA text only warnings did not change quit intentions compared with control (beta = -0.02, p=0.82). **Conclusions:** The new pictorial cigar warnings were more effective at increasing intentions to quit LCCs compared to the currently proposed FDA cigar warnings and a no warning control condition. These results can directly inform regulation of cigar products and implementation of cigar warnings with images.

FUNDING: Federal; FDACTP

POS2-158

EMPOWERING FORMER SMOKERS TO BECOME AGENTS OF CHANGE THROUGH THIRDHAND SMOKE EDUCATION

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Significance: Thirdhand smoke (THS), which includes secondhand smoke contaminants, can be re-emitted and re-suspended into the air and are embedded into carpets, floors, and clothing. The awareness of THS and the health impacts from exposure to its harmful residues is low in the general population of the United States, especially in immigrant communities where smoking remains prevalent. Our study implemented a THS family-based intervention to promote THS awareness among Chinese American immigrants. **Methods**: The THS intervention included an education and home cleaning component delivered by lay health workers to 30 Chinese American dyads (N=60). Dyads consisted of former smokers who quit within the last two years and their non-smoking family member living in the same household. Participants completed pre- and post-intervention survey interviews and a sub-sample (N=15; 8 former smokers and 7 family members) participated in a post-intervention focus group. Multivariable regression adjusted for dyadic data was conducted to compare pre- and post-intervention changes in the Beliefs About Thirdhand Smoke (BATHS) overall and subscale (Persistence and Health) scores. Transcriptions from focus group interviews, conducted in Cantonese, were transcribed and translated, coded by two independent researchers and thematically analyzed using Dedoose. **Results**: All participants were born outside the US and 59% immigrated at age 30 or older (range: 7 to 63 years old). A majority (82%) spoke English less than "well" and 87% were married. BATHS scores analyses suggested that former smokers increased their THS awareness from pre- to post-intervention: BATHS Overall (M=3.95 [SD=0.50], p=0.021); Persistence (M=3.95 [SD=0.48], p=0.031) and Health (M=3.94 [SD=0.58], p=0.038), and their post-intervention THS scores became similar to the BATH scores of non-smoking family members which did not change at post-intervention. Thematic analyses of focus group interviews revealed emerging themes highlighting impacts on former smokers in increasing THS knowledge and strengthening desires to create dialogue about tobacco use with friends; for example, a former smoker shared "I will share my [THS] knowledge with others. I think it will help [my friends] as well." **Conclusion**: A family-based THS education intervention has promising impacts to advance tobacco control in Chinese American immigrant communities by providing new THS knowledge and encouraging former smokers to become agents of change. Future research on empowering former smokers to become effective agents of change to promote tobacco-free communities is warranted.

FUNDING: Other

POS2-159

EFFECT OF FLAVORING CHEMICAL COMPOUNDS ON CARBONYL EMISSIONS FROM ELECTRONIC CIGARETTES

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INTRODUCTION: Flavorings increase attractiveness of electronic cigarettes (e-cigarettes) to both users and non-users. There is evidence that e-cigarette flavorings contribute to formation of harmful compounds during vaping, such as the human carcinogens formaldehyde and acetaldehyde. The purpose of this study is to determine how individual

flavoring compounds contribute to carbonyls production during vaping. METHODS: For sample collection, 'mod' type e-cigarette (Mod SCAR-18 [V18 Mini, 0.15 ohm 90-watt dual meshed coil, manufacturer: SMOK]) at 1.5 LPM was used. Compounds representing the main chemical classes of e-cigarette flavorings were tested (esters: ethyl acetate and ethyl butyrate; aromatic aldehydes: vanillin and benzaldehyde; alcohols: menthol and ethyl maltol; terpenes: limonene and linalool), at 2 concentrations (low: ~1 microliter/mL; high: ~5 microliter/mL) in 50% propylene glycol (PG) and 50% glycerol (VG). Emissions from flavored liquids were compared to those of the unflavored liquid. The aerosol was collected using 2,4-dinitrophenyl hydrazine cartridges (Waters) and analyzed using high-performance liquid chromatography with UV detection (HPLC-UV, Arc 2690 with a 2998 photodiode array detector, Waters). RESULTS: Carbonyl emissions varied with flavoring chemical class. Unflavored formaldehyde and acetaldehyde emissions were 0.6±0.2 and 0.12±0.05 microgram/puff, respectively. Some flavor chemical classes increased carbonyl emissions, especially terpenes whose formaldehyde emissions were 1.2±0.1 microgram /puff for low and 1.8±0.5 microgram /puff for high flavor concentrations. Esters and aromatic aldehydes increased formaldehyde emissions to 0.9±0.2 microgram/puff for low and 1.3±0.4 microgram/puff for high flavor concentration. Menthol did not significantly impact on formaldehyde emissions (0.61±0.08 for low and 0.62±0.09 microgram/puff for high concentration), while addition of ethyl maltol decreased emissions to 0.46±0.07 for low concentration and 0.44±0.07 microgram/puff for high flavor concentration. Changes in acetaldehyde and most other carbonyls with the addition of flavors showed similar trends to those for formaldehyde. CONCLUSIONS: While the carrier liquid (PG:VG) can produce carbonyls by itself, addition of flavors can change carbonyl emissions during vaping. These changes depend on the chemical class of the flavor compound and its concentration. These findings can be used for an informed approach to regulate e-liquid composition.

FUNDING: Federal; FDACTP

POS2-160

YOUTH PERCEPTIONS OF LOW NICOTINE CIGARETTES FROM NATIONAL YOUTH TOBACCO SURVEY

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FDA has stated they intend to propose a nicotine product standard that would reduce the amount of nicotine in cigarettes in order to render them minimally or nonaddictive. However, consumer perceptions of the harm of reduced nicotine content (RNC) cigarettes may impact cigarette use after the product standard is enacted; specifically, people may use RNC cigarettes if they believe those tobacco products are safe. Current evidence indicates that misperceptions regarding the harms of RNC cigarettes are pervasive among US adults; however, there are few studies that examine youth perceptions about RNC cigarettes. The National Youth Tobacco Survey (NYTS) is an annual, nationally representative cross-sectional survey of middle and high school students in the U.S. that includes one item that assesses youth harm perceptions of low nicotine cigarettes. Responses to this item have not been examined in previous publications. This study analyzes NYTS 2022 data to determine middle and high school student perceptions of the harms of low nicotine cigarettes. The aims of the project are to: 1) establish the current prevalence of incorrect perceptions about the harms of low nicotine cigarettes in US youth; and 2) examine how perceptions vary based on grade, tobacco use status, and other key demographic variables of interest (e.g., race and ethnicity, sex, sexual orientation, and gender identity). These prevalence estimates will enable researchers to identify gaps in youth understanding of the harms of nicotine and cigarettes that exist despite public health messaging about the harms of tobacco products. Results of this study can also enable researchers to identify the sub-populations of middle and high school youth to prioritize when creating messaging about the nicotine product standard and FDA's regulation of nicotine.

FUNDING: FDACTP

POS2-161

COMPLIANCE WITH A BAN ON THE OPEN DISPLAY OF TOBACCO PACKAGING AND SINGLE CIGARETTES: AN OBSERVATION STUDY OF POINTS OF SALE IN MEXICO

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Background: Points of sale (POS) play a vital role in tobacco promotion in Latin America. In Mexico, in 2023 the General Law for Tobacco Control prohibited the open display of tobacco products, as well as advertising, promotions and sponsorship at POS. Since 1999, the sale of single cigarettes has been banned at POS. We examined compliance with these laws at POS near schools in Mexico. **Method:** Between May and June 2023, POS were monitored in four cities: 15 municipalities in Mexico City; Guadalajara in Jalisco; Monterrey in Nuevo Leon; and Juchitán in Oaxaca. Different neighborhoods were randomly selected in each city based on their socio-economic status (SES). An adaptation of the 'Tobacco Packaging Surveillance System' (TPackSS) protocol was used to define walking routes, using schools as starting points, and to evaluate the display of tobacco products at POS (street vendors, kiosks, neighborhood stores, convenience stores, and supermarkets) on these routes. **Results:** A total of 504 POS were visited across the four cities. Of these, 245 (48.6%) did not comply with the law that bans the open display of tobacco products. Despite the ban on single cigarettes, 138 POS (27.4%) displayed only single cigarettes. Of these, 63.7% were neighborhood stores, 23.2% street vendors, and 12.3% kiosks, with these POS concentrated in Mexico City (42.8%) and Juchitan (49.3%). 95 POS (18.9%) displayed only cigarette packs, with non-compliance highest in convenience stores (65.3%) and neighborhood stores (30.5%). The display of cigarette packs was found in all cities: Monterrey (38.9%), Mexico City (30.5%), Juchitan (17.9%), and Guadalajara (12.6%). In 12 POS, both packs and single cigarettes were displayed (2.4%), mainly in Juchitan (66.7%) and predominantly in neighborhood stores (83.3%). Regarding the relationship between SES and tobacco product display, exclusive single cigarette displays were observed in high SES neighborhoods (34.1%) and medium SES neighborhoods (26.1%), while exclusive cigarette pack displays were found in high SES (28.4%) and very high SES (32.6%) areas. Combined displays of single cigarettes and packs were mostly found in high SES neighborhoods (41.7%). **Conclusions:** Our study revealed non-compliance with the tobacco product display law in just under half of the points of sale in the four cities. These findings underscore the need for enhanced monitoring of law enforcement and compliance, as well as implementation of stricter measures to ensure enforcement.

FUNDING: Federal

POS2-162

YOUNG PEOPLE'S USE OF DISPOSABLE VAPES: A QUALITATIVE STUDY

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Significance: In the UK, there has been a clear shift in nicotine product consumption, particularly among young people, where vaping prevalence has risen significantly. One phenomenon that has gained prominence is the widespread use of disposable vapes (e-cigarettes). Specific features of disposables may conceivably contribute to their appeal, and potentially influence sustained use amongst young people. Yet little is known about the use and experiences of disposable vapes from the perspective of young people themselves. Aims: To explore situated experiences of young people's use of disposable vapes. Methods: 29 young people aged 16-20 years who vaped disposables regularly were recruited between July and October 2023 from education institutions, community events and snowballing in the East of England. 34.5% (10) were female, 62.1% (18) were from IMDs 1-4, and 41% (12) self-disclosed a special educational need. Thirteen young people took part in an interview with a researcher and 14 took part in discussions in friendship dyads with question cards to guide the conversation, without a researcher present. Data were analysed thematically. Results: Young people reported finding disposables attractive due to ease of use, flavours, behavioural aspects (tricks), and perceived ability to manage their mental health. Most believed vaping was as risky as smoking and many dual used. Vaping was seen as a normal youth behaviour which fostered peer relationships. Young people described ignoring school and other vaping policies and building local knowledge on where to buy vapes. The vapes purchased were often not compliant with UK regulations. Young people reported seeing mostly negative news stories about vaping which influenced their view of harms of vaping and smoking. Marketing was perceived as pervasive. Conclusions: Public health messaging on the harms of tobacco versus the relative risk of vaping should be clearly communicated. Future regulation should carefully consider limiting accessibility of vapes to the youngest people, but complete bans may not be effective as young people reported reactions that might encourage more illicit use, or switching to tobacco.

FUNDING: Nonprofit grant funding entity

POS2-163

MEASURING ILLICIT CIGARETTE CONSUMPTION IN MEXICO: A FOLLOW-UP STUDY IN 2023

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Significance: The threat of illicit trade is one of the main tactics used by the tobacco industry to try to impede progress in tobacco control in Mexico as in most countries. In 2017, independent research found that the illicit cigarette market in Mexico was 8.5%, i.e., almost half of what the industry claimed. However, wide variation among the 8 cities studied and a high incidence (above 15%) in at least 2 cities were observed. This follow-up study analyzed the state of illicit trade in 2023 and changes at both national and local levels compared to 2017. **Methods:** Data were collected in 11 Mexican cities, including the same 8 cities from the 2017 study. The sample included 92 Basic Geostatistical Areas (AGEB) randomly selected (the same ones from the 2017 cities plus 34 AGEBs for the 3 cities added for this study). The distance covered was about 800 km, in which a total of 12,607 discarded packs were collected. To determine the legality of packs, compliance with health warnings and the required message "For exclusive sale in Mexico" was verified. Two alternative definitions considered the brand legality and the presence of the security code required by the tax authority. Standard statistical tests to compare proportions were employed. **Results:** The illicit trade of cigarettes in 2023 for all 11 cities was estimated at 18.2% (95%CI:14.3,22.8). Estimates by city ranged from less than 1% to 43.4%. Most of the illicit cigarettes correspond to illicit imports, seemingly from Asia. The comparison between 2017 and 2023 for the 8 cities participating in both measurements, indicates a significant increase from 8.5% to 20.4% (p<0.001). This increase was not homogeneous: 5 cities presented increases (from 4 to 25.9pp), 1 presented a very significant drop, and 2 remained with a very low penetration of illicit trade. The other definitions of legality yielded consistent results, except in one city (Monterrey), where the share of illicit packs was markedly higher because one brand (Link), produced nationally, did not have the required security code, indicating a problem in national production vs illicit imports. **Conclusions:** The increase in illicit cigarette trade could constitute a setback in the implementation of tobacco control policy in Mexico. The presence of this type of cigarettes favors affordability and accessibility, contributing to maintaining the stagnation of smoking prevalence at its 2009 levels. While there is a need to understand the reasons behind this increase and the great variation across cities, ratifying and implementing the central measures of the Protocol to Eliminate Illicit Trade in Tobacco Products is key to address this issue.

FUNDING: Academic Institution

POS2-164

TRENDS IN US HIGH SCHOOL STUDENT E-CIGARETTE USE BY SEX: RESULTS FROM THE NATIONAL YOUTH TOBACCO SURVEY (2015-2022)

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Background: Historically, cigarettes and other tobacco products have been used at higher rates among adolescent males compared to females. E-cigarettes are the most popular tobacco product among youth, yet little research has reported on prevalence of e-cigarette use by sex. **Methods**: We analyzed data from the National Youth Tobacco Survey (NYTS), 2015-2022. Weighted estimates were calculated for current (past-30 day) and heavy (use on ≥ 20 days in past 30 days) e-cigarette use for males and females ("what is your sex"). Potential factors associated with e-cigarette use (e.g., reasons for use, ad exposure) were also examined. Weighted multivariable logistic regression was used to assess the relationship between current e-cigarette use and sex. **Results**: Between 2015-2018, a higher proportion of high school males used e-cigarettes, compared to females (p<0.05 for each survey year). Between 2019-2021, males and females had similar rates of e-cigarette use (p>0.05 for each survey year), and by 2022, females had a higher rate of use (p=0.039). Between 2015-2020, a greater percentage of male e-cigarette users were heavy users, compared to female e-cigarette users (p<0.05 for each survey year). Between 2021-2022, male and female e-cigarette users had similar rates of heavy use (p>0.05 for each survey year). In 2022, a greater percentage of female e-cigarette users identified anxious/stressed/depressed feelings as a reason for use (48.6%), compared to males (31.6%; p<0.001). Related, a greater proportion of female e-cigarette users (41.9%) reported high levels of psychological distress, compared to males (19.0%; p<0.001) in the same year. In 2022, controlling for age, race/ethnicity, sexual orientation, exposure to e-cigarette ads/promotions on the internet, and location of survey completion (e.g., at home, in school), female students had greater odds of current e-cigarette use, compared to males (OR=1.29; 95% CI=1.04, 1.59; p=0.018). However, after adding psychological distress to the model, males and females had similar odds of e-cigarette use (OR=1.18; 95% CI=0.94, 1.48; p=0.160). **Conclusions**: In 2022, a greater proportion of high school females used e-cigarettes, compared to males, a reversal of pre-COVID trends. Psychological distress among adolescent females may be contributing to these trends.

FUNDING: Nonprofit grant funding entity

POS2-165

RISING UPTAKE OF ALTERNATIVE NICOTINE PRODUCTS (ANPS) BY SMOKING-NAIVE INDIVIDUALS IS NOT NECESSARILY A THREAT TO PUBLIC HEALTH: THE CASE OF DIVERSION BY SNUS IN NORWAY

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Significance: Nicotine products exist on a continuum of harm. Adults who smoke combustible tobacco can benefit by switching to less-harmful alternative nicotine products (ANPs) such as snus and electronic nicotine delivery systems (ENDS), but uptake by smoking-naïve individuals is a concern. Rising ANDS use among non-smoking individuals is often interpreted pessimistically as ANPs attracting new populations of users; however, this interpretation is contradicted in some cases by historic declines in smoking prevalence that accompany rising ANP use. The interplay of ANP use and tobacco smoking trends, and their joint impact on the proportion of smoking-naïve ANP use is examined in the case of Norway, where snus gradually displaced smoking over the 1990s and 2000s. Methods: Data were drawn from the Smoking Habits Survey, an annual cross-sectional survey of tobacco behavior conducted by Statistics Norway. Analyses focus on individuals aged 16-74 between 1985-2022. Trends in current snus use prevalence and current tobacco smoking prevalence (cigarettes or roll-your-own) were examined. Trends in smoking-naïve snus use were also examined, defined as proportion of snus-using individuals who did not currently smoke tobacco. Results: Current snus use prevalence increased from 3.3% in 1985 to 19.2% in 2022, while current smoking decreased from 45.9% to 15.0% over the same period. Over this gradual displacement of tobacco smoking by snus, smoking-naïve snus use increased: in 1985, 45.9% of snus-using individuals in 1985 did not currently smoke, and this increased to 83.5% in 2022. Conclusion: As nicotine use in Norway shifted away from smoked tobacco and towards snus, the proportion of smoking-naïve snus use increased dramatically. However, in this case, rather than being a public health concern (i.e., representing uptake by new populations and higher net nicotine use), rising smoking-naïve snus use is a natural mathematical consequence of simultaneous ANP uptake and falling smoking rates. Thus, the public health implications of rising smoking-naïve ANP use are ambiguous when interpreted in isolation; it is necessary to *also* interpret population-level prevalence trends to disambiguate the extent to which ANPs are being taken up by new populations vs. may be displacing more harmful tobacco smoking.

FUNDING: Other

POS2-166

OPENING THE "BLACK BOX" BETWEEN INTERVENTION DELIVERY AND FOLLOW UP: PARTICIPANT PATHWAYS OF SMOKING AND VAPING FOLLOWING OPPORTUNISTIC DELIVERY OF THE COSTED INTERVENTION

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Background E-cigarette (EC) intervention trialists hypothesise that giving participants an EC will increase participant quit rates months after initial intervention delivery. Yet processes of change occurring in the time-period between recruitment and final follow up which could influence whether smoking cessation is achieved are rarely explored. **Aims:** 1) Identify pathways occurring between intervention delivery and final follow up; 2) Describe baseline and post-intervention statistical data in relation to smoking/vaping behaviour of the different pathway groups; 3) Explore qualitative participant perspectives contextualising pathway groups. **Methods** The Cessation of Smoking Trial in the Emergency Department (ED) (COSTED) offered an innovative opportunistically delivered intervention in 6 EDs between January and August 2022. It consisted of brief smoking cessation advice, referral to the local Stop Smoking Service (SSS) and provision of an EC

starter kit. This sample consists of 366 adult smokers randomised to receive the COSTED intervention and provided data at 6 month follow up, and a qualitative subsample of 24 participants. Pathways and smoking/vaping behaviour at baseline and 6 month follow up were identified using descriptive statistics. Thematic analysis of interview data provided context to the statistical results. **Results** 13.4% (n = 49) of participants quit within 1 month of receiving the intervention, 19.1% (n = 70) quit between 1 and 6 months, 24.9% (91) reduced cigarettes per day (CPD) by at least 50%, and 42.6% did not experience a significant smoking reduction. A third≈ of participants who quit reported not vaping at follow up. Reporting dual use was associated with a reduction in CPD. A third≈ reported experimenting with a different EC to the one provided as part of the intervention. Themes of satisfaction with vaping, changes in environment facilitating quitting, and motivation to quit were reported by quitters. **Conclusions** Sustained long-term EC use is not always necessary for quitting success for people receiving an EC intervention. Dual use can result in a reduction of smoking and may prelude a quit. Success depends on personal context as well satisfaction with vaping. Less EC experience prior to receiving the intervention may make people particularly receptive to support, demonstrating the importance of opportunistic approaches in medical settings in reaching people who would not normally engage with SSS or vape shops.

FUNDING: Other

POS2-167

CESSATION OF SMOKING TRIAL IN THE EMERGENCY DEPARTMENT (COSTED): A MULTI-CENTRE, RANDOMISED CONTROLLED TRIAL

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Background: Supporting people to quit smoking is one of the most powerful interventions to improve health. The Emergency Department (ED) represents a potentially valuable opportunity to deliver a smoking cessation intervention. E-cigarettes have been shown to be one of the most effective smoking cessation tools but have never been tested in the ED environment. **Aims:** The aim of this trial was to determine whether an opportunistic ED based smoking cessation intervention can help people to quit smoking. Methods: In this multi-centre, parallel-group, randomised controlled superiority trial conducted between January and August 2022, adults who smoked daily attending six UK EDs were randomised to intervention (brief advice, e-cigarette starter kit and referral to stop smoking services) or control (written information on stop smoking services). Both groups were followed up 1, 3 and 6 months after randomisation. The primary outcome was biochemically validated abstinence at six months. Results: An intention-to-treat analysis included 972 of 1443 people screened for inclusion. The six month biochemically verified abstinence rate was 7.2% in the intervention group and 4.1% in the control group (relative risk, 1.76; 95% confidence interval [CI] 1.03 to 3.01; p=0.038]). Self-reported 7-day abstinence at 6 months was 23.3% in the intervention group and 12.9% in the control group (relative risk, 1.80; 95% CI 1.36 to 2.38; p<0.001]). No serious adverse events related to taking part in the trial were reported. Conclusions: An opportunistic smoking cessation intervention comprising brief advice, an e-cigarette starter kit and referral to stop smoking services is feasible and effective for sustained smoking abstinence and does not have adverse effects for adults attending the ED. Policy makers should consider the ED as a location to deliver smoking cessation interventions as long as appropriate funding is available for dedicated staff.

FUNDING: Nonprofit grant funding entity

POS2-168

PREVALENCE AND CORRELATES OF TOBACCO USE IN 13 HIGH-RISK STATES IN THE UNITED STATES

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Significance: Overall tobacco use rates are higher in the Midwest and Southern regions of the United States (US) than the rest of the US, yet little is known at the state-level on correlates of tobacco use. This study examines current correlates of tobacco use among individuals living in the 13 most high-risk states (Alabama, Arkansas, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, South Carolina, Tennessee, and West Virginia) in the US. **Methods:** We examined the prevalence of tobacco use and related correlates in a rapid response survey of 4,550 adults (18+ years) living in the 13 high-risk states. Data collected between April-May 2023 by the American Cancer Society were weighted to be representative of the states' population. Bivariate analyses for several demographic characteristics were conducted examining cigarette use, e-cigarette use, and cigar use. **Results:** Respondents were aged 18-65 (Mean = 41.85; SD=0.32) and were majority Non-Hispanic White (70.9%) and female (51.9%). 47.5% of respondents reported an annual household income of <$75,000 USD. The prevalence of any tobacco use was high across all 13 states (33.1%), with 29.5% reporting cigarette, e-cigarette and/or cigar use. 21.1% of respondents were persons who currently smoke vs. 11.5% for the national average, while 20.7% were persons who previously smoked and 8.0% were persons who occasionally smoke. Despite the high prevalence of tobacco use, 68.4% of persons who smoke cigarettes currently reported some intent to quit smoking and 36.2% reported a quit attempt in the past 12 months. 14.0% of respondents reported current e-cigarette use vs 4.5% for the national average and 17.5% reported previous e-cigarette use. 8.7% of respondents reported current cigar use vs 3.5% for the national average and 24.1% reported previous cigar use. Respondents identifying as male (p<.001) and with a household income <$75,000 (p<.001), a disability (p=.014), or military/veteran status (p=.031) were more likely to currently smoke. Respondents who were male (p=.004) or reported household income <75,000 (p=.011) were more likely to report current e-cigarettes use; higher use was associated with increasing age (p<.001). Respondents who were male (p<.001), and nonwhite (p<.001) were more likely to report current cigar use; higher use was associated with increasing age. **Conclusions:** Cigarette use is high among individuals living in this region, and is related to lower household income, military/veteran status, disability status, and male identity. E-cigarette and cigar use increased with age. These high tobacco use rates lead to increased health inequities, with related high rates of cancer and cardiovascular disease. Smoking cessation intent is similar to smokers in other states, and thus tailored cessation programs could help reduce the heavy burden of tobacco use among this population.

FUNDING: Nonprofit grant funding entity; Other

This year, we received a large number of submissions which do not present empirical findings, but which the SRNT 2024 Program Committee Co-Chairs think would be of great value and interest to the SRNT audience. As a result, we have introduced a new area to our poster sessions for "Commentary Posters" which we think will educate, inform, and/or promote conversation. Enjoy!

COM2-1

CHALLENGES AND STRATEGIES FOR RECRUITMENT AND RETENTION OF EXCLUSIVE E-CIGARETTE USERS IN CLINICAL TRIALS

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Background: E-cigarette use has increased rapidly in recent years. In the beginning of 2022, an estimated 82 million people used e-cigarettes, with the largest percentage of e-cigarette users being less than 24 years of age and about 30% being dual users of combustible cigarettes. While less harmful than combustible cigarettes, e-cigarettes have known health risks, and the consequences of long-term use are not known. Over half of e-cigarette users are dissonant and believe they are harmful, addictive, and costly. Those who want to quit - but are unable - should have a safe, clinically proven method to achieve vaping cessation. This requires well-designed clinical trials, but given the younger demographic of exclusive vapers, the dual usage of combustible cigarettes by a significant proportion of vapers, and the harm reduction profile of e-cigarettes, recruitment and retention in clinical trials involving exclusive e-cigarette users is a challenge. **Methods:** Kenvue has designed two randomized clinical trials and conducted a recruitment feasibility study for exclusive e-cigarette users. Challenges and lessons learned have informed strategy for an ongoing phase 3 study, which will compare nicotine mouth spray and placebo over 1 year for abstinence in 800 exclusive e-cigarette users in Canada, the UK, and Germany. The study includes remote visits, behavioral support, and a motivational assessment at screening to encourage subject retention, and the recruitment strategy utilizes AI-powered targeted recruitment through social media platforms most popular with the target demographic. **Key Discussion Points:** The study designs and lessons learned from completed studies could be key discussion points. Given the large overlap with combustible cigarette use, a definition of an exclusive e-cigarette user had to be agreed with regulatory authorities, as well as usage of a validated assessment of e-cigarette dependence. This definition, how to screen for it, and the validated tool for dependence in the phase 3 protocol could all be discussed. The type of advertisements, vendor selection strategy, and the AI-enabled targeted recruitment are other topics for consideration. These topics will promote discussion and further alignment within the e-cigarette research community, allowing future trials to be well-designed and feasible in order to validate additional medicines for vaping cessation.

FUNDING: Pharmaceutical Industry

COM2-2

AN EVIDENCE-BASED E-CIGARETTE PREVENTION PROGRAM (CATCH MY BREATH): LESSON LEARNED IMPLEMENTING AN RCT IN TEXAS MIDDLE SCHOOLS DURING THE PANDEMIC

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Significance. CATCH My Breath (CMB) is a middle school e-cigarette prevention program undergoing a group RCT to empirically assess three-year effects on delaying the onset of e-cigarette use in a 6th-8th-grade cohort. CMB program has four modules taught in class, advisory period, or PE. The grant takes place in Texas and began enrollment in 2020, just as the COVID-19 pandemic began. The presentation describes insights gained while adapting the study's implementation plan (recruitment, enrollment, and execution) during the pandemic. Methods. Guided by a learning agenda approach, which emphasizes intentionality in real-time learning about the delivery of a given project (U.S. Agency for International Development), we incorporated 'pause and reflection' sessions as part of our weekly project meetings to identify and address challenges and best practices for the implementation of the CMB RCT study. Findings. School districts in the Austin area were reluctant to commit to a 3-year study due to lockdown uncertainties, resulting in us recruiting school districts further away than expected (El Paso &Dallas areas). In response, we adapted the CMB curriculum to virtual learning and implemented a digital survey. We created digital videos for each module, taught by a curriculum expert, making it effective for virtual delivery. The survey was adapted in Qualtrics, with links accessible only to students enrolled in the study. In December 2020, parental consent was disseminated using REDCap link printed on digital flyers and posted on digital Blackboards/ Canvas and bulletins. Approximately 2,500 parents consented to their children's participation, with 1,790 students completing the baseline survey. Conclusions. The CMB intervention, originally designed to be delivered in person, was adapted to digital implementation during the pandemic. Applying the 'pause and reflect' method allowed the CMB team to resolve evolving challenges such as virtual school enrollments, parental consent and survey collection, and intervention dissemination. Also, regular communication sessions between the CMB team and school district coordinators, principals, and teachers provided the forum to brainstorm innovative solutions to unique challenges at the various participating schools. Finally, the digital data platforms efficiently provided timely feedback to the participating schools on student retention rates and intervention dissemination.

FUNDING: Federal; Academic Institution


SRNT 2024
Podium Presentation 3: Rapids Session 1
Rapid Submissions

TRANSDISCIPLINARY RAPID-FIRE SESSION 1

RAP1-1

NEIGHBORHOOD INEQUITIES IN THE AVAILABILITY OF RETAILERS SELLING TOBACCO PRODUCTS: A SYSTEMATIC REVIEW

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Significance: The number or concentration of brick-and-mortar stores selling commercial tobacco products in a neighborhood (tobacco retailer availability [TRA]) is associated with tobacco use and tobacco-related health outcomes. With concern for health equity, a systematic review examined place-based differences in TRA by race, ethnicity, socioeconomic status, and sexual orientation of neighborhood residents. **Methods:** We searched PubMed, PsycINFO, Global Health, LILACS, Embase, ABI/Inform, CINAHL, Business Source Complete, Web of Science and Scopus, last searched on November 10, 2022. We included records that were from an Organization for Economic Cooperation and Development member country, included an area-level measure of TRA, included an area-level sociodemographic characteristic of interest, and used statistics to test associations. **Results:** We included 63 records from six countries (Australia, Canada, Germany, New Zealand, United Kingdom, United States). Records were excluded from synthesis and analysis if focused exclusively on the retail availability of nicotine vape products (n=6) or only included model-adjusted effect sizes (n=15), resulting in 41 records and 205 effect sizes. Of the 205 effect sizes, 71 (34.6%) tested associations between TRA and neighborhood composition of people of color (POC). Of these, 58 (81.7%) documented an inequity of greater TRA in neighborhoods with a higher proportion of POC. Specifically, neighborhoods with a greater proportion of Black and Hispanic/Latino residents had greater TRA for 82.8% and 90.3% of effect sizes, respectively. Among 123 effect sizes (60% of the total) focused on socioeconomic status (SES), 100 (81.3%) found greater TRA in areas with lower SES. Two effect sizes tested associations with same-sex couple household composition, and both found greater TRA with more same-sex households. **Conclusions:** Strong evidence of inequities in TRA raises concerns for populations that bear a greater burden of tobacco use and tobacco-related disease. Given these inequities and as part of an endgame plan to eliminate commercial tobacco sales, suggested interventions to reduce TRA include capping the number of tobacco retailers in an area, restricting the location and types of retailers selling tobacco, and increasing tobacco retailer license fees. Health equity assessments to determine the impact of different interventions (alone or in combination) may further promote an equitable reduction of TRA.

FUNDING: Federal; State

RAP1-2

RETAIL TOBACCO HOTSPOTS: THE EQUITY-INCREASING POTENTIAL OF BUILT ENVIRONMENT POLICIES

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Significance: Evidence shows that tobacco retailer concentration is associated with neighborhood demographics, such as percentage of Black or African American residents or low-income populations. In this study, we investigate broader structural metrics of equity, namely measures of social capital and social vulnerability, to explore equity aspects of tobacco retailer concentrations. We also compare structural measures to more traditional sociodemographics for understanding inequities in retailer distribution within communities. **Methods:** We created synthetic populations using the Public Use Microdata Sample from the census bureau to mirror real-world characteristics of residents living in 30 US cities. The Social Vulnerability Index from the CDC includes 15 indicators reflecting how ready communities are to cope with social and health disasters, while the Social Capital Index has 19 components including several measures of social and economic equity and civil and political participation. We spatially simulated three retailer reduction policies: licensing caps, school-to-retailer buffers, and retailer-to-retailer buffers and observed the equity-increasing potential for each policy and city. **Results:** The simulations show that tobacco retailer policies can reduce density as well as reduce demographic disparities, but these effects vary dramatically by city and by type of policy. In general, license caps had greater effects for cities with lower retail density, while buffer policies were more effective in higher density cities. Racial disparities can be reduced by these policies, for example in Baltimore before a 300-meter school-to-retailer buffer policy, neighborhoods with the lowest and highest percentages of Black residents had median retailer densities of 11 vs 27/km^2 respectively, compared to 8 vs 11/km^2 after policy implementation (81% smaller). Structural metrics of equity showed different patterns of reductions. Also in Baltimore, the median retailer density in neighborhoods in the lowest quartile of social capital was 13 compared to 17/km^2 in those with the highest social capital at baseline, and after the same policy these numbers were 7 vs 9/km^2 respectively (50% smaller). While the gap between decreased, the pattern works in the opposite direction from demographic measures. **Conclusions:** These results suggest that social capital and social vulnerability and other structural metrics may be important aspects of community equity that should be considered in tobacco control policy implementation.

FUNDING: Federal

RAP1-3

RETAIL AVAILABILITY OF ORAL NICOTINE POUCHES IN 3 MAJOR US CITIES: ASSOCIATIONS WITH STORE TYPE AND NEIGHBORHOOD SOCIODEMOGRAPHICS

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Significance: Oral nicotine pouches marketed as "tobacco-free" recently entered the US market and have since experienced a precipitous rise in sales. While epidemiological data indicates that these products are increasing in popularity, less is known about patterns of accessibility in retail settings. This study used retailer audits in 3 major US cities to document the prevalence of oral nicotine pouch availability and associations with store type and neighborhood sociodemographic characteristics. **Methods:** In 2023, research staff visited a stratified, random sample of 20% of licensed tobacco retailers in San Francisco, Philadelphia, and New York City (NYC) (n=1,091). Data were collected on the availability of oral nicotine pouch brands (e.g., Zyn, On!, Velo, Rogue). Chi-square analyses examined differences between cities and by store type, and multivariable logistic regression measured associations with district demographics, obtained from the US Census Bureau. **Results:** Oral nicotine pouches were available in 26.6% of retailers and were more prevalent in San Francisco (43.0%) versus NYC (29.2%) and Philadelphia (16.4%, p<.0001). Chain convenience stores were most likely to carry the products (83.3%), followed by drug stores (63.2%), newsstands (55.6%), gas stations (47.3%), and smoke/vape shops (46.8%, p<.0001). After adjusting for city and store type, the odds of a retailer carrying oral nicotine pouches were higher in districts with a greater proportion of non-Hispanic white residents [aOR: 1.04 (1.03-1.05)] and higher median household income [aOR: 1.03 (1.02-1.04)]. Retailers in districts with a greater proportion of non-Hispanic Black [aOR: 0.96 (0.95-0.97)] and Hispanic [aOR: 0.96 (0.95-0.97)] residents had lower odds of carrying these products. **Conclusion:** Approximately 1 in 4 retailers carried oral nicotine pouches, but availability was patterned by geographic and sociodemographic characteristics. Specifically, predominantly white and higher income neighborhoods had greater access to these products in local retailers. As researchers continue to evaluate the risks of oral nicotine products as well as their potential as a tobacco harm reduction strategy, attention to population patterns of use and variations in retail access will be critical to examine impacts on health equity.

FUNDING: Federal

RAP1-4

DISPARITIES IN TRENDS OF SMOKE-FREE HOME RULES ASSOCIATED WITH SOCIOECONOMIC DISADVANTAGES IN THE UNITED STATES, 2001 TO 2019

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Background: Home is the primary place where non-smokers and children are exposed to secondhand smoke. This study aims to update trends in the prevalence of smoke-free home (SFH) rules in the United States from 2001 to 2019 and examine disparities in

the trends by socioeconomic disadvantages. **Methods**: Data came from the 2001-2002, 2003, 2006-2007, 2010-2011, 2014-2015, and 2018-2019 Tobacco Use Supplements to the U.S. Current Population Survey (TUS-CPS), a nationally representative cross-sectional survey. The sample comprised respondents (aged≥ 18 years) who answered items about SFH rules and socioeconomic disadvantage, defined as past-year unemployment, income below the federal poverty line, and/or education less than a high school diploma (N=867,552). Multivariable logistic regressions estimated associations over time between adopting a SFH rule and the number of socioeconomic disadvantages, including interaction terms between time and the number of disadvantages to assess if the disparities changed over time. Subpopulation analyses were conducted by smoking status and the presence of children (ages<18) in the household. **Results**: The prevalence of smoke-free homes increased substantially from 64.6% (95% Confidence Interval [CI]= 64.4%, 64.8%) in 2001-2002 to 88.5% (95% CI=88.4%, 88.7%) in 2018-2019. Across 2011 to 2019, the odds of adopting SFH were successively lower among those with 1 disadvantage (Adjusted odds ratio[AOR]=0.63; 95% CI=0.62, 0.64), 2 disadvantages (AOR=0.52; 95% CI=0.51, 0.54), and 3 disadvantages (AOR=0.27; 95% CI=0.25, 0.30) compared to those without disadvantages. Differences in SFH prevalence by socioeconomic disadvantage narrowed over the 19 years among nonsmokers (p<.001) but widened among smokers (p<.001). Among non-smokers, while the SFH prevalence increased by 17.6ppt (76.2% to 93.8%) among those without disadvantages, the SFH prevalence increased by 25.8ppt (60.6% to 86.4%) among those with 3 disadvantages. In contrast, among smokers, increases in the SFH prevalence over time were successively slower among those with 1 disadvantage (31.7ppt, 22.1% to 53.8%), 2 disadvantages (30.4ppt, 17.7% to 48.1%), and 3 disadvantages (24.5ppt, 14.0% to 38.5%), compared with those without disadvantages (36.2ppt, 29.0% to 65.2%). The widened disparities were particularly pronounced among smokers who did not live with children. **Conclusion**: Despite a large increase in the prevalence of SFH rules, disparities have persisted. Our findings support continued efforts to promote SFH rules, particularly among socioeconomically disadvantaged smokers.

FUNDING: Academic Institution

RAP1-5

AVAILABILITY OF CANNABINOID PRODUCTS IN ONLINE VAPE SHOPS

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Significance: Online vape shops are a primary purveyor of substances other than tobacco, such as cannabidiol (CBD). But now there are other psychoactive cannabinoid products, such as delta-8-THC and hemp-legal delta-9-THC, that contain the main psychoactive molecule in cannabis but are compliant to hemp laws. We sought to determine the varieties of cannabinoid products being offered to consumers in online vape shops. Methods: To obtain a comprehensive sample of online vape shops in San Diego, we included "brick-and-click retailers", which have a physical retail location in San Diego County and an online website, and "click-only retailers", which only have an online website returned in a Google search conducted in San Diego County. All websites were audited using a standard instrument that recorded product offerings. We calculated the percentage of retailers that allowed for mail-order purchasing of cannabinoid products overall and by store type. Results: Of the 109 online vape shops in the study sample, 39 (35.8%) had cannabinoid products available for mail-order purchasing. Of these, the most common cannabinoid products were those containing CBD (89.7%), delta-8-THC (56.4%), hemp-legal delta-9-THC (48.7%), and hexahydracannabinol (HHC; 46.1%). The majority (76.9%) of online vape shops offering cannabinoid products for mail-order purchasing were click-only retailers. Conclusion: Among the online vape shops we reviewed, over a third sold cannabinoid products suggesting substantial cross-product promotion of cannabinoid products that mimic cannabis products but are not required to be sold in dispensaries. Further research and ongoing surveillance of online tobacco marketplaces are needed to monitor evolving trends associated with the unregulated sale of products other than tobacco, such as cannabinoid products, that may be undermining tobacco control efforts.

FUNDING: Federal; Academic Institution

RAP1-6

PACT ACT COMPLIANCE TESTING OF E-COMMERCE VAPE STORES IN SAN DIEGO COUNTY

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Significance: The Preventing All Cigarette Trafficking (PACT) Act was implemented in the U.S. to regulate the online sale and delivery of cigarettes and smokeless tobacco products by enforcing age requirements, tax compliance, and shipping restrictions. The law was first passed in 2010 and amended in March 2021 to include Electronic Nicotine Delivery Systems (ENDS) in the age verification requirements upon delivery and banned ENDS from being mailed via the U.S. Postal Service (USPS). We sought to determine whether retailers were complying to the amendment. Methods: We made flavored-vaping product purchase attempts to 78 retailers resulting in 156 purchase attempts in Fall 2023 using 16 buyers who mimicked consumer purchases. All buyers were 21+ years old and lived in San Diego County. There were two types of retailers we found, those listed on Google maps or Yelp that had a brick-and-mortar store in San Diego County and a website ("brick-and-click") and those found on the first two pages of Google's searches conducted at various locations across the county and could have retailers outside the county ("click-only"). The buyers collectively completed 110 purchases. Upon the arrival of deliveries, buyers were prompted to complete a delivery survey for assessing their delivery experience and each store's adherence to PACT Act requirements. Results: Among the 110 completed surveys conducted, buyers reported that the majority of deliveries (N=83; 74.8%) used USPS despite the amendment. Additionally, 12 deliveries used alternative mail services such as FedEx that have their own bans on shipping ENDS products, in 10 deliveries buyers were uncertain about how it was delivered, and 6 deliveries used private couriers. The majority (N=88; 79.3%) of buyers reported no direct interaction with delivery personnel. For these deliveries, packages were commonly left in mailboxes or on front porches without a face-to-face exchange or age verification. In 23 (20.7%) deliveries buyers engaged with delivery personnel during the process. Out of the 23 deliveries where personnel were interacted with, a majority 16 (69.6%) were not requested to provide identification for age verification. Among the 7 buyers who were asked for ID, only 1 (14.3%) had it scanned for authenticity. Conclusion: The purpose of amending the PACT act was to curtail the illegal online sales of ENDS to minors and stop shipments through USPS; however this study's results suggests that it is generally unsuccessful and a policy solution needs to be created to improve compliance.

FUNDING: Academic Institution

RAP1-7

EXAMINING TOBACCO USE AT THE INTERSECTION OF GENDER, SEXUAL ORIENTATION, RACE, AND ETHNICITY USING NATIONAL U.S. DATA OF SEXUAL AND GENDER DIVERSE YOUTH

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Previous studies have demonstrated tobacco use disparities for sexual minority (e.g., lesbian, gay, bisexual), gender diverse (e.g., trans boys), and racially/ethnically minoritized youth as compared to their heterosexual, cisgender, or White counterparts; however, few studies have considered tobacco use at the intersection of mutually constitutive identities (e.g., bisexual, transgender, and Black). Previous studies have also largely failed to operationalize sexual orientation and gender identity using diverse response options that are common among youth (e.g., pansexual, nonbinary, queer, etc.). Using a novel statistical approach with data newly available (in the last several weeks), we expand on existing research to better understand which subgroups of youth at the intersections of race, ethnicity, sexual orientation, and gender identity may be disproportionately vulnerable to disparities in tobacco use. Data from the 2022 Lesbian Gay Bisexual Transgender Queer National Teen Survey (n = 11,000 youth) were utilized; tobacco use was measured by asking whether youth tried cigarette smoking, even one or two puffs. Exhaustive Chi-square Automatic Interaction Detection, a data-driven decision-tree approach recommended for quantitative intersectional research, was used to test all interactions among independent variables (i.e., social identities), splitting between categories that differ significantly with regard to the prevalence of tobacco use. Several patterns emerged: First, gender identity was the primary correlate of tobacco use (i.e., the groups with the highest prevalence of tobacco use primarily comprised transgender and non-binary youth—particularly trans boys). Second, adolescents with plurisexual sexual identities (e.g., bisexual, pansexual), usually along with a gender

diverse identity, consistently emerged in the higher prevalence tobacco use groups. Last, cisgender youth who also identified as gay, lesbian, straight, bisexual, and race/ethnicities that conferred privledge (e.g., White and non-Hispanic) consistently defined the lower tobacco use groups. Of note, 28.1% of trans boys who were multiracial and asexual had ever smoked cigarettes (more than double the overall sample prevalence). Taken together, these findings identify which intersections of social identities are most disproportionately impacted by high tobacco use. These findings have implications for anti-smoking interventions and other prevention efforts.

FUNDING: Federal

RAP1-8

EXPLORING ENDGAME POLICY: INSIGHTS FROM AMERICAN INDIAN YOUNG ADULTS WHO CO-USE COMMERCIAL TOBACCO AND CANNABIS

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Significance. Commercial tobacco was first grown in the United States by European settlers and since, these products have proliferated to substantially burden the well-being of American Indian (AI) people. Engagement with such historical and contemporary realities are necessary to prevent unintended consequences (e.g., stigmatization) from top-down control policies. The objective of this study is to better understand AI young adult perspectives about the more novel endgame strategy to phase out the sales of all commercial tobacco products in California. **Methods**. Twenty-five participants reporting past-30 day co-use of commercial tobacco and cannabis, aged 21-29 years, and self-identifying as AI completed semi-structured interviews in 2023. Emergent policy-related themes were identified via coding matrices created from in-depth field notes. **Results**. Alongside the key domain of the endgame initiative, two additional policy domains were elicited from the interview data: flavored nicotine ban and recreational cannabis laws. Overall, participants had little to no prior knowledge of the endgame, prompting interviewers to provide a brief description of its goal. General feelings of support were grounded in prosocial beliefs attributed to protecting youth from exposure and access to smoking and vaping nicotine. Participants, however, reported mixed views on how personal use behaviors, including cessation efforts, might be affected. Several participants also contextualized their feelings about the endgame with their past experiences in California under passages of more liberal (e.g., legalization of recreational cannabis use) and more restrictive (e.g., prohibiting purchases of menthol cigarettes) measures. **Conclusion**. Our findings provide important insights into how AI young adults think about a state-wide pursuit of the commercial tobacco endgame. Continued knowledge-building from AI people in California, especially among those who currently use commercial tobacco and co-use cannabis, can help identify ways to increase endorsement without deepening existing disparities.

FUNDING: State; Academic Institution; Nonprofit grant funding entity

RAP1-9

FEDERAL, STATE, AND LOCAL TOBACCO 21 POLICIES AND THEIR POTENTIAL EFFECTS ON SMOKING-RELATED MORTALITY ACROSS THE UNITED STATES

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Background: Research shows that US Tobacco 21 (T21) laws reduce smoking, but differences in underlying smoking patterns, mortality, and policy coverage may yield differences in impact by state. For some states, local and county T21 policies covered large shares of the population, likely dampening the benefits of subsequent state-wide policy. For states without local or state-level T21, benefits would hinge on enforcement of the federal T21 law. We assess the relative long-term impacts of local, state, and federal T21 policies on smoking-related mortality for each of the 50 US states and Washington, DC. **Methods**: We adapt the CISNET smoking population model for each US state using state-specific smoking initiation, cessation, and mortality rates, validating these models against the 1992-2019 Tobacco Use Supplement Current Population Survey (TUS-CPS). T21 policy effects from quasi-experimental studies were translated into reductions to smoking initiation probabilities and applied to each state at time of implementation based on the percentage of the population already and newly covered. Using data on local and state-level T21 coverage from the T21 Population Coverage Database and Tobacco21.org, three T21 policy scenarios are considered: 1) local coverage only, 2) local and state, and 3) federal, state, and local. **Results**: We report results from three states with varying T21 coverage landscapes. In Massachusetts, local T21 policies covered most of the population and is projected to avert 6,000 premature deaths from 2014-2100, dampening the added benefits of a state-wide policy. Kentucky had no local T21 laws prior to state adoption; the state T21 policy would avert 15,000 premature deaths by 2100. California's early adoption of state-wide T21 is projected to avert over 27,000 premature deaths. From 2014-2100, complete enforcement of federal, state, and local T21 would yield up to 550,000 premature deaths averted and 13.8 million life-years gained across the US. Without federal T21 promulgation and enforcement, state and local policies would avert 460,000 premature deaths, with 11.7 million life-years gained. **Discussion:** This study quantifies the long-term health effects of T21 policies and allows lawmakers to gauge the lost public health benefit due to inaction and poor enforcement. The most substantial health benefits of federal T21 will be in states that have no local or state-level T21 policy efforts, highlighting the need for enforcement of federal law.

FUNDING: Federal

RAP1-10

ADOLESCENT NICOTINE EXPOSURE INDUCES ENDURING ADAPTATIONS OF FUNCTIONAL BRAIN NETWORKS AND REDUCES ADULT NICOTINE SENSITIVITY

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Adolescence is characterized by the profound reorganization of neural circuits that make the brain susceptible to enduring effects of drug exposure on mental health. Our research explores the role of complex genetic interactions in shaping individual susceptibility to drug exposures during this vulnerable developmental period. We employ genetically distinct mouse models to explore the contribution of genetic factors to nicotine susceptibility during adolescence and its repercussions on adult mental health-related outcomes. Adolescent drug use informs individual susceptibility to substance use disorders. Here we studied the long-term effects of adolescent nicotine exposure on adult anxiety-like behavior, nicotine sensitivity, and functional brain connectivity. Male and female mice from C57BL/6J and DBA/2J strains were treated with nicotine for 12 days during adolescence. Four weeks after treatment cessation, we evaluated anxiety-like behavior, nicotine-induced hypolocomotion, and functional brain connectivity through resting-state functional MR and dendritic morphology. We found that adolescent nicotine modulated adult anxiety-like behaviors depending on sex and strain. We also found nicotine pre-exposure during adolescence accelerated adult recovery from acute responses regardless of genetic background, suggesting an enduring reduction in nicotine sensitivity. Functional MRI revealed a reduction in global functional connectivity across all groups with differences accentuated by sex and genetic background, particularly in Female DBA/2J mice. Analysis of brain regions of interest showed that adolescent nicotine induced a strain-dependent reduction in the functional connectivity of the prefrontal cortex. Moreover, the connectivity of the prefrontal cortex was also correlated with anxiety-like behaviors and acute responses to nicotine re-exposure during adulthood, suggesting that alterations of functional brain networks induced by adolescent nicotine exposure may be related to behavioral liabilities derived from early drug exposure. Finally, we examined the morphological properties of neural cells in the prefrontal cortex, here we found strain-depended alteration of dendritic complexity in response to adolescent nicotine exposure. Taken together these results show that adolescent nicotine exposure induces enduring structural and functional changes in the developing brain that are sustained into adulthood where they could promote susceptibility to psychiatric-like conditions.

FUNDING: Academic Institution


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POS3-138

CHANGES IN CIGARETTE SMOKING AND HEALTH OUTCOMES AMONG SMOKERS WITH COPD DURING A 12-WEEK SWITCHING TRIAL

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Significance: Nearly 9 out of 10 COPD deaths in the US are attributed to smoking but quit rates are low. An alternative approach for smokers who cannot or will not quit with first-line therapies is tobacco harm reduction with e-cigarettes. Observational studies of smokers with COPD who switch to e-cigarettes show significant reductions in COPD exacerbations, improved lung function and quality of life after switching to e-cigarettes. This pilot study aimed to compare brief advice to switch to topography-based training among smokers with COPD. **Methods:** Participants (*N* = 36) were adult smokers with COPD who had tried and failed to quit in the past year and were uninterested/unwilling to quit. Participants were provided a pod-based study e-cigarette and randomized 1:1:1 to receive brief advice to switch to the study e-cigarette, single session topography training, or enhanced topography training. Follow-up occurred at week 12. Outcomes included the proportion that achieved a complete (CO < 6 ppm) or predominant (>50% CPD reduction + e-cigarette use) switch to e-cigarettes and changes in cigarettes per day (CPD), respiratory symptoms, 6-minute walk distance (6MWD) test, spirometry (FEV1/FVC), pulse wave velocity (i.e., arterial stiffness), and the COPD Assessment Test (CAT). Analyses by treatment group were underpowered due to the pilot nature of the investigation. Outcomes are reported at the sample level. **Results:** Overall, 25% (n = 9) achieved a complete switch and 42% (n = 15) achieved predominant e-cigarette use at Week 12. To examine health-related outcomes, the sample was divided into those that achieved predominant or exclusive e-cigarette use (67%; "switchers") versus those that did not (33%; "non-switchers"). Switchers compared to non-switchers, showed reductions in CPD (17.7 vs. 8.2, p=0.003), respiratory symptoms (5.2 vs. 2.4, p=0.27), arterial stiffness (0.5 vs. 0.1, p=0.47), and improvement in their 6MWD test (29.6m vs. 18.5m, p=0.61). Similarly, switchers showed improved FEV1/FVC while non-switchers showed a decrease (p=0.38) from baseline to week 12. Interestingly, switchers reported worsening CAT scores while non-switchers reported improvements (6.5 vs. -2.3, p<.001). **Conclusions:** Smokers with COPD achieved reductions in smoking and the majority made a switch to predominant e-cigarette use. The findings show initial evidence of associated improvements in respiratory symptoms, lung function, arterial stiffness, and capacity for aerobic exercise.

FUNDING: Academic Institution

POS3-139

A MULTI-ANALYTIC EXAMINATION OF RACE AND SEX ON CIGARETTE CUE REACTIVITY AMONG SMOKERS

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Significance Although smoking has decreased in the US over the past 30 years, reductions in use have varied across sociodemographic groups. Marginalized populations (e.g., Black and female persons) in the US experience higher rates of smoking-related diseases and greater difficulties achieving cessation, despite lower smoking rates than White males. To disentangle this paradox, it is important to investigate how varied demographic groups experience cigarette craving, which is linked to smoking maintenance and relapse. While some research indicates greater craving responses in female smokers, studies have been underpowered to look at a race-by-sex interaction. This study examines whether Black/White, male/female smokers vary in cue reactivity (CR) during cue exposure. **Methods** Participants (*N* = 617) were drawn from seven studies employing the same laboratory *in vivo* cue exposure methods. Participants rated craving on a scale of 0-100 before seeing a cigarette (baseline) and immediately after lighting a cigarette (peak provoked craving, PPC). CR was calculated by subtracting baseline from PPC. Two CR analyses were conducted across sociodemographic variables: a means-based ANOVA and a novel person-centered analysis of the distribution of within-person effects. **Results** We found no main effects of race or sex on CR; however, a significant race by sex interaction emerged for CR (F = 4.37, p = .04), whereby White female smokers experienced the highest CR scores, and Black female smokers demonstrated the lowest CR scores, a finding that remained after accounting for SES. A person-centered analysis mirrored this finding: Black female smokers had the greatest percentage (47.69%) of non-responders (CR ≤ 0) while White female smokers had the lowest percentage (16.13%) of non-responders, showing a discrepancy in CR among female smokers of different racial backgrounds. **Conclusions** This research used the largest sample to date to investigate the impact of sex and race on *in vivo* craving. White female smokers experienced the highest levels of CR, while Black female smokers exhibited the lowest. These data suggest that examining sex effects without accounting for race may obscure differences. The precise mechanisms that drive the disparate CR experiences of White and Black female smokers warrant further investigation. Incorporating identity factors into craving research could enhance our understanding of the difficulties encountered by individuals attempting to quit smoking.

FUNDING: Federal

POS3-140

E-CIGARETTE USE, NICOTINE DEPENDENCE, AND THE USE OF PROTECTIVE BEHAVIORAL STRATEGIES: A PATH ANALYSIS

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Significance: Engaging in protective behavioral strategies (PBS) is a harm reduction approach used to minimize the harmful consequences of substance use. PBS for alcohol is associated with reduced alcohol use and fewer alcohol-related problems, but the relationship between PBS for e-cigarette use (e.g., limit use to weekends, decline any offers to vape) and e-cigarette use-related outcomes are unclear. The purpose of this study was to examine the associations between PBS, perceived behavioral control over using PBS, age, days of past month e-cigarette use, and nicotine dependence. **Methods**: Data were conducted via online surveys from 299 adults. Structural equation modeling was used to test the hypothesized path model. **Results**: The model provided an excellent fit to the data (model chi-square = 2.53, p > .05; comparative fit index (CFI) = 0.99; root mean square error of approximation (RMSEA) = 0.07; 90% CI [0.13, 0.67]; standardized root mean square residual (SRMR) = 0.02). PBS was negatively associated with e-cigarette use and positively associated with nicotine dependence. E-cigarette use was positively associated with dependence while perceived behavioral control of PBS use was negatively associated with dependence. PBS had significant direct and indirect effects on nicotine dependence. The model explained 18.4% of the variance in nicotine dependence. **Conclusion**: Findings enhance our understanding of PBS for e-cigarettes and suggest that PBS should be incorporated into theoretical models devoted to understanding e-cigarette use and nicotine dependence.

FUNDING: Federal; Pharmaceutical Industry; Academic Institution

POS3-141

DOES SOCIOECONOMIC POSITION MODERATE THE ASSOCIATIONS BETWEEN THE CONTENT AND DELIVERY FEATURES OF DIGITAL SMOKING CESSATION INTERVENTIONS AND INTERVENTION EFFECTIVENESS? A SYSTEMATIC REVIEW WITH META-ANALYSIS

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Significance: Digital smoking cessation interventions appear to be more effective than no intervention. However, little is known about their active ingredients and whether they are differentially effective across socioeconomic groups. A comprehensive understanding of what makes digital smoking cessation interventions work for whom is crucial for developing novel interventions to reduce smoking-related morbidity, mortality, and health inequalities. Therefore, this review aimed to examine the associations between content (i.e., behaviour change techniques), delivery features (i.e., delivery mode, readability, ease-of-use), socioeconomic position (SEP), and effectiveness. Methods: Systematic searches of 10 electronic databases and hand searches were conducted between February and June 2023. Experimental evaluations of digital smoking cessation interventions published since 2004 were eligible for inclusion. No restrictions were placed on study populations or control conditions. Authors were contacted to request

intervention materials and data stratified by SEP. Meta-analyses were used to explore intervention effectiveness. Meta-CART was used to examine content, delivery features, and SEP as moderators of effectiveness and whether interactions between potential moderators exist. Exploratory meta-regressions were performed as sensitivity checks. Results: For k=29 studies (14.3% of studies eligible for inclusion) conducted between 2009 and 2023, authors provided sufficient data and materials for inclusion in the primary analyses. Participants in the intervention groups had greater odds of successfully quitting smoking (OR=1.29, 95% CI: 1.10-1.51, p=0.002) with similar effect sizes across socioeconomic groups ($OR_{low\ SEP}$=1.25, 95% CI: 1.00-1.57, p=0.048; $OR_{high\ SEP}$=1.36, 95% CI: 1.06-1.76, p=0.017). Delivery mode, readability, and ease-of-use were not significantly associated with intervention effectiveness. Exploratory meta-regressions suggested that the behaviour change technique 'commitment' (i.e., (re)affirming one's pledge to quit smoking) was associated with larger effects in populations with high, but not low, SEPs. Meta-CART analyses did not detect significant interactions between potential moderators. Conclusion: Digital smoking cessation interventions appear to be equally effective across socioeconomic groups. Uncertainty around active ingredients and moderators of effectiveness remains.

FUNDING: Nonprofit grant funding entity

POS3-142

EXAMINING SOCIOECONOMIC STATUS AS A MODERATOR BETWEEN DISCRIMINATION AND SMOKING IN HEAVY-DRINKING MEN WITH HIV

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Background: People with HIV have an elevated risk of experiencing discrimination, which increases their likelihood of using substances such as alcohol and tobacco, which in turn have been linked to poor HIV care outcomes. While there are known protective factors like socioeconomic status (SES) from the negative effects of experiences of discrimination and use of substances, the Minorities' Diminished Returns (MDRs) Theory argues that protective factors have a weaker effect on people with marginalized identities because of systemic discrimination. The purpose of this study is to examine relations between discrimination and smoking outcomes in this population, and examine whether SES moderates this relationship. Methods: This study used baseline data from ReACH2 (Reducing Alcohol Co-morbidities in HIV care), an alcohol reduction intervention for heavy-drinking sexual minority men with HIV (MWH). The primary independent variable was experiences of discrimination using the full scale and sub-scales (discrimination because of HIV, race, and sexual orientation) of the Multiple Discrimination Scale (MDS). The outcome variables were lifetime, past 30-day, and cigarette use per day (CPD; a pack or more) recoded as binary variables. An SES index was constructed using education, housing stability, and income variables. Logistic regressions and two-way interactions were implemented. Results: In a sample of N=182 MWH, discrimination was not associated with any of the smoking outcomes. However, higher scores of SES (range of 0-3) were associated with decreased odds of lifetime cigarette use (adjusted Odds Ratio [aOR] = 0.46; 95% Confidence Interval [CI]: 0.24, 0.83) and past 30-day cigarette use (aOR = 0.41; 95% CI: 0.26, 0.67) in models that used the full MDS, with similar findings when using MDS sub-scales. SES moderated the relationship between multiple discrimination (aOR = 1.07; 95% CI: 1.01, 1.13) and race-related discrimination (aOR = 1.26; 95% CI: 1.08, 1.47) and past 30 day cigarette use. Discussion: Overall, SES did have a protective effect against smoking. However, at high levels of SES, experiencing more discrimination was associated more strongly with the odds of smoking. This suggests that the protective effect of SES is undermined by exposure to greater discrimination.

FUNDING: Federal

POS3-143

ATTITUDES AND BELIEFS AMONG BLACK ADULTS LIVING IN MISSISSIPPI ABOUT A PROPOSED BAN ON THE SALE OF MENTHOL CIGARETTES

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Significance: Targeted tobacco marketing that disproportionately promotes menthol cigarettes to people in Black neighborhoods is an example of systemic racism that may contribute to tobacco-related morbidity and mortality. In April 2021, the Federal Drug Administration (FDA) proposed a rule prohibiting the use of menthol as a characterizing flavor in cigarettes. Limited research has focused on understanding opinions about the proposed ban among people most impacted by targeted menthol marketing. This study examines opinions about the proposed menthol ban among Black adults living in Jackson, Mississippi (MS). **Methods:** A survey was conducted in MS from February-June 2023 as part of *Project Black people Against Tobacco*, a community-led initiative that aims to change social norms and reduce tobacco use in the city of Jackson, MS. Community level of support for the menthol ban was assessed with Likert-type responses (4-point, strongly support - strongly oppose) to four statements about potential positive and negative impacts of the ban on Black people. People who smoke menthol cigarettes were asked how the ban may impact their smoking. **Results:** The survey sample includes N=539 Black adults who lived in either Jackson or one of eight comparison MS zip codes. Overall, 62% of respondents supported the menthol ban (strongly support and support combined). Support was lower among people who smoke menthol cigarettes (43% vs. 67% of people who do not smoke menthol; $p<0.001$). Overall, 65% agreed that the ban will improve the health of Black communities, 49% agreed that the ban will reduce smoking in Black communities, 30% agreed that the ban will lead to more criminalization/policing of Black people who smoke, and 20% agreed that the ban would discriminate against Black people. Among people who smoke menthol cigarettes, 63% said the ban would lead them to try to stop smoking, 15% would change to non-menthol cigarettes, 4% would change to menthol electronic cigarettes, and 23% were unsure what they would do after the ban. **Conclusion:** Nearly 2 in 3 respondents supported the menthol ban and agreed the ban would improve the health of Black communities. Fewer than 1 in 3 respondents believed the ban would lead to more criminalization/policing (30%) or discrimination against Black people (20%). These results can inform community-led education and outreach, and efforts to provide resources for people who smoke menthol once the ban takes effect.

FUNDING: Federal

POS3-144

SUPPORT FOR TOBACCO ONLY E-LIQUID FLAVOR RESTRICTIONS AMONG PEOPLE WHO SMOKE MENTHOL CIGARETTES DAILY

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Background: Non-tobacco e-liquid flavors represent a unique regulatory challenge; they likely play a significant role in nicotine initiation among adolescents and young adults (AYA) while supporting a harm reduction among people who smoke. It is unclear how smokers perceive the benefits of banning certain e-liquid flavors and how this influences their views on related regulations. Tobacco flavored e-liquids are less appealing to AYA but may be adequate for adult smokers aiming to reduce their use of combusted tobacco. In a recent study evaluating how the availability of menthol and mint e-liquids affected combusted tobacco purchasing, we assessed opinions toward potential nicotine and tobacco policy changes. For this secondary analysis, we examined participants' support for a hypothetical law limiting non-tobacco e-liquid flavors. **Methods:** Participants (n=62, 53% female, 68% Black/AA, mean age 44 years, 15.9 cigarettes per day, smoke menthol cigarettes ≥ 80% of the time, not currently trying to quit) were asked whether they would: (Question 1) "support or oppose a law that restricted the flavor of e-liquids to only tobacco flavors" and (Question 2) "support or oppose a law that restricted the flavor of e-liquids to only tobacco flavors if doing so made it less appealing to teenagers or young adults." Logistic regression analyses were used to assess whether responses to these questions were affected by sex, race, or age. Odds ratios and 95% confidence intervals were calculated for each question. **Results:** Indicating support for restricting

e-liquid flavors was highest when asked in the context of reducing appeal among AYA (Question 2, 44.5%), relative to when asked outright (Question 1: 28.5%). Additionally, when adjusting for responses to Question 1, participants over age 45 were 5.6 times more likely to respond with support for Question 2 than those under age 45 (OR=5.56, 95% CI=1.36-22.7, p=0.017). **Conclusion:** These data suggest that people who smoke menthol cigarettes, particularly older adults, are more likely to support restricting e-liquid flavors when this action is described in the context of benefiting AYA. Public support for policies that restrict e-cigarette flavors, including support among people who smoke, may therefore depend on how the anticipated impacts of the policy are described. Future research could strive to better understand how people who smoke weigh potential trade-offs posed by nicotine regulatory policies when forming their opinions.

FUNDING: Federal

POS3-145

LACK OF E-COMMERCE RETAILER COMPLIANCE TO STATE AND A LOCAL FLAVOR SALES RESTRICTION IN CALIFORNIA, USA

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Significance: Although California has a restriction on sales of flavored tobacco (SB-793), it does not explicitly include online sales. However, local tobacco programs have sales restrictions that legally address online sales. We sought to determine if retailers were voluntarily complying to SB-793 or were complying with the City of San Diego's flavor sales restriction that covers e-commerce. Methods: We made flavored-vaping-product purchase attempts to 78 retailers resulting in 156 purchase attempts in the fall of 2023 using 16 buyers who mimicked consumer purchases. For each retailer, a matched-pair made an attempt to purchase, with one buyer in San Diego City (local flavor restriction), and one buyer somewhere else in the county without a flavor restriction (reference). All buyers were 21+ years old. There were two types of retailers. One we found on Google maps or Yelp that had brick-and-mortar store in San Diego County and a website ("brick-and-click") and one found on the first 2 pages of Google's searches conducted at various locations across San Diego County and could be from retailers outside the county ("click-only"). We first report the website traffic volume directed through Google for each of these retailers that we obtained by purchasing a report from a web analytics firm that covered March to August of 2023. We then report on surveys that buyers completed documenting their delivery and make comparisons of those by local policy status of the buyers home address. Results: Over the 6 month period of web analytics data we purchased, there were 28.2 million website visits to the retailers that were directed through Google. On average, the click-only retailers received 21.6 times more monthly visits (mean = 55,002 visits per month) than brick-and-click retailers (mean = 2,251 visits per month). Of the 156 purchase attempts, 114 purchase attempts were successful, and of those 110 were delivered. There was no statistically meaningful difference in flavor restriction compliance between buyers in San Diego City (flavors restricted) or a reference area without a local restriction at purchase (75.6% (San Diego City) vs 71.0% (reference); p=0.22) or delivery (73.9% (San Diego City) vs 65.4% (reference); p=0.04). Conclusion: Online vaping retailers are receiving a large volume of web traffic and the majority are not complying with flavor restrictions.

FUNDING: Federal; State; Academic Institution

POS3-146

REDUCING THE IMPACT OF CIGARETTE BRAND VARIANT NAMES ON PRODUCT APPEAL, CHOICE, AND USE: THREE RANDOMIZED CONTROLLED EXPERIMENTS

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Significance: Branding evokes a positive emotional response and facilitates product bonding. Tobacco companies use brand variant names to sustain or increase brand awareness, enable differentiation in their brand portfolio, signal product quality, appeal to different consumer segments, and indicate taste and flavor. In countries with large restrictions on tobacco marketing and labeling (i.e., plain packaging in The Netherlands) the brand name is the last remaining tool for product bonding. Brand variant names often indicate attributes (e.g., quality, taste, color, or filter type) typical for that brand variant. This study compares the effects of two proposed policy measures aimed at reducing brand and variant impact on purchase intention, smoking intentions, and product appeal. **Methods**: A total of 1030 young adults (18-25; 354 regular smokers, 293 occasional smokers and 383 non-smokers) and 351 regular adult (26+) smokers were included. In three experimental studies, participants were presented with (one of) three policy scenarios': 1) one variant per brand, 2) brand names replaced with 3-digit numbers and/or 3) a control condition. They reported on intention to buy (study 1), smoking intentions (study 2) and product appeal (study 3). **Results**: While intention to buy increased for all smoker-groups when brand names were replaced by numbers, intention to quit and reduce smoking amongst young occasional smokers did for both of the proposed policies. The effect was largest for the one-variant-per-brand policy. All smoker-groups also report increased likelihood to substitute smoking with another nicotine or tobacco product. Neither of the new policies result in an increased intention to buy or start smoking among non-smokers. **Conclusion**: Replacing brand names with 3-digit numbers and a one-variant-per-brand policy are likely to stimulate youth to quit or reduce smoking. Regulators can consider implementing such policy but must beware that the 3-digit number policy may result in an initial boost in purchasing behavior (likely a surprise or curiosity effect). Unintended smoking uptake amongst non-smokers is not expected. Giving attention to suitable substitution behaviors (i.e., other nicotine or tobacco products) is advised. Policymakers can use the findings to further reduce cigarette appeal and product bonding, ultimately contributing to the prevention of cigarette smoking uptake among youth and young adults.

FUNDING: Federal

POS3-147

TRENDS IN E-CIGARETTE E-LIQUID VOLUME AND NICOTINE CONTENT SOLD, 2018-2023, UNITED STATES

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Significance: Total e-cigarette unit sales (standardized as 1 disposable device=5 prefilled cartridges) declined 12.3% during May 2022-December 2022. However, large-format disposable e-cigarettes have recently proliferated. We reassessed trends in e-cigarette sales accounting for e-liquid volume and nicotine concentration. *Methods:* U.S. e-cigarette point-of-sale data were licensed from Circana (Total U.S. Multi Outlet + Convenience, Week Ending February 4, 2018, through Week Ending September 10, 2023). E-cigarette sales were measured as total milliliters (mL) of e-liquid sold and total milligrams (mg) of nicotine sold. Internet searches were used to identify missing values of e-liquid volume (n=4,999) and nicotine concentration (n=3,698). Sales weighted average volume and nicotine concentration were also calculated. E-cigarette products are categorized as prefilled cartridges, disposable devices, or e-liquids; all hardware sales were excluded (9.5% of sales). Trends during 2018-2023 were analyzed using Joinpoint regression (significance threshold: p<0.05). *Results:* During January 2018-September 2023, unit standardized (1 disposable: 5 prefills) e-cigarette sales increased by 251.7%; while total ml of e-liquid sold increased by 549.8% and total mg of nicotine sold increased by 842.5% (all p<0.05). During March 2022-September 2023, standardized unit sales decreased by 13.2%; however, ml of e-liquid increased by 12.5% and mg of nicotine increased by 11.7% (all p <0.05). Over the period, average e-liquid volume for a disposable device has increased significantly; while the average e-liquid volume for a prefilled cartridge was stable. By September 2023, e-liquid volume in a disposable device was 6.8 times greater than that of a prefilled cartridge (increased from 3.0 times in January 2018). During January 2018- September 2023, nicotine concentration increased from 2.6% to 4.8% among disposable devices; and from 3.5% to 4.2% among prefilled cartridges. Altogether, by September 2023, total mg of nicotine sold per disposable device was 7.6 times that of a prefilled cartridge (2.2 times in January 2018; 6.0 times in March 2022). All estimates are based on CDC Foundation calculations. Conclusions: E-liquid volume and nicotine concentration of disposable e-cigarettes have grown substantially in recent years. Estimating total mg of nicotine sold as a function of e-liquid volume can provide a more precise measure of total e-cigarette nicotine sales in the U.S.

FUNDING: No external funding reported

POS3-148

THE CURRENT STATUS AND EVOLVING LANDSCAPE OF SMOKING CESSATION SERVICES IN BEIJING, CHINA

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Significance: In 2019, China issued the "Healthy China Action (2019-2030)" and proposed to reduce the adult smoking rate to 20% by 2030. The smoking rate target for Beijing by the 2030 is below 17%. In Beijing, there were 32 hospitals owned the department of cessation in 2015, but only 10 had persisted after the epidemic of Covid-19 in 2021, and the number of daily patients was only 5-10. Tobacco control experts believed that to achieve the "Healthy China" goal, it must establish a comprehensive cessation service system that covers both therapeutic and preventive cessation services simultaneously in the hospitals and communities, and the expenses of cessation services also need to be included into the medical insurance. This study is the baseline research to understand the current situation of cessation services in Beijing, and further to discuss and explore the future development paths and opportunities for enhancing the effectiveness of these services. **Methodology:** In November 2023, researchers retrospectively collected the number of visits of outpatient, the number of visits in the department of cessation, and the treatment records of inpatient who were diagnosed smoking related diseases in Chaoyang Hospital during the period from January 1st 2019 to December 31st 2019. The researchers conducted a comparative study base on these data. **Results:** The total number of outpatient visits at Beijing Chaoyang Hospital in 2019 was 234,325, while the number of cessation outpatient visits was only 1,519 at the same time. Among the inpatients with smoking related chronic respiratory diseases, 19.6% of them keep smoking after admission, 32.1% had quit smoking, and the smoking rates of patients who had chronic obstructive pulmonary disease and lung cancer are relatively high, which was 27.3% and 24.9% respectively. **Conclusion:** This study showed the willingness to quit smoking among smokers in Beijing remains low, it also highlighted a significant discrepancy between the current outpatient visits for cessation services and the actual need among inpatients with smoking-related diseases at Beijing Chaoyang Hospital. It underscores the necessity to prioritize therapeutic cessation services as a primary intervention for the patients who had smoking-related disease. It's also important to include cessation intervention services into medical insurance reimbursement system is one of the most crucial measures and policies to achieve health service equity. **Health Equity:** This research highlights that it is important to include cessation intervention services into a medical insurance reimbursement system, which is one of the most crucial measures and policies to achieve health service equity.

FUNDING: Nonprofit grant funding entity

POS3-149

THE IMPACT OF SMOKING TOPOGRAPHY, STEM DEPTH AND PIPE HEIGHT ON THE PHYSICAL CHARACTERISTICS OF WATERPIPE TOBACCO SMOKE

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Significance: Waterpipe tobacco smoking continues to be an attractive alternative to conventional cigarette smoking. Of the many variables associated with waterpipe tobacco smoking, the impact of flavorants and smoking topography are least explored. Previous studies have reported that pipe height and smoking topography impact the physical characteristics of waterpipe tobacco smoke (WTS) and that user smoking topography varies with pipe height. In this study, we will report on the impact of user variations in topography, as a function of pipe height, on the physical properties of WTS. Changing the puff length, time between puffs or inter-puff interval (IPI) and the flow/inhalation rate of each puff change the physical properties of the smoke, including particle size and number concentration. These changes may affect the relative toxicity of WTS. **Methods:** A laboratory-based smoking apparatus was used to generate WTS using different combinations of pipe height (22, 36 and 55 cm) and smoking topographies including puff length (2-6 seconds), IPI (10-40 sec) and inhalation rate (10-17 LPM). Particle number concentrations and size distributions were measured using a TSI Engine Exhaust Particle Sizer (EEPS). **Results:** For samples with puffs at 10 LPM with 10 sec IPI and those at 14 LPM with a 40 second IPI, the average geometric mean of the particulate matter is about 131 nm and 89 nm, respectively. Decreasing IPI and increasing puff length increase the number concentration of particles produced during a smoking session. At a fixed stem depth, particle size distribution is independent of pipe height. Total particle number concentrations per session for pipe height changed as a function of stem depth versus headspace volume with constant and varying smoking topographies. The 36 cm pipe produced a higher number concentration than the 55 cm, which produced a higher concentration than the 22 cm pipe. **Conclusions:** Preliminary data indicate that changes in puff length do not change the physical characteristics of the smoke while changes in IPI and flow rate do. User observed increases in inhalation rate and decreases in IPI for taller pipes seem to indicate compensatory smoking behavior to increase the amount of smoke produced per puff such that the number concentration aligns with the medium height pipe.

FUNDING: Federal; Academic Institution

POS3-150

EXPOSURE TO "LESS HARMFUL" CLAIMS FOR E-CIGARETTES, SNUS, AND SMOKELESS TOBACCO AMONG ADULTS WHO SMOKE

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Significance: In the United States, only products authorized by the Food and Drug Administration (FDA) as Modified Risk Tobacco Products (MRTPs) can make potential claims about posing lower risks or being "less harmful". No e-cigarettes have been authorized as MRTPs to date and no smokeless tobacco (ST) products received MRTP status before October 2019. A previous study using Wave 3 (2015-2016) of the Population Assessment of Tobacco and Health (PATH) survey found that 29%, 5% and 6% of adults who smoke had seen e-cigarettes, snus or other ST products with "less harmful" claims, respectively, and among these 25% said they would use these products in the future. The current study examines more recent exposures using Wave 6 of the PATH study. **Methods:** Previous analyses were replicated using PATH Wave 6 (collected in 2021). Weighted prevalence estimates (with 95% confidence intervals) were used to describe measures which asked respondents if they had seen any e-cigarettes, snus, or other ST products that claim to be "less harmful" in the past 12 months, and their likelihood of using products with these claims in the next 30 days. Weighted logistic regressions were used to model adjusted odds of "less harmful" product claim exposure. Analyses were limited to adults who were current established smokers. **Results:** Fewer adults who smoke noted having seen snus (3.6%, 95% CI=3.1-4.3) or other ST (4.3%, 3.5-5.3) with "less harmful" claims compared with e-cigarettes (11.9%, 10.8-13.1). The odds of e-cigarette claim exposure was higher among Black versus White individuals (aOR=1.6, 1.2-2.2) and those who noticed tobacco advertising at the point of sale (POS) (aOR=1.4, 1.03-1.8) compared to those who did not. The odds of ST claim exposure were lower among those ages 35 to 44 (aOR=0.4, 0.2-0.7) and 45 to 44 (aOR=0.4, 0.2-0.7) compared to those 45 to 54 but higher among those who noticed tobacco advertising at the POS (aOR=1.7, 1.01-2.7) versus those who did not. Among smokers who noticed products with "less harmful" claims, 16.2% (12.8-20.4) said they would use e-cigarettes in the future while 25% (17.6-35.4) and 27% (19.2-37.3) said they would use snus and ST. **Conclusion:** Results suggest perceived exposure to e-cigarettes with unauthorized "less harmful" claims have declined (from 29% to 12% between waves) while reported snus and ST claim exposure remains low (3%-5%). Results also suggest interest in using e-cigarettes with "less harmful" claims may be declining.

FUNDING: Federal

POS3-151

EXPLORING THE ASSOCIATION BETWEEN MENTHOL CIGARETTE-RELATED MESSAGING ON TWITTER/X AND MENTHOL CIGARETTE SALES IN THE UNITED STATES.

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Significance: The majority of adolescent tobacco users use flavored tobacco products. The primary product of interest among historically minoritized populations such as African Americans are menthol cigarettes which currently constitute one-third of the U.S. cigarette market. Youth and minoritzed populations are also disproportionately present on social media, which have become a major marketing platform for flavored tobacco. However, few studies have examined the effects of exposure to social media promotion on menthol cigarette use. In the present study, we use U.S.-geolocated X (formerly Twitter) message rate as an exogenous indicator of exposure to menthol cigarette content and employ this measure to examine the influence of social media content on menthol cigarette sales. **Methods**: We obtained weekly U.S. sales data for cigarette products (menthol-flavored and "non-flavored" brands) for 104 weeks from week ending on 01/11/2020 to 01/01/2022 from NielsenIQ. Cigarette-related tweets posted from U.S. during the same time period were retrieved using Historical PowerTrack. We developed regular expressions to identify menthol cigarette-related posts and built weekly aggregate measures of relevant tweets. We used LOESS smoothing to reduce the spikiness in the X/Twitter measurement and log transformation to reduce skewness in the unit sale measurement. Autoregressive error model was employed to analyze the association between menthol cigarette tweet rates and logarithmic unit sales, controlling for average unit price. **Results**: Findings revealed that an increase of 100 tweets posted during a given week was associated with 1.8% increase in the menthol cigarette unit sales (RR=1.019, p=0.024) during the same time period. Average unit price of menthol products was not significantly associated with unit sales (RR=0.966, p=0.443). **Conclusion:** Menthol-flavored cigarette sales are likely influenced by the amount of menthol tobacco-related social media messages. Social media surveillance can enhance our

understanding of the amount and effects of exposure to tobacco-related promotion, as well as inform strategies for effective policy development and implementation to prevent digital media marketing exposure targeting youth and historically minoritized populations and to curb flavored product use.

FUNDING: Federal; FDACTP

POS3-152

FACTORS ASSOCIATED WITH TOBACCO USE INTENTION AMONG ADOLESCENTS IN A NIGERIAN SOUTHWESTERN STATE: INSIGHTS FOR PREVENTION STRATEGIES

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Significance: Identifying and intervening with adolescents who intend to use tobacco is crucial for preventing initiation and reducing overall tobacco prevalence. However, there is a dearth of empirical data on predictors of tobacco use intention among adolescents in Nigeria. This study aimed to provide insights for tailored prevention strategies to address this escalating public health concern. **Methods:** This was a cross-sectional survey among adolescents (2,590) attending 28 secondary schools across Oyo State, Nigeria, selected using the multistage sampling technique. The participants' sociodemographic characteristics, knowledge, attitude, harm perception, secondhand smoke exposure, tobacco use status, and intention of tobacco use were assessed using a validated modified GYTS questionnaire. Data analysis was done using SPSS version 25, and the significance level for all tests was at $p < 0.05$. Binary logistic regression was conducted to determine the factors that were independently associated with intention to use tobacco. **Results:** The participants' mean (±SD) age was 14.6 (±1.3) years; 51.9% were male and 70.8% schooled in urban communities. The prevalence of intention to use tobacco was 11.7%. Other key findings showed that 2.2% reported past tobacco use, 9.8% owned tobacco-branded items, 22.5% opposed the prohibition of tobacco adverts, 40.9% perceived harm from tobacco smoke as low, 22.5% perceived that buying tobacco was easy, 35.3% had a poor attitude toward tobacco use, and 10.5% had friends who were using tobacco. Factors associated with intention to use tobacco included urban schooling (aOR: 1.95; 95% CI: 1.40-2.71), male gender (aOR: 1.45; 95% CI: 1.11-1.90), past tobacco use (aOR: 3.18; 95% CI: 1.69-6.00), owning a tobacco-branded item (aOR: 1.65; 95% CI: 1.14-2.40), and opposition to the ban on tobacco adverts (aOR: 1.82; 95% CI: 1.34-2.38). Others included low harm perception (aOR: 1.76; 95% CI: 1.31-2.25), poor attitude toward tobacco use (aOR: 1.69; 95% CI: 1.30-2.21), perceived ease of buying tobacco (aOR: 1.37; 95% CI: 1.02-1.84), and having friends who were using tobacco (aOR: 1.71; 95% CI: 1.17-2.48). **Conclusions:** The prevalence of tobacco use intention among participants was 11.7%, influenced by individual factors (gender, tobacco use status, perceptions, and attitudes), interpersonal factors (having friends who use tobacco), and environmental factors (level of urbanization). Addressing these multifaceted risk factors is crucial for effective tobacco prevention strategies and comprehensive public health interventions in the context of adolescent tobacco use.

FUNDING: No external funding reported

POS3-153

METHODS USED BY US ADULTS TO STOP SMOKING CIGARETTES, 2020-2022

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Significance The number of US adults who have successfully stopped smoking and the methods they used are not well quantified in recent years, but can be estimated from the latest National Health Interview Survey (NHIS) data from the US Centers for Disease Control and Prevention (CDC). **Methods** In the 2022 NHIS, respondents who had stopped smoking in the past two years were asked "Thinking back to when you stopped smoking completely, did you use ANY of the following." Respondents who had tried to stop smoking in the past year but were unsuccessful were asked "Thinking back to when you tried to QUIT smoking in the PAST 12 MONTHS, did you use ANY of the following." Responses were analyzed and statistics were weighted with NHIS sampling weights to provide nationally representative population estimates. **Results** 7.5 million US adults stopped smoking completely from 2020-2022, of which 3.2 million (42.5%) used e-cigarettes alone or in combination with other methods, and 2.0 million (27.2%) used e-cigarettes alone with no other method; this includes 1.5 million women, 0.3 million Hispanic adults, 0.2 million Non-Hispanic Black/African American adults, 1.9 million younger adults aged 18-34, and 0.4 million gay, lesbian, and bisexual adults. 4.1 million adults (54.6%) used at least one nicotine-containing product to stop smoking completely (including e-cigarettes, gums/lozenges, patches, and nasal sprays/inhalers); 0.7 million (9.6%) used a prescription drug (varenicline and bupropion); and 0.5 million (6.1%) used some other method (telephone quit lines, counseling, and clinics/classes/groups). 3.0 million (40.1%) used none of the above methods. 7.0 million US adults tried to stop smoking from 2021-2022 but were unsuccessful, of which 2.7 million (38.9%) tried e-cigarettes; 4.1 million (58.6%) tried at least one nicotine-containing product; 1.2 million (17.3%) tried a prescription drug; 0.6 million (8.4%) tried some other method; and 2.4 million (34.8%) tried with none of the above methods. **Conclusion** The latest CDC data show that from 2020-2022, 7.5 million US adults stopped smoking, with methods containing nicotine, especially e-cigarettes, being the most commonly reported.

FUNDING: No external funding reported

POS3-154

THE IMPACT OF STRESS ON RELATIONSHIPS BETWEEN ANTI-VAPING CAMPAIGN AWARENESS AND VAPING INTENTIONS AND BEHAVIOR

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Significance: Exposure to anti-vaping mass media campaigns can influence youth and young adults' attitudes and social norms towards e-cigarettes. However, it remains unknown how the experience of mental health symptoms might affect this relationship. **Methods:** Data from weekly cross-sectional surveys of youth and young adults aged 15-24 years from September 2021 to October 2022 were used for multilevel models assessing whether stress levels moderate associations between campaign awareness (calculated by averaging weekly individual-level campaign awareness) and intentions to use and past 30-day use of e-cigarettes, controlling for sociodemographic factors, perceived financial situation, parental smoking, sensation seeking, and mental health. **Results:** If respondents reported normal stress levels, those in weeks with greater than 65% campaign awareness had significantly lower odds of expressing intentions to use e-cigarettes (OR range: 0.75-0.83, p-values < 0.05). These associations were not significant if respondents reported above normal stress levels. Respondents in weeks with 70%-75% campaign awareness had significantly lower odds of e-cigarette use, compared to weeks with less than 65% campaign awareness, if they reported normal stress levels (OR: 0.77, p-value <0.01). For those reporting above normal stress levels, lower odds of e-cigarette use were found in weeks with greater than 75% campaign awareness (OR: 0.79, p-value = 0.02). **Conclusion:** Stress may moderate relationships between anti-vaping advertisement awareness and vaping intentions and behavior, as respondents reporting above normal stress levels required higher weekly awareness of the truth anti-vaping campaign to show a reduction in odds for intentions and current e-cigarette use.

FUNDING: No external funding reported

POS3-155

DAILY ASSOCIATIONS BETWEEN SOCIAL MEDIA EXPOSURE AND ENDS USE AMONG MEXICAN AMERICAN COLLEGE STUDENTS

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Introduction: Electronic nicotine delivery system (ENDS)-related content is prevalent on social media, including both industry-sponsored advertising, and user-generated content that normalizes ENDS use. Prior research suggests an association between social media exposure and ENDS use, but the extent of this relationship is not fully understood, particularly among vulnerable groups like Mexican Americans. The purpose of this study was to examine the relationship between daily exposure to social media and ENDS use among Mexican American young adults. **Methods:** Participants were 51 Mexican American college students aged 18-25 years, 72.5% female, who were current users of ENDS. Participants were followed for 14 days in Spring 2023 and prompted daily via smartphone to report on their ENDS use, social media use, and exposure to ENDS-related content on social media. Linear mixed models were used to examine the outcome of the number of times the participant used ENDS each day. Analytic models focused on two time-varying covariates, times saw ENDS advertisements and hours on social media, that were included as both between- and within-subject effects, which respectively represent the participant's average across all days and day-level effect of

the time-varying covariate. Three models were fit: (1) times saw ENDS advertisements, (2) hours on social media, and (3) times saw ENDS advertisements and hours on social media. All models included random intercepts for the participant's college and the participant and random slopes for the within-subject time-varying covariates. Each model was adjusted for sex, age, Pell grant recipient, and attendance of a border institution, in addition to the time-varying covariate, social media engagement. **Results:** There was no significant relationship between number of times a participant saw ENDS ads and times used ENDS each day (Model 1), however as the daily hours on social media increased, so times ENDS were used each day (Model 2, p=0.18, Model 3, p = 0.027). **Discussion:** Time spent on social media is associated with an increased frequency of daily ENDS use among Mexican American college students. Social media may influence ENDS use behaviors independently of industry-sponsored marketing or explicit pro-ENDS content. Further research is needed to understand the underlying mechanisms that explain how social media impacts ENDS use.

FUNDING: Federal

POS3-156

SOCIAL SMOKER IDENTITY AND ASSOCIATIONS WITH SMOKING AND QUITTING BEHAVIOUR: A CROSS-SECTIONAL STUDY IN ENGLAND

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Significance: Social smokers typically smoke predominantly or exclusively in the presence of others who are smoking. Relatively little is known about changes in the prevalence of social smoker identity over time and other smoking-related correlates. **Methods**: Data were from the Smoking Toolkit Study, a nationally-representative cross-sectional survey in England. Participants were 26,774 adults who currently smoked or had quit in the past year ('past-year smokers'), surveyed between February-2014 and April-2021. We estimated the overall proportion identifying as social smokers, changes over time, and associations with smoking in social situations, cigarette dependence, motivation to stop, quit attempts and quit success. **Results**: Of past-year smokers, 34.0% (95% Confidence Interval (CI)=33.5-34.6) identified as social smokers. There was a near linear increase in this proportion from 31.9% (95%CI=29.7-34.2) in February-2014 to 36.5% (95%CI=34.1-38.9) in April-2021. Current smokers identifying as social smokers were less cigarette dependent (adjusted B=0.35, 95%CI=0.32-0.38) and more motivated to stop (aOR=1.21, 95%CI=1.15-1.27). Past-year smokers identifying as social smokers reported more smoking in social situations (aOR=6.49, 95%CI=6.17-6.85) and past-year quit attempts (aOR=1.21, 95%CI=1.13-1.29). Quit success was not associated with social smoker identity among past-year smokers who had attempted to quit (aOR=0.97, 95%CI=0.87-1.09). **Conclusions**: An increasing proportion, over a third, of past-year smokers in England identify as social smokers. Current smokers identifying as social smokers exhibited lower levels of cigarette dependence and, were more motivated to quit, and past-year smokers identifying as social smokers were more likely to make a quit attempt, but not succeed, than those not identifying as social smokers.

FUNDING: Academic Institution; Other

POS3-157

E-CIGARETTE USE AND LONG-TERM SMOKING CESSATION AMONG US ADULT CIGARETTE SMOKERS

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Significance: The effectiveness of e-cigarette use for smoking cessation has yet to be conclusively established, especially compared to existing pharmacotherapies such as nicotine replacement therapies (NRT) or prescription medications. **Methods**: The present study examined the prospective associations between types of smoking cessation aids used and long-term smoking cessation among 6,617 U.S. adult smokers aged 18 years or older. Within three waves of the Population Assessment of Tobacco and Health Study, inverse probability weighted regression was used to model the effectiveness of smoking cessation aids (i.e., no aid use, e-cigarettes, NRT, prescription medications, and both NRT and prescription medications) for 12 months abstinence from cigarette smoking adjusting for a comprehensive set of multi-level confounders, such as cigarette smoking-related factors (e.g., smoking intensity, nicotine dependence), environmental factors (e.g., exposure to secondhand smoking at home or work), other substance use (e.g., alcohol, marijuana, other tobacco products), health insurance coverage, and perceived mental and physical health. Treatment effect was defined as the probability of 12-month abstinence in each group and average treatment effect (ATE) was the difference in probability between two treatment groups. **Results**: The results suggested that NRT (ATE = 0.045, 95% CI = 0.01, 0.08) and prescription medications (ATE = 0.153, 95% CI= 0.09, 0.22) were more effective than e-cigarettes for long-term cigarette smoking cessation. No aid use or concurrent use of both NRT and prescription medications were not significantly different from e-cigarettes for long-term cigarette smoking cessation. **Conclusion**: The current study is limited in that the smokers' e-cigarette use patterns as a cessation tool were not considered, and self-reported abstinence may be biased. However, the present study contributes to the existing literature by comparing e-cigarette use to established smoking cessation aids for long-term cessation, while comprehensively controlling for confounding variables. Though e-cigarette use may not help smokers quit smoking, emerging literature supports its potential role in harm reduction. Further research is needed to investigate how to help smokers reduce combustible cigarette smoking by utilizing e-cigarettes. Switching to e-cigarettes could reduce health risks associated with combustible cigarette smoking.

FUNDING: No external funding reported

POS3-158

ACCEPTABILITY AND EFFICACY OF A COMMUNITY-BASED SMOKING CESSATION INTERVENTION DELIVERED ON SOCIAL MEDIA

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Significance: It is important to translate evidence-based interventions with efficacy in randomized controlled trials (RCTs) into real world practice. Social media is a promising channel to deliver tobacco cessation interventions to young populations, as it is deeply integrated into their daily lives. This study examined the acceptability and efficacy of the *Commune Smokefree Social* program, a community-based smoking cessation service that was adapted from an evidence-based Facebook intervention with initial efficacy in an RCT (the *Tobacco Status Project*) and further tailored to appeal to Hipsters (a young adult peer crowd with much higher smoking rates than other peer crowds). **Methods:** We examined data from 260 young adult smokers (aged 18-30 years) who participated in the *Commune Smokefree Social* program and completed both baseline and follow-up surveys at 3 months. Outcomes were acceptability, engagement, pharmacotherapy use, and self-reported 7-day abstinence. Subgroup analyses were conducted comparing participants who identified with the Hipster peer crowd with those who identified with non-Hipster peer crowds (i.e., Hip Hop, Country, Partier, Homebody, and Young Professionals). **Results:** Overall, participants reported high program acceptability, with highest ratings of the intervention for ease of understanding posts (95%) and posts giving sound advice (89%). 82% reported they would recommend the program to others. About two thirds (64%) reported reading most or all of the Facebook posts. 28% reported pharmacotherapy use during the program. The sample was composed of 44% Hipsters and 56% non-Hipsters. Hipsters reported significantly more use of pharmacotherapy than non-Hipsters (35% vs. 23%). Self-reported 7-day abstinence was 39% at 3-month follow-up among the participants; abstinence rates were not significantly different between Hipsters and non-Hipsters. **Conclusion:** Implementing social media-based smoking cessation interventions from the research context in real world community contexts can be acceptable and effective. The community-based *Commune Smokefree Social* program achieved notably high self-reported 7-day abstinence (39% vs. 14% among the intervention participants in the RCT setting). Though Hipsters and non-Hipsters reported similar acceptability and abstinence rates, the high participation among Hipsters and their use of FDA-recommended pharmacotherapies may enhance smoking cessation service effectiveness and delivery to this high risk group.

FUNDING: Academic Institution

POS3-159

CHARACTERIZING TIKTOK POSTS RELATED TO E-CIGARETTES AND PREGNANCY USING NETWORK ANALYSIS

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Background While the prevalence of e-cigarette use during pregnancy is low, rates may rise as young adults with early e-cigarette use are reaching the lifestage when pregnancy is more common. Emerging evidence shows adverse health effects of e-cigarette use during pregnancy, although e-cigarettes may serve as an effective harm reduction replacement for smoking during pregnancy. Social media, like TikTok, are used by young

adults to socialize but also to glean/share information. TikTok content could influence perception of social norms and health effects of e-cigarettes, which could impact young adults' e-cigarette use during pregnancy. **Methods** We obtained a total of n=1561 TikTok videos from 6 broad search term combinations ("e-cigarette pregnant", "e-cigarette pregnancy", "vaping pregnant", "vaping pregnancy", "vape pregnant", "vape pregnancy") and their corresponding metadata in September 2023. We removed duplicate videos (n=665) to obtain n=100 videos per keyword, resulting in a total of n=600 TikTok videos. We calculated the frequency of the most frequently used: (1) hashtags and hashtag pairs (i.e., co-occurring hashtags used in the same post) across the n=600 posts and (2) words in video post descriptions. To evaluate how hashtags are connected, we examined the visual co-occurrence network graphs of the hashtags (after removing the hashtags that were used for the initial search). **Results** We identified a total of 1479 hashtags related to e-cigarettes and pregnancy. This includes 10808 hashtag pairs; the top 10 pairs (e.g., pregnant and vape, pregnant and smoke) constitute 5.65% of posts. We found 8 major clusters that were composed of hashtags that co-occurred at least twice. These hashtag network graphs showed the following themes: 1) childbirth, sexual & gender minority (SGM) pregnancy, parenthood; 2) cigarette smoking and humor; 3) religiosity; 4) couples; 5) celebrity gossip; 6) health/medical impact of smoking; 7) pregnancy journey/pregnancy timeline; and 8) young mom/first pregnancy. The top 10 most frequently used words in video post descriptions were: "pregnant", "smoke", "babi", "vape", "health", "dont", "stop", "quit", "fertil", and "tri". **Conclusions** Findings indicate that in addition to using TikTok for more lighthearted communications (e.g., humor, celebrity gossip), it is used to communicate about e-cigarettes and pregnancy within communities (e.g., young moms, SGM populations, religious individuals) and about health-related topics (e.g., smoking risks, preparation for childbirth). Future work can qualitatively study posts and videos within these clusters in-depth to more comprehensively understand the motivations, attitudes, and experiences of TikTok users' posting about pregnancy and e-cigarettes, and the health-related information or misinformation relayed.

FUNDING: Federal

POS3-160

SENSITIVITY AND SPECIFICITY OF BRAIN REGIONS ASSOCIATED WITH SOCIAL, COGNITIVE, AND EMOTIONAL ANTI-VAPING MESSAGE EXPOSURE IN PREDICTING VAPING FREQUENCY

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Significance Rising youth vaping underscores the need to identify factors influencing vaping behaviors. Employing the random forest classification (RFC) method, a machine learning approach to assessing prediction and accuracy of a 'majority vote' of a binary outcome generated from a forest of decision-trees. This functional MRI (fMRI) study investigated the utility of neural network responses to various anti-vaping message appeals to predict those who subsequently increase or decrease vaping among young adults (YAs). ***Methods*** 35 YAs (mean age: 20.3, *SD*=1.56; 69% female; 77% White) who vaped more than 15 of the past 30 days underwent an fMRI scan while exposed to anti-vaping messages with cognitive, emotional, and social appeals. Past 7-day vaping frequency was assessed at baseline and 1-month later. Four a-priori brain regions of interest (ROIs) associated with selective attention and perceptual salience were identified by prior literature. Participants were assigned to groups based on whether their follow-up vaping increased or decreased compared to their baseline. An RFC model was then trained on a random split of 70% of data and tested on the remaining 30% to assess predictive accuracy and importance of each ROI in identifying those who increase or decrease vaping frequency. ***Results*** The model was 71% *accurate* at classifying increases or decreases in vaping frequency. Right frontal gyrus (RFG) activation while viewing emotional and social appeals, and right insula activation while viewing cognitive appeals ranked as the top contributors to determining increased frequency. The strongest predictors used in determining the binary outcome were RFG response during emotional and social message exposure and right insula response during cognitive message exposure. The model yielded an overall area under the curve (AUC) accuracy of 71%, with 57% sensitivity and 80% specificity. ***CONCLUSIONS*** Results indicate neural responses to message appeals vary in their associations with changes in vaping frequency. Executive functions associated with the RFG may contribute the most to accuracy and predicative utility of the model due to selective attention, abstract reasoning, and emotional regulation during emotional and social message viewing. Conversely, right anterior insula effects may reflect its role in detecting the motivational significance of cognitive messages. These findings hold promise for informing future anti-vaping message campaigns aimed at curbing YA vaping.

FUNDING: Federal; Academic Institution

POS3-161

PERCEPTIONS OF NICOTINE ADDICTION: AN EXPLORATORY FACTOR ANALYSIS

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Significance: Given the proliferation of e-cigarette use over the past decade, it could be argued that the term "smoker" no longer applies exclusively to combustible cigarette users, e-cigarette users may now be the prototypical "smoker". The disentanglement of the physical, psychological, and social components of nicotine addiction are needed to better understand what addiction means to people. Understanding how the lay person views and thinks about nicotine addiction may provide insight into non-smokers initiation intentions, smokers consumption habits, and quit intentions. This study presents preliminary findings of an instrument designed to measure perceptions of nicotine addiction that are comprehensively aligned with the clinical dimensions of addiction. **Methods:** Self-report data were collected from 179 undergraduate students in Central California [*M*age = 20.5 years (SD = 2.7 years); 82.6% female). We conducted an exploratory factor analysis of 36 candidate items assessing nicotine addiction perceptions (NAP) to reduce items and assess factor structure. Item retainment was dependent upon how well items load onto factors and their meaningful contribution to the construct of perceptions of nicotine addiction. **Results:** Data were non-normal, thus, a principal axis factor technique with an oblique rotation (oblimin) was conducted and suggested a six-factor solution: Continued use despite harm to physical or social health, withdrawal, tolerance, social impact, continuous desire to quit/reduce use, and substitution to other behavior. One item loaded poorly onto two factors (> 0.4) and was removed. Final factor structure required removal of 11 items because their loading fell below the 0.40 threshold and their removal did not substantively change their contribution to the model. **Conclusion:** This formative study suggests perceptions of nicotine addiction align within several clinical dimensions of nicotine dependence. Future directions include confirming model fit with other samples and whether perceptions are related to people's e-cigarette related intentions (e.g., initiation, cessation) and consumption.

FUNDING: State

POS3-162

PREVALENCE AND CORRELATES OF PERCEIVED HARM FROM NICOTINE AMONG MEXICAN ADULT SMOKERS

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Significance Nicotine is the main addictive substance in cigarettes (cigs). Tobacco risk perceptions can predict tobacco use behavior; however, little is known about how perceived harms from nicotine relate to one's own level of perceived addiction, smoking quit attempts, and intention to quit smoking. **Methods** Data were analyzed from seven surveys of an open cohort of 9,752 Mexican adult smokers surveyed every four months (Nov. 2018-Nov. 2020). Self-reported perceptions of the harmfulness of nicotine for health were dichotomized to reflect low perceived harm (not harmful/lightly/moderately harmful) vs. high perceived harm (very/extremely harmful). Using multilevel mixed-effects logistic models to account for repeated measures, we estimated weighted crude and adjusted odds ratios (OR & AOR) of perceived harm from nicotine by whether participants reported they were addicted to cigs (no/yes), had attempted to quit smoking in the last four months (no/yes), and had intentions to quit smoking in the next six months (no/yes). Covariates included smoking frequency, smoking dependence, e-cigarette (e-cig) use frequency, perceived improvement in health by switching from cigs to e-cigs, smoking among partners, family, and friends, and sociodemographics (sex, age, education, and household income). **Results** 79% of participants reported high harm to health from nicotine. In adjusted models, perceived addiction to cigs [AOR=1.51 (1.08-2.12)], having recently attempted to quit smoking [AOR=1.50 (1.17-1.92)], and intentions to quit smoking [AOR=1.51 (1.10-2.06)] were positively associated with high perceived harm from nicotine. Independent covariates of lower perceived harm were: e-cig use [occasional: AOR=0.50 (0.47-0.74); frequent: AOR=0.31 (0.24-0.40)], having a partner who smoked [AOR=0.70 (0.55-0.89)], and being male [AOR=0.58 (0.47-0.72)]. Greater likelihood of perceived nicotine harm was found among older participants ([AOR 40-49 vs 18-29=1.54 (1.09-2.17); AOR 50+ vs 18-29=2.12 (1.45-3.09)] and those with middle-school education or less vs university or higher[AOR=2.83 (1.85-4.34)]. **Conclusion** One's own perceived addiction to cigs, quit intentions, and smoking quit attempts were positively associated with perception of high harm from nicotine, while

e-cig use was inversely associated. Research is needed to determine whether perceptions of nicotine harm are independent of other perceived harms from smoking and could provide a focus for smoking cessation interventions.

FUNDING: Federal


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RAPID SUBMISSIONS: POSTER SESSION 4

POS4-103

PREDICTORS OF MEDICATION ADHERENCE IN A RANDOMIZED CLINICAL TRIAL OF MULTIPLE PHARMACOTHERAPY ADAPTATIONS BASED ON TREATMENT RESPONSE IN BLACK ADULTS WHO SMOKE

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Aims: To assess predictors of adherence to smoking cessation pharmacotherapies among Black adults participating in a smoking cessation clinical trial and to understand reasons for non-adherence to treatment. **Methods:** Data came from 333 participants of an unblinded, open label randomized clinical trial that evaluated the efficacy of multiple pharmacotherapy adaptations (ADT), compared to enhanced usual care (UC), in combination with counseling for smoking cessation. All participants received 18 weeks of medication. ADT received nicotine patch and up to two pharmacotherapy adaptations, with a first switch to varenicline and a second switch, if needed, to bupropion plus patch based on CO-verified smoking status (CO ≥ 6 ppm) at Weeks 2 and 6. UC received patch throughout the duration of treatment. Medication adherence was assessed via 7-day Timeline Follow Back Interview at each in person visit and corroborated with patch/pill counts and was defined as taking at least 80% of the prescribed medication for the entire treatment. Baseline factors examined as predictors of 18-week adherence included demographic, psychosocial, and smoking characteristics. Non-baseline factors included substance use; medication experience (0-10 scale with 0 being extremely negative; and 10 being extremely positive); early treatment response, and adverse events. Backward stepwise multivariate analyses were performed with all baseline and non-baseline factors assessed. We used descriptive statistics to summarize reasons for non-adherence to medication. **Results**: One hundred seventy-seven participants were compliant with their medication. Treatment group (ADT/adherent 102 (57.6%); UC/adherent 75 (42.4%); p<.001) and the participant's medication experience (Adherent 8.0 (1.8); Non-adherent 7.2 (2.1), p<.001) were significantly associated with adherence. Participants randomized to the ADT (OR = 2.40, 95% CI = 1.52-3.81, p<.001) and with more positive medication experience (OR = 1.28, 95% CI = 1.14-1.45, p<.001) were more likely to be adherent to study medications. The most common reason for non-adherence was "*forgetting or losing the medication*" (49.1%%). **Conclusions:** Over half of our sample were adherent to their pharmacotherapy, and those randomized to adaptive therapy, coupled with a positive experience with their medication, exhibited better overall compliance with their long-term pharmacotherapy. Reasons for not taking medications were similar to the existing literature.

FUNDING: Federal

POS4-104

PROVIDING FREE CAR SERVICE RIDES TO REDUCE TRANSPORTATION-RELATED BARRIERS TO ATTENDING SMOKING CESSATION STUDY VISITS FOR PEOPLE WITH LOW INCOME: RESULTS OF A PILOT STUDY

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Significance: Lack of safe, accessible, and affordable transportation is a social determinant of health that contributes to missed health care appointments and research study visits. Reducing transportation-related barriers to attending smoking cessation study visits may improve study attendance and cessation outcomes. We conducted a pilot study to evaluate the acceptability and feasibility of providing free round-trip car service rides for people with low income to attend their smoking cessation study visits. **Methods:** We are currently conducting a randomized controlled trial (RCT) in New York City testing the effectiveness of smoking cessation coaching for people with a household income below 200% of the federal poverty level. Our initial protocol was to provide round-trip reimbursement of public transportation to attend study visits. After experiencing a 50% no-show rate to study appointments, we piloted a protocol for offering free round-trip private car service rides to attend study visits. From October - December 2023, we tracked the proportion of people who accepted the offer of a car service ride and used chi-squared analyses to compare consent and coaching appointment attendance between people who did, or did not, accept the car service offer. **Results:** During the 2-month tracking period, 56 people were eligible for the parent RCT and were able to choose between using the car service or receiving subway reimbursement to attend their consent appointment. Sixteen people (29%) accepted the car service offer, while 40 (71%) opted to use subway reimbursement. People who accepted the car service offer were significantly more likely to attend their consent appointment than people who did not accept the car service offer (81% vs. 40%, *P*=.009). Once enrolled, seven people (24%) opted to use the car service to attend their first coaching appointment and 22 (76%) opted for subway reimbursement. There was no significant difference in the rate of attending the first coaching session between people who accepted the car service (57% attendance) versus people who opted for subway reimbursement (50% attendance, *P*=.742). **Conclusion:** This pilot study showed that most participants were not interested in using the study's free car service. Uptake of the free car service may have improved study enrollment, but there was no impact of providing the free car service on smoking cessation coaching attendance.

FUNDING: Federal

POS4-105

"SHE JUST GAVE ME THAT 'YOU'RE NOT ALONE' KIND OF FEELING": A QUALITATIVE STUDY OF PEER NAVIGATION FOR SMOKING CESSATION IN PEOPLE WITH HIV

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Significance: People with HIV (PWH) are disproportionately affected by cigarette use, with a 40% - 70% prevalence rate. Although expressing a strong interest in tobacco treatment, many PWH who smoke experience lower cessation rates with traditional interventions, often confronting compounded challenges related to social factors (e.g., isolation, support, presence of other smokers in social networks). HIV care services have integrated Peer Navigator (PNs) into clinical care for many years, but not in the context of smoking cessation. Linking PWH who smoke with PNs to support cessation and provide social support through motivation and encouragement to quit is a novel approach to tobacco treatment. **Objective:** Explore the perceptions of PWH who smoke daily and engage with a PN to improve support for smoking cessation in a randomized clinical trial. **Methods:** A PN, defined as a person with HIV who smoked daily and successfully quit, was trained to provide cessation resources, encourage readiness to quit, and provide social support for quitting. Participants were randomized to either PN (weekly phone calls with PN + nurse visit) or usual care (nurse visit). Qualitative interviews were conducted at week 12 to examine the acceptability of the PN by study participants. Participant responses were analyzed using inductive thematic analysis. **Results:** Sixty-four participants were randomized, and 47 qualitative interviews were conducted, 23 (48.9%) representing the PN arm. Five main themes emerged in the analysis: (1) social support through peer navigation, (2) sharing stories for success, (3) perceived salient traits of PN, (4) accountability, and (5) enhanced self-efficacy. Participants in the PN condition felt more engaged in the study and endorsed higher support for quitting than those in the control condition. Moreover, participants who were paired with a PN felt that they could rely on the PN with questions and receive tips on smoking cessation due to the PN's lived experience as a former smoker. **Conclusions:** PNs can be utilized in tobacco treatment and are acceptable among PWH who smoke. These findings underscore the significance of social support in motivating quit attempts and sustained abstinence. **Implications for Practice:** Tobacco treatment clinical services for PWH should consider utilizing PNs. This approach may be cost-effective to improve quit rates and engagement with cessation services.

FUNDING: Federal

POS4-106

TOBACCO AND CANNABIS CO-USE: A SYNTHESIS OF STUDIES TO INFORM INTERVENTION DEVELOPMENT

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Significance Tobacco and cannabis are commonly co-used, but rarely co-treated. Few interventions exist which address both, either sequentially or simultaneously, or

which assess the impact of treating one substance on the use of the other. We aimed to synthesise findings on co-use and co-quitting to inform intervention development and develop a harm reduction tool for both substances. **Methods** Phase 1: Evidence base development: The Medical Research Council framework for complex intervention development was used, and 3 linked studies conducted: a systematic review and meta-analysis (published), an online survey, and qualitative interviews with young adults from 3 vocational colleges in England with recent co-use experience. Ethical approval was granted by the university and each college gave permission. Findings from all 3 studies were synthesised using the Theoretical Domains Framework. For each synthesised finding, indicated intervention/s were grouped according to type. Phase 2: Harm reduction tool development: Harm reduction advice was indicated as a type of intervention, so using synthesised data, a 'co-use wheel' was developed. This was presented to people who co-use or work in tobacco dependence or substance misuse treatment, and refinements made to the final image. **Results** Phase 1: Synthesised findings across all studies included: a) frequent reports of mental health problems, and a complex and bi-directional relationship described between mental health, cannabis and to a lesser extent nicotine, b) perception of risk and dependence of each substance were distinct and contrasting and c) motivation to and experience of quitting or changing use of each varied significantly. Three types of interventions were indicated by the synthesised findings: 1) a co-use intervention designed with people who co-use within and beyond healthcare settings, 2) additions or adaptations to existing tobacco cessation and cannabis use treatment, 3) harm reduction advice, health and risk information and signposting to other services. Phase 2: An example of a harm reduction tool capturing the relative risks of tobacco and nicotine products, in combination with cannabis products has been developed, which aligns with 3) above. **Conclusions** A multi-faceted response to co-use is required comprising various interventions to address the complexity, variety and correlated challenges for young adults. Interventions including the harm reduction tool require testing in real world settings.

FUNDING: Academic Institution

POS4-108

EXPLORING VAPING PRACTICES IN EASTERN LIBYA: A QUALITATIVE PILOT STUDY OF VAPE SHOP RETAILERS' PERSPECTIVES

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Significance: Libya represents lower- and middle-income countries (LMICs) where tobacco/nicotine research is significantly underrepresented, tobacco products are virtually unregulated, and usage is rampant (Allen, 2022; WHO). This study aims to investigate the uncharted vaping landscape in Libya by surveying local vape product vendors. It is the first report on patterns of electronic nicotine delivery systems (ENDS) use in the country. **Methods:** In-person, semi-structured qualitative interviews were conducted between September and October 2023. Participants (n=10) were owners/managers of vape shops that sell vape products exclusively in the cities of Benghazi (urban) and Al-Marej (rural). Participants were asked about perceptions of current vaping trends, consumer demographics and beliefs, and challenges faced by Libyan vape product vendors. Content and thematic analyses were performed on interview transcripts. **Results:** Participants reported their customers are mostly >18, male, and traditional cigarette smokers, who favored rechargeable and refillable products. Customers generally exhibited mid to high socioeconomic status and education levels. Tobacco, menthol, and fruity flavors were the most popular. Consumer motivations for purchasing vapes were dichotomized into (1) intentions to quit smoking (in older vapers) and (2) curiosity about vaping (among youth). Concern over product safety and quality control emerged as a theme. Imported products from the UK and Turkey dominated the Libyan market, bearing safety warnings and barcode verification; however, participants expressed concerns about circulating sub-par products, illegal trade, anti-vaping campaigns (largely from local tobacco companies), and misuse of their products. Social media and the internet were predominant information sources about vaping for vendors and drove their marketing strategies. A major theme was the lack of awareness, as perceived by vape shop retailers, among customers and physicians regarding vaping's health impacts and potential utility as a smoking cessation device. **Conclusion:** This pilot study sheds light on previously unreported ENDS use in Libya and lays the groundwork for future epidemiological research. Vape shop owners highlighted the lack of awareness regarding ENDS among Libyan consumers and healthcare professionals as well as concerns over product quality/safety, both which may require targeted and culture-specific public health interventions. Drawing on global experiences, Libya is well-positioned to proactively tackle the vaping epidemic and promote evidence-based smoking cessation.

FUNDING: No external funding reported

POS4-109

CHARACTERISTICS AND REACH EQUITY OF UNITED STATES FLAVORED TOBACCO SALES RESTRICTIONS AS OF MARCH 31, 2023

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Background: Flavored tobacco products (FTPs) are disproportionately marketed toward and used by several United States (US) subpopulations (e.g., Black, low-income, and LGBTQ residents). Policies restricting the sale of FTPs can reduce tobacco-related disparities if they reach these subpopulations. Our study estimates the extent to which US sociodemographic subpopulations were reached by FTP sales restrictions in effect as of March 31, 2023. Methods: We merged US flavor policy data from Truth Initiative's FTP sales restriction database with sociodemographic data (e.g., race/ethnicity, poverty status, rurality) from 2020 Census data. For each sociodemographic subgroup, we calculated Reach Ratios (ReRas) to describe the extent to which FTP sales restrictions proportionately reached US subpopulations. For example, to determine the ReRa for non-Hispanic (NH) Black residents, we determined what proportion of people covered by FTP sales restrictions were NH Black. We then divided that value by the proportion of the US population that was NH Black. A ReRa less than 1.0 indicates inequitable reach to the subpopulation. We also generated ReRas examining the reach of "comprehensive" FTP policies, here defined as policies that: 1) apply to flavored (including menthol) cigarettes, e-cigarettes, little cigars and cigarillos, and smokeless tobacco and 2) exempt no retailers or only exempt retailers that sell FTPs for on-site consumption (e.g., 'cigar bars'). Results: As of March 31, 2023, over one-quarter of US residents were covered by any FTP sales restriction, while under 15% of residents were covered by comprehensive policies. ReRas show the most inequitable reach to NH American Indian/Alaska Native (AIAN) (ReRa: 0.45; CI: 0.45, 0.45) and non-urban residents (ReRas: 0.18-0.61). Inequities in reach were also observed among NH White residents (ReRa: 0.84; 0.84, 0.84), NH Black residents (ReRa: 0.91; CI: 0.91, 0.91), and those completing high school as their highest educational attainment (ReRa: 0.87; CI: 0.87, 0.87). When examining the reach of comprehensive policies, ReRas were most inequitable for non-urban residents (ReRas: 0.06-0.60). Inequities in comprehensive policy reach were also observed for NH Black residents (ReRa: 0.54; CI: 0.54, 0.54), NH AIAN residents (ReRa: 0.55, CI: 0.55, 0.55), and those completing high school as their highest educational attainment (ReRa: 0.77; CI: 0.77, 0.77). Conclusions: Increased implementation of comprehensive flavor policies is needed, particularly in jurisdictions with high proportions of non-Hispanic Black, non-Hispanic American Indian/Alaska Native, and non-urban residents and high proportions of residents who have not obtained more than a high school education. National flavor policy implementation would also help reduce gaps in coverage for all populations.

FUNDING: Other

POS4-110

PREVALENCE AND CHARACTERISTICS OF CO-OCCURRENCE OF SMOKING AND INCREASING-AND-HIGHER-RISK DRINKING: A POPULATION SURVEY IN ENGLAND

Claire Garnett[1], Melissa Oldham[2], Leonie S. Brose[3], Hazel Cheeseman[4], Sharon Cox[2]. [1]University of Bristol, Bristol, United Kingdom, [2]University College London, London, United Kingdom, [3]King's College London, London, United Kingdom, [4]Action on Smoking and Health, London, United Kingdom.

Significance: Smoking and drinking alcohol both significantly contribute to mortality and morbidity, and there is a need to characterise the sociodemographic and health-related characteristics (e.g. mental distress) of people who do both in order to target resources. This study aimed to report the prevalence and characteristics of adults in the general population in England who both drink alcohol at increasing-and-higher-risk levels and smoke. ***Methods:*** We used cross-sectional data from a monthly, nationally representative survey of adults in England (n=37,258; April 2020-March 2022). Weighted data were used to report prevalence and unweighted data were used to report descriptive statistics for sociodemographic and health-related characteristics. ***Results:*** The prevalence of both smoking and increasing-and-higher-risk drinking was 4.6% (95% CI=4.4-4.9; n=1,574). They smoked a mean of 10.4 (SD=8.86) cigarettes per day and had a mean AUDIT score of 12.8 (SD=5.18). Nearly half (48.2%, n=751) were trying to cut down on their smoking and 28.0% (n=441) on their drinking. A quarter (25.3%, n=397) had received General Practitioner advice on smoking (which was significantly lower than among adults who smoke but do not drink at increasing-and-higher-risk levels) while 8.7% (n=76) had received advice on their drinking. Nearly half (48.6%, n=745) reported experiencing psychological distress in the past month and 44.6% (n=529) had a diagnosed mental health condition, both of which were significantly higher than among adults who smoke but do not drink

at increasing-and-higher-risk levels and vice versa. ***Conclusions:*** In England, from April 2020 to March 2022, the prevalence of both smoking and increasing-and-higher-risk drinking was 4.6% and this group has high rates of psychological distress and mental health conditions, which is known to be negatively associated with successfully quitting smoking. Despite the multiplicative effect on the risk of cancer from both smoking and increasing-and-higher-risk drinking, the proportion of this group trying to cut down on their smoking or on their drinking was significantly lower than among adults who smoke but do not drink at increasing-and-higher-risk levels, or vice versa. Support needs to be targeted at this group to increase the proportion making an attempt to cut down on their drinking or smoking, and the likely success rates of these attempts.

FUNDING: Nonprofit grant funding entity; Other

POS4-111

GENDER DIFFERENCE IN SOCIOECONOMIC INEQUALITY OF ELECTRONIC CIGARETTES AND HEATED TOBACCO PRODUCTS AMONG SOUTH KOREAN ADULTS

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Background While conventional cigarettes (CC) are prevalent in low education and income class in both male and female in South Korea, less has been known about the socioeconomic inequality of electronic cigarettes (EC) and heated tobacco products (HTP), especially for gender difference. Hence, we investigated socioeconomic inequalities of EC and HTP in relation to gender for Korean adults. **Methods** We analyzed 226,749 adults from 2020 Community Health Survey, representative sample of South Korean adults. Socioeconomic position variables included household income and education. We used multivariable logistic regression analysis to evaluate the gender differences in socioeconomic inequalities of EC, HTP and CC adjusted for age, household income, education, occupation, marital status, and binge drinking. **Results** Total current HTP users were 6,065, comprising 5,414 male and 651 female users, while current EC users were 3,764 in total, including 3,432 male and 332 female users. In male, odds to be EC users and HTP users were 0.328 (95% CI, 0.237-0.456), and 0.774 (0.629-0.952), respectively for ≤ middle school graduate compared with ≥ college graduate. In female, odds to be EC users and HTP users were 2.520 (1.462-4.346), and 2.555 (1.574-4.148), respectively for ≤ middle school graduate compared with ≥ college graduates. Regarding income, there was no consistent inequalities for EC, and HTP among male. However, there was consistently greater odds to be EC and HTP users among female. For example, odds to be EC users and HTP users among 1st quartile (lower income) were 2.118 (1.141-3.931), and 2.784 (1.898-4.083), respectively compared with 4th quartile. **Conclusion** Gender differences in socioeconomic inequalities in EC and HTP may ask gendered approach to control novel tobacco products like EC and HTP in South Korea.

FUNDING: No external funding reported

POS4-112

EXPLORING THE RISK PERCEPTION OF TOBACCO SMOKING OF SMOKERS LIVING WITH HIV IN VIETNAM

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Background Smoking prevalence among people living with HIV is two to three times higher than that of the general population, across regions and country income levels. There is a lack of data on factors influencing quitting in this population, particularly in low and middle-income countries like Vietnam. Perceptions about the risk of tobacco use may influence cessation behaviour, but this not well studied. **Methods** We conducted a cross-sectional survey among 288 patients receiving HIV care at three outpatient clinics in Hanoi, Vietnam. We used five questions to assess different dimensions of smoking risk perceptions. Patients were asked about the perceived likelihood of getting a smoking-related disease if they continued to smoke and if they quit, the impact of smoking on HIV, and about the comparative risk of using waterpipe or cigarettes. We analyzed the data using generalized linear modelling (GLM) with LASSO regularization to identify sociodemographic and other factors associated with risk perception. **Results** Most individuals (89.9%) believed continued smoking increased the risk of smoking-related diseases like cancer or heart conditions, and quitting would significantly reduce these risks (86.1%). Seventy per cent of patients were unaware of smoking's impact on their HIV conditions. Additionally, 40.3% believed waterpipes were safer than cigarettes. Thirty-six percent were unconcerned about smoking's health effects. The GLM found divorced, separated, or widowed status (vs never married) (Beta -1.38, 95%CI -2.09;-0.67), longer antiretroviral medication (Beta -0.42, 95%CI -0.70;-0.13), and excellent self-rated health (vs poor) (Beta -3.42, 95%CI -5.78;-1.06) were associated with lower levels of risk perception. Employment (Beta 0.92, 95%CI 0.00;1.83), higher perceived importance of quitting tobacco (Beta 0.19; 95%CI 0.07;0.31), internalized smoking stigma (Beta 0.18, 95%CI 0.05;0.31), social norms related to smoking (Beta 1.84, 95%CI 0.40;3.28), reports of people objecting to their smoking (Beta 1.47, 95%CI 0.68;2.27), and being asked about tobacco use by providers at the last visit (Beta 0.55, 95%CI 0.03-1.07) were associated with higher levels of risk perception. **Conclusion** The analysis suggests that characteristics associated with a greater understanding of the risks associated with tobacco use are potentially modifiable. This finding suggests potential approaches to improve cessation rates among people living with HIV.

FUNDING: Other

POS4-113

THE IMPACT OF PRICES AND TAXES ON THE USE OF TOBACCO PRODUCTS IN LATIN AMERICA AND THE CARIBBEAN: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Significance The scarcity of studies in Latin America and the Caribbean using household- or individual-level data in existing reviews limits their policy relevance. **Methods** We conducted a systematic review and meta-analysis of quantitative studies that examined the association between manufactured tobacco product prices and taxes and tobacco use using household- or individual-level data in countries of Latin America and the Caribbean. We also examined if socioeconomic status, age, sex, or rurality modified the association between tobacco prices or taxes and tobacco use. We searched four electronic databases, two grey literature databases, and two working paper repositories. At least two reviewers independently screened articles for inclusion, extracted characteristics, and assessed risk of bias. **Results** We found consistent evidence that higher tobacco prices were associated with lower tobacco use. Pooled own-price elasticities using random-effects models indicate that higher prices were associated with a less than proportional decrease in tobacco use (pooled own-price elasticities, participation: −0.17; 95%CI −0.32, −0.02; consumption: −0.45; 95%CI −0.73, −0.16; initiation: −0.40; 95%CI −0.44, −0.36). We did not find any consistent evidence that socioeconomic status, age, sex, or rurality affected price responsiveness. **Conclusion** Our review confirms that taxes that raise tobacco prices can effectively lower tobacco use. Moreover, raising tobacco prices through increased taxes is anticipated to boost tax revenue due to the inelastic nature of the demand for tobacco. The finding that socioeconomic status did not modify the association between prices and tobacco use suggest that tax- and industry-initiated price increases may disproportionally affect poorer tobacco users who do not quit when prices are increased.

FUNDING: Academic Institution; Nonprofit grant funding entity

POS4-114

TOBACCO TOWN: BASELINE SIMULATION FOUNDATION FOR GEOGRAPHICALLY REALISTIC TOBACCO POLICY IMPLEMENTATION

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Significance: There is research into the effects of tobacco retailer concentration on the population, and the relationship between tobacco control policies and smoker behaviors, but limited work exploring the intersection of policies, retailer concentration and behavior. A previous version of Tobacco Town, a computational agent-based model, explored the effects of tobacco retailer policies on product accessibility in four abstract city types. This iteration of Tobacco Town introduces real geography by modeling 30 US cities, utilizes realistic smoker agents, introduces cessation as a measurable outcome of the model, and calibrates to available smoker behavior and tobacco retailer data. **Methods:** We incorporated real geography into the model using street networks of the 30 cities. We also identified likely tobacco retailers using NAICS codes from Business Analyst data, and synthesized realistic smoker populations with home locations based on the American Community Survey 5-year Public Use Microdata Sample. We based price distribution for menthol and non-menthol cigarettes on real store data. Cessation

was introduced into the model, operationalized based on smoker characteristics. Model calibrations tested behaviors of interest - including cigarettes per day, tobacco product purchase volume, purchase cost, travel time to purchase - according to self-reported data from smokers in those cities. **Results:** After developing the core utility function driving agent purchasing (where each agent wants to minimize price paid and distance travelled), we calibrated model behavior on three metrics: purchase volume, distance travelled, and cessation rates. The model was tested across multiple timeframes from 3 to 12 months to ensure that the behaviors stabilized over time. Across the cities, baseline output reflects smoker-reported behavior, and smokers do not act in an unexpected manner (such as excessive products purchased in a short time). We improved model runtime from hours to minutes for the larger cities (size, data, etc.) leading to richer policy space for exploration including a focused look at a smoker agent's behavior throughout a model run and more complex policy implementation. **Conclusion:** The model illustrates the ability for real-world data to be replicated in a simulated tobacco retail environment and the potential to test the impact of retailer reduction policies on both the built environment and smoker behaviors.

FUNDING: Federal

POS4-117

TIME TO FIRST REPORT OF NICOTINE DEPENDENCE SYMPTOMS AMONG ADOLESCENTS WHO USE E-CIGARETTES AND CIGARETTES IN THE UNITED STATES: A NATIONALLY REPRESENTATIVE COHORT STUDY, PATH (WAVES 1-5; 2013-2019)

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Background: Although e-cigarettes are the most frequent tobacco used by youths in the United States, no study has looked at the time to first report of symptoms of nicotine dependence following first past 30-day (P30D) use among this population. **Objective (s):** 1) To determine the time to first report of nicotine dependence symptoms among exclusive P30D e-cigarette and P30D cigarette smokers following the first report of P30D use.2) To compare the time to the first report of nicotine dependence symptoms among exclusive P30D e-cigarette users to that for exclusive P30D cigarette smokers following the first report of P30D use. **Methods:** Secondary analysis of youth data (Waves 1-5; 2013-2019) from the Population Assessment of Tobacco and Health (PATH) was conducted. Youth P30D tobacco users who reported exclusive P30D e-cigarette use or exclusive P30D cigarette smoking (n=2,940, N=5,391,642; mean age= 17.6 years) in at least 1 wave were included in the current analysis. Survival analysis was used to estimate the time to first report of three validated nicotine dependence symptoms ("use within 30 minutes of waking"; "strong cravings" and "really needing to use") following the first report of P30D use. Multivariable Cox proportional hazard models were used to estimate adjusted hazard ratios (aHR) and 95% confidence intervals (CI). **Results:** There were no significant differences in the time to first report of "use within 30 minutes of waking" (HR=1.1, 95% CI=0.87-1.40) and "strong cravings" (HR=1.09, 95% CI=0.81-1.47) between exclusive P30D e-cigarette users and exclusive P30D cigarette smokers. However, compared to exclusive P30D e-cigarette users, the hazard of first reporting "really needing to use" tobacco was 39% (HR 1.39; 95% CI: 1.05-1.84) times higher for those who reported exclusive P30D cigarette smoking after controlling for covariates. **Conclusion:** Compared to exclusive P30D cigarette smokers, there was no difference in the time to first report of nicotine dependence symptoms ("use within 30 minutes" and "strong cravings") among exclusive P30D e-cigarette users following the first report of P30D use. Policymakers and regulatory agencies should consider this evidence when assessing the abuse liability potential of e-cigarette products.

FUNDING: No external funding reported

POS4-118

CHEMICAL ANALYSIS OF E-LIQUID SOLD IN MEXICO

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Significance Since its introduction to the market, e-cigarettes had been promoted as a less harmful alternative to smoking. However, information about the chemical composition of the e-liquids used on e-cigarettes, and the potential risk of its components, are lacking. Although this gap exists throughout the world, it is especially important in countries where these products are prohibited and, therefore, their production is not regulated. **Methods** E-liquid samples were collected in Mexico, 146 were acquired at different stores (physical and online) and 49 were provided by the Federal Commission Against Health Risks (COFEPRIS). Samples were analyzed using gas chromatography with single quadrupole mass spectrometry, using NIST library for identification of chemical components. Nicotine contents were analyzed using gas chromatography with a nitrogen-phosphorous detector (GC-NPD, Varian brand). **Results** From the 195 e-liquids, 66% were produced in Mexico, 30% in the USA, 3% in Canada and 2% in the UK. A total of 103 chemical components were found, of which 46 were irritating (IC), 34 toxic (TC) and 6 carcinogenic (CC). The e-liquid with more components detected was "Rojito NicSalt" with 33 components (18 IC, 12 TC and 3 CC), while "Papilord Red" had the least components present (2, 1 IC, 1TC and 0 CC). Both e-liquids were made in Mexico. *Pyridine* was the most common IC it was found in 68% of all e-liquids, followed by *butanoic acid ethyl ester*present in 60%, and *vainillin* in 34% of all e-liquids. *Pyridine*, also the most common TC, was found in 68% of all e-liquids, followed by *ethyl maltol* (37%) and *benzaldehyde* (34%). *Benzaldehyde,* also a carcinogenic, was the most present as CC, followed by *formaldehyde* (0.084%) and *gamma-terpinene* (0.082%). 44% of the samples had a variation greater than 10% of the nicotine concentration reported on the label. Of these, 74% had less nicotine than declared. **Conclusion** Several IC, TC or CC chemical components can be found in the e-liquids sold in Mexico. These components are not declared in the labels or packaging, making hard to evaluate the risks of using e-cigarettes.

FUNDING: Nonprofit grant funding entity

POS4-119

EVALUATING A CAUSAL MECHANISM BETWEEN COVID-19 POLICIES AND TOBACCO AND MARIJUANA USE

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Background: In March 2020, state governments in the United States implemented Stay-at-Home (SAH) orders to reduce the spread of the novel coronavirus. There were concerns about the impact of these policies on mental health and substance use. The goal of this research was to quantify the relationships between SAH orders, depression and anxiety, and the use of tobacco and marijuana use. Methods: Using longitudinal data from the Understanding America Study (UAS) COVID-19 surveys, we tested the hypothesis of a mediated effect of COVID-19 SAH orders on tobacco and marijuana use through PHQ-4 scores. Using two simultaneously estimated Generalized Estimating Equations (GEE) with a logistic link function, we examined both within-person and between-person relationships. SAH orders were modeled using dates of enactment and easement. To ensure proper temporal inference, SAH orders were modeled using a 1-wave lag. PHQ-4 scores were dichotomized based on scoring criteria into normal/mild and moderate/severe. Confidence intervals and p-values for indirect effects were calculated using Monte Carlo methods. Analyses controlled for age, sex, educational attainment, race, and state marijuana legalization status. Results: In the system with current tobacco use as the outcome, the presence of a SAH order was associated with a .72 (95% CI: .08, 1.36) increase in the log-odds of moderate/severe PHQ-4 scores. Similarly, in the system with current marijuana use as the outcome, the presence of a SAH order was associated with a .69 (95% CI: .16, 1.22) increase in the log-odds of elevated PHQ-4 scores. Moderate/severe PHQ-4 scores were associated with a 1.14 (95% CI: -1.92, -.35) and 1.01 (-1.83, -.18) decrease in the log-odds of tobacco and marijuana use respectively. Within-person increases in PHQ-4 scores were associated with a 1.31 (95% CI: -1.87, -.74) and 1.55 (95% CI: -2.16, -.93) decrease in the log-odds of tobacco and marijuana use respectively. There was no evidence of a relationship between within-person changes in SAH orders and PHQ-4 scores. All between-person and within-person mediated effects were significant at the .05 level. Conclusions: During the COVID-19 pandemic, elevated depression and anxiety symptoms were associated with lower odds of tobacco and marijuana use. These results provide evidence for a mediation mechanism between SAH orders and tobacco and marijuana use, through depression and anxiety symptoms.

FUNDING: Academic Institution

POS4-120

SOCIAL MEDIA USE AND E-CIGARETTE USE DURING PREGNANCY AMONG US ADULTS IN THE PATH STUDY

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Significance: In the US, rates of e-cigarette use are highest among young adults. Social media is a common source of information on e-cigarettes, and exposure to pro-e-cigarette social media content is associated with increased risk of e-cigarette use. However, data is limited on whether exposure to social media affects e-cigarette use during pregnancy, specifically. Given the risks of adverse maternal or infant outcomes of e-cigarette use during pregnancy, it is important to understand potential impacts of social media on e-cigarette use during this sensitive time period. We aimed to assess how social media use may impact likelihood of using e-cigarettes during pregnancy. **Methods:** Data from Population Assessment of Tobacco and Health (PATH) Study (Wave 5; 2018-19), were used. For this analysis, the sample was limited to women who had been pregnant in the past 12 months (N=1377). In a logistic regression model, social media use ('do you have a social media account'; 'about how often do you visit your social media accounts') was the predictor, and e-cigarette use during the last 3 months of pregnancy was the outcome. Covariates included: age, race, ethnicity, education level, alcohol use during pregnancy, past 12-month cannabis use, e-cigarette use before pregnancy, cigarette use before pregnancy, and cigarette use during pregnancy. **Results:** Among women who were pregnant in the past 12 months, those who used social media (vs. those who did not have a social media account or did not use a social media) were less likely (odds ratio =0.17, p=0.005) to report having used e-cigarettes during the last three months of their pregnancy. Several of the covariates were also statistically significant: using e-cigarettes or cigarettes prior to pregnancy, or cigarettes during pregnancy were each associated with increased likelihood of using e-cigarettes during pregnancy. **Conclusions:** Lower likelihood of using e-cigarettes during pregnancy among social media users may indicate the promise of social media as a means of health communication. However, the relative health risks of vaping nicotine during pregnancy (increased harm relative to no tobacco use, but potential harm-reduction relative to smoking) is a complex and nuanced topic. Future studies should examine how social media platforms can be used as a health communication tool for pregnant people.

FUNDING: Federal; FDACTP

POS4-121

TRANSITIONS BETWEEN CIGARETTES AND HEATED TOBACCO PRODUCTS AMONG ADULTS WHO USE VS DO NOT USE NICOTINE VAPING PRODUCTS IN THE REPUBLIC OF KOREA: FINDINGS FROM THE 2020, 2021, AND 2023 ITC KOREA SURVEYS

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Significance: The Republic of Korea is a key country for studying heated tobacco products (HTPs), being the world's 4th largest HTP market. We previously examined transitions of HTPs to/from cigarettes in Japan, the world's largest HTP market, finding that HTPs were not associated with smoking cessation but with long-term dual use. Korea differs in an important way from Japan in that nicotine vaping products (NVPs) are legal; the nicotine market in Korea is thus more similar to that of the United States and other countries. **Methods**: We fit a Markov multi-state model among adults (19+yrs) in 2020, 2021, and 2023 ITC Korea Surveys who participated in at least two waves (1696 W1 cohort + 1073 W2 cohort) to estimate one-year cumulative transition probabilities among four tobacco use states: (1) smoked cigarettes but did not use HTPs >=weekly (PWS), (2) used HTPs but did not smoke >=weekly(PWH), (3) smoked and used HTPs >=weekly (dual use)(PWS+H), and (4) quit smoke and HTPs (use <weekly/did not use at all)(PWQ). Analyses were weighted/adjusted by sex and age. We also examined whether above transition patterns differed between those who (a) also vaped (n=385) vs (b) did not vape (n=2384) at baseline. **Results:** Among all PWS, after one year, 86.1% remained PWS, 8.2% became PWS+H, and 5.4% quit smoking (0.3% PWH+5.4% PWQ). Those PWS who also vaped were less likely to remain PWS (79.0%) and more likely to become PWS+H (12.8%), compared to those PWS who did not vape (86.8% remained PWS, p<0.01, and 7.7% became PWS+H, p=0.02). Among all PWS+H, after one year, 90.1% stayed PWS+H, 6.4% became PWS, and 3.6% quit smoking (3.1%PWH+0.5% PWQ). Those PWS+H who also vaped were less likely to become PWS (6.4%) and more likely to stay PWS+H (90.1%), compared to those PWS+H who did not vape (12.2% became PWS, p<0.001, and 84.2% remained PWS+H, p=0.01). Among PWH, 58.9% became PWS+H, 36.1% were not smoking (30.8% PWH+5.3% PWQ), and 3.0% became PWS. **Conclusion:** Transitions to/from cigarettes and HTPs in Korea were similar to transitions we previously found in Japan: when those who smoke took up HTPs, there were low rates of transitioning away from cigarettes. HTP use was not associated with smoking cessation but with a very high percentage of HTP-cigarette dual use. NVP use was a partial moderator: those who also vaped were more likely to transition to HTPs overall, but NVPs did not moderate transitions to not smoking. These transition analyses suggest that NVPs and HTPs were substitutes for each other, but neither was associated with transitions away from smoking. This national study in Korea is the first to examine transition patterns among HTPs, NVPs, and cigarettes over time, and the findings from this multi-stage modeling analysis may provide insights on how these products are or will be interacting in other countries.

FUNDING: Federal; Other

POS4-122

DIFFERENT MEASURES OF NICOTINE AND CANNABIS POLYUSE AMONG ADOLESCENTS AND ASSOCIATIONS WITH NICOTINE AND CANNABIS DEPENDENCE

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Significance: Adolescent polyuse of nicotine and cannabis is a rising public health concern. Youth who use both nicotine and cannabis (vs. just one substance) are more likely to report substance dependence. Most studies define polyuse of nicotine and cannabis as having used both substances in the past month; however, this definition may not adequately capture more problematic forms of polyuse, such as using nicotine and cannabis on the same day. **Methods**: This study examined patterns of nicotine and cannabis polyuse among a cohort of Southern California high school students (N=3,823; mean age[SD]=16.2[0.59] years). Participants were classified into five mutually exclusive exposure groups based on past 30-day use of nicotine and/or cannabis: 1) use of both substances on the same day at least once in the past 30 days; 2) use of both substances in the past 30 days without same-day use; 3) exclusive nicotine use; 4) exclusive cannabis use; 5) no use of either product. Nicotine dependence was assessed using the Hooked on Nicotine Checklist and a modified vaping dependence measure; cannabis dependence was assessed using the Cannabis Abuse Screening Test. **Results**: Past month nicotine and/or cannabis use was reported by 9.5% of the sample. Among those who reported past-month nicotine and/or cannabis use, 35.1% used both substances on the same day, 15.5% used both substances in the past 30-days but not on the same day, 16.9% reported exclusive nicotine use and 32.6% reported exclusive cannabis use. Polyuse on the same day was associated with greater dependence than other use patterns; among those who reported same-day nicotine and cannabis polyuse, 56.0% reached subclinical or clinical levels of nicotine dependence, compared to 38.0% of participants who used both substances without same-day use and 22.0% of exclusive nicotine users. Cannabis dependence was identified among 68.8% of participants reporting same-day polyuse, compared to 34.8% of participants who used both substances without same-day use and 35.2% of exclusive cannabis users. **Conclusion**: Adolescents reporting same-day polyuse had higher levels of nicotine and cannabis dependence than those who used both substances in the past month without using on the same day. A same-day definition of polyuse might capture more problematic use than a past-month definition alone and warrants further research.

FUNDING: Federal

POS4-123

RESPONSES TO TOBACCO PUBLIC EDUCATION MESSAGES AMONG YOUNG ADULTS: HOW PREVIOUS QUIT ATTEMPTS AND QUIT INTENTIONS AFFECT MESSAGE PERCEPTIONS

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Significance. Public education campaigns can effectively prevent smoking and vaping initiation among youth and encourage cessation in adults, but their effect among young adults (YA) is understudied. We tested the effectiveness of messages describing the absolute and comparative risks of smoking cigarettes and vaping nicotine and assessed how quit interest/attempts shaped post-exposure perceptions among YA living in the United States. Methods. YA aged 18-35 years viewed 8 messages in one of three experimental conditions (control, absolute risk, comparative risk). We fit unadjusted, post-exposure regression models to assess main effects of self-reported past 12-month quit attempts and quit interest on outcomes (impact perceptions; intentions to refrain

from smoking/vaping in the next 3 months) among current smokers (N=750) and vapers (N=1015). Results. Among YA who currently smoked, those who made a quit attempt rated messages as more likely to motivate cigarette smokers to quit than those not making a quit attempt (p<.001). YA interested in quitting smoking within 6 months rated messages as more likely to motivate smokers to quit, than YA not interested in quitting (p<0.001). YA who made a quit attempt rated themselves more likely to refrain from smoking than those who did not attempt to quit (p < 0.001). YA interested in quitting within 6 months, rated themselves more likely to refrain from smoking than those not interested in quitting (p < 0.001) and those interested in quitting, but not within 6 months (p < 0.001). Among young adults who currently vaped, YA who attempted to quit rated messages as more likely to motivate vapers to quit than YA who did not attempt to quit (p<0.001). YA interested in quitting vaping within 6 months rated messages as more likely to motivate vapers to quit than those not interested in quitting (p<0.001). YA who made a vaping quit attempt rated themselves as more likely to refrain from vaping than YA who did not attempt to quit (p<.001). YA interested in quitting vaping within 6 months rated themselves more likely to refrain from vaping than those not interested in quitting (p < 0.001) and those interested in quitting, but not within 6 months (p < 0.001). Conclusion. Tobacco public education messages describing the absolute and comparative risks of smoking cigarettes and vaping nicotine were most effective for YA who reported making a recent quit attempt, or who were interesting quitting smoking/vaping within 6 months. Results suggest that YA are interested in quitting smoking/vaping and that unique message framing must be developed to engage YA across the quit continuum.

FUNDING: Federal; FDACTP; Academic Institution

POS4-124

QUALITATIVE ANALYSIS OF VAPING AND PREGNANCY CONTENT AND MESSENGER CHARACTERISTICS ON TIKTOK

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Significance: Understanding communications regarding vaping and pregnancy on social media platforms, like TikTok, is crucial for informing health information. Social media plays a pivotal role in shaping health behaviors, making it crucial to analyze content regarding vaping and pregnancy to identify perceptions, misinformation, and messenger characteristics. **Methods:** We searched for 6 keyword combinations ("e-cigarette pregnant", "e-cigarette pregnancy", "vaping pregnant", "vaping pregnancy", "vape pregnant", "vape pregnancy") on TikTok and removed duplicates to obtain 600 videos in September 2023. We content analyzed 10% (n=63) of eligible videos (defined as containing both vaping and pregnancy content) to identify themes related to vaping and pregnancy, messenger characteristics, and engagement metrics (number of likes, views). We used a codebook developed iteratively across 4 independent coders who viewed 10-30 videos each. **Results:** Preliminary results indicated that 56% (n=35) of posts were anti-vaping, 29% (n=18) unclear/neutral, 11% (n=7) pro-vaping, and 3% (n=3) mixed valence. Anti-vaping message content included testimonials on quitting vaping while pregnant, sharing opinions that one should quit while pregnant and/or criticizing people who vape while pregnant, and mentioning health harms (e.g., infertility, adverse fetal health, general health risk). Pro-vaping content included switching from smoking to vaping, using vaping as a form of birth control (i.e., decreased fertility), and health harm of quitting while pregnant (e.g., quitting cold turkey and withdrawal causing "stress" to the fetus). Unclear messages often used sarcasm/humor. The median number of "likes" was 412 (IQR=912) and "views" was 7813 (IQR=21,649). 86% of video messengers were female; and the pregnancy status was: 56% (n= 35) currently/previously pregnant, 29% (n=18) unknown, 10% (n=6) not applicable, 3% (n=2) trying to get pregnant, and 3% (n=2) stated not being pregnant. Median followers were 2600 (IQR=26,464). The analysis is ongoing, and the presentation will include additional results from all eligible videos. **Conclusions:** We identified diverse communication regarding vaping and pregnancy on TikTok, including accurate and inaccurate information. Insights gleaned from TikTok may inform targeted public health campaigns to counter misinformation, raise awareness of associated risks, to contribute to the well-being of pregnant individuals and their unborn children.

FUNDING: Federal; FDACTP

POS4-125

NICOTINE VAPING AND OBESITY TRAJECTORIES DURING AND POST COVID-19 PANDEMIC: ARE THEY OVERLAPPING HEALTH RISKS?

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Significance. Past research has indicated obesity is associated with cigarette smoking in young adulthood (Huang et al., 2013; Hussaini et al., 2011), but whether this relationship extends to nicotine vaping is unclear (Lanza et al., 2017; Lanza et al., 2022; Mason & Leventhal, 2021). Longitudinal studies examining the co-occurring development of nicotine vaping and obesity are critical to understanding whether and how nicotine vaping and obesity are related in young adulthood. The current study identified nicotine vaping and obesity trajectories during and post COVID-19 pandemic and assessed co-occurrence among these health-risk trajectories. **Methods.** 1,303 young adults (20.5±2.3 years; 63% female; 41% Latina/o/x, 30% Asian-American/Asian, 18% Caucasian/White) from a public, urban university completed health behavior surveys at six-month intervals from spring 2021 (W1) to spring 2023 (W5). Participants reported height and weight at each wave and were categorized into obese status if body mass index (BMI) ≥ 30.0. Self-reported past 30-day use of nicotine vaping was reported at each wave. Nicotine vaping and obesity trajectories were estimated separately using growth mixture modeling and parallel growth mixture modeling was used to assess co-occurrence of nicotine vaping and obesity trajectories. **Results.** Four nicotine vaping trajectories were identified: Non-use (87.5%); Chronic Use (5.4%); Increased Use (4.1%); and End of Restrictions Use (3.0%). Three obesity trajectories were identified: Non-obese (81.0%); Chronic Obesity (15.0%); and Increasing Obesity (3.9%). Cross-classification probabilities indicated that most young adults in the Chronic Use trajectory belonged to the Non-obese trajectory (90.8%); the remaining 9.2% were in Increasing Obesity. Among those in the Increased Use trajectory, 86.2% were classified in the Non-obese trajectory and 13.8% in Chronic Obesity. Similarly, 89.5% of those in the End of Restrictions Use trajectory were classified in the Non-obese trajectory and 10.5% in Chronic Obesity. **Conclusions.** Close to 30% of young adults were identified in either a nicotine vaping use or obese status trajectory; in contrast, the overlap between nicotine vaping use and obese status trajectories was very low (1.4% of total sample). Cross-classification probabilities highlight a few patterns that may be worth exploring (e.g., 14% of young adults with an increasing vaping trajectory belonged to the chronic obesity trajectory); however, we cannot ignore that co-occurrence between nicotine vaping and obesity is quite low. Future studies should seek to identify the processes that may explain why the cigarette smoking-obesity link does not extend clearly to nicotine vaping.

FUNDING: Federal

POS4-126

IDENTIFYING ELECTRONIC CIGARETTE RELATED TIKTOK VIDEO FEATURES ASSOCIATED WITH USER ENGAGEMENT USING LARGE LANGUAGE MODELS

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Significance: Electronic cigarette (e-cigarette) use remains high in youth and young adults. TikTok, a popular social media platform for youth and young adults, has been used to disseminate e-cigarette-related videos, primarily dominated by promotional videos. We aim to identify critical e-cigarette-related TikTok video features associated with high user engagement to assist with future video design for vaping prevention campaigns. **Methods:** E-cigarette-related TikTok videos and related metadata were collected using the TikTok API (Application Programming Interface). Large language models ChatGPT-4 was used to extract features (e.g., promotion content, background, gender, lifestyle, talking, cartoon, vaping trick, containing emoji) from e-cigarette-related TikTok videos. The accuracy of the ChatGPT-4 in identifying video features was manually checked using randomly selected 25 videos. After video features were extracted, generalized linear models with identity link functions were used to identify significant video features associated with high TikTok user engagement. **Results:** We collected 560 e-cigarette-related TikTok videos for our data analysis. According to the 25 videos, the accuracy of ChatGPT-4 in identifying features ranged from 83% to 100%. Significantly higher user engagements were observed in videos with a background in a car (rate ratio = 3.79, 95% CI: 1.68-8.56) or private space (rate ratio = 2.27, 95% CI: 1.37-3.75) than in open space. Videos featuring females had significantly higher user engagement than males (rate ratio = 2.71, 95% CI: 1.88-3.92) or mixed gender (rate ratio = 2.24, 95% CI: 1.12-4.50). Videos showing casual (rate ratio = 1.71, 95% CI: 1.12-2.61) or leisure (rate ratio = 2.74, 95% CI: 1.57-4.79) lifestyles showed increased engagement. Videos featuring talking (rate ratio = 1.87, 95% CI: 1.21-2.89), vape tricks (rate ratio = 3.82, 95% CI: 1.71-8.52), or emojis (rate ratio = 1.89, 95% CI: 1.37-2.60) had higher user engagement. Conversely, videos with promotion contents (rate ratio = 0.58, 95% CI: 0.36-0.92), e-cigarettes (rate ratio = 0.72, 95% CI: 0.51-1.00), or cartoons/animations (rate ratio = 0.56, 95% CI: 0.35-0.88) had significantly lower engagement. **Conclusion:** TikTok video

features such as background, females, lifestyle, people taking, vaping tricks, and emojis could significantly improve user engagement. Our findings could guide the design of future videos in vaping prevention campaigns to improve social media user engagement.

FUNDING: Federal; FDACTP

POS4-127

PUBLIC PERCEPTION AND DISCUSSION OF VERY LOW NICOTINE CONTENT PRODUCTS ON TWITTER/X

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Significance: On June 21, 2022, the Food and Drug Administration announced a plan to propose a rule to reduce the addictiveness of cigarettes and other combusted tobacco products by establishing a maximum nicotine level, which aims to protect public health by reducing youth use, addiction, and death. This study aims to understand public perception and discussion of VLNC (Very Low Nicotine Content) on Twitter/X. **Methods**: From December 12, 2021, to January 1, 2023, we collected Twitter/X data related to VLNC using relevant keywords such as "vln", "low nicotine", and "reduced nicotine". After a series of pre-processing steps (such as the removal of duplicates, retweets, and commercial tweets), we identified 3,270 unique non-commercial tweets related to VLNC. To establish a codebook, we randomly selected 300 tweets for hand-coding by two human coders, including the attitudes toward VLNC (positive, neutral, and negative) and main topics (14 topics). The Cohen's Kappa statistic between the two coders reached over 70%, indicating a substantial interrater agreement. The rest of the tweets were single-coded according to the codebook. **Results**: We observed a significant peak in the discussion of VLNC on Twitter/X within four days of the announcement of the FDA's plans for the proposed rule on June 21, 2022. The proportion of tweets with a negative attitude toward VLNC was higher than those with a positive attitude, 32.45% (1061/3270) vs. 28.99% (948/3270). Among tweets with a positive attitude, the topic "Help smoking or vaping cessation" is dominant (53.69%, 509/948). Among tweets with a negative attitude, the topic "Same or more toxic of VLNC products" is the most popular topic (21.49%, 228/1061), followed by "VLNC products lead to more smoking" (20.36%, 216/1061), "Other" (18.10%, 192/1061), "VLNC is not a good method for quitting" (17.44%, 185/1061), "Ineffectiveness of VLNC policy due to the black market" (14.23%, 151/1061). **Conclusion**: Twitter/X users were more likely to have a negative attitude toward VLNC than a positive attitude, resulting from different perspectives about VLNC products. This study provided additional important evidence for the FDA to finalize a potential rule on regulating the nicotine content in tobacco products in the future.

FUNDING: Federal; FDACTP

POS4-128

PUBLIC DISCUSSIONS OF SMOKING CESSATION STRATEGIES AND CHALLENGES ON REDDIT

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Significance: Tobacco smoking kills over 8 million people worldwide each year. While most smokers are willing to quit, the success rate is very low, even with different treatments (such as nicotine replacement therapy). In this study, we aimed to understand personal experiences and difficulties during smoking cessation, especially potential effective strategies shared on social media (Reddit). **Methods:** From Reddit, we downloaded all submission posts from three Subreddits ("stopsmoking", "quittingsmoking", and "smokingcessation") between January 2018 and July 2022. After cleaning, we identified 50,746 relevant submission posts. By applying the Latent Dirichlet Allocation (LDA) modeling, we identified 13 main topics based on the coherence score and inter-topic distance. We further grouped them into three major categories. **Results:** From Reddit, we have identified three major categories, including "Smoking cessation strategies and advice" (34.94%, 17,731/50,746), "Difficulties and challenges faced during smoking cessation" (48.76%, 24,744/50,746), and "Health effects/symptoms during smoking cessation process" (16.30%, 8,271/50,746). Under "Smoking cessation strategies and advice", the most popular topic is "Community and friend support" (52.46%, 9,302/17,731), followed by "Hypnosis" (14.72%, 2,611/17,731), "Distraction using physical activity and music" (13.81%, 2,449/17,731), "Nicotine replacement therapy" (12.18%, 2,160/17,731). Within "Difficulties and challenges faced during smoking cessation", the most popular topic is "Social challenge and secret smoking" (24.81%, 6,139/24,744)), followed by "Withdrawal effect and asking for help" (21.61%, 5,348/24,744), "Emotional challenges" (17.81%, 4,407/24,744), and "Anxiety and depression" (12.31%, 3,045/24,744). The category "Health effects/symptoms during smoking cessation process" includes two main topics, "Physical symptoms such as cough, nausea, and dizziness" (85.78%, 7,095/8,271) and "Desire for smoking in the dream and morning time" (14.22%, 1,176/8,271). **Conclusion:** In this study, we have identified common difficulties and challenges during the smoking cessation process and, more importantly, successful smoking cessation strategies shared on Reddit. These results not only provide a deep understanding of the reasons for the low smoking cessation rate but also provide potential effective smoking cessation strategies, which could be useful for future smoking cessation programs.

FUNDING: Federal; FDACTP

POS4-129

USE OF FOREIGN, COUNTERFEIT, OR SMUGGLED TOBACCO BY PEOPLE WHO SMOKE IN AOTEAROA NEW ZEALAND: FINDINGS FROM THE 2022 EASE/ITC NEW ZEALAND SURVEY

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Significance: In January 2023, the New Zealand Parliament passed world-leading smokefree legislation which included significantly reducing the number of tobacco retailer outlets and mandating very low nicotine cigarettes. However, after a change of government in November 2023, the legislation is set to be repealed. One of the arguments made by opponents against introducing new smokefree measures is that they may fuel illicit trade. We analysed data from the 2022 EASE/International Tobacco Control New Zealand Survey to describe patterns of use of illicit tobacco products among people who smoke. **Methods:** We analysed data from 1,040 adults aged 18 years and older who smoke (698 smoked daily and 342 less than daily), including 415 Māori. Data were weighted to the New Zealand Health Survey to represent the national profile of people who smoke. We asked participants whether they had smoked cigarettes or tobacco that was likely foreign, counterfeit, or smuggled (FCS) in the past, if they were likely to in the future, and how easily accessible these products are. We excluded "Refused" and "Don't know" responses from questions about prior and future FCS use. We excluded "Refused" responses from the question about access. **Results:** 79.3% (95% CI 75.7-82.6%) of participants reported that they had not used FCS tobacco in the previous 6 months. 7.5% (95% CI 5.2-10.7) reported using it once, and 9.5% (95% CI 7.4-12.0) a few times. Only 2.4% (95% CI 1.6-3.6) reported using FCS many times, and 1.2% (95% CI 0.7-2.1) said they used it all the time. When asked how likely they were to purchase FCS tobacco over the next 6 months, 3.2% (95% CI 2.0-5.0) said they definitely would and 7.4% (95% CI 5.1-10.6) said it was very likely. 7.8% (95% CI 5.9-10.3) said quite likely, 17.2% (95% CI 14.4-20.3) said not likely, 22.3% (95% CI 19.2-25.8) said very unlikely, and 42.1% (95% CI 38.3-46.1) said definitely not. When asked how easy it was to buy FCS tobacco, 5.5% (95% CI 3.9-7.8) said it would be very easy, 17.9% (95% CI 14.9-21.3) said easy, 20.5% (95% CI 17.8-23.6) said difficult, 24.5% (95% CI 21.3-28.0) said very difficult, and 31.6% (95% CI 28.1-35.3) said "Don't know". **Conclusion:** Frequent use and definite or very likely intended use of FCS tobacco amongst people who smoke in Aotearoa New Zealand was low. This contradicts tobacco industry claims that the high price of smoked tobacco products in Aotearoa New Zealand would fuel illicit trade. These findings strengthen the case for retaining Aotearoa New Zealand's smokefree legislation.

FUNDING: Federal; State; Academic Institution

POS4-130

USE OF CESSATION AIDS TO QUIT SMOKING IN AOTEAROA NEW ZEALAND: FINDINGS FROM THE 2022 EASE/ITC NEW ZEALAND SURVEY

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Significance: In January 2023, the New Zealand Parliament passed world-leading smokefree legislation which included significantly reducing the number of tobacco retailer outlets and mandating very low nicotine cigarettes. However, after a change of government in November 2023, the legislation is set to be repealed and the regulatory arrangements for electronic cigarettes (ECs) are likely to change. It is thus more important than ever to understand patterns of quitting and the use of cessation support

aids and services in Aotearoa New Zealand. **Methods:** We analysed data from the 2022 EASE/International Tobacco Control New Zealand Survey; 438 adults aged 18 years and older who quit smoking in the past 2 years (197 quit in the past 12 months) and 1,040 adults who currently smoke (429 attempted to quit in the past 12 months). Data were weighted to the New Zealand Health Survey to represent the national profile of people who smoke or recently quit smoking. Participants were asked about their history of quit attempts and what aids and support they used in their most recent attempt to quit. "Don't know" and "Refused" responses were excluded. **Results:** 81.1% (95% CI 78.3-83.7%) of participants who smoke reported unsuccessfully trying to quit in the past. Among those who smoke and had attempted to quit smoking in the past 12 months, 60.0% (95% CI 53.9-65.9) used ECs as part of their most recent quit attempt, 43.2% (95% CI 37.4-49.3) used nicotine replacement therapy, 14.8% (95% CI 11.1-19.5) used prescription medicine, and 7.0% (95% CI 5.1-9.7) used heated tobacco products (HTPs). Among people who had successfully quit smoking in the last 12 months, 64.3% (95% CI 53.7-73.6) used ECs as part of their quit attempt, 30.7% (95% CI 22.8-40.0) used nicotine replacement therapy, 12.0% (95% CI 7.5-18.8) used prescription medicine, and 3.0% (95% CI 1.1-7.9) used HTPs. **Conclusion:** There were high levels of EC use and very low use of HTPs in recent successful quit attempts. Regulatory policies that impact on the availability, affordability, addictiveness, and palatability of these products could have significant consequences for people trying to quit smoking. Failure to quit smoking, despite the use of a range of cessation aids, demonstrates the importance of implementing other measures to create a supportive environment for smoking cessation, such as those included in Aotearoa New Zealand's smokefree legislation.

FUNDING: Federal; State; Academic Institution

POS4-131

THE IMPACT OF WHO FCTC ON THE NUMBER OF SMOKERS AGED 10-24 YEARS OLD: AN ANALYSIS USING ITSA WITH SYNTHETIC CONTROL GROUPS

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Significance: The smoking epidemic is responsible for more than 8 million deaths per year, making it the number one cause of evitable death worldwide. Because of this, the World Health Organization (WHO) has made its Framework Convention for Tobacco (FCTC). This international treaty aims to control the demand and supply of tobacco, the effectivity of which remains to be determined. Several past studies found no sizeable effect of the FCTC on several variables related to smoking (e.g., number of cigarettes consumed). However, none have considered counterfactual scenarios using synthetic control groups. **Methods:** We use Interrupted Time Series Analysis (ITSA) with synthetic control groups generated with countries that never ratified the FCTC. This method compares the differences between a change in the levels and trends after ratification in the number and the logarithm of the number of smokers below 25 years old (when consumption usually begins) between the treated and control groups. By doing this, we can compare the reality of the countries that ratified with the counterfactual scenario that they would never have done so. This is made not only for the world (excluding China, as it shows a peculiar pattern in smoking numbers) but also for countries by World Bank income levels and gender. The ratification year of each country is considered both in the treatment and control groups, allowing for comparability. **Results:** Analyzing only countries that ratified before 2010 (only a few countries representing less than 2% of the world smoking population ratified after 2010), we observed that, in the population under 25 years, if these countries had not ratified, they would have had about 25 million more smokers, ten years after ratification than there were (a reduction of 16.5% in the projected number of smokers). Of this reduction, 13.9 million smokers would be males (a decrease of 13% in the projected number of smokers), and 7.8 million would be females (a reduction of 20.4%). Regarding countries by income group, most of the relative reduction came from High-income countries, which would have reduced the number of potential smokers by 21.3% (about 6.2 million). In the case of Low and Middle-Income countries, such a reduction would have been 16% (about 19 million smokers). **Conclusions:** Considering that smoking kills about half to two-thirds of those who start early and don't quit, the FCTC may have avoided at least 12.5 million deaths in the first decade of implementation.

FUNDING: Nonprofit grant funding entity

POS4-132

MONITORING UNDERAGE AWARENESS, SUSCEPTIBILITY, AND USE OF NICOTINE POUCHES IN THE UNITED STATES

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Significance: Between 2019 and 2022, sales of nicotine pouches within the United States increased from 126 million units to 808 million units. Nicotine pouches are small, discrete, and available in a range of flavours which has raised concerns regarding the appeal of nicotine pouches to young people. In 2023, the National Youth Tobacco Survey (NYTS) estimated that 2.3% [95%CI: 1.8-3.0] of middle and high school students reported lifetime use of nicotine pouches and 1.5% [95%CI: 1.0-2.1] reported past 30-day use. As well as understanding the extent of underage use of nicotine pouches, it is important to understand every stage of tobacco product uptake from non-use to regular use among the entire underage population. The purpose of this study was to estimate awareness, susceptibility to use, lifetime use, and past 30-day use of nicotine pouches among 13- to 20-year-olds in the US. **Methods:** Subjects were a probability-based sample of 4,603 underage individuals who took part in the Tobacco Product Prevalence Study (TPPS) in June-July 2023. TPPS is an annual, online, cross-sectional, household-based study of tobacco product use in the United States. TPPS participants are recruited through Ipsos Insights LLC's KnowledgePanel and online opt-in panels. Four items were used to assess susceptibility to use nicotine pouches: (1) curiosity around trying, (2) intention to try soon, (3) intention to use in the next year, and (4) intention to try if a best friend offered. Subjects who answered anything other than "Not at all curious" to item 1 and "Definitely not" to items 2-4 were defined as susceptible to use nicotine pouches. Subjects who were not aware of nicotine pouches were classified as not susceptible to use. Estimates are reported for awareness, susceptibility to use, ever use and past 30-day use of nicotine pouches. **Results:** TPPS data from June-July 2023 estimated underage awareness of nicotine pouches as 39.2% [95% CI: 37.2-41.3], and 6.9% [95% CI: 5.9-8.0] of subjects were identified as being susceptible to use nicotine pouches. Lifetime use was estimated as 3.0% [95% CI: 2.4-3.8] and past 30-day use estimated as 1.7% [95% CI: 1.2-2.4]. **Conclusions:** Nicotine pouches are an emerging new tobacco product that has characteristics which may appeal to young people. It is important to monitor underage use of these products but equally important to understand the stages that precede use including awareness of and susceptibility to use these products.

FUNDING: Other

POS4-133

CHANGES IN THE USE PATTERNS OF CIGARETTES, NICOTINE VAPING PRODUCTS, AND HEATED TOBACCO PRODUCTS AMONG KOREAN ADULTS: FINDINGS FROM THE 2020 AND 2021 ITC KOREA SURVEYS

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Significance: While cigarettes remain the most commonly used nicotine product, heated tobacco products (HTPs) and nicotine vaping products (NVPs) have gained significant market share in the Republic of Korea (KR). Little is known about recent trends in the use patterns of these products in KR. We examined the relative prevalence of cigarettes, NVPs, and HTPs (including exclusive, dual, and triple use) among adults in the Republic of Korea (KR) in 2020 and 2021. **Methods:** Repeat cross-sectional data came from the 2020 (Wave 1: W1) and 2021 (Wave 2: W2) ITC Korea Surveys of a representative sample of Korean adults aged 19+ who smoked cigarettes (PWS, W1:n=3763; W2: n=3557), used HTPs (PWH, W1: n=1826, W2: n=1774), or vaped (PWV, W1: n=860; W2: n=736), all >=weekly. Weighted estimates were computed to assess changes in product use (including changes in exclusive, dual, and triple product use) between W1 and W2 among 7 groups who were: (1) smoking exclusively (PWSe); (2) smoking and using HTPs (PWS+H dual use); (3) smoking and vaping (PWS+V dual use); (4) vaping exclusively (PWVe); (5) using HTPs exclusively (PWHe); (6) vaping and using HTPs (PWH+V dual use); or (7) using all three products (PWS+H+V triple use). **Results:** From W1 to W2: (1) Among **PWS**, the proportion of PWSe increased from 78.1% to 87.6% (p<.001); PWS+H decreased from 10.4% to 7.2% (p<.001); PWS+V decreased from 6.8% to 3.4% (p<.001); PWS+H+V decreased from 4.7% to 1.8% (p<.001). (2) Among **PWH**, the proportion of PWHe increased from 13.0% to 30.7% (p<.001); PWS+H did not significantly change:

58.2% to 52.9% (p=.12); PWH+V did not significantly change: 3.8% to 2.8% (p=.57); PWS+H+V decreased from 25.0% to 13.6% (p<.001). (3) Among **PWV**, the proportion of PWVe increased from 13.3% (9.4,17.1) to 25.6% (18.4,32.8); PWS+V decreased from 56.7% to 45.7% (p<.05); PWH+V did not change: 4.4% to 5.0%; PWS+H+V decreased from 28.0% to 20.5% (p<.05). GEE model to test the W1-W2 changes in the PWVe were not possible due to small sample sizes. **Conclusions:** In KR, the proportion of adults who smoked exclusively, used HTPs exclusively, and vaped exclusively increased between 2020 and 2021, while the proportion of adults who used three products decreased. In both years, the vast majority of PWH and PWV were also smoking. The reasons for the shift from dual/triple to single product use are unclear, but may reflect changes in policies and/or product features/marketing.

FUNDING: Federal; Nonprofit grant funding entity; Other

POS4-134

DESIRE TO QUIT SMOKING AND SUPPORT FOR SMOKEFREE LEGISLATION AMONGST PACIFIC PEOPLES IN AOTEAROA NEW ZEALAND: FINDINGS FROM THE 2022 EASE/ITC NEW ZEALAND SURVEY

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Significance: Daily smoking prevalence in Aotearoa New Zealand is 6.8%. While smoking rates amongst Pacific peoples are falling, they have traditionally been much higher compared with non-Māori-non-Pacific. In January 2023, the New Zealand Parliament passed world-leading smokefree legislation to significantly reduce the number of tobacco retailer outlets, mandate very low nicotine cigarettes (VLNCs), and ban the sale of cigarettes to anyone born after 2008, creating a smokefree generation. However, after a change of government in November 2023, the legislation is set to be repealed. This study investigates desire to quit smoking and support for the smokefree legislation measures amongst Pacific peoples using data from the 2022 EASE/International Tobacco Control New Zealand Survey of people who smoke or recently quit smoking. **Methods:** We analysed data from 314 Pacific adults aged 18 years and older (40% smoke daily, 26% smoke less than daily, and 34% quit smoking in the last 2 years). Data were weighted to permit inferences to the national profile of people who smoke or recently quit smoking. "Refused" and "Don't know" (DK) responses were excluded from the question about desire to quit. For the questions on support for the legislation, answer options were "Strongly support" and "Support" (combined as "Support" for reporting), "Oppose" and "Strongly oppose" (combined as "Oppose"), and DK. "Refused" answers were excluded. **Results:** 24.9% (95% CI 21.8-28.4%) of participants who smoked wanted to quit a little, 28.3% (95% CI 25.1-31.9) wanted to quit somewhat, and 30.9% (95% CI 27.4-34.5) wanted to quit a lot. For all participants (including those who smoke and those who recently quit smoking), support for a substantial reduction in retail outlets was 57.8% (95% CI 51.3-64.1), opposition was 32.9% (95% CI 27.2-39.2), and DK was 9.2% (95% CI 6.2-13.5). Support for the introduction of VLNCs was 60.0% (95% CI 53.5-66.2), opposition was 21.7% (95% CI 16.9-27.6), and DK was 18.2% (95% CI 13.9-23.5). Support for a smokefree generation was 63.2% (95% CI 56.8-69.1), opposition was 27.9% (95% CI 22.6-33.9), and DK was 8.9% (95% CI 6.0-13.1). **Conclusions:** Well over 80% of Pacific participants who smoke wanted to quit. Overall, the upcoming measures have substantial support from Pacific peoples who smoke or recently quit smoking. These findings provide an important evidence-base from the Pacific community for retaining Aotearoa New Zealand's smokefree legislation.

FUNDING: Federal; State; Academic Institution

POS4-135

"I HAVE A LOVE HATE RELATIONSHIP WITH THIS PRODUCT": ANALYSIS OF YOUTUBE COMMENTS IN RESPONSE TO THE NETFLIX DOCUSERIES "BIG VAPE: THE RISE AND FALL OF JUUL."

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Background: On October 11, 2023 Netflix released a docuseries about the history of the electronic nicotine delivery system (ENDS) JUUL titled "Big Vape: The Rise and Fall of JUUL," that chronicled how JUUL became synonymous with ENDS use, and ultimately voluntarily pulled most of its flavored products from the market. **Objective:** We sought to systematically characterize NTP-related comments and replies in response to the docuseries trailer on the Netflix YouTube channel, both through qualitative human coding and through automated topic-modeling techniques. First, we systematically characterized nicotine and tobacco (NTP)-related comments and replies posted in response to the docuseries trailer on the Netflix YouTube channel. Second, we evaluated the effectiveness of automated topic-modeling techniques in comparison to traditional human-generated qualitative coding to determine if computational methods can accurately mirror and support the process of human coding. **Methods**: We extracted all comments and replies on the docuseries trailer on YouTube one month after the docuseries' release. Research assistants with extensive experience coding ENDS-related social media data manually double-coded the top 50% of comments (n=219) using a systematically-developed codebook that included codes for relevance, sentiment, and comment content. Simultaneously, we employed word clustering techniques including word-frequency analysis, bigram analysis, and structural topic modeling to identify the overarching topics on all comments (n=521). **Results:** Of the human-coded comments and replies, 86% (n=187) were relevant to NTPs. Approximately 33% (n=63) expressed pro-ENDS or pro-JUUL sentiment, 32% (n=59) expressed anti-ENDS or anti-JUUL sentiment, and 30% (n=57) expressed unclear sentiment. The most frequently content category was potential misinformation (i.e. stating an unverifiable claim or a scientifically invalid claim about NTPs; 35%, n=65). Approximately 20% (n=36) mentioned personal use of ENDS products. With topic modeling, the two lead authors identified 10 main topics that were somewhat different from most frequently human-coded categories. For example, some of the identified topics included comparisons with of ENDS to traditional cigarettes and THC products as well as mention of Big Pharma and Big Toboacco (28%, n=52 and 4%, n=8 of human-coded comments, respectively). **Discussion:** The study highlights the potential utility of analyzing YouTube comments related to an ENDS-related docuseries to identify public perceptions of these products and potential misinformation about them. It also highlights the benefits of integrating computational and human qualitative research to analyze social media perceptions of ENDS.

FUNDING: Federal


SRNT 2024
Podium Presentation 5: Rapids Session 2
Rapid Submissions

TRANSDISCIPLINARY RAPID FIRE SESSION 2

RAP2-1

THE IMPACT OF CDC'S TIPS CAMPAIGN ON AWARENESS AND QUIT ATTEMPTS AMONG PEOPLE WHO SMOKE MENTHOL CIGARETTES

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Significance: Menthol cigarettes contribute to tobacco-related health disparities in the U.S. The U.S. tobacco industry aggressively targets its marketing to certain populations. Mass media campaigns can effectively promote quitting while educating people about the harms of smoking menthol cigarettes. From 2012 to 2018, more than 16 million people attempted to quit smoking, and an estimated one million quit because of the U.S. CDC's *Tips From Former Smokers® (Tips®)* campaign. [Adverts to be shown during presentation]. **Methods:** Using data from the 2022 and 2023 *Tips* surveys, with respondents from a U.S. national longitudinal online sample of adults who currently smoke, we estimated prevalence of menthol cigarette smoking among adults stratified by a range of demographic characteristics. We then estimated percentages of adults who smoke menthol cigarettes who reported seeing *Tips* ads to provide estimates of campaign reach. We used a repeated measures longitudinal regression model to analyze the relationship between increased frequency of *Tips* exposure and the odds of making a quit attempt at follow-up. All data and statistical analyses were weighted to reflect demographic characteristics of US adults who currently smoke using data from the National Health Interview Survey. **Results:** Among the 3,900 adults who currently smoke cigarettes, 36.7% reported usually smoking menthol cigarettes. In 2023, menthol cigarette smoking was highest among adults who are non-Hispanic Black (79.6%). Past 3-month quit attempts were significantly higher among adults who smoke menthol cigarettes (51.5%) compared to people who smoke non-menthol cigarettes (36.9%). An estimated 73.5% of people who smoke menthol cigarettes had seen one or more *Tips* TV or digital video ads in the past 3 months. Among people who smoke menthol cigarettes, increased frequency of seeing *Tips* ads during the 2022 campaign was associated with increased odds of reporting a quit attempt in the past three months at follow-up (Odds Ratio = 1.24, p < 0.01). There were also significant and positive relationships between *Tips* exposure and past 3-month quit attempts among non-Hispanic Black (OR = 1.39, p < 0.03) and Hispanic (OR = 1.90, p < 0.02) people who smoke. **Conclusion:** Seeing *Tips* ads was associated with increased attempts to quit smoking among people who smoke menthol cigarettes. These results indicate that the *Tips* campaign successfully reaches adults who smoke menthol cigarettes and promotes quit attempts.

FUNDING: Federal

RAP2-2

IMPLICIT FLAVOR NAMES ON ENDS PACKAGING MAY RESULT IN MISPERCEPTIONS

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Significance: Tobacco industry often uses implicit, concept flavor indications (e.g., "tropical breeze" "splash ice") to enhance product appeal by suggesting unique sensory experiences. This study examined how explicit or implicit flavor names and visuals on electronic nicotine delivery systems (ENDS) packaging may result in differential flavor perceptions. **Methods**: 564 US adults (50% current ENDS users) were recruited via Qualtrics online panel. Participants were randomly assigned to 5 conditions showing different images of mint/menthol-flavored ENDS packages with a fictitious brand "Jolly Bar": 2x2 (flavor visual, e.g., mint leaves: present (w/) vs. not (w/o); flavor name: explicit [e.g., mint, menthol] vs. implicit [e.g., fresh, ice]) and control condition (plain packaging with explicit flavor names). In each condition, participants viewed 4 images of ENDS packages and described the perceived tastes. All packages were colored in bright green, reflecting many mint-flavored ENDS products on market, except in the control condition (olive brown). We scored how many products participants correctly perceived the flavor as mint/menthol (range:0-4). We also counted how many products participant perceived as fruit or candy flavored. **Results**: Participants seeing ENDS with implicit names were least likely to correctly identify the flavor (w/visual: *M*=1.99, *SD*=1.43; w/o visual: *M*=0.91, *SD*=1.31), compared to those who saw products with explicit names (w/visual: *M*=3.04, *SD*=1.25; w/o visual: *M*=2.81, *SD*=1.39; plain packaging: *M*=2.81, *SD*=1.44), $F(4,558)=47.48$, $p<.001$. Those who saw ENDS with implicit names w/o flavor visuals were most likely to expect fruit (e.g., "green apple" "lime") or sweet flavors (e.g., "Jolly rancher" "hard candy"), *M*=1.54, *SD*=1.51. Other conditions featuring either explicit name or mint-related visuals yielded a significantly lower likelihood of perceiving fruit or sweet flavors (*M*s=0.11-0.41), $F(4,558)=47.32$, $p<.001$. 9 participants thought some products might taste like "weed" or "marijuana," especially when they saw the implicit flavor name "green" accompanied with visuals of mint leaves, probably misperceived as cannabis plants. **Conclusion**: Implicit flavor names on ENDS packaging have led to flavor misperceptions, such as fruit or candy flavors, potentially attracting youth and undermining efforts to reduce their vaping. Continuous surveillance of ENDS marketing practices and strict regulation around implicit flavor names are crucially needed.

FUNDING: Federal; FDACTP

RAP2-3

SELECTIVE REDUCTION OF SOCIOECONOMIC DISPARITIES IN THE EXPERIMENTAL TOBACCO MARKETPLACE: EFFECTS OF FLAVOR RESTRICTIONS AND NOVEL TAX PROPOSALS

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Significance: Cigarette smoking accounts for >30% of the socioeconomic gap in life expectancy. Flavored restrictions and taxation claim to promote equity; however, few studies have experimentally compared their effect across socioeconomic statuses (SES). This presentation utilizes the Experimental Tobacco Marketplace (ETM) to understand the impact of cigarette and e-cigarette flavor restrictions (Study 1); tobacco parity (i.e., equal taxes on all tobacco products), and harm-reduction (i.e., taxes proportional to the level of harm) tax proposals (Study 2) on tobacco-related socioeconomic disparities. Methods: In Study 1, participants (N=275; lower and higher SES) completed four conditions in the ETM. Conditions were presented in a 2x2 factorial design (cigarette flavors restricted or unrestricted and e-cigarette flavors restricted or unrestricted) with increasing cigarette prices across trials. In Study 2, participants (N=41; low, medium, and high SES) completed two conditions with increasing tax magnitudes across trials. Products were placed in three tax tiers according to each proposal's goal. Results: Study 1 showed: 1) SES differences in cigarette, e-cigarette, and NRT purchases under unrestricted policies, with lower SES showing higher cigarette demand (p<0.001) and lower e-cigarette (p<0.001) and NRT substitution (p=0.026) than higher SES, 2) cigarette restrictions decreased cigarette (p<0.001) and increased NRT (p=0.008) purchases among lower SES, but no significant changes among higher SES, 3) decreased SES differences in cigarette demand under cigarette restrictions (p=0.089), but persistence under e-cigarette restrictions (p<0.001) or their combination (p=0.003), 4) persistence of SES differences in e-cigarette purchases under all restrictions (cigarette; p=0.002, e-cigarette and combination; ps<0.001), and 5) waning of SES differences in NRT purchasing under all restrictions (cigarette; p=0.351, e-cigarette; p=0.065, combination; p=0.614). In Study 2, the low SES exhibited greater substitution of medium-tax tier products than the high SES in the harm-reduction tax (p=0.023). Conclusion: Flavor restrictions and tobacco taxation differentially affected individuals based on SES. A menthol cigarette restriction and the harm reduction tax proposal showed the largest effects on decreasing disparities. These findings highlight the utility of the ETM in investigating the impact of policy on tobacco-related socioeconomic inequality.

FUNDING: Federal; State

RAP2-4

EXPLORING MENTHOL USE POST THE CALIFORNIA FLAVOR BAN AMONG AFRICAN AMERICAN LIGHT SMOKERS: A QUALITATIVE FOCUS GROUP STUDY

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Significance Despite comparable rates of tobacco use, African Americans (AA) are more likely to die from tobacco-related diseases, as compared to other racial/ethnic groups. In 2023, California implemented a flavor ban, restricting the sale of menthol cigarettes, which are disproportionately used by AA smokers. Little is known about tobacco use behaviors post the ban, particularly among light smokers (smoking ≤10 cigarettes per day (CPD)), who comprise 50% of the AA smoking population. To inform effective cessation interventions among AA light smokers, the objective of the current study

was to explore AA light smokers' experiences, perceptions and tobacco use behaviors following the California menthol ban. **Method** Using a semi-structured interview guide, six focus groups were conducted among 24 AA light smokers (9 men and 15 women; 45.2 ±12.4 years old), who self-reported smoking ≤10 CPD. Audio-recorded interviews were transcribed, de-identified and qualitatively analyzed to identify major themes surrounding menthol ban. Dedoose helped to organize analysis. **Results** Overall, the majority (87.5%) of participants preferred menthol cigarettes and half (50%) reported making at least one quit attempt in the last 12 months. Approximately, two thirds (66.6%) reported concurrent use of alternative tobacco products, including blunts, flavored hookah and electronic cigarettes. Participants revealed feelings of racial discrimination aimed against AA smokers as a result of the ban, rejecting ideas of being protected by the legislature. Qualitative analysis revealed the following themes related to the menthol ban: (a) continuing to smoke despite ban-induced menthol cigarette price increases; (b) perceiving AA smokers as a target of tobacco legislature; and (c) endorsing preference for menthol but continuing nonmenthol cigarette smoking. In response to the ban, participants reported purchasing menthol cigarettes from in- or out-of-state connections or illicit markets. **Conclusion** Despite a state-wide ban restricting the sale of menthol cigarettes, AA light smokers continued smoking menthol and nonmenthol cigarettes, and concurrently used alternative tobacco products. While this ban begins to address health inequities experienced by AA smokers, findings suggest sentiments of resentment towards lawmakers' intent. To ensure health equity and reduce tobacco-related disparities, future studies should focus on tailored cessation intervention programs, specific to the needs of AA light smokers.

FUNDING: State

RAP2-5

CALIFORNIA YOUTH AND YOUNG ADULTS REPORT MORE DIFFICULTY OBTAINING FLAVORED TOBACCO PRODUCTS AT LOCAL RETAIL STORES FOLLOWING PASSAGE OF A STATEWIDE FLAVOR POLICY

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Significance: California implemented a policy restricting the sale of flavored tobacco products in December 2022. This study sought to identify whether an indicator of policy enforcement - perceived difficulty of purchasing products at retail point of sale - changed significantly among California youth and young adults pre- and post-policy implementation. The study includes a national sample as a comparator. **Methods:** Data were drawn from Waves 1 (W1) and 2 (W2) of the Tobacco Epidemic Evaluation Network Study (TEEN+), an address-based, longitudinal cohort of youth and young adults (13-24 years at W1) in the US with a representative oversample in California. W1 and W2 fielded pre- and post-implementation of the California policy, respectively (W1: Jul-Oct 2022; W2: Mar-Jun 2023). At both waves, respondents reported perceived difficulty of purchasing menthol cigarettes, flavored cigars and e-cigarettes from a local retailer. Responses on a 4-point Likert-type scale ranged from 1 (very hard) to 4 (very easy) and were dichotomized for analysis (1=very/somewhat hard, 0=very/somewhat easy). The analytic sample included respondents with data at W1 and W2 (N=1,744 in California; N=5,916 nationally less California). Current tobacco product use was defined as past 30-day use at W1. Analyses were restricted to W1 respondents who currently used (a) cigarettes, (b) cigars or (c) e-cigarettes. Weighted GEE analyses were adjusted for sociodemographic characteristics and compared perceived difficulty of purchase reported at W2 to W1 for (a) menthol cigarettes (n=61 California, n=271 national) (b) flavored cigars (n=41 California, n=255 national) and (c) flavored e-cigarettes (n=133 California, n=722 national). **Results**: California respondents who used each product type at W1 had significantly greater odds of reporting perceived difficulty of purchase at W2 compared to W1 for (a) menthol cigarettes (aOR: 4.05, p=0.018); (b) flavored cigars (aOR: 3.83, p=0.036); and (c) flavored e-cigarettes (aOR: 2.08, p=0.035). Nationally, no significant differences in perceived difficulty were observed between W1 and W2 for menthol cigarettes or flavored cigars. National respondents who used e-cigarettes at W1 had higher odds of perceiving difficulty of purchase of flavored e-cigarettes at W2 (aOR: 1.50, p=0.025) compared to W1. **Conclusions:** The results of this study indicate that California's restrictions on flavored tobacco product availability were perceptible shortly after policy implementation among youth and young adults who used cigarettes, cigars or e-cigarettes prior to policy passage. Similar effects were not observed at a national level for menthol cigarettes or flavored cigars.

FUNDING: Nonprofit grant funding entity

RAP2-6

CHANGES IN CALIFORNIA'S E-CIGARETTE AND CIGARETTE SALES FOLLOWING A LAW PROHIBITING FLAVORED TOBACCO PRODUCTS SALES

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Significance: California began implementing a sales restriction on all non-tobacco flavored e-cigarettes, cigarettes, and cigars (except premium cigars) on December 21, 2022. Cigarette manufacturers rapidly introduced "non-menthol" cigarette products containing synthetic coolants and/or marketed with signifiers of flavor such as colors, color names, and descriptors implying cooling sensations. We assessed changes in retail sales of e-cigarettes and cigarettes following implementation of the law, overall and by flavor and product type. *Methods:* U.S. e-cigarette and cigarette point-of-sale data were licensed from Circana (California Multi Outlet + Convenience, Week Ending January 30, 2022 through Week Ending May 21, 2023). E-cigarettes were coded by flavor and device type. The data include information on whether cigarettes are regular/non-menthol or menthol. We conducted an online search to identify cigarette products with the aforementioned signifiers of flavor (e.g., ingredient listings with the synthetic coolant WS-3, blue or green packs, words such as "crisp," "blue" or "green"). Consistent with previous studies, e-cigarette unit sales were standardized as one unit equal to five prefilled cartridges, one disposable device, or one e-liquid bottle. One pack of 20 cigarettes equaled one cigarette unit. *Results:* During January 29, 2023-May 21, 2023, 2.6 million e-cigarette units were sold in California, a 43.0% decline from the same period the year prior; 130 million cigarette packs were sold, a 15.9% decline. Non-tobacco-flavored e-cigarette sales decreased by 69.7% (2.3 million units) while tobacco flavored e-cigarette sales increased by 18.4% (0.2 million units). Of total e-cigarette unit sales, 61.0% were tobacco-flavored, 37.4% were non-tobacco flavored (of which 90.1% were disposables), and 1.6% were undefined. Menthol-labeled cigarette sales decreased by 94.4% (31.5 million units), while sales of cigarettes labeled as non-menthol increased by 5.7% (6.9 million units) (of which 8.6% had flavor signifiers and/or cooling chemicals). All estimates are based on CDC Foundation calculations. Conclusions: California's statewide flavor law was associated with a decline in unit sales of e-cigarettes and cigarettes. Enhanced enforcement, including against cigarettes that signify flavor, could accelerate these declines.

FUNDING: No external funding reported

RAP2-7

EXAMINING THE EFFECT OF E-LIQUID STANDARDISED PACKAGING AND LIMITED FLAVOUR AND BRAND DESCRIPTORS AMONG YOUTH IN GREAT BRITAIN

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Significance: E-cigarette use among youth has increased in Great Britain (GB). Many vaping products in GB feature bright colours, novel brand names, and flavour descriptions, which may be particularly appealing to youth. This study examined the impact of standardising e-liquid packaging (including limiting brand and flavour descriptors) on interest in trying e-liquids among youth in GB. **Methods:** A between-subjects experiment was included in the Action on Smoking and Health Smokefree GB Youth 2021 online survey (age 11-18; N=1628). Participants were randomised to view a set of three images of e-liquids from one of three packaging conditions: (1) original branded (control), (2) white standardised (with original brand and flavour names), or (3) white standardised with brand codes and limited flavour descriptors. Participants were asked to select which e-liquid they perceived people their age would be most interested in trying. Selecting any of the three products was coded as "interest in trying", other available response options were "no interest" or "don't know". Multinomial regression models examined how youth reporting (a) 'interest in trying' (i.e., selected any e-liquid) or (b) 'don't know' compared with (c) 'no interest' across the different packaging conditions. **Results:** Compared with original branded packaging, youth had lower odds of reporting people their age would be interested in trying the e-liquids in white standardised packs with brand codes and limited flavour descriptors (56.3% vs 39.2%, AOR=0.48[95%CI=0.36-0.65], p<.001), but not white standardised packs with original descriptors (56.3% vs 48.9%, AOR=0.82[95%-CI=0.61-1.12], p=.214). Youth had higher odds of reporting interest in trying the e-liquids in white standardized packs with original descriptors compared to white standardized

packs with brand codes and limited flavour descriptors (48.9% vs 39.2%, AOR=1.70, 95% CI= 1.26-2.30, p<.001). **Conclusion:** Standardized e-liquid packaging which also limits flavour and brand descriptors may reduce the interest of trying e-liquids among youth.

FUNDING: Other

RAP2-8

TRENDS IN E-CIGARETTE ADVERTISEMENTS FOLLOWING MAJOR POLICY CHANGES IN THE U.S.: THE WARNING LABEL REQUIREMENTS, TOBACCO 21, AND THE FLAVOR ENFORCEMENT POLICY

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Significance The U.S. has recently implemented several regulatory measures to govern the sale and marketing of e-cigarettes. In 8/2018, new nicotine addiction warning label requirements for e-cigarette ads became effective. In 12/2019, the minimum legal age to purchase nicotine products was raised to 21 (T21). In addition, in 1/2020, a flavor ban essentially limited the sale of e-cigarettes to only tobacco and menthol flavors. This content analysis examines trends in e-cigarette advertising strategies during these U.S. policy changes for three leading brands. **Methods** Mobile, online, outdoor, and print ads of Vuse, Njoy, and Logic from 1/1/2016 to 8/11/2022 were obtained through Numerator Ad Intel (N=615). Two coders coded the ads for warning label compliance, youth appealing features (e.g., young models, sports, music, sex appeal, etc.), and non-menthol non-tobacco flavors (e.g., images of food, characterizing words like sweet or fruity, etc.). Descriptive statistics were used to examine trends in advertising strategies over time. Chi-square tests were used to compare ads before and after each policy implementation. **Results** The warning label requirement triggered timely compliance in all three brands. The proportion of ads containing a health warning increased from 21.7% in the year preceding the policy implementation to 96.7% the next year (chi square [1, N=235] =144.5, p<.001). Youth appeals were prevalent regardless of the implementation of T21. Ads containing youth appeals increased from 20.5% in the year before T21 to 44.8% after T21 (chi square [1, N=314] =21.28, p<.001). No significant change was found in the use of flavor cues in the ads between the year before the flavor ban (18.6%) and the next year (25.5%; chi square, [1, N=310] =2.13, p=.14). **Conclusion** The U.S. policy for nicotine warnings on e-cigarette ads gained immediate compliance. In contrast, the ads showed a gradual reduction in the promotion of flavored varieties and the use of flavor cues after the flavor restrictions were enforced. Despite a U.S. federal T21 policy, the use of youth appeal in e-cigarette ads persisted. Exposure to e-cigarette ads is a well-known risk factor for e-cigarette use among youth. Findings from the study call for continued close monitoring of youth appeal in e-cigarette ads on all platforms to inform potential policies that focus on explicitly restricting youth-targeted marketing.

FUNDING: Federal; FDACTP

RAP2-9

PREVALENCE AND TRENDS IN RECALL OF PICTORIAL HEALTH WARNING LABELS AMONG ADULTS WHO SMOKE IN CANADA

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Significance: Canada was the first country to implement pictorial health warning labels (PHWLs) on cigarette packages in 2001. Another set of PHWLs was implemented in 2012; however, no new PHWLs have been implemented since then. It is unclear which PHWL messages are the most salient, and whether this has changed over time. **Methods:** Data were collected from two online samples of Canadian adult smokers: Sample 1 from 2012-2015 (n=3701) and Sample 2 in 2023 (n=3000). Uncued recall was assessed by asking participants to describe each health warning they remembered without looking at their cigarette packages, with 10 open response text boxes to record up to 10 different warnings. For coding responses, we grouped all PHWLs implemented in 2001 and 2012 into mutually exclusive themes: 6 themes from 2001, 13 themes from 2012, and 9 themes present in both implementation periods. We also coded whether participants remembered a quote from a specific PHWL message. Three people coded 15% of each sample with high interrater reliability (sample 1: alpha=0.93; sample 2: alpha=0.96), and the remaining data were coded individually by these coders. Frequencies in codes by sample period were compared using chi-squared tests. **Results:** Uncued recall was higher for all themes in Sample 1 than in Sample 2 (p<0.05) except for the 2001 theme 'chemicals', where recall was similar (2% & 2%, respectively). The highest recall within both samples was for PHWL themes implemented in both 2001 and 2012: smoking harms pregnancy (35%, 15%), lung cancer (33%, 24%), and mouth disease (38%, 16%). Of the 2001 PHWL themes, recall was highest for mouth disease-teeth (12%, 6%) and impotence (12%, 4%). Of the 2012 themes, recall was highest for throat cancer (17%, 6%) and blindness (13%, 5%). In Sample 2, participants were more likely to recall a message with an unspecified form of cancer than in Sample 1 (14% & 31%). In Sample 1, 10% of participants recalled a specific PHWL quote, whereas only 2% did so in Sample 2. **Conclusion:** The three most prevalent PHLW themes recalled were consistent between 2012-2015 and 2023 and were implemented in both 2001 and 2012; however, people recall of themes and specific quotes declined between 2012-2015 and 2023. These results suggest that more frequent rotation of PHWLs may be necessary to prevent wear-out, but that perhaps redesigning and emphasizing similar health outcomes could improve recall.

FUNDING: Federal

RAP2-10

CHARACTERIZATION OF THE LIQUID COMPOSTION OF THE STANDARDIZED RESEARCH ELECTRONIC CIGARETTE SREC AND NJOY ACE

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The National Institute on Drug Abuse (NIDA) and NJOY, LLC developed a Standardized Research Electronic Cigarette (SREC) intended for use in NIH-funded clinical studies. SREC is a pod system electronic cigarette, available in four flavors: rich tobacco, menthol, blueberry and watermelon, each with zero or 5% nicotine liquid concentration. It is designed to "produce a consistent, well-characterized aerosol." Nearly identical in outward appearance to the NJOY Ace, some researchers may assume that SREC are different only in name. This study aimed to characterize the liquid composition SREC (menthol, 0% and 5% nicotine) and NJOY Ace (menthol, 5% nicotine). Nicotine (total, protonated and freebase), menthol, and propylene glycol/vegetable glycerin (PG/VG) were measured using gas-chromatography flame ionization detector and gas-chromatography mass-spectrometry (GC-MS). In addition, a non-targeted analysis (NTA) for flavor chemical screening was conducted using GC-MS. Liquid taken from three products of each type were analyzed.The average nicotine concentration for 5% SREC and NJOY Ace cartridges was 57 and 58mg/ml, respectively. Nicotine was predominantly protonated for both products, with approximately 99% for SREC and 89% for NJOY Ace in the protonated form. No nicotine was detected in the 0% SREC. PG/VG ratios were comparable across all three liquids, and roughly equal to 50/50. Notably, the menthol concentration in 0 and 5% SREC (7.4 and 8.6mg/ml) were greater than in the 5% NJOY Ace (3.2mg/ml). The non-targeted analysis revealed that SREC and NJOY Ace exhibited some common flavor chemicals, including alfa pinene and benzyl alcohol. However, each product also had distinctive chemical profiles. For example, ethyl butyrate was exclusively identified in SREC liquids, whereas cineole was unique to the 5% NJOY Ace menthol. Acetylpyrazine and tetramethylpyrazine were only detected in 0% SREC samples.In summary, the 5% menthol containing SREC and NJOY Ace differed in terms of menthol concentration, nicotine form, and flavor additives. On the other hand, both contained similar nicotine concentrations and PG/VG ratios. Importantly, pyrazines, which are associated with chemosensory effects in tobacco smoke, were exclusive to the 0% SREC. While NJOY Ace and NIDA SREC have similar outward appearances, their liquid formulations differ in important ways that can impact sensory experience, and potentially, use and exposure patterns.

FUNDING: Federal; FDACTP


SRNT 2024
Podium Presentation 6: Rapids Session 3
Rapid Submissions

TRANSDISCIPLINARY RAPID FIRE SESSION 3

RAP3-1

ANTERIOR INSULAR IN CIGARETTE SMOKERS WITH NICOTINE DEPENDENCE

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Background: The insula is recognized for its complex heterogeneity and involvement in a multitude of functions through its connectivity with distinct cerebral regions. Subdivisions of the insula display unique resting-state FC patterns with specific brain areas, each possessing a distinct functional implication in the context of chronic cigarette smoking. This study endeavors to examine the dynamic functional connectivity (dFC) alterations within specific insular subdivisions in smokers. **Methods:** Data were collected via resting-state BOLD imaging from 31 smokers diagnosed with nicotine dependence and 27 age-matched non-smokers, all of whom were right-handed and aged between 18 and 45. Three bilateral regions within the insula (dorsal, ventral, and posterior) were pinpointed as seeds for the ensuing analysis. We employed a sliding window methodology to capture the dFC metrics of these insular seeds. To differentiate between smokers and non-smokers on the basis of the atypical insular dFC, we implemented a support vector machine (SVM)—a prevalent machine learning classification tool. The SVM model underwent training using a leave-one-out cross-validation (LOOCV) strategy, focusing on the significant dFC variance disparities across the groups. **Results:** We found that smokers displayed a reduced dFC variance between the left ventral anterior insula and regions such as the right superior parietal cortex and the left inferior parietal cortex. Contrastingly, there was an escalation in dFC variance from the right ventral anterior insula to the right middle cingulum cortex when compared with non-smokers. Additionally, marked dFC variations in the right dorsal insula and right middle temporal gyrus were observed in smokers. A correlation analysis revealed that heightened dFC between the right dorsal insula and right middle temporal gyrus was linked with prolonged smoking durations. The SVM based on altered insular subdivision dFC successfully classified smokers from non-smokers with 89.66% accuracy, 96.30% sensitivity, and 83.87% specificity. The dynamic characteristics of the insula, profound in the discovery, could represent innovative and unbiased methods to diagnose nicotine dependence. **Conclusions:** It was noted that nicotine-dependent smokers exhibit variations in dFC between the anterior insula and several cortical regions, including the inferior parietal cortex, superior parietal cortex, middle cingulum cortex, and middle temporal gyrus. The irregular dFC patterns signify the potential to serve as diagnostic markers for nicotine addiction. The insights acquired underscore the importance of insula's dynamic characteristics as pivotal to the underlying mechanisms of nicotine addiction and propose that these characteristics may potentially stand as critical neuromarkers for addiction treatment strategies.

RAP3-2

DEVICE CHARACTERISTICS AND NICOTINE DOSE ACROSS A VARIETY OF ENDS PRODUCTS

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Significance: Electronic nicotine delivery systems (ENDS) can vary in many ways, including device power, liquid nicotine concentration and PG/VG ratio. ENDS heterogeneity and its relationship to nicotine emission rate ("nicotine flux") is, along with an individual's puff duration, key to understanding the nicotine dose they deliver. **Methods:** Sixty-eight participants (62% female, 38% male; 87% 18-39 years) attended one lab session where information about their ENDS was obtained and their puffing behavior measured during a 25-min *ad lib* use period. Nicotine flux was determined based on device and liquid characteristics. The nicotine dose delivered by each puff was calculated for each participant by multiplying their ENDS nicotine flux by their mean puff duration. **Results:** Participants' ENDS were open-system (44%), pod-based (37%), or disposable (19%). For those who used nicotine-containing liquid, nicotine concentration ranged from 3-50 mg/ml (N=66; mean=33.0 mg/ml, SD=19.9). Power (N=51) ranged from 3.3-200W (mean=31.8W, SD=37.5). Power and liquid nicotine concentration were correlated inversely (r=-0.69; $p<0.05$) and power differed across device types, with higher power in open-system ENDS (N=29; mean=51.1W, SD=40.1) compared to pod/disposable ENDS (N=22; mean=6.3W, SD=3.4). Lower nicotine concentrations were observed in open systems (N=28, mean=15.2 mg/ml, SD=15.1) compared to pod-based/disposable (N=38, mean=46.1 mg/ml, SD=10.6, all *p*s<.05). Average nicotine flux was 80.3 µg/sec (SD=67.9), average puff duration was 2.5s (N=62; SD=1.2), and average number of puffs was 23.7 (SD=13.2) during the use period (no significant differences across devices). The mean per-puff dose of nicotine was 218 µg (SD=262.4). In comparison, combustible cigarettes have a mean flux of 79 ug/s, with an average nicotine dose of 158 µg/puff (assuming 2s puffs). **Conclusions:** ENDS vary by device characteristics and liquid constituents; puffing behavior of people who use ENDS also varies by individual. Results from the current study demonstrate that some ENDS are likely delivering more nicotine on a per-puff basis than a combustible cigarette. However, if the ENDS devices in this study were limited to a 2s mean puff duration, the maximum per-puff nicotine dose would have been 152.7 µg, comparable to the average for a cigarette. Additional studies with plasma nicotine measurement are needed to determine actual nicotine delivery and any behavior change related to limits on puff duration.

FUNDING: Federal; FDACTP

RAP3-3

A PEER NAVIGATOR MODEL FOR PEOPLE WITH HIV WHO SMOKE INCREASES POSITIVE SOCIAL SUPPORT FOR QUITTING

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Background: Smoking prevalence among people with HIV (PWH) is high (40-50%) compared to the general U.S. population (13%), and quit rates are disappointingly low. PWH report that because smoking is common in their social networks, they lack social support for quitting. **Aims:** We developed a tailored intervention for PWH who smoke entitled, *Peer navigation for social support for smoking cessation* (PNSS-S). This 24-week randomized pilot study examined feasibility, acceptability, and initial efficacy. **Methods:** Participants were randomized to PNSS-S or to standard care (SC; i.e., nurse-provided recommendation to quit and a quit line referral). All participants met once with a clinic nurse to discuss quitting strategies and FDA-approved medications for cessation. Participants in the PNSS-S condition received 12 weekly phone calls from a peer navigator (PN) who was trained in standard smoking cessation counseling. Assessments were conducted at baseline, and at 4, 12, and 24 weeks. **Results:** Sixty-four participants were enrolled: mean age was 54.5 years (SD 10.9); 60% White, 23% Hispanic; and 41% female. Mean cigarettes per day was 16.0 (SD 9.1). Mean total score on the Fagerström Test for Cigarette Dependence was 5.8 (SD 2.1), indicating a moderately high level of dependence. Average time smoking was 35.5 (SD 12.5) years; 14.9 (SD 44.8) lifetime quit attempts. Completed mean study sessions was high indicating excellent feasibility, and did not differ by condition ($p>.05$). Acceptability was high: 91% of participants completed the study. Mean satisfaction scores differed significantly by condition: PNSS-S (29.1 [SD 3.0]), control (25.8 [SD 4.1], $p = .001$; scale range: 8-32). A significant increase in positive social support from baseline to week 12: 17.4 (SD 11.4) to 25.1 (SD 12.2), ($t=2.4$, df 26, $p = .01$) (scale range: 0-40) was seen in PNSS-S but not in the control group, ($t = 1.11$, df 29, $p=.24$). Half (52%) of all participants made at least one quit attempt. **Conclusion:** Cross-training HIV clinic-based PNs in smoking cessation is feasible. Engaging in peer-based smoking cessation counseling is acceptable to PWH and increases social support. Quit attempts were reported by half of our sample regardless of the condition. Further study is needed.

FUNDING: Federal

RAP3-4

BASELINE FINDINGS FROM THE BABYBREATHE TRIAL - PREVENTING RETURN TO SMOKING POSTPARTUM

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Background: The majority of people who manage to quit smoking in pregnancy relapse postpartum, with most relapse occurring in the first six months after a baby is born. BabyBreathe™ is a complex intervention offering targeted one-to-one behavioural support in the community, delivered either face-to-face or remotely, alongside digital, remote and pharmacological support in the postpartum period. Recruitment completed in August 2023. **Aims:** To report baseline and first follow up findings from a randomised controlled trial to compare the BabyBreathe™ intervention with usual care. This presentation will focus on recruitment and follow up data collection strategies, their relative effectiveness, and initial outcomes. **Methods:** Multi-centre randomised controlled trial (RCT). The trial has recruited people who quit smoking for or during pregnancy across the UK (total n=887). Recruitment methods included remote screening of midwifery records, direct phone contact, advertising, identification by other health care professionals, and paid-for online targeted recruitment. The BabyBreathe intervention starts in late pregnancy and continues postpartum. Follow up is at 6 and 12 months from the date of birth. The primary outcome is 12 month CO verified sustained smoking abstinence. **Results:** 887 participants were recruited and randomised. Mean age was 29, and 91% of the sample were of white ethnic identity. 45% were co-habiting, with 29% married. To date, 277 people had been followed up to 12 months (ongoing). Of those reporting abstinence, 84% had completed biochemical verification. Across groups, biochemically validated smoking abstinence was 47%. 54% self-reported continuous abstinence. Most participants quit smoking during early pregnancy, and 35% live with a partner who was also smoking. Approximately 40% had used an e cigarette to support them with smoking cessation. **Conclusions**: Continued support for the positive behaviour change of smoking cessation during pregnancy is vital to ensure maximum long term health benefits to parents and infants are realised . The Babybreathe trial has recruited flexibly and remotely during the covid-19 pandemic. The intervention can be delivered remotely successfully.

FUNDING: State

RAP3-5

DOES USE OF SMOKING CESSATION PHARMACOTHERAPIES DURING PREGNANCY INCREASE THE RISK OF CONGENITAL MALFORMATIONS IN INFANTS? FINDINGS FROM A MULTI-NATIONAL STUDY

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Significance: The pharmacotherapies nicotine replacement therapy (NRT), varenicline, and bupropion are the most effective smoking cessation strategy available. Using population-based data from four countries, we assessed the risk of major congenital malformations (MCM) among infants born to women using these pharmacotherapies during pregnancy, as prior studies have been too small to provide clear safety evidence in terms of MCM risk. **Methods:** Routinely collected birth records (2003-2020) from New South Wales (Australia), Norway, Sweden, and New Zealand were linked to records of filled prescriptions, inpatient/outpatient care, and death data. Our exposed group comprised infants born to women who had at least one dispensing of NRT, varenicline, or bupropion with days of supply overlapping the first 13 weeks of pregnancy. Our comparison group comprised infants born to women who smoked without using pharmacotherapy. We identified MCM (overall and by body-system) recorded within 18 months of birth. We used propensity score matching to account for confounding. We calculated adjusted rate ratios (RR, 95% confidence interval [CI]) using conditional Poisson regression and combined estimates across countries using fixed-effect meta-analysis. **Results:** We identified 9325, 3031, and 1042 women using NRT, varenicline and bupropion, respectively. We found no increased risk of overall MCM with exposure to NRT (3.8% *vs* 3.4%; RR 1.10, 95%CI 0.98-1.22), varenicline (3.3% *vs* 3.7%; 0.90, 0.73-1.10), or bupropion (3.3% *vs* 3.8%; 0.93, 0.67-1.29). NRT was not associated with MCM in most body systems including cardiac, limb, genital, renal, oral clefts and respiratory. NRT was associated with an increased risk of MCM of digestive organs but the absolute risks were small (0.4 *vs* 0.3%, 1.53, 1.05-2.23). Varenicline was not associated with cardiac, limb, or genital malformations while the risk of renal MCM was increased (1.1% *vs* 0.4%, 2.75, 1.42-5.34). For bupropion, data were too sparse to robustly estimate the risk of MCM by body system. **Conclusions**: NRT use during pregnancy does not increase the risk of MCM overall or in the most common malformation categories. Varenicline and bupropion do not increase the risk of MCM overall, but a larger number of exposed babies is needed to accurately estimate malformation risks by body system.

FUNDING: Federal

RAP3-6

WHAT DOES SUPPORT LOOK LIKE FOR PREGNANT PEOPLE WHO USE TOBACCO? A SYSTEMATIC REVIEW OF QUALITATIVE STUDIES USING THE SOCIAL COGNITIVE THEORY AND AN INTERSECTIONAL APPROACH.

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Significance Pregnant people who use tobacco are likely to be advised to and offered support to quit, but little is known about how this support is experienced by them. It is important to understand what 'support' may mean to this population, and to consider support they may have experienced outside of healthcare interventions in order to gain insight into why some pregnant people make successful quit attempts, and others do not. This review aimed to characterise the experience of support for pregnant people who used tobacco, using the Social Cognitive Theory as a framework to categorise the type of support and secondly taking an intersectional view of the concept of support described across the included studies. **Methods** Two databases (PubMed and PsychINFO) were searched for qualitative and mixed method studies which explored pregnant people's experience of support during pregnancy. Findings relating to support were extracted, and the 4 categories of Social Cognitive Theory support (i.e., emotional support, esteem support, informational support, instrumental support) were used to characterise the concept of support; sources of support (e.g., healthcare worker, family member, friend) were also identified. The CASP checklist was used to assess quality. **Results** 1184 references were retrieved, and after duplicates removed, 978 titles were screened. 322 full-text references were then reviewed with 103 studies ultimately meeting all inclusion criteria and being included in the review. The range of participants was broad in terms of location, identity and additional health needs such as substance use disorder. Study designs included exploration of cessation in general as well as specific existing or proposed interventions. Analysis shows that emotional and esteem support are commonly provided by family members and partners, and that support offered by healthcare practitioners was not always welcome or accepted. Intersectionality was not frequently discussed in papers. **Conclusions** Emotional and esteem support are highly valued, and the role of family and partners appears key. The intersection of pregnancy and additional vulnerabilities may affect the experience of support. Public health and policy responses to tobacco use during pregnancy should take into account that support offered may be differently experienced to support sought out.

FUNDING: No external funding reported

RAP3-7

SMOKING PREVALENCE, ATTEMPTS TO QUIT AND CESSATION BY MENTAL HEALTH CONDITIONS - A DESCRIPTIVE ANALYSIS OF A NATIONALLY REPRESENTATIVE SURVEY IN GREAT BRITAIN

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Background: Smoking prevalence is higher among people who have mental health conditions or use other addictive products. People who smoke and have mental health conditions are at least as likely to attempt to stop smoking as those without mental health conditions, but less likely to succeed. There is however limited evidence on these outcomes for different types of conditions. We aimed to describe smoking prevalence, attempts to stop and cessation for individual diagnoses. **Methods:** Monthly cross-sectional, nationally representative household survey of adults (18+) conducted in Great Britain between October 2020 and June 2023, including n=66,381 who reported whether they had ever been diagnosed with depression, anxiety, obsessive compulsive disorder (OCD), panic disorder/a phobia, post-traumatic stress disorder (PTSD), psychosis or

schizophrenia, personality disorder, attention deficit hyperactivity disorder (ADHD), eating disorder, autism or autistic spectrum disorder (ASD), bipolar disorder, alcohol misuse/dependence, drug misuse /Dependence, or problem gambling (multiple responses possible). Weighted past-year smoking prevalence, proportion who had made at least one quit attempt in the past year and proportion still not smoking at the time of the survey were calculated overall, for those without any diagnosis and for each diagnosis separately. **Results:** Among all adults, 18.9% had smoked in the past year (14.9% among those without diagnosis); for adults with different diagnoses, this ranged from 28.9% for anxiety to 64.8% for drug use/dependence. Among all adults who had smoked in the past year, 37.3% had attempted to quit (34.6% among those without diagnosis); ranging across diagnoses from 29.6 for problem gambling to 44.1% for ADHD. A quarter of all adults attempting to stop were still not smoking (25.2%; 25.8% among those without diagnosis), this was lowest (13.1%) among people with psychosis/schizophrenia and highest (27.4%) among people with PTSD. **Discussion:** Limitations include that many people have more than one diagnosis and numbers for some conditions were small despite the overall large sample. Nevertheless, results indicate that overall figures for smoking behaviour among people with mental health conditions mask substantial variation between conditions.

FUNDING: Nonprofit grant funding entity

RAP3-8

DOES HARMFUL/PROBLEMATIC ALCOHOL USE HINDER SMOKING CESSATION AMONG CONCURRENT USERS OF CIGARETTES AND E-CIGARETTES ?

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Introduction Prior research has identified problematic alcohol use as a barrier for smoking cessation. However, much of this research has been cross-sectional and has often ignored concurrent e-cigarette use. Therefore, the objective of this longitudinal study is to assess if harmful alcohol consumption is associated with lower odds of quitting smoking among concurrent users of cigarettes and e-cigarettes. **Methods** The study utilized longitudinal data from the Adult Consumers of Tobacco Study of 296 US adult participants (21+) who were current cigarette smokers and had initiated e-cigarette use within the past 30 days at screening. The participants were recruited nationally using targeted social and online media advertisements, and 84% were retained at 12-month follow-up. The outcome variable was current smoking status at 12-month follow-up: current or past 30-day smoking vs. past 30-day smoking abstinence. The primary exposure variable was problematic alcohol consumption during the 12-month study period using the Alcohol Use Disorders Identification Test (AUDIT) defined at two score thresholds: 8+ (harmful drinking) and 15+ (likely moderate-severe alcohol use disorder). Logistic regression using robust full-information maximum likelihood estimation under the MAR assumption for missing data was conducted, adjusting for gender, race/ethnicity, education, age, plan to quit smoking, self-reported physical health, and nicotine withdrawal symptoms reported at baseline. **Results** We found that 29.1% of the participants were self-reported smoking abstinent at 12-month follow-up. One-fifth of participants reported at least harmful drinking on the AUDIT, and 8.5% indicated likely moderate-severe alcohol use disorder during the 12-month study period. Harmful alcohol use (AUDIT > 7) was not significantly related to smoking cessation at 12-month follow-up (AOR = 0.93, 95% CI: 0.43 - 2.02, p = 0.87). However, highly problematic alcohol consumption indicative of a likely moderate-severe alcohol use disorder was associated with lower odds of cessation (AOR = 0.23, 95% CI: 0.06 - 0.86, p = 0.03). **Conclusion** Moderate to severe, but not low, hazardous alcohol use is associated with lower odds of smoking cessation among concurrent e-cigarette users. Future studies should explore mechanisms through which harmful alcohol or other drug use affects smoking cessation efforts among concurrent users and its implications for clinical intervention.

FUNDING: Federal; FDACTP; Academic Institution; Nonprofit grant funding entity

RAP3-9

THE EFFECT OF SMOKING CESSATION FOLLOWING A CANCER DIAGNOSIS ON SURVIVAL

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Significance: Evidence for the survival benefit of smoking cessation after cancer diagnosis is limited by the absence of prospectively obtained smoking cessation outcomes and longitudinally obtained survival data, across a wide spectrum of cancer diagnoses. Understanding the relationship between quitting after a cancer diagnosis to survival is crucial to advance cancer care. Methods: This study utilized a prospective, approach to examine the impact of smoking cessation on cancer survival among patients treated in the Tobacco Research and Treatment Program(TRTP) at MD Anderson Cancer Center. Survival up to 15-years after diagnosis was the primary outcome following abstinence at 3, 6, and 9 months, after cessation treatment. Data were analyzed using Cox proportional hazards including adjustments for cancer site, staging, and patient characteristics. Results: Among 4,526 TRTP treated patients, survival increased with abstinence at 3-months (aHR=0.75, 95% CI: 0.67 - 0.83), 6-months (aHR=0.79, 95% CI: 0.71 - 0.88), and 9-months (aHR=0.85, 95% CI: 0.76 - 0.95) after TRTP entry. The strongest effect of cessation was observed for patients diagnosed 6 months prior to TRTP entry. These patients had a 26% reduction in mortality (aHR=0.74; 95% CI: 0.64 - 0.85) for abstinence at 3 months; 25% at 6-months (aHR=0.75, 95% CI: 0.65 - 0.87); and 18% at 9 months (aHR=0.82; 95% CI: 0.70 - 0.95). Conclusions: Data from this prospective study provide clear evidence that quitting smoking after a cancer diagnosis using an evidence-based TRTP significantly improves overall cancer

FUNDING: Academic Institution

RAP3-10

MULTIMODAL SMOKING CESSATION INTERVENTION USING REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION, COGNITIVE BEHAVIORAL THERAPY AND NICOTINE REPLACEMENT THERAPY IN VETERANS WITH POSTTRAUMATIC STRESS DISORDER: RESULTS FROM A NONRANDOMIZED PHASE II TRIAL

Jonathan Young[1], Carri Polick[1], Dana Rubenstein[2], Dani Castillo[2], Anna Grace Greenho[2], Catie Fristoe[2], Eunice Lee[2], Aliyah Watson[2], Eunjae Lee[2], Kunyu Du[2], Caroline Yoon[2], JT Galla[2], Willa Papanikolas[1], Mariah Evans[2], Dandan Chen[2], David Yanez[2], Eric Dedert[1], Merideth Addicott[3], Scott Moore[1], Greg Appelbaum[2], Jean Beckham[1]. [1]Durham VA Medical Center, Durham, NC, USA, [2]Duke University, Durham, NC, USA, [3]Wake Forest University, Winston-Salem, NC, USA.

Significance: U.S. veterans with posttraumatic stress disorder (PTSD) are three times more likely to have tobacco use disorder (TUD), while biochemically verified quit rates are as low as 4.5% at 1 year. Recent neuroimaging studies suggest that the insula is integrally involved in the neurocircuitry of TUD. Consequently, interest has grown in modulating insular activity using repetitive transcranial magnetic stimulation (rTMS), yet clinical trials remain scarce. The aims of the study were to evaluate acceptability and feasibility of insula-targeted rTMS integrated with cognitive behavioral therapy (CBT) and nicotine replacement therapy (NRT) in veterans with PTSD, and smoking-related outcomes over 2 months. Methods: In this phase II nonrandomized open-label pilot study, we evaluated the feasibility of a novel multimodal smoking cessation intervention that integrates 5 sessions of rTMS (1 Hz rTMS for 960 pulses at 100% motor threshold neuronavigated over the right postcentral gyrus functionally connected to insula), 5 sessions of CBT, and NRT. At each rTMS session, cigarette craving intensity was measured before a cue to provoke cravings, after the cue, and after rTMS treatment. Results: Ten veterans with comorbid TUD and PTSD enrolled in the treatment group, and eight completed all treatment procedures. The average age was 53.8 years (SD = 7.4), and most participants were Black or African American (60%) and male (60%). For individuals (n = 8) who completed all treatment procedures, baseline cigarettes per day (CPD) was 14.5, reducing to 2.1 by the end of the treatment procedures. Baseline carbon monoxide (CO) level was 20.1, which decreased to 14.5 by study completion. After the first session, participants reported an average cigarette craving intensity of 39.4/100 before the cue, 35.0 after the cue, and 30.0 after rTMS. By the fifth session, these values diminished to 30.0 before the cue, 28.8 after the cue, and 18.8 after rTMS. Acceptability scores for rTMS and overall treatment were each rated at an average of 9.1/10. Conclusions: Among this cohort of veterans with comorbid TUD and PTSD, five sessions of insula-targeted rTMS integrated with 5 weeks of CBT and NRT led to reductions in CPD, CO, and cigarette craving intensity. Treatment was reported to be

highly acceptable, indicating a future potential to reduce smoking in this tobacco use disparities group. Further evaluation and estimation of effect size with a randomized sham-controlled trial is warranted.

FUNDING: Federal


SRNT 2024
Podium Presentation 6: Rapids Session 4
Rapid Submissions

TRANSDISCIPLINARY RAPID FIRE SESSION 4

RAP4-1

MOOD EFFECTS OF NICOTINE, CANNABIS, AND CO-USE: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

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Significance: Nicotine and cannabis co-use is increasing among young adults and poses greater health risks than either substance alone. It is unclear if the mood effects of co-use differ from those of each substance alone. This study used EMA to compare mood effects of cannabis, nicotine, and co-use among young adults. Methods: Participants (*N* =36 young adults, *M* age = 25; 36% women, 42% men, 14% nonbinary, 8% transgender; 69.4% white, 11.1% MENA, 8.3% Hispanic, 2.8% Black, 8.3% Asian) used both nicotine and cannabis. Baseline measures included substance use related factors and 7 days of EMA. EMA included random prompts 5-7 times/day and participant-initiated interviews when nicotine or cannabis was used. EMA interviews were categorized as random/no substance use; nicotine; cannabis; and co-use (use at same time). Random effects multiple level analyses examined differences in mood (positive affect, PA, and negative affect, NA) both immediately before and after product use. Results: Participants either smoked (*M*=3.7 cigarettes/day) or vaped (*M*=19.7 times/day), and used cannabis 6.8 days/week on average. The sample had moderate to high levels of depression (CES-D 10 item *M*=11.5), cannabis dependence (CUDIT-R *M*=15.8), and cigarette (NDSS *M*=2.8) and e-cigarette (NDSS *M*=3.0) dependence. During EMA, PA was significantly lower (est = -0.28, *SE* = 0.06; $p < .0001$) before using either nicotine or cannabis, compared to background times. After using either nicotine or cannabis, PA was higher than at background (est = 0.92, *SE* = 0.06, $p < .0001$). PA was higher after cannabis/co-use than after nicotine use (est = 0.72, *SE* = 0.08, $p < .0001$). PA after cannabis use and co-use did not differ. NA prior to using either nicotine or cannabis was significantly greater than NA at random times (est = 0.46, *SE* = 0.06, $p < .0001$). NA prior to nicotine use was greater than NA prior to cannabis/co-use (est = -0.16, *SE* = 0.07, $p = .03$). There was no significant difference in NA prior to cannabis use vs. co-use. After using any nicotine or cannabis, NA was lower than at random times (est = -0.21, *SE* = 0.05, $p < .0001$). There was a greater NA reduction from using cannabis or co-use than from nicotine use (est = -0.30, *SE* = 0.06, $p < .0001$). The NA reductions from cannabis and co-use did not differ significantly. Conclusions: Cannabis and co-use resulted in similar PA increases and NA reductions. Nicotine led to smaller PA increases and NA reductions than cannabis and co-use.

FUNDING: Federal

RAP4-2

A PILOT STUDY OF A HARM REDUCTION APPROACH AMONG PATIENTS IN CANCER CARE WHO REFUSE TRADITIONAL TOBACCO TREATMENT

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Significance: Smoking rates are high among patients in cancer care. Despite the health benefits of cessation, many patients refuse evidence-based tobacco treatment even when it is offered proactively and at no cost. Development of novel and appealing interventions is of critical importance. The goal of this single arm pilot study was to assess the potential for e-cigarettes to serve as a harm reduction approach among patients in cancer care who refuse tobacco treatment. The primary aims were to assess intervention acceptability and feasibility, and an exploratory aim of assessing changes in smoking and cigarette abstinence. **Methods:** Individuals currently smoking cigarettes who attended cancer center outpatient clinics and refused treatment through a proactive, opt-out Tobacco Treatment Program were offered the opportunity to participate. Participants were mailed an NJOY Ace e-cigarette battery and 14 e-liquid pods (2-week supply of tobacco or menthol flavor), and a behavioral plan worksheet for setting a switch date and switching completely to the e-cigarette. Participants completed a 2- and 4-week follow up and a structured interview to assess intervention acceptability and motivation for study enrollment. **Results:** All participants (N=10) tried the e-cigarette. By Week 2, 30% had achieved some duration of complete switching ranging from 1 to 11 days. By Week 4, 40% had been continuously abstinent from cigarettes for at least 2 weeks. At Week 2 and Week 4, average reduction in cigarettes per day was 42% and 74%, respectively. The most common themes that emerged from the interviews were that, despite initially refusing all traditional tobacco treatment, participants were interested in an opportunity to switch to an e-cigarette because they had tried all other tobacco treatment methods unsuccessfully, and they wanted to explore new options for cessation. **Conclusion:** This single-arm pilot study found that cancer care patients who refuse all components of traditional tobacco treatment are still interested in novel and appealing interventions, including harm reduction options. All participants tried the e-cigarette, the majority reduced their smoking, and 4 of the patients were able to switch completely. Participants indicated that the reason they were interested in enrolling was that they had tried all traditional options before and wanted to try something new. Novel interventions are needed for adults who smoke and have failed with existing treatment options.

FUNDING: Academic Institution

RAP4-3

PATIENT PERCEPTIONS OF THE USE OF E-CIGARETTES IN SMOKING TREATMENT PROGRAMS: A QUALITATIVE ANALYSIS

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Background: The use of e-cigarettes is associated with increased rates of smoking cessation and may serve as a useful alternative to currently available nicotine replacement therapy (NRT). However, little is known about the perceptions of using e-cigarettes as part of a smoking treatment program. By examining the perspectives of research participants enrolled in a tobacco treatment intervention trial, our objective was to gain further insight into patient-level factors to be considered when developing smoking treatment programs that incorporate the use of e-cigarettes. **Methods:** We performed a qualitative analysis of in-depth interviews with participants enrolled in a tobacco treatment intervention pilot randomized clinical trial that compared the impact of behavioral counseling paired with e-cigarettes or NRT on smoking outcomes. Participants were prompted to share their experiences with the study products and the study overall. Transcripts were coded according to the principles of the Framework analysis for applied research. The codes were then examined, summarized, and grouped together into themes using the principles of grounded theory. **Results:** Interviews were analyzed for a total of 26 participants. Themes developed from the analysis suggest that, while there is an eagerness to try e-cigarettes as a new tool for smoking cessation, there is some apprehension regarding what it means to "quit" if switching to e-cigarettes and the perception of replacing one addiction with another. Participant definitions of "quitting" varied, for some it meant stopping all forms of nicotine consumption, while others remained open to continued e-cigarette use. Reflecting on the transitional purpose of e-cigarettes, and potential health concerns associated with their use, many participants went on to differentiate between the short-term goal to quit combustible cigarettes and the long-term goal to quit e-cigarette smoking. **Conclusions:** Incorporating e-cigarettes into smoking treatment regimens may be an opportunity to re-engage smokers who have previously tried and failed to quit with other forms of NRT. However, due to their addictive nature and potential health effects, many participants felt it can be difficult to establish what it truly means to quit smoking with the use of e-cigarettes. To reduce confusion among consumers and establish best practices, further efforts are needed to develop guidelines for the effective incorporation of e-cigarettes into smoking treatment programs.

FUNDING: Academic Institution

RAP4-4

READINESS TO QUIT AND TOBACCO TREATMENT DELIVERY AMONG ADULTS WHO SMOKE: RESULTS FROM PRIMARY CARE CLINICS IN APPALACHIA

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Significance: Brief advice and cessation support from healthcare providers can boost readiness to quit and facilitate abstinence. Primary care is ideal for tobacco treatment delivery, but implementation of 5A and AAR models is low. This practice gap may inequitably impact populations that have historically used tobacco at higher rates, in

Appalachia, a mountainous geographic region in the eastern US. This study describes readiness to quit and tobacco treatment delivery in primary care patients in Appalachian KY, OH, VA and WV. **Methods**: Providers received brief training in evidence-based tobacco treatment, then anonymous patient surveys were deployed in clinic on randomly selected weeks from 1/2022 to 6/2023. 1,242 adults (64% female; M, SD=46.7, 6.8 years old) across 36 clinics were surveyed. Descriptive statistics and logistic regression models evaluated patient characteristics and provider behavior. 34% of patients reported smoking. **Results**: For patients who smoked, 14% expressed readiness to quit within the next month, 15% in 1-6 months, 16% in 6 months to 1 year, 18% >1 year later, and 37% did not intend to quit. 93% of patients reported that their provider asked about smoking status. Among patients who smoked, 81% reported that their provider asked about readiness to quit, 90% said their provider advised cessation, 64% said their provider talked about cessation medication, and 46% said their providers recommended behavioral treatments. No patient characteristics were significantly associated with providers asking about smoking status or advising cessation among those who smoke. However, significant associations were found with other provider behaviors: 1) asking about readiness to quit more frequently occurred among patients aged 35-49 than others, 2) discussing pharmacotherapy more commonly occurred among patients aged 35-49 and at well visits compared to sick visits, 3) prescribing medication more commonly occurred for Hispanic than non-Hispanic patients, and 4) recommending behavioral treatments occurred most frequently among patients aged 35-49. **Conclusion**: Findings underscore considerable room for improvement in some Appalachian adults' readiness to quit smoking and a gap in implementation of tobacco treatment in Appalachian primary care settings. Concerted and sustained efforts to address these public health and clinical practice gaps are crucial to reduce the tobacco burden in a vulnerable region and to ensure equitable access to and delivery of tobacco treatment nationwide.

FUNDING: Federal

RAP4-5

PHASE II STUDY ASSESSING EFFICACY AND SAFETY OF NFL-101 ON REDUCTION OF REINFORCING PROPERTIES OF CIGARETTES (PRECESTO TRIAL)

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OBJECTIVES: NFL-101 is a drug candidate for smoking cessation consisting of a nicotine-free extract of tobacco proteins for subcutaneous injections. According to the observations made during CESTO (NCT02521701), a Phase I study on 24 smokers, NFL-101 appears to work by reducing smoking satisfaction and desire to smoke during few days after an injection.Reducing smoking satisfaction before a quit attempt could represent a therapeutic interest and lead to higher abstinence rates.The main objective of PRECESTO is to enhance knowledge of NFL-101 potential impact on smoking satisfaction. METHODS: PRECESTO is a monocentric, crossover, placebo-controlled, randomized and double-blind study in 34 smoking subjects not wanting to quit (MTSS ≤ 2), with a modified Cigarette Evaluation Questionnaire (mCEQ) smoking satisfaction subscale score ≥ 4 and smoking more than 10 cigarettes per day. Each subject received either NFL-101 or the placebo at the start of each of the two 28-day periods and answered the mCEQ on days 4 (D4), 7 (D7), 14 (D14), 21 (D21) and 28 (D28). Washout duration between the two administrations was 35 days.The 3 questions of the mCEQ Smoking Satisfaction subscale are: "was smoking satisfying?", "did cigarettes taste good?", "did you enjoy smoking?". Answers are: 1-not at all, 2-very little, 3-a little, 4-moderately, 5-a lot, 6-quite a lot, 7-extremely. Score is the mean of the 3 responses. RESULTS: Data were consolidated over a single interval since the carryover effect was not significant (p>0,10).At Baseline, the average score for smoking satisfaction was 6.12 (standard deviation 0.77).From baseline, the effect of NFL-101 in reducing smoking satisfaction grew from D4 (average reduction -0.810; confidence interval (-1.139; -0.481)) to D28 (average reduction -1.261; CI (-1.590; -0.932).The average satisfaction from smoking, initially ranging from "quite a lot" and "extremely", notably decreased to "moderate" to "a lot" by D28. This reduction is clinically meaningful, especially given that it concerns subjects not wanting to quit.The NFL-101 effect was always stronger than the placebo effect. p-values are 0.0003 (average difference -0.188; CI (-0.289; -0.087)) over the entire period and 0.007 (average difference -0.314; CI (-0.540; -0.088) on D28. CONCLUSION: The clinically relevant and superior reduction, as compared to the placebo, of smoking satisfaction achieved by NFL-101 makes it a promising candidate for a pre-quit smoking cessation intervention.

FUNDING: State; Pharmaceutical Industry

RAP4-6

AN EXAMINATION OF PHILIP MORRIS INTERNATIONAL'S ESTIMATE OF KOREAN ADULTS WHO HAVE "COMPLETELY TRANSITIONED" FROM CIGARETTES TO IQOS: FINDINGS FROM THE 2020 AND 2021 ITC KOREA SURVEYS

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Significance: Philip Morris International (PMI) has consistently reported to shareholders that over two-thirds of their IQOS customers have *"completely transitioned"* from cigarettes to IQOS (defined as IQOS consumption accounting for at least 95% of total tobacco consumption). We previously assessed this claim in Japan—the global leading HTP market—finding that 23% of IQOS customers had completely transitioned in 2019 and 17% in 2020. This study extended our work to the Republic of Korea (KR), where nicotine vaping products are legal (unlike in Japan) to test PMI's reports in 2020-2021 that 72% of IQOS customers had completely transitioned from cigarettes, that is, only 28% of IQOS customers were dual using HTPs and cigarettes. We also tested whether there were differences between people who did and did not vape. **Methods:** We analyzed cross-sectional data from the 2020 and 2021 ITC Korea (KRA) Surveys of adults who were (1) smoking cigarettes or who had quit smoking; and (2) reported ≥weekly HTP use. In 2020, 1099 respondents were using HTPs (IQOS: n=609). In 2021,1220 were using HTPs (IQOS: n=652). Total tobacco consumed/day (TPD) was the sum of cigarettes smoked/day (CPD) and heat sticks used/per day (HPD). The outcome was *"completely transitioned",* defined as the percentage of respondents for whom HPD/TPD was ≥95% among those who used: (1) IQOS; and (2) leading HTP brands (IQOS/lil/Ploom TECH/glo). HPD/TPD was calculated using ITC KRA weighted data based on the age*sex distribution of PMI's Japan IQOS User Surveys (PMI Korea data are not available), thus aligning our weighted estimates with PMI's own estimates as closely as possible with publicly available information. **Results:** Among respondents using IQOS, the percentage who had completely transitioned from cigarettes was 17% in 2020 and 30% in 2021—much lower than PMI's reported IQOS customer percentage of 72%. The completely transitioned rate among those using any leading HTP brand was also much lower than PMI estimates: 20% in 2020 and 36% in 2021. These rates did not differ between people who vaped nicotine vs. those who did not (all p>0.5). **Conclusion:** Most Korean adults regularly using IQOS or other HTPs did not discontinue smoking; rather, they had high rates of dual use (HTPs+cigarettes)—in 2020: 83% (IQOS) and 80% (all HTPs) in 2020; in 2021: 70% (IQOS) and 64% (all HTPs). These results in Korea replicate our findings in Japan, where dual use among those who regularly used IQOS was 77% in 2019 and 83% in 2020.

FUNDING: Federal; Nonprofit grant funding entity; Other

RAP4-7

CHANGES IN TOTAL TOBACCO CONSUMPTION AMONG KOREAN ADULTS WHEN TRANSITIONING BETWEEN EXCLUSIVE CIGARETTE SMOKING AND DUAL USE OF CIGARETTES AND HEATED TOBACCO PRODUCTS: FINDINGS FROM THE 2020 AND 2021 ITC KOREA SURVEYS

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Significance: Heated tobacco products (HTPs) were introduced in the Republic of Korea (KR) in 2017. In KR, many people who smoke cigarettes (PWS) exclusively initiated HTP

use, becoming people who dual use: smoke and use HTPs (PWS+H). This prospective study measured changes in tobacco consumption when those who smoke (PWS) exclusively transitioned to dual use of smoking and use HTPs (PWS+H), and when those who dual use transitioned to exclusive smoking. For comparison, we also examined changes in consumption when PWS and PWS+H did not transition. **Method**: Cohort data came from 923 adults who participated in both Wave 1 (W1; 2020) and Wave 2 (W2; 2021) of the ITC Korea Survey. We examined consumption changes in two W1 groups: **PWS** (n=866, >=weekly) and **PWS+H** (n=57, both >=weekly**)**. We measured cigarettes smoked/day (CPD), HTP sticks used/day (HPD), and total tobacco consumed/day (TPD=CPD+HPD) when W1 PWS and PWS+H transitioned to a different (or remained the same) tobacco use state at W2. Analyses employed generalized estimating equations on weighted data. **Results:** Among W1 **PWS**: 1) 83.2% remained PWS at W2: CPD decreased from 12.8 to 12.1 (p<0.001); 2) 11.7% transitioned to PWS+H at W2: CPD decreased, but not significantly, from 13.0 to 12.2 (p=0.13) and HPD increased from 0 to 6.4; thus, TPD increased from 13.0 to 18.6 (p<0.001). Among W1 **PWS+H**: 1) 82.7% remained PWS+H at W2: There were no significant changes in CPD (11.4 to 11.1, p=0.23), HPD (6.8 to 6.4, p=0.35), or TPD (18.2 to 17.5, p=0.19); 2) 10.3% transitioned to PWS at W2 : CPD decreased from 13.4 to 10.6 (p=0.02) and HPD decreased from 6.6 to 0; leading to a decrease in TPD from 20.0 to 10.6 (p<0.001). **Conclusion:** Among Korean adults who were smoking exclusively, transitioning to dual use (cigarettes and HTPs) led to an increase in total tobacco consumption of 43.1%; this increase in consumption was greater than the 26% increase we found in Japan. In contrast, among Korean adults who were dual using cigarettes and HTPs, transitioning back to smoking exclusively led to a decrease in total tobacco consumption of 47.0%; again, much greater than the 20% decrease we found in Japan. Dual use of HTPs and cigarettes is thus an **apex state**—it is associated with substantially higher total tobacco consumption than single-product use. Dual use thus constitutes an attractive state for cigarette companies to cope with the declining cigarette sale, which are currently the only manufacturers of HTPs. **Length: 2482 characters with spaces (max 2500)**

FUNDING: Federal; Nonprofit grant funding entity; Other

RAP4-8

ACUTE PERCEIVED DISCRIMINATION AFFECTS CIGARETTE USE AND CO-USE BETWEEN SAME-SEX COUPLES DURING A SMOKING QUIT ATTEMPT

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Introduction: While cross-sectional studies indicate that greater perceived discrimination (PD) is associated with smoking in sexual/gender minority (SGM) individuals, the acute effects of PD experienced by SGM individuals on tobacco use are poorly understood. Vicarious PD can be distressing but these effects are even more rarely studied, especially in the context of romantic relationships. We examine how vicarious PD (i.e., PD experienced by one's partner) and intersectional PD (i.e., PD due to >1 demographic attribute) acutely impact one's own and their partners' cigarette use and substance co-use during a smoking quit attempt. **Methods:** During a 4-week smoking quit attempt in 2021-2023, same-sex couples (N=101 dyads, aged 21-68) reported daily assessment of the occurrence of - and the perceived reasons for (e.g., race, disability) - PD, cigarette use, and co-use of any substances (cigarettes, cannabis, e-cigarettes, or alcohol). We conducted 4 sets of multilevel dyadic analyses with indistinguishable dyads to simultaneously model the acute actor (self) and partner (vicarious) effects of PD on cigarettes use and co-use of multiple substances that day. **Results:** PD based on any one intersectional factor was reported on 25.4% of person-day assessments (n=5,756), 32.9% of which were IPD. On days when one reported PD, they used marginally more cigarettes (b= .16; p=.06) and were more likely to co-use multiple substances (b=.36, p<.001). On days one experienced greater intersectional PD, they were more likely to co-use other substances (b=.15, p<.001) but this did not affect how many cigarettes smoked (b=.01, p=.81). On days their partner reported PD, they smoked more cigarettes (b=.13, p=.11) and were more likely to co-use multiple substances (b=.12, p=.20), but not significantly. Greater partner intersectional PD did not significantly affect number of cigarettes (b=.06, p=.16) or likelihood of co-using multiple substances (b=.05, p=.30) on a given day. **Implications:** Our findings show that experiencing discrimination acutely leads to increased cigarette use and the likelihood of using multiple substances among SGM couples in-situ. The adverse effects of vicarious discrimination on substance use were detected but were not statistically significant. It is possible that PD events were experienced by both partners, which may limit our operationalization of vicarious PD. Future studies might assess whether discrimination events are shared between the partners.

FUNDING: Federal; State

RAP4-9

PRODUCT DIVERSITY AND USE PATTERNS AMONG YOUNG ADULT DAILY E-CIGARETTE USERS

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Significance: Traditional longitudinal surveys typically evaluate electronic nicotine delivery system (ENDS) use based on past 30-day recall measures. However, ENDS characteristics such as e-liquid flavors, product design, and nicotine concentration may be difficult to remember, and may potentially change as users switch or try new devices, especially over a 30-day period. Ecological momentary assessment (EMA) is well-suited to examine nuances of ENDS use and product characteristics including timing, location, and social context and provide a more ecologically valid understanding of when, where, and how ENDS use occurs. The present study used EMA to examine ENDS use among a sample of young adult daily ENDS users. **Methods:** Participants were 57 young adults aged 18-29, followed using EMA over a period of 30 days in February-March 2022. Participants were prompted 4 times a day during waking hours to report their ENDS use (i.e., frequency), as well as product characteristics (i.e., flavors, nicotine concentration, and device type), and withdrawal symptoms (e.g., intense cravings, irritability, headaches, nausea, etc.). **Results:** Participants used ENDS 2.1 times a day on average (SD=0.79), and reported an average of 1.3 withdrawal symptoms a day (SD=1.6). Over the entire 30-day period, 66.7% of participants reported experiencing anxiety, 59.6% intense cravings, 56.1% irritability, and 50.9% difficulty concentrating. The most used nicotine concentration was 50-59 mg/mL or 5.0-5.9% (69.6% of participants), and the most used device type was pods (58.9%), closely followed by disposables (51.8%). Menthol and mint (61.8%) and fruit flavors (58.2%) were the most commonly used flavors, while 5.5% used tobacco or unflavored ENDS. Notably, many participants altered use patterns over the monitoring period (58.9%). Across 30 days, 45.5% used more than one ENDS flavor, 25% used more than one nicotine concentration, and 30.4% used more than one device type. **Conclusion:** Young adult daily ENDS users demonstrated a wide variety of use patterns, and most switched at least one product characteristic during the 30-day study period. Most used pod and disposable devices with high nicotine concentrations and reported symptoms of withdrawal, including cravings and negative mood. ENDS use, when examined over an extended period in real-world conditions, can offer invaluable insights into how these products are actually used and how they may contribute to nicotine addiction and dependence.

FUNDING: Federal

RAP4-10

EXPLORING HEALTH-PROMOTING INSERT DESIGN: A FOCUS GROUP STUDY WITH ADOLESCENTS AND ADULT SMOKERS IN THE UK

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Significance: Just as inserts inside cigarette packs provide tobacco companies with additional marketing space, they offer governments an opportunity to extend communication with consumers. Health-promoting pack inserts, with messages aimed at instilling the belief that smokers can quit or highlighting the benefits of quitting, are currently only required in packs in Canada, although they are scheduled for introduction in Israel. The UK Government is considering requiring health-promoting inserts inside cigarette packs, with this study aimed at understanding whether there may be potential public health benefits associated with doing so and how different insert designs are perceived by consumers. **Methods:** Twenty-two focus groups were conducted in England, Scotland and Wales in May 2023, 6 with adolescents aged 11-17 years (segmented by age, gender and social grade) and 16 with adult smokers (segmented by age, gender, and whether they mainly smoked cigarettes or rolling tobacco). Participants were shown 16 inserts spanning 8 'themes' (with 2 inserts per theme) and asked for their views on these. Half the inserts included response-efficacy messaging (benefits of quitting on 'Physical health', 'Mental health', 'Financial health', or 'Conception and pregnancy') and half included self-efficacy messaging (encouraging 'Perseverance with quitting', 'Quitting in older age', offering tips on controlling 'Cravings', or outlining the types of 'Stop-smoking aids' available, including e-cigarettes). Focus group data were analysed thematically. **Results:** The insert themes perceived most positively by participants and considered potentially helpful for quitting smoking included 'Physical health benefits' (viewed as motivational), 'Financial benefits' (viewed as prompting smokers to consider their tobacco spend and think about the rewards they could gain by quitting), 'Perseverance' (viewed as supportive and encouraging), and 'Cravings' (viewed as helpful in providing

practical tips to control cravings). Inserts covering other themes were met with a mixed or negative response, with some participants rejecting some of these messages as they were considered irrelevant, incongruent with their personal experience, or because they were thought to lack credibility. **Conclusions:** Participants in this study perceived some pack inserts as potentially helpful in encouraging some smokers to think about quitting and in discouraging trial, experimentation or continued use among youth.

FUNDING: State


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RAPID SUBMISSIONS: POSTER SESSION 5

POS5-2

A PROSPECTIVE RANDOMIZED CLINICAL TRIAL TO EVALUATE EFFECTIVENESS OF CBT-BASED DIGITAL THERAPEUTICS FOR SMOKING CESSATION

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Significance Smoking remains a major public health concern, contributing to a myriad of preventable diseases and premature deaths worldwide. As the leading cause of preventable morbidity and mortality, the imperative to address smoking cessation has never been more critical. This research paper aims to investigate the synergy between CBT-based smoking cessation programs and digital therapeutics (DTx), exploring how technology-driven solutions can augment traditional strategies. **Methods** A total number of 20 participants has been enrolled in this study. Except for one patient, all participants have completed programs. For nine participants, control is a treatment as usual(TAU) of conventional smoking cessation consultation. For ten participants, treatment is a TAU plus CBT-based DTx, which is a possible designated medical device by the Ministry of Food and Drug Safety in Korea. The DTx has a total number of sixteen CBT-based educational session with real-time Chat-bot to reduce cravings based on the CBT guidelines of the Korean Society for Research on Nicotine and Tobacco. **Results** In terms of a risk-difference in a 7-day point-prevalence of smoking cessation at the eighth week adjusted with age and sex, the treatment group may have 21.2% (95% CI; -6.5%, 48.9%, *p*=0.1331) higher than the control group. In addition, the treatment group shows also higher probability in 4-week continuous abstinence of 30.1% at the fourth week and 21.2% at the eighth week respectively, compared to the control group. In terms of a change in the Smoking Abstinence Self-efficacy Questionnaire (SASQ), repeated measured mixed was used and adjusted with age and sex. At the eighth week, a least square mean difference is -4.8 [95% CI: -11.3-1.6, p=0.1294]. **Conclusion** Through this pilot study, it has larger effect size in both a 4-week point-prevalence and the SASQ. We are now preparing a confirmative clinical trial to get approval as a medical device. It will be also reported with number of 164 participants in next year.

FUNDING: Federal

POS5-3

PILOTING A SMOKING CESSATION APP USING AUGMENTED REALITY AS A NOVEL APPROACH FOR CUE EXPOSURE THERAPY

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Significance: Augmented reality (AR) can insert virtual objects into the real-world environment via a smartphone. With this innovative technology, individuals attempting to quit smoking can receive cue exposure therapy (CET) in their natural settings to improve extinction robustness. We previously demonstrated that smoking-related AR images elicited cue reactivity and extinction of cravings to smoke. We have since enhanced our AR app for improved motivation, engagement, and usability in preparation for a large randomized controlled trial (RCT). New features include additional smoking-related AR images, app tutorials, the rationale of CET, reminder notifications, progress trackers and rewards, and detailed assessments. **Method:** Ten individuals who recently quit smoking (60% Male, Mean Age=37.9) were asked to use the app daily and complete 2-5 AR CET sessions per day for one week in places they typically experience smoking urges. Self-reports of usability (e.g., reality of AR cues) and acceptability (e.g., ease of use, satisfaction), app meta data, and feedback via phone interview were used to evaluate the enhanced app. **Results:** High usability and acceptability were reported. Participants used the app an average of 6.1/7 (SD=1.5) days, completed a mean of 5.9/7 (SD=1.7) daily assessments, and a mean of 7.0 (SD=5.6) AR extinction sessions over a week. Participants reported the AR cues realistic and well-integrated in their natural environments (M=7.7-8.2/10). The app was perceived as easy to use (M=4.1/5), and 90% of participants reported being mostly or very satisfied with the app and would recommend it to a friend considering quitting smoking. Interviews revealed potential barriers that included forgetting to use the app and technical difficulties with the AR. Participants reported that progress trackers and rewards were motivating, they enjoyed the AR experience, and notifications and reminders were helpful. The most common recommendations were for more instruction on initial AR image placement and reminders about the theoretical rationale for the AR sessions. **Conclusion:** Results have informed minor revisions to the app for testing in an upcoming RCT (N=2072) as an adjuvant therapy to individuals enrolled in a state tobacco quit line. Revisions include enhanced instructions on treatment rationale and AR image placement as well as minor edits to improve the user experience.

FUNDING: Federal; Academic Institution

POS5-4

A CIGARETTE DEVALUATION STRATEGY TO FACILITATE SWITCHING AWAY FROM COMBUSTIBLE CIGARETTES

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Significance. Behavioral supportive approaches have been shown to increase odds of stopping smoking. This study explored a strategy for aiding adults who smoke to switch away from combustible cigarettes (CC) to an electronic nicotine delivery system (ENDS), whereby participants were instructed to use an ENDS immediately prior to smoking any CC. By using ENDS before CC to achieve pre-emptive nicotine satiation, the aim was to reduce CC use by behaviorally devaluing cigarettes. Notably, this behavioral approach was designed to devalue cigarettes in a targeted manner for people who smoke, while not increasing the attractiveness of ENDS products and risk of nicotine use initiation for people who do not smoke. This approach may also have utility for nicotine replacement therapy (NRT) to increase odds of cessation. **Methods.** A pilot study compared cigarette craving and satisfaction ratings of six smokers when CCs were smoked right after use of an ENDS and after a period of abstinence. A subsequent field study enrolled 50 participants in a 12-week switching protocol with the instruction to use ENDS immediately prior to any CC smoked. Expired air carbon monoxide (CO) was measured as an objective marker of CC use and abstinence. Daily self-reports of CC and ENDS use, craving, satisfaction, and adherence to the instruction were also collected. **Results.** The pilot study suggested that CCs were rendered less satisfying when smoked immediately after an ENDS. In the field study, participants who were most adherent to the instruction showed lower smoking satisfaction, reduced CC craving and CO, as well as a higher rate of smoking abstinence at weeks 9-12 (OR=7.0, 90% CI=1.5-33.2, P=0.02). **Conclusions**. Cigarette devaluation may be a simple, useful and targeted approach to help people who smoke successfully switch away from CCs to an ENDS. Further research is needed to evaluate this strategy in observational studies and randomized controlled trials for switching and cessation.

FUNDING: Federal; Pharmaceutical Industry; E-cigarette/Alternative nicotine products Industry; Nonprofit grant funding entity; Tobacco Industry

POS5-5

CHANGES IN CARDIOPULMONARY AND OTHER CLINICAL HEALTH OUTCOMES AMONG ADULT SMOKERS USING ELECTRONIC CIGARETTES: AN EXPLORATORY ANALYSIS FROM A RANDOMIZED CONTROLLED SMOKING REDUCTION TRIAL

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Significance Potential health effects among people who dual-use electronic cigarettes and combustible cigarettes is unclear. We report on changes in cardiovascular disease (CVD) risk factors, lung function, and other clinical laboratory markers among people using e-cigarettes to reduce their cigarette smoking in a placebo-controlled randomized trial. **Methods** Adults who regularly smoked cigarettes were randomized to 1 of 4 conditions (e-cigarettes paired with 0, 8, or 36 mg/mL of nicotine liquid [double-blind] or a cigarette-substitute) and encouraged to reduce their smoking over 6 months. Differences were assessed between the e-cigarettes (0, 8, or 36 mg/mL) and cigarette substitute conditions at baseline and 6-month follow-up using one-way ANOVA and linear mixed effect models. Primary outcomes were: CVD risk (i.e., blood lipids, C-reactive protein, blood pressure, heart rate, waist-to-hip ratio, body mass index, and INTERHEART risk score), lung function (i.e., spirometry indices), and other clinical laboratory markers (i.e.,

complete blood count and complete metabolic panel). **Results** Participants (n=520) were 58.8% female, 67.3% White, and the mean age was 46.2±11.6 years. The mean number of cigarettes smoked per day at baseline was 18.6±7.7. Among over 20 outcome measures, we found very few significant between group changes. We observed a statistically significant improvement in high density lipoprotein (HDL) levels, cholesterol/HDL ratio, low density lipoprotein (LDL) levels among participants using 36 mg/mL nicotine e-cigarette as compared to cigarette substitute at 6-month follow-up. These results were consistent in both the unadjusted and adjusted analyses for HDL levels and cholesterol/HDL ratio though between group differences were small. Compared with participants in the cigarette substitute or a 0 mg/mL nicotine e-cigarette group, we found no consistent patterns of harm or benefit from nicotine e-cigarette use on any of other measured outcomes. **Conclusion** The current randomized controlled trial found that regardless of liquid nicotine concentration, e-cigarette use during 6 months of smoking reduction did not contribute to additional harms as compared to a plastic cigarette substitute or a non-nicotine e-cigarette group. A novel finding that warrants further exploration was the improvement in blood lipids in participants assigned to use the 36mg/mL nicotine e-cigarette as compared to a non-aerosol cigarette substitute.

FUNDING: Federal; FDACTP

POS5-6

EFFECT OF PARTIAL NICOTINE REDUCTION ON YOUNG ENDS USERS IN THE US: A CROSS-OVER CLINICAL TRIAL

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Significance: The advent of salt-based nicotine formulations is a major contributor to the recent electronic nicotine delivery systems (ENDS) epidemic among young people in the United States. Salt-based ENDS can deliver high-dose nicotine efficiently, which increases nicotine addictiveness. To reduce nicotine addictiveness in tobacco products, the FDA is currently considering nicotine reduction (NR) as an important regulatory pathway. Therefore, using an experimental clinical design, this study evaluates the effect of partial NR on ENDS users' puffing behaviors. **Methods:** In this repeated-measure within-subject clinical cross-over study, 50 current high nicotine concentration ENDS users aged 21-35 attended two ENDS use sessions with the same brand of 3% (28-35 mg/ml) and 5% (58-59 mg/ml) nicotine JUUL/NJOY pods in random order up to 60 minutes ad libitum, preceded by 12-hour nicotine abstinence. Puffing topography was recorded during each session to measure smoking time, puff time, average puff duration, average flow rate, average inter-puff interval, number of puffs, total inhaled volume, average puff volume, and maximum puff volume. Blood samples were collected before and after each session, and plasma nicotine levels were assessed retrospectively using gas chromatography-mass spectrometry. **Results:** The median topography parameters were higher during the ENDS use sessions with 3% nicotine concentration compared to the sessions with 5% nicotine concentration (i.e., puffing time: 1.33 min vs. 1.21 min, p = 0.021; average puff duration: 2.57 sec vs. 2.44 sec, p = 0.017; total inhaled volume: 1990 ml vs. 1490 ml, p = 0.045), indicating the presence of compensatory puffing behavior for partial NR. Post-plasma nicotine level was higher in the 5% nicotine condition (6.85 ng/ml) than in the 3% condition (5.40 ng/ml, p = 0.014). **Conclusion:** Using a sensitive within-subject clinical design, this study provides clear evidence of compensatory puffing in nicotine-salt-based ENDS use when partial NR is employed, with the potential for increased toxicant exposure. Investigating the persistence of this effect in the long term, as well as the impact of further reductions in nicotine on users' puffing behaviors, is an important research priority.

FUNDING: Federal

POS5-7

DELIVERING SMOKING CESSATION INTERVENTIONS IN NHS PRIMARY DENTAL CARE - LESSONS FROM THE ENHANCE-D TRIAL

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Significance: Smoking is a major contributor to health inequalities in the UK. The ENHANCE-D trial is evaluating three smoking cessation interventions (Nicotine Replacement Therapy (NRT) or electronic cigarettes (ECs) or Very Brief Advice (VBA)) delivered in NHS primary dental care. This qualitative study aimed to provide insight into the factors that could influence the adoption of the interventions in these settings. **Methods:** Interviews were conducted at two timepoints. Purposive maximum variation sampling was used to recruit and interview a total of 24 dental patients, 12 dental professionals and 3 NHS dental commissioners. Thematic analysis was carried out using Normalisation Process Theory as an analytical framework. **Results:** Dental settings were perceived as an appropriate location to deliver smoking cessation interventions. Patients had several motivating and demotivating factors regarding use of NRTs or ECs; they often had negative preconceptions. Financial considerations were major influencers for both patients and dental teams. The time pressures for dental practices were identified as a major barrier. Some practical issues such as procurement and stock supply would need to be considered if the ENHANCE-D interventions were to be implemented in routine practice. **Conclusion:** Primary dental care teams are well placed to deliver smoking cessation interventions. However, a number of facilitators and deterrents were identified, and strategic changes are needed for successful implementation.

FUNDING: Other

POS5-8

INTERVENTIONS FOR SMOKELESS TOBACCO USE CESSATION: A COCHRANE REVIEW

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Significance: Smokeless tobacco is consumed orally or nasally without combustion or heat. It is used by over 300 million people worldwide and is the predominant form of tobacco use in South/Southeast Asia. Smokeless tobacco products are diverse, and often contain additives, such as betel, areca nut, slaked lime, and flavourings; each can affect how addictive or harmful the product is. While many interventions for combustible tobacco cessation are well-evidenced, the evidence base for effectiveness of smokeless tobacco products is limited. **Methods:** We searched the Cochrane Tobacco Addiction Group Specialised Register, MEDLINE, Embase, PsycINFO, and CENTRAL from inception to Jan 2023 for trials that randomised smokeless tobacco users to any intervention compared with control or another intervention and reported abstinence at 6+ month follow-up. We followed standard Cochrane screening, data extraction, and study appraisal methods. Where appropriate, we conducted meta-analyses of strictest-definition tobacco abstinence data to calculate risk ratios (RRs) with 95% confidence intervals (CI). **Results:** We included 41 trials of over 18000 people. Thirty-three trials were conducted in North America, 2 in Scandinavia, 5 in India, and 1 in Turkey. We found moderate-certainty evidence of increased quit rates from counselling compared with minimal support (RR 1.76, 95% CI 1.43-2.16; I^2=76%; n=8252; 20 studies), brief advice compared with no support (RR 1.23, 95% CI 1.02-1.49; I^2=56%; n=6537; 7 studies), and varenicline compared with placebo (RR 1.35, 95% CI 1.08-1.68; I^2=0%; n=508; 2 studies). We found low-certainty evidence of increased quit rates from NRT compared with placebo or no medication (RR 1.18, 95% CI 1.05-1.33; I^2=49%; n=2562; 11 studies). Low-certainty evidence did not show benefit from bupropion compared with placebo (RR 0.89, 95% CI 0.54-1.44; I^2=0%; n=293; 2 studies). We planned subgroup analyses to explore whether smokeless tobacco type affects intervention efficacy, but found insufficient data. **Conclusions:** Evidence supports using counselling, brief advice, varenicline and NRT to help people quit smokeless tobacco. Despite the vast majority of smokeless tobacco users living in lower and middle-income countries, only 6 studies were conducted outside of North America and Scandinavia. Given the heterogeneity of smokeless tobacco products (in use patterns, ingredients, and health impacts), this represents a significant health-equity gap.

FUNDING: No external funding reported

POS5-9

RELATIONSHIP BETWEEN SEX AND CURRENT DAILY SMOKING STATUS ON MOTIVATIONS TO USE ELECTRONIC CIGARETTES

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Significance: Electronic cigarette (e-cigarette) use is prevalent among adults. Understanding motivations for use is key for developing targeted cessation interventions for

those who are nicotine dependent, and prevention strategies for young people in early use. This study investigated differential motivations for e-cigarette use as a function of sex and daily cigarette smoking status. **Methods:** Data from 987 adults who endorsed lifetime e-cigarette use were coded based on biological sex (male/female) and their history of combustible cigarette use: current daily smokers (n= 383); past daily smokers (n=445); and never daily smokers (n=159). To examine motivations for vaping, participants completed the Reasons for E-cigarette Use questionnaire, assessing eight motives for use: social influence (modeling/peer pressure); alternative (to cigarettes); experiential effects (buzz/relaxation); harm reduction (relative to cigarettes); dependence (physical/psychological); (control of) weight/appetite; smell/flavor (of e-cigarette liquids); and cessation (of cigarette use). Participants also completed demographic measures delivered via Qualtrics on the Prolific crowdsourcing platform. **Results:** ANCOVA revealed sex by smoking status interactions on experiential and weight/appetite motives for e-cigarette use. Among current daily cigarette smokers, men reported greater experiential reasons for use than women, whereas women reported greater use for weight/appetite reasons. Male current smokers reported greater experiential reasons compared to male never daily smokers, whereas female past daily smokers reported greater experiential reasons than female current smokers. Current male smokers reported greater use of e-cigarettes for weight/control reasons than did male past daily smokers. Past daily cigarette smokers scored higher on harm reduction and flavor scales but lower on social influence than current and never daily smokers. Never daily smokers scored lower on the dependence scale than smokers and lower than past daily smokers on the cigarette alternative scale. All three groups differed on the cessation scale with past smokers scoring the highest, followed by current and never daily cigarette smokers. **Conclusion:** This study is among the first to examine sex and daily combustible cigarette smoking status as reasons for e-cigarette use. Results may help guide the development of targeted prevention and intervention strategies for reducing e-cigarette use.

FUNDING: State

POS5-10

IMPLEMENTATION OF A SMOKING CESSATION PROGRAMME IN CORRECTIONAL FACILITIES IN HONG KONG: A PROSPECTIVE EVALUATION

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Significance: Despite the alarmingly high smoking prevalence in incarcerated individuals, there remains a lack of effective treatment in correctional settings. We evaluated a smoking cessation programme for incarcerated individuals and identified the predictors of tobacco abstinence. **Methods:** From 2018 to 2022, we implemented the annual "Quit to Win" smoking cessation programme for adult daily cigarette smokers with intention to quit smoking in 5 correctional institutions in Hong Kong. Participants received face-to-face brief cessation advice, a 30-minute educational video covering the risk of smoking, benefits of quitting, and skills of managing craving and withdrawal symptoms, and booster advice at follow-ups. Those who achieved biochemically verified smoking abstinence at 3- and 6-month follow-ups were awarded HKD500 (≈USD64) at each timepoint and an additional social visit. Descriptive statistics were used to compare the 6-month biochemically validated abstinence rate by baseline characteristics. **Results:** We recruited 226 incarcerated individuals with a mean age of 33.4 (SD=9.6) years, 73.5% (N=166) were male, 55.3% (N=125) had moderate/ high cigarette dependence, and 63.7% (N=144) had previous drug use or currently on drug treatment. The most common reasons for quitting were "health concerns" (70.8%), followed by "proving one's ability" (46.0%), and "reuniting with family members" (45.6%). The retention rate at 3- and 6-month follow-up was 91.6% (N=207) and 87.2% (N=197), respectively. The biochemically validated tobacco abstinence rates were 63.3% (N=143) at 3-month and 51.3% (N=116) at 6-month follow-up, assuming those with missing data were non-abstinent. Participants with imprisonment duration of 5-10 years (56.6%) and >10 years (60.4%) had higher abstinence rate than those with <5 years (39.2%) of imprisonment (P=0.026). The abstinence rate was lower in participants with moderate or high cigarette dependence (42.4% vs 62.4% in those with low dependence; P=0.003) and in those with previous drug use (51.5%) or currently on drug treatment (34.0%) compared to those without (65.3%; P=0.004). No difference by sex and age group (<35 vs ≥35) were observed. **Conclusions:** The smoking cessation programme was able to help half of the incarcerated individuals to achieve 6-month biochemically validated abstinence. Targeted interventions for specific subgroups (e.g. those with polysubstance use) are warranted in correctional settings.

FUNDING: Other

POS5-11

PARENT AND PEER BEHAVIOR PREDICT CIGARETTE SMOKING AMONG ADOLESCENTS WITH CO-OCCURRING DISORDERS

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Background: Among adolescents without psychiatric diagnoses, parental monitoring protects against adolescent tobacco use, while peer use confers risk. Perhaps counterintuitively, parental communication about tobacco use is not always protective, as some studies find that more substance-related communication is associated with greater adolescent use. Despite their heightened risk for adverse tobacco-related health outcomes, very little is known about how parents and peers influence tobacco use among adolescents with co-morbid disorders. **Method**: 110 adolescents (ages 13-18; M_{age}=15.72; 43% female) with co-occurring psychiatric and substance use (excluding tobacco) disorders and their families were recruited from a community clinic. Negative binomial regression was used to predict past 30-day cigarette use from: age, sex, peer cigarette use (coded as 0 [no close friend use] or 1 [close friend use]), the frequency of use of four aspects of parent-reported parental monitoring strategies (parental knowledge, parental solicitation, parental control, child disclosure; ranging from 1 [*not at all*] to 5 [*all the time*]), and observer-rated parent communication against the use of tobacco (1= *not at all* to 9 = *very much*). **Results**: Adolescents used cigarettes, on average, 9.19 days (*SD*=12.61) over the 30 days preceding assessment. Approximately 65% reported that at least one of their closest friends uses cigarettes. Means for parental monitoring ranged from 3.04 (child disclosure) to 4.54 (parental control). On average, parents "somewhat" communicated negative views about tobacco use (*M*=5.11, *SD*=2.97). Negative binomial regression results indicated that female sex (β = -1.24, *p* =.02) and greater child disclosure (β= -0.20, *p* =.01) were associated with less cigarette use, while communication against tobacco use (β= 0.22, *p* =.01) and peer use (β= 3.71, *p* <.001) were associated with greater cigarette use. **Discussion**: Parent and peer factors were linked with cigarette use among adolescents with co-occurring disorders. Child disclosure and female sex protected against cigarette use, while parental tobacco-related communication and peer use conferred risk. Increasing child disclosure and reducing involvement with peers who smoke may be important intervention targets for reducing cigarette use among adolescents in co-occurring disorders programs. Further research is needed to determine how and when clinicians should recommend caregivers discuss tobacco use with their child.

FUNDING: Federal

POS5-12

PROJECT LUNA: OPTIMIZING THE EFFECTIVENESS OF A SMOKING CESSATION INTERVENTION IN THE LOW-DOSE CT LUNG CANCER SCREENING SETTING

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Significance: While smoking cessation intervention methods are well documented in the general community, the optimal configuration of a smoking cessation intervention in a low-dose computed tomography (LDCT) screening setting has not been established. The objective of this study is to test the efficacy of three tobacco treatment delivery strategies of increasing intensity, initiated in the LDCT screening. **Methods:** 630 participants were enrolled onto the study at an academic cancer center and randomized into 3 intervention groups: QL: quitline referral plus free nicotine replacement therapy (NRT); QL+: quitline referral plus free NRT or pharmacotherapy prescribed by the LDCT provider (i.e., radiologist); IC: integrated care including free NRT or prescription pharmacotherapy and counseling provided by tobacco treatment specialists. All participants received a free LDCT scan. We reported odd ratios (OR) from logistic regression to evaluate the effect of treatment assignment on abstinence at 3 (end of treatment; EOT) and 6 months. Intention-to-treat (ITT) abstinence rates were computed using self-report and expired CO verification combined with self-report. **Results:** Most participants were White (81%), 49% were female, and the median age was 59 years. In the ITT results using self-report, IC outperformed both QL (OR = 1.75, p = 0.009) and QL+ (OR = 1.58, p = 0.029) at 3 months, and QL at 6 months (OR = 1.86, p = 0.006). In the analyses using self-report plus expired CO verification, IC outperformed QL (OR = 1.73, p = 0.011) and QL+ (OR = 1.60, p = 0.027) at 3 months and QL at 6 months (OR = 1.75, p = 0.014). **Conclusions:** In smokers presenting for lung cancer screening, integrated care involving both medication and intensive counseling provides the best opportunity for

abstinence relative to QL counseling with or without medication provided by an LDCT provider (QL/QL+) through the end of treatment. These differences are maintained at 6 months compared to QL but ongoing treatment (> 3 months) may be necessary for these gains to be sustained relative to QL+.

FUNDING: Federal; Other

POS5-13

SMOKING AND DRINKING CHARACTERISTICS OF PARTICIPANTS RESPONDING TO SEQUENTIAL STAGES OF FOLLOW-UP IN TWO LARGE RCTS OF APPS FOR SMOKING CESSATION AND ALCOHOL REDUCTION

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Significance: Those who do not respond to follow-up in Randomised Controlled Trials (RCTs) of smoking and drinking interventions are often assumed to have relapsed to baseline levels of smoking or alcohol consumption. Here, we examine whether smoking and drinking characteristics differed between participants responding to sequential stages of follow-up in two remote RCTs examining the effectiveness of apps for smoking cessation or alcohol reduction. **Methods:** Descriptive analysis of 3143 adult smokers participating in the ASSET trial evaluating the Smoke Free app and 5602 adult drinkers participating in the iDEAS trial evaluating the Drink Less app. Smoking abstinence at 7-months (ASSET) and change in weekly alcohol consumption in UK units at 6-months (iDEAS) are presented by the stage of follow-up participants responded to (initial invitation vs. reminders via email/text/phone/post). **Results:** In ASSET, initial responders smoked fewer cigarettes per day (mean=15.9 [sd=8.8]) and a smaller proportion smoked within 5 minutes of waking (39%) compared with those responding to sequential reminders via email (17.3 [8.4]; 43%), phone call (20.5 [20.6]; 37%) and text (18.2 [8.8]; 52%). Initial responders were also more likely to report being abstinent at 7-month follow-up (31%) than at later stages of follow-up via email (17%), phone call (19%) and text (11%). In iDEAS, initial responders had lower baseline AUDIT-C scores (mean=9.8 [sd=1.9]) and a smaller proportion reported daily heavy episodic drinking (34%) compared with those responding to sequential reminders via email (10.0 [1.8]; 40%), phone call (10.6 [1.6]; 57%), postal survey (10.6 [1.7]; 55%) and postcard (10.6 [1.7]; 61%). Initial responders had slightly smaller reductions in weekly units at 6-month follow-up (mean=26.6 [95%CI=25.2-28.0]) relative to each subsequent mode of follow-up via email (m=28.6 [27.1-30.5]), phone call (m=29.4 [19.5-39.3]), postal survey (m=28.9 [20.9-37.5]) and postcard (m=28.7 [20.2-38.1]). **Conclusion:** In smoking RCTs non-response is typically classified as being indicative of relapse to smoking. A smaller proportion reported abstinence after each sequential mode of follow-up in the ASSET trial, but at the final stage of follow-up around one in ten respondents reported abstinence and would have been misclassified with less intensive follow-up. In the iDEAS trial those responding at later stages of follow-up reported slightly larger reductions in weekly units. In trials with less intensive follow-up methods intervention effectiveness may be underestimated, depending on assumptions made about missing data.

FUNDING: Nonprofit grant funding entity

POS5-14

APPLYING AN ONP PURCHASE TASK TO EXAMINE ABUSE LIABILITY OF ORAL NICOTINE PRODUCTS

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Significance: Flavored commercial oral nicotine products (ONPs) are gaining popularity among young adults, with millions spent on ONP marketing, yet their abuse liability remains understudied. In this pilot study, current nicotine users completed a hypothetical purchase task paradigm to examine abuse liability for ONP type and flavor. **Methods:** Young adults (N=17; 21-29 years) completed a baseline survey assessing nicotine dependence and conducted a 30-min ad-lib session in which they used one ONP that varied by type and flavor. Participants were then asked to estimate the quantity of the ONP they would purchase in 24 hours if access to their usual nicotine product was and was not available. Analyses examined differences in ONP type (pouch v. gum), flavor (fruit v. mint), and nicotine dependence (high v. low). Descriptive (product means) statistics examined Omax (the maximum total expenditure), Pmax (price at peak expenditure), and Intensity (consumption at $0) for both ONPs by flavor and with/without access to their preferred nicotine product. **Results:** Participants (Mage=24.7 [SD=2.6]) used e-cigarettes (n=11) or used both e-cigarettes and cigarettes (n=6). Based on increased spending, gum (v. pouch; p=.03) and fruit flavor (v. mint; p=0.01) were preferred, with increased spending among participants with higher nicotine dependence (v. lower; p=.003). When access to usual nicotine product was restricted, separate purchase tasks for gum and pouch products (in fruit and mint flavor) suggest that participants were willing to spend more on gum and fruit flavors (Omax gum=$3.09; Omax fruit=$3.00). Pouches (Pmax=$1.50/piece; Intensity=5.8 pieces) and mint flavors (Pmax=$7.50/piece; Intensity=5.8 pieces) had more sensitivity to price increases and consumption. Participants with greater nicotine dependence exhibited increased spending and consumption (Omax= $3.33; Pmax=$5.00/piece; Intensity=6.6 pieces). Participants reported an overall decrease in spending and consumption regardless of ONP type/flavor when access to their preferred nicotine product was available. **Conclusions:** Differences in expenditure and consumption intensity were observed when comparing ONP type and flavor, both with and without access to their own nicotine product available. Omax showed higher spending for gum and fruit ONPs, while Pmax suggested greater sensitivity to price changes for pouch and mint ONPs, emphasizing the potential influence that ONP type and flavor may have on abuse liability.

FUNDING: Federal; FDACTP

POS5-15

TOBACCO TREATMENT PROGRAM SUSTAINABILITY ACROSS TIME AND ASSOCIATION WITH PROGRAM CHARACTERISTICS

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Significance: The Cancer Center Cessation Initiative (C3I) is a National Cancer Institute (NCI) Cancer Moonshot℠ program that supports NCI-designated cancer centers to implement and improve tobacco treatment programs (TTPs) for cancer patients who smoke. Although TTP effectiveness is well studied, sustainability of these programs remains unclear. We assessed C3I TTP characteristics associated with greater capacity for sustainability. **Methods:** TTP evaluation data were reported bi-annually by C3I centers (n = 42), including the Clinical Sustainability Assessment Tool (CSAT; i.e., program sustainability measure). We assessed mean scores for each CSAT domain across 4 years since C3I funding. Using regression analysis, we examined mean CSAT scores (engaged staff and leadership domain) as a function of program size (number of current smokers), TTP services offered (medication, point of care, counseling, referral), and level of TTP implementation (Cancer Center wide, part of Cancer Center, other) during July-December 2019. **Results:** CSAT scores trended upward over 4 years (i.e., Engaged staff and leadership: 0.5 years = 5.6, 2.5 years = 6.2, 4 years = 6.2; Engaged stakeholders 0.5 years = 5.6, 2.5 years = 5.8, 4 years = 6.1; Monitoring and evaluation: 0.5 years = 5.1, 2.5 years = 5.7, 4 years = 5.9; Implementation and training: 0.5 years = 5.4, 2.5 years = 5.9, 4 years = 6.3; Outcomes and effectiveness: 0.5 years = 4.7, 2.5 years = 6.0, 4 years = 6.2; Workflow integration: 0.5 years = 5.5, 2.5 years = 6.2, 4 years = 6.3; Organizational readiness: 0.5 years = 5.0, 2.5 years = 5.5, 4 years = 5.7). Larger program size and offering referral services were associated with lower CSAT scores for engaged staff and leadership. Offering cessation counseling was associated with higher CSAT scores for engaged staff and leadership. C3I centers offering cessation counseling services implemented Cancer Center wide (vs. part of Cancer Center), and centers with point of care services implemented Cancer Center wide (vs. other), had higher CSAT scores for engaged staff and leadership. **Conclusions:** Smoking cessation counseling services may require more engagement to implement, compared to referral services. Fostering cohesive staff and leadership engagement in smaller centers, and center-wide, may be easier compared to larger centers and only in parts of centers. Although factors associated with sustainability may be center-specific, overall capacity for sustainability can increase over time.

FUNDING: Federal

POS5-16

THE EFFECTS OF LONG-TERM FLAVORED HOOKAH TOBACCO SMOKING ON VASCULAR STIFFNESS AND CARDIOVASCULAR DISEASE-RELATED EXPOSURE BIOMARKERS

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Significance: Flavored tobacco smoking using a hookah is effectively being marketed as a harmless tobacco alternative to youth and young adults. While data on the short-term vascular effects of flavored hookah tobacco smoking are emerging, data on the long-term effects are not only lacking but are critical to strengthen the evidence base and inform regulatory efforts. In the present study, we sought to determine the effect of chronic, intermittent exclusive hookah smoking on arterial stiffness and biomarkers of harm, as compared to exclusive cigarette smokers and non-smokers. **Methods**: In 45 exclusive chronic hookah smokers (27±1 years of age; mean±SE), who reported smoking flavored hookah tobacco on average two times per week for 8±1 years, 43 exclusive cigarette smokers who reported 5.4±1.1 pack years, and 40 non-smokers, we measured aortic stiffness, assessed as carotid-femoral pulse wave velocity and plasma biomarkers of harm, including: high sensitivity-C-Reactive Protein (hs-CRP), and fibrinogen. **Results:** Hookah smokers and cigarette smokers exhibited significantly higher carotid-femoral pulse wave velocity, indicating increased arterial stiffness, as compared to non-smokers (hookah smokers: 8.29±0.21 m/sec; cigarette smokers: 8.56±0.21 m/sec; non-smokers: 7.29±0.18 m/sec; mean±SE; p<0.05). Among hookah smokers, the vascular changes were accompanied by intermediate levels of fibrinogen and hs-CRP as compared to cigarette and non-smokers (fibrinogen: hookah 278.33±7.44; cigarette 293.81±9.20; non-smokers 268.55±4.79 mg/dL; hs-CRP: hookah 1.09±0.15; cigarette 1.69±0.27; non-smokers 0.62±0.07 mg/L). **Conclusions:** Though intermediate between cigarette smokers and non-smokers, long-term intermittent flavored hookah tobacco smoking is associated with increases in carotid-femoral pulse wave velocity—an index of arterial stiffness and a marker of atherosclerosis—and cardiovascular disease-related exposure biomarkers. These findings suggest, in stark contrast with social media and tobacco industry claims, that flavored hookah tobacco smoking is not without harm.

FUNDING: Federal; FDACTP

POS5-17

FTCD VS HSI WHICH MEASURE OF DEPENDENCE MORE ACCURATELY PREDICTS SMOKING ABSTINENCE AMONG CANCER PATIENTS UNDERGOING SMOKING CESSATION TREATMENT IN A COMPREHENSIVE CANCER CENTER?

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Significance: Smokers with cancer exhibit greater cigarette dependence compared to smokers without cancer. Research is limited on the predictive accuracy of the Fagerström Test for Cigarette Dependence (FTCD) and the Heaviness of Smoking Index (HSI) on smoking abstinence in cancer patients undergoing smoking cessation treatment. **Methods:** We analyzed data from 5,934 cancer patients seeking smoking cessation treatment at The University of Texas MD Anderson Cancer Center (female 52.08%; Mean age = 55.52, SD = 11.17). The study focused on the predictive accuracy of the FTCD and HSI for abstinence at 3-, 6-, and 9-months from consultation, controlling for sex at birth, race/ethnicity, and age. Abstinence was 7-day point prevalence without smoking, not even a puff. **Results:** Both the FTCD and HSI showed comparable predictive accuracy for smoking cessation (Areas Under the Curve scores -AUCs- around 60). For the FTCD, AORs for cessation were 0.86 (95% CI: 0.84- 0.88) at 3 months, 0.89 (95% CI: 0.86-0.9) at 6 months, and 0.90 (95% CI: 0.87-0.91) at 9 months. Predictive accuracies varied among different racial groups. For the HSI, AORs for cessation were 0.81 (95% CI: 0.78- 0.84) at 3 months, 0.84 (95% CI: 0.81-0.87) at 6 months, and 0.84 (95% CI: 0.81-0.87) at 9 months. **Conclusions:** The study indicates that both the FTCD and HSI are similarly effective but not highly accurate in predicting abstinence from smoking in cancer patients, as indicated by the low AUCs. The shorter HSI, being less burdensome, should be considered as a measure of cigarette dependence in cancer care settings.

FUNDING: Federal; State; Academic Institution; Nonprofit grant funding entity

POS5-18

CANNABIS USE AMONG PEOPLE WHO SMOKE WHO ARE SCHEDULED FOR LUNG CANCER SCREENING

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Purpose: Cannabis use is common among people who smoke cigarettes. Co-use of cannabis and tobacco increases the risk of adverse physical and mental health outcomes, compared to use of either substance alone. The current study aims to characterize cannabis use among older adults at high risk for lung cancer who currently smoke and who are scheduled for a lung cancer screening (LCS) test and identify sociodemographic and psychological correlates of co-use that may inform future screening and intervention. Method: We analyzed baseline data from a randomized clinical trial that offered tobacco treatment to people who smoked cigarettes in the past 30 days and were scheduled for LCS. Participants (n=638) reported past 30-day tobacco product use (cigarette, e-cigarette, and alternative nicotine/tobacco products), dependence, and cessation attempts, cannabis use, and mental health symptoms (patient health questionnaire-8 (PHQ-8) and generalized anxiety disorder-7 (GAD-7)) at baseline. Descriptive and bivariate analyses explored differences in tobacco use and mental health symptoms among tobacco users who did and did not report recent cannabis use. Results: On average, participants were 63.9 (SD=6.5) years old, 55.6% (n=355) were female and 82.3% (n=525) were White. At baseline, participants smoked an average of 16.2 (SD = 8.3) cigarettes per day and 75.7% (n=480) smoked within 30 minutes of waking. 18.8% (n=120) reported past 30-day cannabis use. Participants who used cannabis (vs. non-users) were younger (*M* = 62.2 vs 64.3 years, p <.001), endorsed more depression symptoms (PHQ-8 score *M* = 8.1 vs. 5.9, *p* < .001), and were more likely to be male than female (24.4% vs. 14.4%, p=.001) and African American than White race (29.7% vs. 16.1%, p=.012). Groups did not differ significantly in number of cigarettes per day, time to first cigarette, urge to smoke, anxiety symptoms, past 30-day alternative nicotine/tobacco product use, cigarette quit attempts, or use of cessation medication. Conclusions: Recent cannabis use among individuals scheduled for LCS who smoke cigarettes was nearly twice as prevalent as past-month cannabis use among adults over 55 in the US (estimated at 9.2% based on 2022 National Survey on Drug Use and Health). Screening patients for cannabis use may support targeted intervention (e.g., risks of co-use, messaging about the route of administration) to lower the risk of negative health outcomes among people who use tobacco and cannabis.

FUNDING: Federal

POS5-19

RESPIRATORY FUNCTION, PHYSICAL CAPACITY, AND METABOLIC SYNDROME COMPONENTS IN COMBUSTIBLE CIGARETTES AND HEATED TOBACCO PRODUCTS USERS: A FIVE-YEAR FOLLOW-UP COHORT STUDY

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Purpose: Chronic obstructive pulmonary disease (COPD) is one of the leading causes of death worldwide and is the fourth leading cause of death in Kazakhstan. Cigarette smoking is a prevalent risk factor for COPD. While quitting smoking is the preferred way to reduce COPD risk, literature suggests that heated tobacco products (HTP) might be a better option for people who cannot quit smoking. The aim of this paper was to analyze the long-term effects of shifting to HTP use in long-term smokers compared to continued combustible cigarettes (CC) use. **Patients and methods:** A cohort of 1200 participants (393 HTP and 807 CC) aged 40-59 years with a minimum of 10 pack-year smoking history were recruited and followed for four years. The functional outcomes compared between HTP, CC users and No-Smokers (NS, people who stopping smoking) included: (1) COPD Assessment Test (CAT); (2) post-bronchodilator lung function; (3) 6-minute walking distance (6MWD) test; and (4) metabolic syndrome components. Multivariable linear mixed models (MIXED) were used to compare functional outcomes between visits and to test associations between health outcomes and smoking type (HTP vs. CC vs. NS) over time. **Results:** Out of 1200 participants 830 (466 CC users, 248 HTP users and 116 No-Smokers) remained in the study by the fifth year of follow up. Linear mixed models showed HTP use was associated with better CAT scores and HDL cholesterol level compared to CC users. Lung function (FVC) decrease was significantly less in HTP users. FEV, 6MWD, waist circumference, fasting blood glucose, triglycerides and diastolic blood pressure significantly changes over time, but without between-group difference in dynamic. **Conclusion:** This study demonstrated that HTP users experienced it to a significantly lesser decrease in lung function by FVC compared to CC users over time (in time dependent model), while demonstrating better stable

levels in other functional outcomes. The results of this study suggest that HTP might be a less deleterious alternative compared to CC in people with long history of CC use and who cannot quit smoking.

FUNDING: Tobacco Industry

POS5-20

AD LIBITUM SMOKING OF REDUCED NICOTINE CIGARETTES IN LABORATORY AND HOME ENVIRONMENT -IMPLICATIONS FOR MANDATED REDUCTION OF NICOTINE IN US DOMESTIC CIGARETTES

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Significance. To improve public health, the US FDA has proposed rulemaking to reduce the nicotine content of cigarettes to reduce cigarette appeal and initiation and minimize their addictive risk. The consequences of that policy are uncertain. **Methods.** Adult smokers (n=47; 25 men) who were not trying to quit smoking participated in a double-blind, randomized, within-subjects crossover study of very low nicotine content (VLNC, 0.4 mg/gm) and moderate nicotine content (MNC, 15 mg/gm) cigarettes. Participants smoked only their assigned experimental cigarette in their home environment for 7 days and completed laboratory visits, including *ad libitum* smoking of the assigned experimental cigarette at the beginning and end of each experimental week. Participants smoked their usual cigarettes for 7 days between experimental conditions. Interactive voice response (IVR) questionnaires assessed home smoking behavior. Laboratory smoking examined puff topography, exhaled carbon monoxide, plasma nicotine and cotinine, and subjective evaluations of the experimental cigarettes. **Results.** Compared to MNC cigarettes, VLNC cigarettes yielded significantly lower plasma nicotine (4.3 vs. 14.9 ng/ml) and cotinine 1(19 vs 209 ng/ml), fewer number of puffs (13.4 vs 14.6), less satisfaction and liking (Cigarette Evaluation Scale), and less reduction in cigarette craving (Questionnaire of Smoking Urges-Brief). Cigarettes per day in home smoking of own brand (13.8) and VLNC (12.9) were both less than with MNC (14.3). The difference between number of VLNC and MNC was significant (p=0.03). Sex significantly influenced response to Duke Sensory Questionnaire questions on strength of puff on: tongue, nose, windpipe, and chest; where women rated the MNC higher than men, but LVNC lower than men. **Conclusions.** The results indicate that VLNC cigarettes in both the home and the lab environment engender less smoking but are less appealing than MNC cigarettes. Although the cigarettes were less appealing, they continued to be smoked, albeit at reduced total consumption. Women appeared to be more sensitive to nicotine reduction on sensations on oral/tracheal structures. The results add to the conclusions of other studies that nicotine reduction influences tobacco use, further bolstering the argument that mandated nicotine content reduction will likely reduce the public health burden of smoking.

FUNDING: Federal

POS5-21

PREDICTORS OF THE SHORT-TERM RELAPSE AFTER SUCCESSFUL QUITTING AMONG PATIENTS OF SMOKING CESSATION CLINICS IN CHINA, 2019- 2021

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Significance: Tobacco use has caused huge socio-economic burden to China. The Chinese government started to support establishment of smoking cessation clinics (SCCs) in each province to offer smoking cessation services since 2014. As nicotine addiction is characterized by high rates of relapse following a period of abstinence, this study aimed to identify vulnerable subgroup and target to prevent relapse risk for patients of SCCs in China. **Methods:** The data collected when patients visited the clinics for the first time and received follow-up at 1 month and 3 months after the initial visit. Cessation treatments provided by trained practitioners in SCCs consists of counseling, the first-line cessation medication (including varenicline, bupropion, and nicotine replacement therapy), and traditional Chinese medicine (TCM, including acupuncture, ear acupuncture, and Chinese herbal). Counseling were delivered based on the 5As (Ask, Advise, Assess, Assist, and Arrange follow-up) and 5Rs (Relevance, Risks, Rewards, Roadblocks, and Repetition) theory model, with recommended duration ≥10 minutes for each session. We used pooled data from June 2019 to December 2021. Patients were eligible if they (a) were at least 18 years old; (b) completed both 1-month and 3-month follow-ups; (c) reported being abstinent at 1-month follow-up (N=10,882). Short-term relapse is defined as patients who reported being abstinent at 1-month follow-up, but smoked at 3-month follow-up. Logistic regression analysis model was used to determine predictor factors of relapse. **Results:** Of the 10,882 patients (Mage= 51.0 ± 15.1, 95.9% male). 15.2% patients were prescribed the first-line cessation medication, and 4.2% of patients used TCM. 46.4%of the patients had withdrawal symptoms when followed-up at 3 months. An overall short-term smoking relapse prevalence was 11.5%. Higher relapse rates were significantly associated with patients who were obese (BMI score were 28.0 or above) (OR, 2.341; 95% CI:1.067-5.137), with 1-5 times quit attempts or more than 5 times in the past (compared with patients who had never tried to quit) (OR, 1.535, 2.131; 95% CI: 1.197-1.969 and 1.380-3.292, respectively), with low self-efficiency (regarded it was moderately or highly difficult to quit) (OR, 2.325, 2.566; 95% CI: 1.317-4.104 and 1.499-4.395, respectively), and with withdrawal symptoms at the 3-month follow-up (OR, 4.412; 95% CI: 3.308-5.885). Conversely, use of TCM therapies was significantly associated with a lower risk of relapse (OR, 0.389; 95% CI: 0.158-0.961). **Conclusions:** Helping patients overcome weight gain and other withdrawal symptoms after quitting smoking, and improving their self-efficacy of quitting are the key to prevent short-term relapse. The mechanism of TCM in preventing relapse needs further study and confirmation.

FUNDING: No external funding reported

POS5-22

DEVELOPMENT OF AN MHEALTH MINDFULNESS-BASED INTERVENTION FOR SMOKING CESSATION AMONG PATIENTS DIAGNOSED WITH CANCER: A MIXED-METHODS APPROACH

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Introduction Continued tobacco use among cancer survivors increases the risk of a second primary cancer and mortality. Despite a high quit rate at the time of cancer diagnosis, more than half of survivors continue smoking. Existing smoking cessation interventions have not demonstrated efficacy above standard treatment among cancer survivors. Such results may stem from a lack of understanding of the real-time dynamic relations between cancer-specific (e.g., fear of cancer recurrence) and general (e.g., craving) smoking vulnerabilities that contribute to relapse. The current study presents findings from the first phase of a project that aims to develop a mindfulness-based ecological momentary intervention (EMI) for smoking cessation using a smartphone app targeting cancer-specific risk factors for relapse among cancer survivors. Specifically, the objective was to obtain feedback from cancer survivors who smoke on the utility and acceptability of key mindfulness practices for smoking cessation using an mHealth approach. **Methods** Participants were 20 cancer survivors who endorsed current cigarette smoking. They engaged in a 50-minute Zoom interview and completed a brief survey. During interviews, participants provided feedback on (1) prospective meditation and mindfulness skills and (2) the timing and delivery of EMIs and ecological momentary assessments (EMAs). The survey assessed demographics, tobacco history, and perceived usefulness of the app for an EMI. **Results** Participants were 55% female, 95% non-Hispanic White (means for age = 63.7 and cigarettes per day = 13.5). Primary cancer diagnoses were lung (n=6), colorectal (n=4), breast (n=4), melanoma (n=3), bladder (n=2), and gynecological (n=1). The interviews revealed that mindfulness was perceived as a novel and potentially helpful approach in managing craving and cancer-related stress. Although participants found EMIs useful, responses were mixed regarding the EMA length and frequency. Suggestions included providing meditations of varying durations and clear instructions for instances when participants were unable to complete the EMIs and EMAs. Eighty percent were willing to try the app to quit smoking and 75% rated that the app would be useful. **Discussion** Results showed that cancer survivors found the mindfulness-based EMI for smoking cessation both acceptable and useful. These data will guide the development of a prototype mindfulness-based app that will be tested for usability.

FUNDING: Federal

POS5-23

AN ASSESSMENT OF SOCIAL DETERMINANTS OF HEALTH QUESTIONS IN A CLINICAL TRIAL OF A STANDARDIZED RESEARCH E-CIG AMONG ADULTS ATTEMPTING TO SWITCH FROM CIGARETTES

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Significance. A disproportionate impact to health from combustible cigarettes remains high in the U.S. among adults with lower educational attainment and living below the poverty level compared to their non-smoking counterparts. These disparities are influenced, in part, by social determinants of health (SDoH). Limited research exists on the tools used to identify the environmental, behavioral, and social causes and consequences of nicotine addiction. This study assessed the social and economic factors that may influence clinical trial enrollment, participant retention, and the ability of participants to switch from traditional cigarettes to a Standardized Research E-Cig (SREC). Methods. This cross-sectional analysis assessed SDoH-related risk of adults who were recruited to a 6-week clinical trial of switching from traditional cigarettes to a SREC from March 2019 to December 2023. Recruitment occurred using several sources including Facebook, the institution's on-hold message, email, and flyers. To assess the SDoH-related risk we conducted an assessment adapted from the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE) and the Adverse Childhood Experiences (ACEs) surveys. The SDoH survey, collected at baseline (Visit 1), included questions on housing, material security (food clothing, etc.), health insurance, neighborhood safety, social connection, and transportation. Other measures routinely collected in clinical trials of tobacco (e.g., race, ethnicity, education, etc.) were also included. Means and proportions were used to describe the sample within the Healthy People 2030 (HP2030) domains (D): D1) economic stability, D2) education and early childhood development, D3) social and community context, D4) health and health care, and D5) neighborhood and built environment. Sample sizes varied due to missing data. Results. Overall, 104 participants completed the SDoH assessment and were 65.4% female, 90.4% White, and had a mean age of 50.9 (SD = 10.0). The mean exhaled carbon monoxide measurement was 22.1 ppm (SD=11.0). The results for the HP2030 domains were: D1, 64.4% of participants were economically stable, worked full-time jobs (64.4%) and were not worried about losing housing (93.3%), had material security (80.4%) and transportation (100%); D2, 77.9% had some college or higher education level, and the most prevalent ACE was a parent or adult swearing, etc. (51.0%); D3, 91.1% felt some level of stress and 55% saw or talked to people they care about 5+ times per week; D4, 91.2% had health insurance; and D5, all respondents (100%) reported feeling physically and emotionally safe where they live. Conclusion. A comprehensive assessment of SDoH-related risk should be considered in future clinical trials of tobacco to evaluate potential environmental, behavioral, and social causes and consequences of nicotine addiction.

FUNDING: Federal; FDACTP

POS5-24

BARRIERS AND FACILITATORS TO CIGARETTE SMOKING CESSATION AMONG AFRICAN AMERICAN LIGHT SMOKERS: INSIGHTS FROM FOCUS GROUPS

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Significance African Americans (AA) experience higher rates of tobacco-related disparities and are less likely to successfully quit smoking, as compared to other racial/ethnic groups. Approximately, 50% of AA smokers are light smokers (smoking ≤10 cigarettes per day (CPD)), yet their dependence measures are comparable to that of white heavy smokers. Few studies have focused on cessation interventions among this subgroup of AA smokers. To inform future effective cessation intervention programs, the objective of this study was to explore African American light smokers' experiences, perceptions and attitudes regarding barriers and facilitators of smoking cessation. **Method** Using a semi-structured interview guide, six focus groups were conducted among 24 African American light smokers (9 men and 15 women; 45.16 ± 12.4 years old) who self-reported smoking ≤ 10 CPD, verified by exhaled carbon monoxide measures. Interviews were recorded, de-identified, transcribed and analyzed using Dedoose to identify major themes. **Results** Overall, half of study participants reported having at least one serious quit attempt within the past 12 months. Four major themes were identified that describe barriers to cessation: (a) "enjoying menthol and alternative tobacco products use"; (b) "socializing with other smokers"; (c) "perceiving cigarettes as a solution for managing adverse life events"; and (d) "stopping only to restart smoking". AA light smokers expressed agreement that facilitators of cessation include themes centered around: (a) experiencing personal/familial sickness; (b) accessing a support system; and (c) having an exclusive cigarette health marketing campaign targeted to the AA smoking communities. **Conclusion** Findings from this study suggest that, despite being motivated to quit smoking, AA light smokers experience unique barriers to cessation efforts, particularly surrounding the use of menthol and alternative tobacco products, personal beliefs and peer support. Future studies should focus on cessation programs that support AA light smokers' quit efforts by addressing their unique barriers to smoking cessation, which will help combat tobacco-related disparities specific to this underserved population.

FUNDING: State

POS5-25

HEALTH EQUITY IMPLICATIONS OF A NICOTINE REDUCTION STANDARD: RACIAL/ETHNIC DIFFERENCES IN THE ACUTE AND EXTENDED EFFECTS OF REDUCED NICOTINE CONTENT IN CIGARETTES ON CIGARETTE REINFORCEMENT

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SIGNIFICANCE: Racial/ethnic minority groups in the U.S. continue to suffer disproportionately from tobacco-related diseases and death, despite considerable efforts to reduce tobacco use. The FDA proposes to develop a product standard that mandates a reduction in nicotine content in cigarettes to minimally addictive levels, which may substantially reduce smoking and its harms in the U.S. However, it is unknown whether this policy would reduce health disparities by equitably benefiting all racial/ethnic groups in the U.S. This study evaluated racial/ethnic differences in the acute and extended effects of smoking very low nicotine content (VLNC) cigarettes on the reinforcing efficacy of cigarettes in youth who smoke cigarettes daily. **METHODS:** Data were drawn from 2 experimental studies that included racially and ethnically diverse samples of youth ages 15-19 (6-10 Asians/Pacific Islanders [API]; 15-20 Other Underrepresented Minorities [URM]; 25-40 Whites). Participants were randomly assigned to either VLNC (0.4 mg/g nicotine) or normal nicotine content (NNC; 15.8 mg/g) study cigarette conditions. Study 1 (n=50) assessed the acute effects of VLNC vs. NNC cigarettes following overnight abstinence relative to usual brand (UB) cigarettes, whereas Study 2 (n=66) assessed the extended effects of VLNC vs. NNC cigarettes across 3 weeks. Cigarette Purchase Tasks (CPT) were completed at baseline and experimental sessions. Multilevel models tested main and interactive effects of cigarette nicotine content and race/ethnicity on 5 demand indices derived from CPT. **RESULTS:** Study 1 demonstrated a significant interactive effect, such that URM youth reported higher maximum expenditure (O_{max}) for UB cigarettes relative to API and White youth (p=.001). Study 2 found a main effect of nicotine content, such that youth assigned to VLNC cigarettes reported lower O_{max} for study cigarettes at Week 3 than those assigned to NNC cigarettes (p=.02). Significant interactions were also found between race/ethnicity and nicotine content, such that URM youth who switched to VLNC cigarettes reported significantly lower O_{max} for study cigarettes at Week 3 compared to URM youth assigned to NNC cigarettes (p=.03). **CONCLUSIONS:** Findings provide preliminary evidence that a nicotine reduction standard may reduce the reinforcing effects of cigarettes acutely and over time, and thereby reducing cigarette demand in youth across all racial/ethnic groups; this effect may be heightened among URM youth.

FUNDING: Federal

POS5-26

PROVIDING NO-COST NRT AT CANCER CENTER CESSATION INITIATIVE (C3I) SITES: METHODS AND STRATEGIES TO PROMOTE EQUITY

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Significance: While clinical practice guidelines recommend integration of tobacco treatment into cancer care, this is not yet realized in most cancer care settings. Nicotine replacement therapy (NRT) is highly effective for cancer patients trying to quit smoking but coverage, especially with public insurance for older and low-income adults, varies widely. Offering no-cost NRT to cancer patients has potential to increase tobacco treatment engagement and reduce disparities around tobacco-related disease burden. This study aims to describe NCI-designated Cancer Center Cessation Initiative (C3I) sites that have no-cost NRT programs and present their strengths and obstacles. Methods: Tobacco treatment engagement and medication use rates across 32 C3I sites were gathered via standardized survey; these data correspond to 7/2021-12/2021. Semi-structured interviews based on the Consolidated Framework for Implementation Research were then conducted in 2023 with 9 C3I sites with no-cost NRT programs. Descriptive statistics were used for survey data and thematic analysis for interview data. Results: On average, 17.4% of patients who smoke engaged in a C3I tobacco treatment program and 37.7% of those were prescribed NRT. Based on interviews, barriers to widely disseminating no-cost NRT included unclear or inconsistent eligibility determinations, with some sites requiring proof of financial hardship; healthcare systems requiring prescription orders for over the counter NRT formulations; and pick-up limited to a single location. Also, most sites operated under institutional policies barring advertisement of no-cost NRT plus funding uncertainty that jeopardized program sustainability. Strengths across no-cost NRT programs included integration of tobacco treatment programs into electronic health records and robust availability of evidence-based cessation counseling paired with combination NRT. Conclusion: Results show significant heterogeneity in how some cancer centers provide no-cost NRT to patients, an initiative that is largely driven by the desire to improve equitable access to tobacco treatment. Unfortunately, barriers related to prescription and distribution of NRT, eligibility, advertisement, and sustainability mean that providing accessible, gold standard treatment to all cancer patients who smoke is not yet a reality. Future research should investigate how to improve access and delivery of no-cost cessation medications for all patients with cancer who smoke.

FUNDING: Federal

POS5-27

HELPING EVERYONE ACHIEVE A LIFETIME OF HEALTH-FUTURE ADDICTIONS SCIENTIST TRAINING (HEALTH-FAST): OUTCOMES OF A TRAINING PROGRAM IN TOBACCO AND OTHER SUBSTANCE USE HEALTH EQUITY SCIENCE

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Significance: Numerous chronic diseases are associated with tobacco and other substance use, including cancers, diabetes, and cardiovascular diseases. Critically, population-based estimates of tobacco and other substance use mask disparities in use and related health consequences among groups experiencing marginalization, discrimination, and systemic racism that limits the achievement of health equity. Addressing these disparities is a critical step in reducing the disproportionate burden of associated diseases in disadvantaged communities; moreover, enhancing diversity in the workforce through training programs that address tobacco and other substance use is a necessary strategy to make significant progress toward this goal. Here, we present outcomes from the first 2 cohorts of a research/education program called HEALTH-FAST, which was designed to build the capacity of under-represented doctoral trainees (DT) and postdoctoral scholars (PD)/early-stage investigators (ESI), respectively, in tobacco and other substance use health equity science. **Methods**: Overall, 8 DTs, 2 PDs, and 6 ESIs (all from groups under-represented in the sciences) completed HEALTH-FAST to date in annual cohorts spanning 2021-2023. Trainees provided quantitative data on satisfaction with programmatic offerings, research-related factors (e.g., self-efficacy, knowledge), and academic productivity. When applicable, comparisons over time were assessed using Wilcoxon signed-rank tests. **Results**: Trainees rated satisfaction with programmatic offerings highly (e.g., between good and excellent on average). DTs reported statistically significant increases in research knowledge, tobacco and other substance use knowledge, research self-efficacy, and research career preparation over time. ESI/PDs reported statistically significant increases in tobacco and other substance use knowledge, research self-efficacy, professionalism self-efficacy, and research career preparation over time. Scholars attributed 61 professional presentations, 76 peer-reviewed publications, and 18 grant awards to HEALTH-FAST. **Conclusions**: The HEALTH-FAST research/education program met key objectives in the initial cohorts; each, along lessons learned, will be further described in the presentation. Data-driven best practices and recommendations to inform future training/mentorship programs that address tobacco and other substance use health equity and target historically excluded trainees will also be discussed.

FUNDING: Federal

POS5-28

ACTIVATEXTO:FEASIBILITY AND ACCEPTABILITY OF A MOBILE INTERVENTION THAT PROMOTES SMOKING CESSATION AND PHYSICAL ACTIVITY AMONG LATINOS

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Objective: To assess the feasibility and acceptability of a mobile intervention that promotes smoking cessation and physical activity among Latinos. Methods: Twenty Latino adults who smoked and did not meet recommended levels of physical activity were recruited using community-based recruitment strategies. Participants received *Actívatexto*, a theory-based, culturally accommodated, 12-week text messaging intervention (available in English and Spanish) that promotes smoking cessation and physical activity. *Actívatexto* integrates four components: 1) a text messaging program, 2) a wearable device, 3) an online dashboard where the research team manages participants' incoming and outgoing data from both the text messaging program and wearable device, and 4) nicotine replacement therapies (NRT). We assessed self-reported 7-day point prevalence smoking abstinence at Month 3, weekly minutes of moderate to vigorous physical activity (MVPA), pharmacotherapy adherence, and satisfaction. Results: At baseline, participants' mean age was 47.3 years old (SD 16.0), 55% of participants were female, and 60% indicated that Spanish was their language of preference. Most participants (75%) smoked 1-10 cigarettes daily and 35% smoked their first cigarette within five minutes after waking up. At Month 3, 14 participants (70%) self-reported 7-day point prevalence smoking abstinence (90% follow-up rate). Fitbit-assessed mean minutes of MVPA per week increased from 113 (SD 127; range 0-399) at Week 1 to 177 (SD 163; range 0-513) at Month 3 (p=0.15). Sixteen participants (88.9%, 16/18) reported NRT use in the past 90 days. Most participants reported being satisfied or extremely satisfied with the intervention (88.9%, 16/18). Conclusion: *Actívatexto* resulted in a noteworthy cessation rate at Month 3 (70%), increased mean weekly minutes of moderate to vigorous physical activity, produced high use of nicotine replacement therapy, and was well received by participants. Additional testing in a randomized clinical trial is warranted to assess the efficacy of the intervention.

FUNDING: No external funding reported

POS5-29

RECRUITING LATINO YOUNG ADULTS INTO A VAPING CESSATION STUDY VIA SOCIAL MEDIA: FEASIBILITY AND COST ANALYSIS

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Objective: 1) To assess the feasibility and cost of recruiting Latino young adults (ages 18-25) into a vaping cessation study via social media. 2) To describe the baseline characteristics of participants enrolled via social media. **Methods:** Between March and November 2023, three paid advertisements (one in English, one in Spanish exclusive to the United States, and one in Spanish exclusive to Puerto Rico) were launched using the Meta Ads platform, which serves ads to users on Facebook and Instagram. Key measures of audience targeting included ages 18-25, all genders, and the following interests: "electronic cigarettes", "vape", "Latin pop", and "Latin music". The advertisements invited Latino young adults to join a text messaging vaping cessation study by clicking on it. The advertisements included different images of Latino young adults; images did not include e-cigarettes. Moreover, the advertisements stated that participants could earn up to $80 for being part of the study. By clicking on the advertisements, interested individuals were directed to a website to fill out a contact form. The study team contacted individuals who filled out the form, assessed them for study eligibility and, if eligible, enrolled them into the study. **Results:** A total of 164 individuals completed the contact form. Among these, 40 were assessed for study eligibility, 34 were eligible, and 26 were successfully enrolled into the study. The enrollment efficiency ratio was 15.9% (26/164). The total amount spent in the advertisements was $2,447.69 USD. The cost per enrollment was $94.14 USD. Participants (n=26) mean age was 22.7 years old (SD 1.6). Half of participants (50%) were male, 38.5% were female, and 11.5% were gender non-conforming/non-binary. Two-thirds of participants (69.2%) were born in the USA, 23.1% in Puerto Rico, and 7.7% in Mexico. Eight participants (30.7%) selected Spanish as their language of preference. In terms of the type of vaping device, 16 participants (61.5%) indicated using disposables, 6 (23.1%) cartridges/pods, and 4 (15.4%) tanks/

refillable. Sixteen participants (61.5%) reported using marijuana in e-cigarettes. Six participants (23.1%) had high e-cigarette dependence. Twenty participants (76.9%) had attempted quitting e-cigarettes in the past year. **Conclusion:** It is feasible to recruit Latino young adults into a vaping cessation study via social media. Social media offers a relatively low-cost approach to recruit a diverse sample of Latino young adults who vape.

FUNDING: Nonprofit grant funding entity

POS5-30

SUPPORTING DRUG AND ALCOHOL SERVICE USERS TO CUT DOWN OR STOP SMOKING: REVIEW AND EVIDENCE GAPS

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Aim: Globally, drug and alcohol service users are underserved by smoking cessation and tobacco control services despite their high rates of smoking, smoking-related disease and interest in quitting or cutting down. Smoking rates among people using drug and alcohol services are at least 2-4 higher than the general population. It is further estimated that approximately half of all smoking deaths are attributable to people with alcohol, drug or mental health problems. DASHES (drug and alcohol users help to exit smoking) is developing and evaluating a tobacco harm reduction intervention with service users and staff of specialist third sector and NHS services, public health, and policymakers. This presentation will present key findings from a rapid literature review where we sought evidence to inform the intervention components. The review was framed by three research questions: 1) What is best practice to develop and deliver a smoking cessation/tobacco harm reduction service or intervention for people with problematic drug and alcohol (PDA) use? 2) Is the service/intervention trauma informed and if so, how? 3) How effective was the service/intervention at reducing or stopping smoking? Methods: Rapid review of smoking cessation interventions for drugs and/or alcohol service users. Papers screened by title and abstract, extracted using Covidence and appraised by four researchers using CASP guidance. Included papers were quality reviewed. Results: We quality reviewed 29 eligible studies. Interventions identified fell into three main groups: those providing interventions with fewer components than recommended for the general population; those seeking to extend the implementation of existing national guidance on smoking cessation into drug and alcohol services and those evaluating new or additional interventions (more intensive, greater length) or services. In PDA, as in the general population, combining pharmacotherapy and psychological interventions is more likely to achieve higher rates of smoking cessation and reduction in cigarettes per day. None of the papers included in this review made explicit reference to their interventions being guided by trauma informed practice (TIP) or the best practice guidelines in their area [SAMHSA 2016]. However, six papers reported on five studies that contained elements of a trauma-informed approach. Conclusions: Our review identified promising components for inclusion in DASHES but effective and equitable delivery of smoking cessation/reduction services for people using drug and alcohol services remains understudied. Lack of attention to smoking contributes to the ongoing burden of avoidable disease and death associated with tobacco-related harm in this population.

FUNDING: Academic Institution; Nonprofit grant funding entity

POS5-31

MULTIPLE TOBACCO PRODUCTS USE IN IMMIGRANTS AND DESCENDANTS OF IMMIGRANTS - AN ONLINE CROSS-SECTIONAL SURVEY IN FRANCE

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Background: Immigrant smoking behavior differs from that of the native-born population in France and is associated with factors such as region of origin and other determinants more routinely assessed in epidemiology. This study aims to describe multiple tobacco products (MTP) use prevalence and assess the corresponding determinants in immigrants and descendants of immigrants (IDI) in the French context. **Methods:** A sample of immigrants and descendant of immigrant(s) in France completed a cross-sectional online survey in 2020. Data was collected on demographic, social and religious factors hypothesized to be determinants of tobacco use. Data on products, frequency and intensity of tobacco use was also analyzed. Prevalence according to tobacco product type and MTP use was quantified, as were associations between selected factors and current MTP use. **Results:** Smoked tobacco is the most prevalent product used among immigrants (32%) and descendants (60%), followed by shisha (12% and 35%) and smokeless tobacco (10% and 32%). Univariate regression analysis shows that in both IDI groups, smoked tobacco use is found to be significantly associated with use of shisha. **Conclusion**: The results of this study highlight high prevalence of tobacco use in IDI as well as combination of use of tobacco products. As these results differ from actual tobacco use in the general population, it can be hypothesized that tobacco use - in all its forms - may represent a different social function in these subgroups of the population. Furthermore, these particular tobacco use profiles are likely not to benefit from the general population prevention strategies and tobacco control policies, therefore deserving tailored tobacco use prevention and cessation programs in France.

FUNDING: Academic Institution; Nonprofit grant funding entity

POS5-32

SLEEP HEALTH AND WELL-BEING AS CORRELATES OF NICOTINE ADDICTION AMONG BLACK SEXUAL MINORITY MEN IN THE UNITED STATES

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SIGNIFICANCE - Nicotine use is known to negatively affect sleep and well-being in the general population, but research is limited on the relative strength of these relationships in populations experiencing high rates of health disparities. In particular, Black sexual minority men in the United States experience a range of health disparities including disproportional use of tobacco products. Black sexual minority men represent an underrepresented racial and sexual minority group in tobacco research and therefore are in need of critical attention in this area. METHODS - In a recently completed project, we collected data from individuals who reported identifying as Black or African diaspora, male sex assigned at birth, 18 years of age or older, interest in HIV prevention, HIV negative status, and sex with a man in the past year. Participants resided in the southeastern United States. RESULTS - We used generalized linear modeling and found that 15% (42/281) of participants reported experiencing symptoms of tobacco or nicotine addiction (wanting to use tobacco "so badly that you couldn't think of anything else") in the preceding year. Participants reporting nicotine addiction were more likely to report that their sleep patterns interfered with their daily functioning (OR=1.43 [1.11-1.86], p<.001) and that they experienced difficulty falling asleep (OR=1.33 [1.03-1.77], p<.05); no differences emerged in staying asleep or waking up too early compared with individuals without a recent history of nicotine addiction. In addition, scores on the well-being measure were lower among individuals with nicotine addiction (OR=.55 [.36-.85], p<.01) compared with individuals without reporting nicotine addiction (based on 11-item measure of physical health, mood, work, social relationships, ability to function in daily life, etc., alpha = .93). In subsequent analyses, individuals with recent nicotine addiction were also more likely to report living with diabetes (OR=3.78 [1.40-10.26], p<.01) and cardiovascular disease (OR=6.05 [1.18-31.06], p<.05). Other substance use (e.g., crack, cocaine, marijuana) was also elevated among individuals with a history of nicotine addiction. CONCLUSIONS - For the current study, we present areas of research that have received limited attention among a minoritized population. In order to better meet the needs of and develop programmatic interventions for Black sexual minority men around tobacco use it is critical to understand how various markers of health are related to these behaviors. This study is among the first to investigate the relationship between nicotine addiction and sleep health, and the findings warrant additional attention. This work is critical for tailoring targeted tobacco control interventions for minoritized communities and improving well-being.

FUNDING: Federal; Nonprofit grant funding entity

POS5-33

SUBJECTIVE SOCIAL STATUS MEDIATES THE PROSPECTIVE ASSOCIATION BETWEEN RACIAL DISCRIMINATION AND CIGARETTE SMOKING IN BLACK U.S. ADULTS

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Significance: Black Americans carry a greater burden of tobacco-related morbidity and mortality compared to the general population. Racial discrimination contributes to racial/ethnic health inequities, and it is positively associated with psychological distress, symptoms of depression and anxiety, and increased risk of substance use and mood disorders in Black populations. Discrimination may also be associated with lower subjective social status (SSS), a measure of an individual's perceptions of their own relative social standing in a community or society, which is associated with mental and physical health outcomes in minoritized individuals. However, it is unknown whether SSS

mediates the association between racial discrimination and health behaviors in minoritized populations. In this prospective study, we examined the associations among racial discrimination experiences, SSS, and cigarette smoking in Black US adults. **Methods:** Data were from Black adults who participated in the Coronary Artery Risk Development in Young Adults (CARDIA) study (N=2,637) in 2000, 2005, and 2010. In 2000, participants reported whether they experienced racial discrimination in several domains. In 2005, participants reported subjective social statuses (SSS) in the US as well as in their community. In 2010, participants reported whether they currently smoke cigarettes. Structural equation models were used to examine the prospective associations between racial discrimination experiences, SSS, and subsequent current smoking, adjusting for demographics. Full-information maximum likelihood algorithm was used to handle missing data. **Results:** Exposure to racial discrimination was prospectively associated with lower SSS in the US (β=-0.33, 95%CI=-0.53, -0.13) and in their community (β=-0.45, 95%CI=-0.66, -0.24). Additionally, higher SSS in the US (AOR=0.89, 95%CI=0.80, 0.99) and in their community (AOR=0.88,95%CI=0.79, 0.98) were prospectively associated with lower odds of subsequent current cigarette smoking. The association between exposure to racial discrimination and subsequent current cigarette smoking was no longer statistically significant after accounting for SSS (p>0.05). **Conclusions:** Exposure to racial discrimination was related to subsequent current cigarette smoking among Black adults in this study, largely because of the lower SSS resulting from the exposure. Addressing racial discrimination may promote better SSS and reduce cigarette smoking among Black adults.

FUNDING: Federal

POS5-34

FACTORS INFLUENCING TOBACCO SMOKING AND CESSATION AMONG PEOPLE LIVING WITH HIV: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Tobacco smoking is highly prevalent among people living with HIV (PLWH) yet there is a lack of data on smoking behaviours and effective treatments in this population. Understanding factors influencing tobacco smoking and cessation is crucial to guide the design of effective interventions. **Methods:** This systematic review and meta-analysis synthesised existing evidence on associated factors of current smoking and smoking abstinence among PLWH. We used random-effect meta-analysis to estimate the pool effect sizes due to anticipated heterogeneity and performed subgroup analysis for studies conducted in high-income (HIC) and low- and middle-income countries (LMICs). **Results:** Eighty articles were eligible for the review, of which almost 74% were from HIC. Fifty-three studies were included in the meta-analyses, while 27 were narratively synthesized. Meta-analyses showed that male gender (pOR 3.26, 95%CI 2.09-5.10), alcohol use (pOR 2.06, 95%CI 1.56-2.72), and illicit drug use (pOR 3.82, 95%CI 2.09-6.98) and were positively associated with current smoking. These factors, namely male gender (pOR 0.60, 95%CI 0.37-0.98), hazardous alcohol use (pOR 0.18, 95%CI 0.08-0.44), and cocaine use (pOR 0.50, 95%CI 0.39-0.64) were negatively associated with smoking abstinence. The association of depression with current smoking (pOR 1.18, 95%CI 1.05-1.31) and lower abstinence rates (pOR 0.79, 95%CI 0.68-0.93) were observed only in HICs. Narrative synthesis revealed that substance use, depression, loneliness, and chronic diseases were associated with higher odds of current smoking. Smoking abstinence was influenced by medical conditions (e.g., pulmonary and cardiovascular diseases), depression, nicotine dependence, substance use, intention to quit, quit attempt, receipt of and adherence to smoking cessation interventions, self-efficacy, social support, and provider involvement. The review did not identify randomized-controlled trials conducted in LMICs. **Conclusion:** Findings indicate the need to integrate smoking cessation interventions with mental health and substance use services as part of a comprehensive approach to treating tobacco use in this population. Consistent support from health providers trained to provide advice and treatment options is also an important component of treatment for PLWH engaged in care, especially in LMICs.

FUNDING: Other

POS5-35

RACIAL TRAUMA AMONG MULTI-ETHNIC MINORITY YOUNG ADULTS AFFECTS NICOTINE, ALCOHOL AND CANNABIS USE DIFFERENTLY THAN AMONG MONO-ETHNIC MINORITY YOUNG ADULTS

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Introduction: "Two or More Races" is the fastest growing ethnic minority group in the US, and those individuals are at high risk for mental and behavioral health problems. We used Healthy Minds (HM) data to focus on people of color (PoC), to examine how perceived racial trauma and psychological well-being (PWB) influence substance (nicotine, alcohol and cannabis) use, as mediated through mental health states. We hypothesized that PWB would negatively interact with racial trauma to influence substance use, mediated by depression and anxiety, though varying by mono- vs. multi-ethnic status. **Methods:** We combined HM data from 2021-2023 for self-identified PoC (N=62,243), with 25.1% identifying as "Two or More Races". We conducted moderated mediation path analyses, stratified by mono- vs. multi-ethnic PoC, to assess the interaction between racial trauma and PWB (i.e., Flourishing scale) on substance use in the past 30 days, and mediation by depression and anxiety, controlling for age, gender and sexual/gender minority status. Multiple group analysis identified non-invariant paths by testing whether collectively releasing all constraints improved model fit. **Results:** For mono-ethnic PoC, PWB predicted lower anxiety (β=-.25, p<.001) and depression (β=-.37, p<.001), lower levels of substance use (β=-.04, p<.001), but higher likelihood of any use (β=.17, p<.001); effects of PWB on any substance use was augmented by racial trauma (β=.11, p=.005), but not level of use (p=.54). Effects of racial trauma and PWB on substance use were partially mediated via depression (indirect effects p<.001) but not anxiety. For multi-ethnic PoC, PWB predicted lower anxiety (β=-.35, p<.001) and depression (β=-.51, p<.001), but not substance use (p's>.12); effects of PWB on depression and anxiety were dampened by greater racial trauma (p<.004). Effects of racial trauma and PWB on substance use were completely mediated via depression (indirect effects p<.001), but not anxiety. Multiple group analyses confirmed non-invariance. **Discussion:** Findings show that the effects of psychological well-being on mental health states are dampened by racial trauma for both mono- and multi-ethnic PoC. Using any substance may represent normative behavior, but psychological well-being protected against greater level of use. Particularly for multi-ethnic PoC, depression may be an important modifiable factor to mitigate effects of racial trauma.

FUNDING: Federal

POS5-36

EXAMINING LGBT+ CIGARETTE AND E-CIGARETTE USE AMONG STATES VARYING IN LGBT+ EQUALITY PROTECTIONS

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Significance: Across U.S. states, there is variability in the legal protections for the LGBT+ community. LGBT+ individuals use both cigarettes and e-cigarettes at higher rates than their heterosexual, cisgender peers and it is theorized that this relationship could be exacerbated by stress and discrimination. Further investigation is needed to understand how the greater policy environment in which an LGBT+ individual resides is related to tobacco use. **Methods:** The sample was drawn from a national convenience survey of 15-30 year-olds (N=6003) fielded from Oct 2022-Feb 2023. Respondents were asked about current (past 30-day) e-cigarette and cigarette use. LGBT+ respondents were considered those (a) whose sex assigned at birth (male/female) and current gender identity (male, female, non-binary, another identity) differed (gender minority) or (b) who were gay/lesbian, bisexual, or another identity (sexual minority). The analytic sample consisted of LGBT+ respondents (n=1373). The Movement Advancement Project scored each state for LGBT+ equality based on the 2023 policy environment. Scores were categorized as negative, low, fair, medium and high. High scores represented protective policy and negative scores harmful policy. We condensed the low, medium, and fair policy scores into a mid-level category. Bivariate analyses among LGBT+ individuals, as well as sexual minority (n=1321) and gender minority individuals (n=272), examined current e-cigarette and cigarette use by policy category. **Results:** Among LGBT+ individuals, 15% of those residing in states with a high policy score currently used e-cigarettes whereas 22% of those in states with mid-level scores, and 26% of those in states with negative scores used e-cigarettes (p &lt 0.001). Similarly, 6% of those in high scoring states currently smoked cigarettes while 8% of those in mid-scoring states and 11% of those in negative scoring states smoked cigarettes (p=0.008). Similar trends were seen among the subsamples of sexual minority and gender minority individuals. **Conclusions:** LGBT+ cigarette and e-cigarette use was significantly higher in states with policies that are harmful to LGBT+ equality, and lowest in states with highly protective

policies in place. Possible mechanisms to explain the association include the role of stress and discrimination on harmful health behaviors among LGBT+ individuals. Policies protecting the LGBT+ community are needed to address disparities in tobacco use among the LGBT+ community.

FUNDING: No external funding reported

POS5-37

EXAMINING CIGARETTE AND E-CIGARETTE USE OVER TIME AMONG LGBT+ YOUTH AND YOUNG ADULTS USING A REPEAT CROSS-SECTIONAL SURVEY, 2022-2023

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Significance: In the U.S., the LGBT+ community has historically reported higher rates of cigarette use. However, the literature would benefit from a more recent, national examination of both cigarette and e-cigarette use among LGBT+ young people, given the ongoing crisis of nicotine use among young people. Methods: A weekly repeat cross-sectional survey of a national convenience sample of 15-24 year-olds was administered from January 2022 to November of 2023 (N=28,192). Participants were asked about current (i.e. past 30-day) cigarette and e-cigarette use. They were asked if they identify as heterosexual, gay/lesbian, bisexual, or another identity. Respondents also reported their sex assigned at birth and, as of July 2022, they were asked if they identify as male, female, non-binary, or another identity. If participants did not identify as heterosexual, or their gender identity and sex differed, they were considered LGBT+. Current cigarette and e-cigarette use were examined among LGBT+ individuals and non-LGBT+ individuals. Use was also assessed among different sexual orientations. The sample size of gender minority individuals was too small to assess use within this subpopulation. Data were aggregated into quarters for additional analyses. Results: Overall, 25% (n=1912) of LGBT+ individuals currently smoked cigarettes, compared to 21% (n=4348) of non-LGBT+ individuals. Similarly, 31% (n=2401) of LGBT+ individuals currently used e-cigarettes while 26% (n=5353). When examining by specific sexual identity, 26% of bisexual individuals currently smoked (n=1183), and 27% gay/lesbian individuals (n=476) smoked, compared to 21% (n=4427) of heterosexual participants. Additionally, 35% (n=1578) of bisexual participants and 29% (n=511) of gay/lesbian participants currently used e-cigarettes compared to 26% (n=5435) of heterosexual participants. When examined over time by quarter, these gaps persisted. Conclusion: LGBT+ youth used cigarettes and e-cigarettes at higher rates than their non-LGBT+ peers over 2022 - 2023. Bisexual individuals may be at elevated risk of cigarette and e-cigarette use within the community, requiring additional support. Greater surveillance of gender minority individuals is necessary to understand trends among this population. Programs should tailor their efforts for the LGBT+ community to reduce tobacco use disparities.

FUNDING: No external funding reported

POS5-38

ESTIMATING MENTHOL TOBACCO USE AMONG LGBT+ PEOPLE WHO USE CIGARETTES AND E-CIGARETTES USING A NATIONAL SAMPLE, 2022

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Significance: In the U.S., the tobacco industry has targeted the LGBT community, amongst other minority groups, with marketing of menthol tobacco products. Menthol products are easier to start and harder to quit, with implications for tobacco-related health disparities among targeted groups. The FDA has proposed a rule to ban menthol from combustible tobacco products. The literature would benefit from an assessment of the current state of menthol cigarette and e-cigarette use among the LGBT community to best inform policy and practice. Methods: The Behavioral Risk Factor Surveillance Survey (BRFSS) is a nationally administered telephone survey examining health behaviors among U.S. adults. In 2022, 36 states asked respondents to report their sexual orientation (lesbian or gay, straight, bisexual or something else) and their gender identity (transgender male-to-female, transgender female-to-male, transgender gender non-conforming, or cisgender). Those who were not straight and cisgender were considered LGBT. All adults were asked to report current (past 30 day) use of cigarettes and e-cigarettes. Six of the 36 states that asked about sexual orientation and gender identity asked current cigarette and e-cigarette users if they usually used menthol products. Weighted bivariate analyses examined menthol cigarette and e-cigarette use among the LGBT+ population compared to their cisgender heterosexual peers. Results: Among those who identified as LGBT, 50.3% (n=170) of those who currently smoked cigarettes usually used menthol, compared to only 38.6% (n=1342) of non-LGBT people who smoked cigarettes (p-value: 0.003). One-third (33.2%) (n=108) of LGBT people who currently used e-cigarettes usually used menthol, compared to 29.1% (n=422) of non-LGBT people who currently used e-cigarettes (p-value: 0.285). Conclusions: Among U.S. adults currently smoking cigarettes, a significantly greater proportion of LGBT individuals are using menthol cigarettes compared to their non-LGBT peers. No significant difference was observed among those currently using e-cigarettes. Although BRFSS is administered nationally, external validity of these findings is limited by the variability in survey administration across the U.S. Despite these limitations, the findings suggest menthol cigarette use continues to disproportionately affect LGBT individuals. A federal ban on menthol in tobacco products would advance health equity in this population.

FUNDING: No external funding reported

POS5-39

CLOSING DISPARITIES: EXPLORING RECRUITMENT AND RETENTION IN COMPARATIVE EFFECTIVENESS STUDY OF MOBILE HEALTH SMOKING CESSATION INTERVENTIONS FOR UNDERSERVED PATIENTS IN PRIMARY CARE

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Background Tobacco smoking remains the leading cause of preventable disease, disability, and death. Mobile health (mHealth) interventions for smoking cessation have been shown to boost treatment accessibility. Smoking rates are higher among populations considered socially vulnerable by the Centers for Disease Control. We describe the direct impacts of stakeholder engagement on study progress during the pre-trial period. **Methods** We selected two institutions in the US Southeast that collectively oversee a network of hospitals and practices with 3 million annual visits, committed to enhancing community health and financial viability through IT resources. We selected these partners because of their large patient volumes, geographic location (covering rural and urban settings), and ability to recruit patients from diverse populations (35% Black/African American, 30% Hispanic/Latinx, and ≥40% Medicaid insured). To ensure demographic diversity, we implemented quotas for key demographic groups in our screening procedures, mandating a minimum of 40% male/female, 30% non-white, and 20% Hispanic/Latino. Additionally, we implemented engagement practices to ensure that a diverse and inclusive study population is achieved. These include adding two clinical champions with expertise in community engagement and serving African American and Latino patient populations and adding bilingual study staff in clinics serving Spanish-speaking patients. **Results** The recruitment process we employed to improve diversity indicates a diverse representation across gender, race, and ethnicity within the study population. Notably, 69.2% of participants identified as women, and 11.2% identified as Hispanic/Latino, mirroring the demographics of the city's population. Compared to the demographic composition of the city's population, we achieved an enrollment of 30.8% Black individuals, surpassing the city's 21.9% Black population, based on a sample size of N=107. Additionally, some participants chose not to disclose their gender, race, or ethnicity, highlighting the importance of respecting diverse identities and maintaining inclusivity in research. **Conclusion** Implementing engagement practices was associated with an increase in the recruitment of a diverse and inclusive population. By leveraging mHealth interventions, we can also enhance the equitable accessibility of smoking cessation resources, contributing to a broader impact on community and population health. The results will aid in targeting diverse populations for mHealth cessations.

FUNDING: Nonprofit grant funding entity

POS5-40

SMOKING CESSATION ATTEMPTS AMONG INDIVIDUALS WHO CO-USE COMBUSTIBLE CIGARETTES AND E-CIGARETTES VERSUS COMBUSTIBLE CIGARETTES ONLY IN 13 U.S. HIGH-RISK STATES

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Significance: Concurrent use of cigarettes and e-cigarettes (co-use) is common in the United States. Although some people report using e-cigarettes to quit combustible

cigarettes, continued co-use has the potential to exacerbate existing health disparities, particularly in states with disproportionately high smoking rates. We examined whether individuals currently co-using differ in smoking cessation attempts and strategies from those using combustible cigarettes exclusively among individuals in 13 high-risk U.S. states (Alabama, Arkansas, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, South Carolina, Tennessee, and West Virginia). **Methods:** Respondents were a subsample (n = 4,550) of a probability sample of adults (18+ years) from the above 13 states participating in an online rapid-response survey conducted between April to May 2023 by the American Cancer Society. Questions included those on tobacco use and related behaviors and attitudes. Weighted logistic regressions were used to examine associations between co-use status and cessation attempts and strategies. **Results:** Among those in high-risk states, 20.4% reported exclusive cigarette use and 5.31% reported co-use (~9% and ~2% higher than comparison states, respectively). Individuals reporting co-use were significantly more likely than people who exclusively use cigarettes to report at least one past year quit attempt (odds ratio, OR = 2.55, p = .001) but they did not differ on number of quit attempts (p = .277). Furthermore, 82% of people making at least one quit attempt who also currently smoke and use e-cigarettes reported they tried using e-cigarettes to quit smoking (vs. 31% of people who smoke exclusively), although those reporting co-use were also more likely to report using any cessation strategy, including pharmacologic (e.g., nicotine replacement therapies (NRT), prescription medication; OR = 2.84, p = .020), non-pharmacologic (e.g., quit lines, counseling; OR = 3.61, p = .003), and non-FDA-approved (e.g., switching to e-cigarettes OR = 13.77, p < .001) strategies. **Conclusions:** People reporting co-use were more likely to make at least one quit attempt using a variety of strategies. Given respondents continued smoking cigarettes at the time of the survey, more resources are needed to help support successful quitting. Future research should investigate access to approved smoking cessation therapies among those living in high-risk states.

FUNDING: Nonprofit grant funding entity

POS5-41

DENYING AND MINIMIZING RACIAL DISCRIMINATION AMONG PEOPLE OF COLOR WHO POLY-USE: IMPLICATIONS FOR MEASURING RACIAL DISCRIMINATION IN NICOTINE RESEARCH

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Background: Racism is a multifaceted and pervasive system that impacts behavioral and mental health through various interlocking pathways. Yet if racism is so pervasive, then why do some people of color deny or minimize experiences of racial discrimination? Identifying contexts and factors that may contribute to denial or minimization of racial discrimination may enhance common discrimination measures in relation to polysubstance use. **Methods:** We conducted 7 focus groups (5-9 participants per group, Total N=43) among Black, Latino, and Asian American adults between the ages of 21 to 44 years old who reported current use of two or more of the following substances: alcohol, cigarettes, e-cigarettes, or cannabis, while residing in a U.S. state where recreational adult cannabis use is legal. Focus groups were conducted online via Zoom between July – October 2023 and lasted approximately 90 minutes. Each focus group was stratified by gender and race/ethnicity, except for one mixed race and gender focus group. Data were analyzed drawing on a team-based iterative-inductive and deductive analytical approach, involving independent open coding and deliberation. **Results:** Across all three ethno-racial groups, we found some respondents (but not all) minimized or denied experiences of racial discrimination or hesitated to identify their experiences as racial discrimination. Some respondents also denied seeing a direct link between experiences of discrimination and substance use. Inductively, we noted themes that might help explain these responses, which are: (a) relative exposure and positive stereotypes; (b) drowning out effect; and (c) diversity of contexts. We also note methodologically that there were contradictions in accounts (i.e., respondents both denying *and* endorsing experiences/impacts of racism) and that responses depended on orienting cues (i.e., needing to provide nuanced examples of racial discrimination). **Conclusions:** Racism is insidious, covert, pervasive, and invisible. A complex set of factors facilitate and hinder people of color from readily recalling and identifying experiences of racism. Some people may not see a direct connection between discrimination and substance use. Recommendations include aligning definitions of racism between academic and public/popular discourse; updating measures to keep up with the evolving forms of racism (with context-specific examples); combining subjective measures of racial discrimination with objective measures of racism; and dialoguing with the public to raise awareness around social, economic, and political forces shaped by racism. Understanding the motivations for minimization or denial of racial discrimination among people of color can invigorate future research to better capture these experiences in relation to polysubstance use.

KEY WORDS: racial discrimination; racism; polysubstance use; focus groups

FUNDING: Federal

POS5-42

PREVALENCE AND CORRELATES OF TOBACCO USE IN 13 HIGH-RISK STATES IN THE UNITED STATES

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Significance: Overall tobacco use rates are higher in the Midwest and Southern regions of the United States (US) than the rest of the US, yet little is known at the state-level on correlates of tobacco use. This study examines current correlates of tobacco use among individuals living in the 13 most high-risk states (Alabama, Arkansas, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, South Carolina, Tennessee, and West Virginia) in the US. **Methods:** We examined the prevalence of tobacco use and related correlates in a rapid response survey of 4,550 adults (18+ years) living in the 13 high-risk states. Data collected between April-May 2023 by the American Cancer Society were weighted to be representative of the states' population. Bivariate analyses for several demographic characteristics were conducted examining cigarette use, e-cigarette use, and cigar use. **Results:** Respondents were aged 18-65 (Mean = 41.85; SD=0.32) and were majority Non-Hispanic White (70.9%) and female (51.9%). 47.5% of respondents reported an annual household income of <$75,000 USD. The prevalence of any tobacco use was high across all 13 states (33.1%), with 29.5% reporting cigarette, e-cigarette and/or cigar use. 21.1% of respondents were persons who currently smoke vs. 11.5% for the national average, while 20.7% were persons who previously smoked and 8.0% were persons who occasionally smoke. Despite the high prevalence of tobacco use, 68.4% of persons who smoke cigarettes currently reported some intent to quit smoking and 36.2% reported a quit attempt in the past 12 months. 14.0% of respondents reported current e-cigarette use vs 4.5% for the national average and 17.5% reported previous e-cigarette use. 8.7% of respondents reported current cigar use vs 3.5% for the national average and 24.1% reported previous cigar use. Respondents identifying as male (p<.001) and with a household income <$75,000 (p<.001), a disability (p=.014), or military/veteran status (p=.031) were more likely to currently smoke. Respondents who were male (p=.004) or reported household income <75,000 (p=.011) were more likely to report current e-cigarettes use; higher use was associated with increasing age (p<.001). Respondents who were male (p<.001), and nonwhite (p<.001) were more likely to report current cigar use; higher use was associated with increasing age. **Conclusions:** Cigarette use is high among individuals living in this region, and is related to lower household income, military/veteran status, disability status, and male identity. E-cigarette and cigar use increased with age. These high tobacco use rates lead to increased health inequities, with related high rates of cancer and cardiovascular disease. Smoking cessation intent is similar to smokers in other states, and thus tailored cessation programs could help reduce the heavy burden of tobacco use among this population.

FUNDING: Nonprofit grant funding entity; Other

POS5-43

SECONDHAND SMOKE EXPOSURES AND SMOKEFREE POLICY IN MULTI-UNIT HOUSING: EXPERIENCES OF IMMIGRANT ARAB AMERICAN WOMEN

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Significance: While California's comprehensive tobacco control program has greatly reduced smoking overall, lesser reductions are evidenced among people of lower socioeconomic status. The San Francisco Bay Area is home to a sizable population of people from Arabic-speaking countries. Arab immigrants from low or middle income countries (LMIC) mostly live in low-income multi-unit housing (MUH). Many California cities have restricted smoking in MUH facilities, and most Californians support such laws. The major metropolitan city of Oakland has yet to enact a smokefree MUH ordinance. In a participatory program to reduce tobacco-related harms among Arab American women, participants who learned about secondhand smoke (SHS) risks

wanted to focus more on this topic. In a subsequent participatory action research pilot, Arab American women who lived in MUH discussed barriers and supports to reducing their SHS exposures. Methods: Arab American women were recruited from the prior prevention program and convened as a group in web-based meetings. Meeting topics included SHS exposure risks, smokefree MUH policies (presented by the local tobacco control coalition), and potential actions to reduce home smoke exposures. Staff conducted confidential interviews with each participant to assess home circumstances. Discussions and interviews were conducted in Arabic, and recorded in audio recordings or written notes. Notes and transcribed recordings were analyzed thematically. Results: The 29 participants were aged 22 to 68; primarily Yemeni immigrants; and all lived with young children at home. Participants stated they did not allow smoking inside their apartments because of concern about the effects of SHS on their family's health. However, neighbors living nearby smoked cigarettes and cannabis every day, for hours, mostly on the weekends and summertime. Women reported that the smell of smoke drifted into their units from vents, doors, and adjacent balconies. Participants found it difficult to speak to their building managers and neighbors about SHS smoke exposures from neighbors smoking. They cited fears of racism or retribution as challenges. Participants were willing to advocate to city officials for a ban on smoking in MUH. Local tobacco control coalition leaders, however, noted that city officials were unwilling to pass such a law due to the ongoing crises of eviction and homelessness in the city, and concerns about eviction as an enforcement mechanism for smokefree MUH policy. Conclusions: Without equitable tobacco control that engages both health and housing justice, lower income Arab American women and children are exposed to SHS, even when they restrict smoking in their apartments.

FUNDING: State

POS5-44

CESSATION METHODS USED BY INDIVIDUALS REPORTING CURRENT OR FORMER SMOKING IN 13 HIGH-RISK STATES IN THE US

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Significance: Individuals who currently smoke and want to quit and those that formerly smoked have various cessation options. However, few studies examine cessation methods among individuals living in US states with the highest rates of cigarette use, where cessation resources could greatly reduce the burden of tobacco use. **Methods:** A rapid response survey of 4,550 adults aged 18+ was conducted by the American Cancer Society in 13 US high-risk states with the highest rates of tobacco use from April-May 2023. We ran univariate and bivariate analyses to examine cessation methods, resource awareness, and cessation insurance coverage among those reporting current or former smoking. **Results:** Only 10.8% of those who currently smoke and 10.3% of those who formerly smoked used US Food and Drug Administration (FDA) approved pharmacological (Nicotine Replacement Therapy (NRT), prescription medication) or non-pharmacological (quit line, counseling) cessation methods. 21.1% of respondents report current smoking and 20.7% reported former smoking. Overall, 42.3% reported non-FDA approved (switched to other tobacco products) methods alone or in combination with other methods (current: 62.7%; former: 33.5%; p<0.00). Among individuals who currently smoked and made a quit attempt in the last 12 months (36.2%), 4.1% used approved pharmacological methods only, 2.2% used non-pharmacological methods only, 14.6% used non-FDA approved methods only, 52.6% used two or more methods, and 26.5% didn't use any method. 22.2% of this subgroup reported awareness of cessation advertisements (often/always vs. never/rarely/sometimes). 45% of this subgroup reported insurance coverage for NRT and 50% for non-pharmacological cessation programs. Among those who formerly smoked, 7.7% used pharmacological methods only, 0.3% used non-pharmacological methods only, 18.6% used non-FDA-approved methods only, 17.3% used two or more methods, and 56.2% didn't use any method. 12.6% of this subgroup reported awareness of cessation advertisements. 26.7% reported insurance coverage for NRT and 37.4% for non-pharmacological cessation programs. **Conclusion:** Given that the majority of those reporting current smoking with a quit attempt used non-approved cessation methods, but were not successful in quitting, more research on the effectiveness of alternative methods such as e-cigarette use is needed. Additionally, most former smokers did not use any cessation methods and less than half of individuals who reported current smoking or former smoking report insurance coverage for approved cessation strategies. More policies increasing access to cessation methods are needed to reduce the burden on states with the highest rates of tobacco use.

FUNDING: Nonprofit grant funding entity; Other

POS5-45

INEQUALITIES IN TOBACCO USE BEHAVIORS AMONG IMMIGRANTS AND THEIR DESCENDANTS IN THE U.S. AND FRANCE

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Significance: In the U.S. and France, around 13.6% and 10% of the population are immigrants. Understanding how immigrants and their descendants fare across two countries can help identify risk/promotive factors. **Methods:** Data were from the 2018-2019 U.S. Tobacco Use Supplement to the Current Population Survey (n=137,471) and the 2019 French Constances study participants (n=179,026). Outcomes included current daily smoking and ever smoking. Participant and parental area of birth was used to define immigration generation (1st: immigrants, 2nd: adults with ≥1 immigrant parent, and 3rd+: adults and parents born in the country of data collection) with categories (Asia, overseas territories, Europe, North Africa, Sub-Saharan Africa, Other) based on the geographic origin of the participant (for 1st generation) or ≥1 of the parents (for 2nd generation). Multivariable logistic regression was used to assess associations between geographic origin, immigration generation, and outcomes, adjusting for age and sex. **Results:** The prevalence of ever smoking was 29.6% and 53.1% for the U.S. and French samples respectively, and 8.7% and 7.7% for current daily smoking. In the U.S., relative to 3rd+ generation adults, there were similar or lower odds of ever smoking among 1st and 2nd generation adults (AOR range: 0.19-0.83). In France, there were lower odds of ever smoking among 1st (AOR range: 0.33-0.81) and 2nd generation adults with ≥1 parent from Sub-Saharan Africa (AOR=0.74, 95%CI: 0.61-0.90) and Asia (AOR=0.87, 95%CI: 0.76-0.996), with the exception of adults with ≥1 parent from Europe (AOR=1.11, 95%CI: 1.06-1.15) and North Africa (AOR=1.10, 95%CI: 1.04-1.16). In the U.S., relative to 3rd+ generation adults, there were similar or lower odds of current daily smoking among 1st and 2nd generation adults (AOR range: 0.10-0.67). In France, relative to 3rd+ generation adults, immigrants from Europe (AOR=1.24, 95%CI: 1.13-1.35) and North Africa (AOR=1.54, 95%CI: 1.38-1.72) had higher odds of current daily smoking, as did 2nd generation adults with ≥1 parent from Europe (AOR=1.19, 95%CI: 1.11-1.26), North Africa (AOR=1.35, 95%CI: 1.25-1.47), and Other areas (AOR=1.46, 95%CI: 1.21-1.76). **Conclusions:** Inequalities in tobacco use among adults differ in the U.S. and France. Discerning what drives these differences is context specific but may be partly related to cultural and other mediating factors including difficulties in quitting smoking in the host country.

FUNDING: Federal

POS5-46

INTENDED BEHAVIORS OF MENTHOL CIGARETTE USERS IN 13 HIGH-RISK STATES IN THE UNITED STATES AFTER THE IMPLEMENTATION OF A NATIONAL MENTHOL FLAVOR BAN

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Background: The US Food and Drug Administration proposed to restrict menthol as a characterizing flavor in cigarettes in April 2022 (henceforth ban). Up-to-date data on the anticipated behaviors of individuals who use menthol cigarettes should menthol cigarettes become unavailable is needed. **Methods:** In a rapid response survey of 4,550 adults aged 18-65 years from 13 high-risk states in the US where smoking rates are 40% higher than the US population (Alabama, Arkansas, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, South Carolina, Tennessee, West Virginia) conducted by the American Cancer Society in April to May 2023, we examined responses to a question asked of all respondents currently smoking menthol cigarettes: "If menthol cigarettes were not available for sale in the US, which of the following would you do? Please select all that apply." **Results:** Among the 1,015 respondents who smoked cigarettes, 52.9% reported current use of menthol cigarettes. Persons of African American (74.4%) and Hispanic (64.9%) race/ethnicity disproportionately smoked menthol cigarettes compared to white persons (47.8%). Among persons who smoked menthol cigarettes, their intended behaviors toward an impending nationwide ban on menthol cigarettes were as follows: switch to non-menthol cigarettes (13.6%); quit all tobacco use (13.3%); quit smoking all cigarettes entirely (menthol and non-menthol) (10.8%); reduce the number of cigarettes smoked (7.5%); quit smoking menthol cigarettes with the help of nicotine replacement therapy (NRT) (5.4%); find another way to get menthol cigarettes (4.5%); switch to other menthol-flavored tobacco products (e.g., cigars, smokeless tobacco, e-cigarettes) (3.7%); switch to other non-menthol flavored tobacco products (15.7%), 2+ intended behaviors (including a quit attempt) (4.6%), and

2+ intended behaviors (not including a quit attempt) (20.9%). **Conclusion:** Over a third of persons who smoke menthol cigarettes in these high-risk states intend to quit all tobacco use, quit smoking cigarettes entirely, reduce the number of cigarettes smoked, or quit using menthol cigarettes using NRT if menthol cigarettes become unavailable, which would reduce the heavy burden of tobacco use in these states. Increasing access to cessation resources for persons who intend to quit or reduce cigarette smoking in response to a nationwide menthol ban would pave the way for successful quit attempts among current menthol cigarette users as intended by the ban.

FUNDING: Other

POS5-47

TRENDS IN NON-CIGARETTE TOBACCO SMOKING IN ENGLAND: A POPULATION SURVEY 2013-2023

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Background: The UK Government intends to implement a 'smokefree generation' policy prohibiting the sale of all tobacco products to people born after 2008. National surveys provide comprehensive data on cigarette smoking, but little is known about patterns of non-cigarette tobacco smoking across key population groups in England. **Methods**: Using data from a nationally-representative cross-sectional survey of adults (≥18y) in England, collected monthly between September-2013 and September-2023 (n=196,721), we estimated time trends in non-cigarette tobacco smoking prevalence, overall and by age, gender, occupational social grade, region, ethnicity, and vaping status. Interviews were conducted face-to-face until March-2020 and via telephone thereafter. **Results**: From September-2013 to September-2023, there was a non-linear increase in non-cigarette tobacco smoking prevalence (from 0.36% to 1.68%; PR=4.72 [95%CI=3.43-6.48]). Prevalence was relatively stable up to February-2020 (at an average of 0.46%), then increased sharply at the start of the Covid-19 pandemic, to 0.90% [0.82-0.99%] in March-2020. This was followed by a steadier rise, peaking at 1.97% in May-2022, before falling slightly to 1.68% by September-2023. As a result, in 2022/23, one in ten smokers (10.8% [9.64-12.0%]) used non-cigarette tobacco. This rise was observed across all subgroups but was most pronounced among younger adults (e.g., reaching 3.21% of 18-year-olds vs. 1.09% of 65-year-olds). Prevalence was consistently higher among men (2.17% in September-2023 vs. 1.07% women) and current vapers (4.71% vs. 1.25% non-vapers). **Conclusions**: While exclusive use of non-cigarette combustible tobacco remains rare among adults in England, it increased at the start of the Covid-19 pandemic (at the same time as survey methods changed) but subsequently continued increasing steadily until May-2022. As of September-2023, there were ~773,000 adult non-cigarette tobacco smokers in England; around five times more than a decade earlier. The rise in prevalence differed by age, with a more pronounced rise leading to higher prevalence among younger than older ages.

FUNDING: Nonprofit grant funding entity

POS5-48

PROJECT UPDATE: NICOTINE FORM AND E-CIGARETTE APPEAL BY SMOKING STATUS: A RANDOMIZED CLINICAL TRIAL

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Significance: E-cigarettes may offer smokers a less harmful alternative than cigarettes, but they also have high appeal to young people. While several factors contribute to e-cigarette appeal among young people, the use of palatable nicotine salts versus harsher free-base nicotine e-liquids is a key driver. The current study examined whether there was a minimal level of free-base nicotine in e-liquid that would be unappealing to young adult exclusive e-cigarette users with minimal/no smoking history but not to current adult smokers interested in switching to an e-cigarette. **Methods:** Using a single-visit, double-blinded, randomized cross over design, 45 young adults who exclusively use e-cigarettes (mean age 22.2, 73% female, 84% White) and 55 older adults who smoke cigarettes (mean age 39.8, 78% female, 80% White) completed 10 vaping sessions. During each session, participants vaped two puffs of each of the 10 lab-prepared e-liquids which varied by the fraction of free-base nicotine (5%, 25%, 45%, 65%, 85%) and nicotine concentrations (20 mg/mL, 50 mg/mL). Participants provided ratings on appeal (liking, enjoyment, satisfaction; range: 0-100), sensory effects (throat hit, smoothness, harshness; range: 0-100), and behavioral intention for continued use (range: 1-7), following each session. The trial is ongoing with an anticipated N=120. **Results:** In general, higher free-base fractions were associated with lower ratings of appeal, positive sensory effects, and use intentions in both young adult exclusive e-cigarette users and older adult smokers. Generalized linear mixed models fit for each outcome revealed no significant interactions between smoking status/age and free-base fraction, with one exception for smoothness. That is, young adult exclusive e-cigarette users reported lower perceived smoothness compared to older adult smokers at 65% free-base fraction in 50 mg/mL nicotine concentration (mean: 10.6 [SD: 11.2] vs. 22.2 [SD: 24.4]), p=0.039. **Conclusion:** This preliminary finding suggests the potential need to mandate a minimum threshold for the fraction of free-base nicotine. This may reduce the appeal of e-cigarettes to young people, while not discouraging people who smoke from switching to e-cigarettes. Further data analysis is underway with more granular examinations of various e-liquid dimensions. Future studies that include nicotine isomer and flavor should help establish effective e-cigarette product standards to best serve public health.

FUNDING: Academic Institution

POS5-49

CIRCUMVENTING CALIFORNIA'S MENTHOL FLAVOR RESTRICTION: TIPS FROM REDDIT

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Significance. Until the FDA finalizes proposed product standards to prohibit menthol as a characterizing flavor in cigarettes, five US states and at least 375 localities continue to restrict sales of flavored tobacco products. To understand strategies people may use to circumvent such laws, we examined Reddit posts that described methods of obtaining flavored tobacco in Los Angeles, California, where the city law restricted sales of flavored tobacco not long after the state law, effective December 21, 2022. By examining these Reddit posts, we sought to identify strategies used to circumvent flavor sales restrictions. **Methods.** Using Python, we extracted 72 Reddit comments (parent and child levels of responses) to a post, "How to obtain menthol cigarettes in California?" A codebook was developed using an inductive procedure based on a grounded theory approach. Codes that emerged included buying additives, driving out of the state or to another location (i.e., tribal lands), online sales, illegal sales, and other comments. Next, a 1-mode social network analysis was conducted to examine connections between Reedit users' and their discussions about circumventing sales bans. To do this, we examined the network among those who disclosed that they lived in California and the topic of their discussion using the developed codes. **Results.** Reddit discussions about circumventing tobacco flavor prohibition laws included 45 unique users, 7 of whom self-identified as California residents in their posts. Overall, 13% of the 72 posts were about illegal sales at retailers. Other posts suggested purchasing menthol products by shopping online (13%), driving out of state or to tribal reservations (31.1%), and 15.6% suggested buying additives, such as menthol crystals to flavor cigarettes. The further from the central post, the more likely the discussions were categorized other (26.7%). **Implications.** Tobacco regulatory agencies should consider strategies that consumers use to circumvent these sales restrictions in order to strengthen laws and improve enforcement. According to the Prevent All Cigarette Trafficking Act (the PACT Act), cigarettes and e-cigarette online sales are subject to federal, state, local, or Tribal tobacco taxes. Similarly, regulations of the PACT act should extend to flavor sale restrictions, ensuring that online vendors do not sell flavored tobacco products within these jurisdictions.

FUNDING: Federal; FDACTP

POS5-50

ASSOCIATION BETWEEN BELIEVING ONE'S OWN CIGARETTE BRAND HAS FEWER CHEMICALS AND ECOFRIENDLY BEHAVIOR AMONG PEOPLE WHO SMOKE

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INTRODUCTION: Research suggests that people who perceive that cigarette manufacturers are socially responsible or "ecofriendly" also believe that their products are less harmful. These relationships may be explained by a "health halo" that ecofriendly/social-

ly-conscious marketing lends to the cigarette maker and its brand. This study examines whether ecofriendly beliefs and behaviors among people who smoke are correlated with the perceived chemical content of their preferred brand. **METHODS**: The present study examined baseline data from adult (21+) daily cigarette smokers participating in a human lab study examining how *natural* and *organic* advertising affects expectancies, subjective experience, and smoking behavior. For the current analyses, we examined the association between ecofriendliness (EF) (assessed using an 18-item scale where a higher score indicated more ecofriendly purchase/lifestyle behavior), and perceived chemical content of one's preferred brand (assessed as: *Compared to other cigarettes, the cigarettes I normally smoke…have less chemicals)* with response options- *true*, *false*, or *neither true nor false*. Fisher's exact tests and Poisson regression models were used to determine statistical significance. **RESULTS**: Of the 122 participants enrolled in the study, 63.1% were male, 74.6% were non-Hispanic white; 79.5% had at least a high school diploma. The median age of 44.5 (IQR: 35-53). About 12.3% believed their usual cigarette brand had fewer chemicals; 56.3% of these were Natural American Spirit smokers. The overall median EF score was 6.0 (IQR: 3-11); when stratified by fewer chemicals belief, those who indicated *true* had the highest median EF score (11, IQR:6-17) than those who indicated *false* (5.0, IQR: 2-10), or *neither* (5.0, IQR:1-8). Nearly twice as many (80% vs. 43.5%; p=0.018) participants who believed their brand had fewer chemicals *agreed* that they *always choose the product which contributes to the least amount of pollution* compared to those who did not hold the fewer chemicals belief. Further, EF scores were greater among participants who believed their usual cigarette brand had fewer chemicals, compared to those who believed this was false (β: 0.52; 95% CI: 0.35,0.70). **CONCLUSION**: Individuals who believed their brand had fewer chemicals had significantly higher levels of ecofriendly beliefs and behavior. These findings underscore the relationship between ecofriendly beliefs and behaviors and perceptions about usual brand among cigarette smokers. Future studies can explore which aspects of product marketing (e.g., packaging features, advertising claims) may drive these associations or if tobacco products that implicitly communicate reduced harm attract individuals with EF beliefs and lifestyles who smoke.

FUNDING: Federal

POS5-51

THE ASSOCIATION BETWEEN OPPOSITION TO A CIGARETTE FILTER BAN POLICY AND THE BELIEF THAT REMOVING FILTERS MAKES CIGARETTES MORE HARMFUL AMONG ADULTS WHO SMOKE: FINDINGS FROM THE 2022 ITC FOUR COUNTRY SMOKING AND VAPING SURVEY

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Significance: Many people who smoke falsely believe that cigarette filters are effective in reducing the harms from tobacco smoke. This multi-country study examined the association between the belief that removing filters makes cigarettes more harmful and opposition for banning cigarette filters among adults who smoke. **Methods:** Data are from 2977 adults (18+ years) who smoked cigarettes and participated in the 2022 ITC Smoking and Vaping Survey in Australia (AU), Canada (CA), England (EN), and the United States (US). Weighted descriptives estimated whether respondents: a) 'support', 'oppose' or 'do not know whether they support or oppose' banning filters; b) believe that removing filters makes cigarettes more harmful (much more harmful; a little more harmful; no, not more harmful; or don't know). A weighted multinomial regression analysis examined the association between opposition to a filter ban and beliefs that removing filters would make cigarettes much more harmful (vs otherwise: a little/no/don't know). Socio-demographics (age, income, education), country, smoking frequency (daily vs non-daily), cigarette type (factory-made vs roll-your-own) were also included as independent variables. **Results:** Overall, 11.8% supported a filter ban, 69.5% opposed it, and 18.7% did not know. Support was highest in EN (18.3%), followed by CA (12.5%), US (8.0%) and AU (7.9%). Nearly half (45.9%) believe that removing filters would make cigarettes much more harmful (country:p>0.05), 28.9% reported a little more harmful (higher in EN vs US,p=0.005), 15.2% were unsure (higher in EN vs the US (p=0.005) and AU (p=0.001)), and 10.0% reported not more harmful (country:p>0.05). Compared to those who did not know if they would support a ban, believing that removing filters would make cigarettes much more harmful (vs otherwise) were more likely to oppose a filter ban (79.3% vs other: 63.6%,p<0.001). Those who resided in AU and the US, smoked daily, were older and female were also significantly more likely to oppose a filter ban (all p<0.05). **Conclusion:** Across all four countries, most adults who smoke oppose banning filters, and this opposition was associated with the false belief that filters reduce the harmfulness of cigarettes. There is a need to address these false beliefs through consumer educational campaigns regarding the environmental and health harms of filters and through regulatory policies that resolve the knowledge gaps regarding filters by banning them completely.

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POS5-52

PREVALENCE AND CORRELATES OF SUPPORT FOR TEXT WARNINGS ON CIGARETTE STICKS AMONG CANADIAN ADULTS WHO SMOKE

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Significance: In 2024, Canada will be the first country to implement a policy requiring text warning statements printed on each stick, beginning with king-size cigarette sticks, which comprise 70% of cigarettes sold. Little is known about support for this policy or characteristics of Canadian adults who smoke king-size cigarettes. **Methods:** Every 3 months from May-November 2023, we surveyed an open cohort of Canadian adults who currently smoke factory-made cigarettes (n=6010 observations, n=4505 individuals). Participants were shown an image of a cigarette with a warning on the filter reading, "Poison in every puff," and asked how much they support the policy, dichotomized to support (5-7=agree) vs not (reference, 1-4=neutral/disagree). In waves 3 and 4, we queried cigarette size (king-size vs regular=reference; n=2816 observations, n=1008 individuals). Separate crude and adjusted generalized estimated equations logistic models regressed these two outcomes on sociodemographic and smoking characteristics. **Results:** Overall, 25% of adults who smoke agreed, 36% were neutral, and 39% disagreed with the policy. After adjusting, participants were more likely to support the policy if they reported current use of any roll-your-own cigarettes (AOR: 1.34, 1.13-1.59) or other nicotine products (AOR: 1.19, 1.02-1.39), had a recent quit attempt (AOR: 1.32, 1.13-1.54), intended to quit (AOR: 1.31, 1.11-1.53), or had higher risk perception of smoking harms (AOR: 1.30, 1.21-1.39). Participants were less likely to support the policy if they were older (AOR 0.98, 0.97-0.99), female (AOR 0.84, 0.72-0.98), white (AOR: 0.79, 0.65-0.95), or reported greater reactance to cigarette pack labels (AOR: 0.74, 0.71-0.78). Agreement with the policy was unassociated with survey wave, education, or nicotine dependence. Participants who smoked king-size cigarettes were older (AOR: 1.02, 1.01-1.03), white (AOR: 1.49, 1.16-1.91), and more nicotine dependent (AOR: 1.26, 1.18-1.34), while king-size preference was less likely among people with college (AOR: 0.67, 0.51-0.86). **Conclusion:** Only a quarter of participants supported the inclusion of warnings on cigarette filters. Policy support has not changed over the year since the pending policy was announced. This study offers a pre-implementation baseline estimate for future efforts to determine whether support increases, as with other tobacco control policies.

FUNDING: Federal

POS5-53

TOBACCO INDUSTRY INTERFERENCE IN AOTEAROA NEW ZEALAND: AN ANALYSIS OF A CAMPAIGN DISRUPTING THE RETAILER REDUCTION POLICY

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Significance: Despite claims they are transforming and wish to create a smokefree future, tobacco companies continue to disrupt and impede policies that would reduce sales of their smoked tobacco products. Aotearoa New Zealand's endgame legislation was at the vanguard of international policy; however, even before the newly elected government proposed repealing the smokefree law, tobacco companies had attempted to undermine its key measures. A social media campaign, "Save our Stores", aimed to overturn a policy that would see outlets selling tobacco products reduce from 6000 to 600. Analysing the arguments adduced in this campaign could help policy makers and advocates anticipate and respond to future disruptions. **Method:** The Policy Dystopia Model (PDM) explains how tobacco companies create narratives to argue that proposed policies will bring harmful social and economic consequences that lead to catastrophic outcomes. Based on a wide-ranging review of industry documents and literature, it

sets out an argument framework that supports critical analyses of industry activity. Using the PDM, we deductively analysed claims made in the "Save our Stores" website, which British American Tobacco (NZ) and Imperial Brands Australasia supported. We identified discursive strategies, and critically reviewed the arguments, frames and narratives used. **Results:** Arguments presented typically outlined costs to the economy and society. The campaign suggested that reducing numbers of retail outlets selling smoked tobacco would create economic mayhem, and increase illicit tobacco trade and violent crime. Claims also implied lower excise tax revenue from reduced tobacco sales would translate to decreased police funding, thus exacerbating lawlessness, and increase individuals' income tax payments. The campaign framed the government as incompetent, authoritarian, and focussed on misplaced priorities. Collectively, the arguments created a metanarrative of lawlessness and decreased public safety. **Conclusion:** Tobacco companies in Aotearoa New Zealand successfully collaborated to undermine a retailer reduction policy that aimed to reduce smoking prevalence rapidly and equitably. Understanding how claims of economic harm and illicit trade fostered a metanarrative of widespread social unrest could assist international policy makers to pre-empt arguments they may face when introducing similar policies.

FUNDING: Academic Institution

POS5-54

RELATIVE EFFECTIVENESS OF CIGARILLO WARNING THEMES IN TEXT AND PICTORIAL FORMATS: AN EXPERIMENTAL STUDY AMONG A NATIONALLY REPRESENTATIVE SAMPLE OF US YOUNG ADULTS

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Significance: Health warning labels (HWLs) are an effective tool to communicate the health risks of cigar use and can decrease use when applied on cigar packages. This study aims to assess the relative effectiveness of the themes of the six FDA-proposed cigarillo warnings in text and pictorial format by cigarillo smoking status. **Methods:** A nationally representative sample of cigarillo users and susceptible nonusers ages 18-29 were randomized to a text or study-developed pictorial warning condition. Within each condition, participants viewed all six of the FDA-proposed HWLs in random order. The warning themes were *lung cancer and heart disease*; *cancers of the mouth and throat*; *nicotine/addiction; not a safe alternative*; *harm to baby*; and *secondhand smoke*. We assessed negative affect, cognitive elaboration, and perceived message effectiveness (PME) for each warning. ANOVA for repeated measures followed by Bonferroni adjustment for multiple comparisons were used to test the equality of outcome means between the HWLs themes within text and pictorial format for current (past 30 day) cigarillo users and susceptible nonusers. **Results:** Of the 348 participants, 62.0% were current users, and 37.9% were susceptible nonusers. The sample was 46.5% female; mean age 23.9. There were significant differences between the 6 pictorial HWLs' themes for negative affect (F=2.35; p=0.04). Among current users, the pictorial HWL *cancers of the mouth and throat* (mean± standard deviation=2.98±1.13) elicited the lowest negative affect compared to the *nicotine/addiction* (3.35±1.27; effect size (d)=0.29), *harm to baby* (3.31±1.26; 0.25), and *not a safe alternative* pictorial HWLs (3.30±1.24;0.26). The *nicotine/addiction* pictorial HWL (3.35±1.27) evoked higher negative affect than *lung cancer and heart disease* (3.04±1.25; 0.27). No significant differences were found among pictorial HWL themes for susceptible nonusers. No differences were observed among the text HWL themes for current or susceptible nonusers. **Conclusions**: Differences among the 6 HWL themes emerged within the pictorial format. Except for *cancers of the mouth and throat,* and *lung cancer and heart disease*, the pictorial HWLs depicted people, displaying the full face or the entire person. Pictorial HWLs depicting people to represent health effects may be more effective than images of diseased organs or body parts. The FDA should consider adding such images to the text warnings on cigarillo packages to better convey the health risks of cigarillo smoking and reduce its rates among young people.

FUNDING: Other

POS5-55

THE SITUATION OF TOBACCO ADVERTISING, PROMOTION, AND SPONSORSHIP IN CHINA IN 2022

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Significance: Seventeen years after the implementation of the FCTC in China, which mandates a comprehensive ban on TAPS, the amended Advertising Law of 2015 explicitly prohibits tobacco advertising in mass media, public places, public transport, and outdoor areas. It also bans any form of tobacco advertising targeted at minors. However, tobacco advertisements are not banned at tobacco retail points, considered public places. The 2019 amended Charity Law does not prohibit donations from the tobacco industry but bans related promotional activities. This research would provide a basis for modifying and strengthening law enforcement. **Methodology:** Between July and Oct in 2022, a study was conducted in eight Chinese cities. In each city, one urban and one suburban area were selected, and 40 tobacco retail points, including specialized stores and general tobacco sales points, were randomly chosen for undercover investigation to assess tobacco advertising and promotion activities. Tobacco sponsorships were monitored from June to Sept. 2022 using an online public opinion monitoring system. The monitoring included sponsorship of public welfare activities by tobacco companies and related institutions, with data on tobacco industry sponsorship from 2011-2019 collected from the "China Tobacco Yearbook." **Results:** The undercover investigation covered 640 tobacco sales points. Tobacco advertisements were found at 30.6% of these points, with a higher prevalence in specialized tobacco stores (69.0%) compared to general sales points (9.2%). No instances of single-cigarette display, sample trials, or taste testing were found, except for one specialized store in Beijing that offered price promotions, accounting for 0.16% of the total. From 2011-2019, the amount of public welfare sponsorship by the tobacco industry generally showed an increasing trend, peaking in 2016 (¥3.13 billion), with a significant decrease in 2017. Since 2018, especially after the new Charity Law, there has been a yearly increase. Sponsorship mainly focused on poverty alleviation, rural revitalization and agricultural assistance, often related to "assistance," "revitalization," "education support," and "donations." **Conclusion:** The regulations on tobacco advertising in the Advertising Law are not well enforced. The Charity Law needs to be revised to achieve a comprehensive ban.

FUNDING: Nonprofit grant funding entity

POS5-56

PAST EXPOSURE TO TOBACCO ADVERTISING ON SOCIAL MEDIA PREDICTS MORE FREQUENT CIGAR USE AMONG YOUTH AND YOUNG ADULTS

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Background. The influence of tobacco ad exposure (e.g., television, magazines, storefront) on youth tobacco use is well-documented. Less is known about how tobacco promotion on social media impacts future tobacco use among young people. Social media platforms commonly ban paid tobacco advertising, yet content can be observed on branded or vendor/online store accounts and by paid product influencers. Promotions for little cigars and cigarillos (LCCs) can be found on social media channels popular among young people, including TikTok and Instagram. The purpose of this study was to determine whether past exposure to tobacco advertising/promotion on social media is associated with frequency of cigar/LCC use among youth and young adults. **Methods.** Data were drawn from 3 waves of the Truth Longitudinal Cohort (TLC), a national address-based sample of youth and young adults aged 15 to 24 years: Wave 1 (Feb-May 2018); Wave 2 (Feb-May 2019); Wave 3 (Sept-Dec 2019). The analytic sample was restricted to respondents who were past 30-day cigar, little cigar, or cigarillo users at Wave 3 (N=489). The predictor variable was a 4-level scale of self-reported past 30-day exposure to tobacco ads/promotions on social media (0=never, 3=very often). The measures were summed across Waves 1 and 2 to create a cumulative exposure score (range: 0-6). The outcome was the number of days respondents reported using cigars/LCCs in the past 30 days (range: 1-30). Linear regression was used to test the association between exposure to tobacco ads/promotions (W1-W2) and number of days of cigar/LCC use (W3), controlling for age, sex, race/ethnicity, household tobacco use, perceived financial situation, and sensation-seeking. **Results.** Less than half of the sample (40.7%) could not recall any exposure to tobacco ads/promotions on social media or websites at Waves 1 and 2. The average cumulative tobacco ad exposure score was 1.17 (SD: 1.31). At Wave 3, respondents used cigars/LCCs an average of 5.34 days (SD: 7.89), with 83.8% reporting use between 1 and 9 days. Greater exposure to tobacco ads/promotion on social media in Waves 1-2 was positively associated with the number of days respondents reported using cigars/LCCs at Wave 3 (r = 0.71, SE: 0.28, p=0.013). **Discussion**. This study provides evidence to suggest that previous exposure to tobacco advertising and promotions on social media contributes to more frequent cigar/LCC use among youth and young adults. Regulation and enforcement of tobacco advertising on social media platforms should be expanded to encompass branded and vendor accounts and influencer content

FUNDING: Federal

POS5-57

TOBACCO USES AMONG USERS OF A YOUTH CESSATION SERVICE FOLLOWING E-CIGARETTE AND HEATED TOBACCO PRODUCT BAN IN HONG KONG

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Significance The global approach to non-combustible tobacco products varied widely, with some jurisdictions implementing strict regulations or outright bans. However, empirical research on the impacts of banning the sales of these products is lacking. This study aims to examine the changes in tobacco use among youth tobacco users following the implementation of a comprehensive ban on the import, promotion, manufacture, sale, and commercial possession (excluding personal usage) of e-cigarettes (EC) and heated tobacco products (HTPs) in Hong Kong on April 30, 2022. **Methods** This cross-sectional study was conducted in the HKU Youth Quitline, a telephone-based cessation service targeting youths aged 25 years or below in Hong Kong. From May 2022 to May 2023, 301 youths who currently (past 30-day) used either cigarettes, EC, HTP, or a combination of these products, were enrolled in the service. During service intake, self-reported data on tobacco use and changes after the ban were collected through telephone interview by a peer counselor. Estimates of proportions of changes in tobacco use were presented with 95% confidence interval (CI). **Results** Among the 301 participants (mean±SD age=19.7±3.5 years, 79.1% male), 194 (64.5%) were exclusive cigarette users, 20 (6.6%) were exclusive EC users, and 87 (28.9%) were concurrent users of cigarettes plus either EC (n=77), HTP (n=6), or both (n=4). Most participants (92.2%, 95% CI 88.6-94.9%) were aware of the EC and HTP ban. Among 143 participants who used EC regularly before the ban, 30.1% (23.7-38.9%) reported quitting EC after the ban while 15.4% (10.3-22.3%) reported a reduction in EC use. For regular HTP users (N=27), 63% (43-79%) reported quitting HTP use after the ban, with no change in consumptions reported among continued users. Only 5.7% (2.8-11.0%) regular EC users and no regular HTP users reported increased cigarette use after the ban. In comparison, 10.6% (6.5-17.0%) regular EC users reported a reduction in cigarette smoking. **Conclusion** In this real-world sample of youth tobacco users, a substantial proportion of regular EC and HTPs users quit or reduce consumption after the ban on these products, without notable shift towards increased cigarette smoking. One-third of youths continued to use EC or HTP despite the ban, highlighting the need for additional interventions and enforcement strategies to address persistent use.

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POS5-59

LESS THAN ONE MINUTE OF EXPOSURE TO PRO-VAPING SOCIAL MEDIA POSTS INCREASES INTENTIONS TO VAPE BY NEARLY 50%: RESULTS FROM A RANDOMIZED CONTROLLED EXPERIMENT AMONG US YOUNG ADULTS

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Significance: A recent proliferation of noncommercial social media content presents vaping and nicotine addiction in both positive and negative terms. The effect of exposure to this content on young people's attitudes, beliefs, and intentions to use e-cigarettes is unknown. **Methods:** This is a between-subjects randomized controlled experiment of an online convenience sample of 1,816 U.S. young adults ages 18-24 who were randomized to view a series of real, noncommercial, publicly accessible social media posts about nicotine addiction of the same valence (positive, negative, or control unrelated to nicotine addiction). Univariate and multivariable logistic and linear regressions were conducted to test the effect of exposure condition on intentions to use or quit using e-cigarettes or smoking cigarettes, beliefs about nicotine addiction, and descriptive and injunctive social norms around nicotine use, adjusting for demographic characteristics. **Results:** Those in the positive valence group, who viewed 4 videos for less than 60 seconds total, had 49% higher adjusted odds of reporting intentions to vape compared to the control group, both before and after adjustment for race and ethnicity, gender, e-cigarette use and cigarette use (aOR: 1.49, 95% CI: 1.08-2.04, p=0.014). In multivariable linear regressions, those assigned to the negative valence group, who viewed 3 videos for approximately 90 seconds total, reported higher intentions to quit smoking (but not vaping) compared to the control group (β=1.36, 95% CI: 0.38-2.34, p=0.007). Additionally, compared to the control group, those in the negative valence group had higher agreement that "nicotine is addictive because it is so good people don't want to stop" (β=0.6, 95% CI: 0.22-0.98, p=0.002) and estimated a higher prevalence of peer vaping (β=3.26, 95% CI: 0.33-6.19, p=0.029). **Conclusions:** Results from this randomized controlled experiment suggest that exposure to noncommercial social media content about nicotine addiction has immediate effects on some measures of young adults' intentions to use or quit tobacco use, beliefs about nicotine addiction, and norms about nicotine use. Potential actions to protect young people from exposure to this content could include rules prohibiting posting about tobacco products on social media platforms and age restrictions on access to platforms and/or access to certain types of content on such platforms.

FUNDING: Nonprofit grant funding entity

POS5-60

EFFECTS OF E-CIGARETTE WARNING LABELS ABOUT MENTAL HEALTH CONSEQUENCES OF NICOTINE ADDICTION AMONG U.S. YOUNG ADULTS: RESULTS FROM A RANDOMIZED CONTROLLED EXPERIMENT

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Significance: Since 2016, e-cigarette packaging and advertising in the US have been required to bear the warning statement: "WARNING: THIS PRODUCT CONTAINS NICOTINE. NICOTINE IS AN ADDICTIVE CHEMICAL." However, health communication efforts that are solely focused on the addictive properties of nicotine may lack effectiveness. **Methods:** A between-subjects experiment randomized an online convenience sample of 1,919 US young adults ages 18-24 to view one of four e-cigarette label conditions: no-message control, the current FDA label, a message that "nicotine addiction can worsen depression and anxiety symptoms," and a message that "nicotine addiction is a source of stress." Using the FDA label group as the reference, simple and multivariable regressions tested for associations between exposure to the mental health label conditions and intentions to use e-cigarettes, intentions to quit e-cigarettes (among those who currently vape), beliefs about nicotine, and perceived message effectiveness (e.g., the message "makes me concerned about nicotine addiction" and "discourages me from wanting to use nicotine"; control condition excluded). Equivalence of the FDA and control labels was also assessed. **Results:** There were no significant associations between label condition and intentions to use or quit e-cigarettes or nicotine-related beliefs. Use intentions, quit intentions, and nicotine-related beliefs were equivalent among those who viewed the FDA label and those who viewed the no-message control label. However, compared to those who viewed the FDA label, participants who viewed the depression/anxiety label and those who viewed the stress label had greater agreement that the label message "makes me concerned about nicotine addiction," including after adjustment for tobacco use, sociodemographic characteristics, and self-rated mental health; those who viewed the depression/anxiety label also had greater agreement that the message "discourages me from wanting to use nicotine." **Conclusions:** While brief exposure to warning label messages may not impact intentions to use or quit vaping and beliefs about nicotine addiction, messages about stress, depression and anxiety arising from nicotine addiction had higher perceived effectiveness among young adults than FDA's current message. Warnings about mental health consequences of nicotine addiction may be worth including in a suite of warnings and implemented as part of a comprehensive tobacco prevention and control strategy.

FUNDING: Nonprofit grant funding entity

POS5-62

SELF-REPORTED ATTENTION AND RESPONSES TO CIGARETTE PACKAGE LABELS AT THE END OF A TWO-WEEK RANDOMIZED TRIAL OF CIGARETTE PACKAGE LABELING CONFIGURATIONS

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Significance: Cigarette pack inserts that describe quitting benefits and provide tips to quit may promote cessation, but research is needed to better understand their effects, including their potential to enhance pictorial health warning label (PHWL) effects. Methods: A 2X2 between-subject trial randomly assigned adult smokers (n=356) to one of four groups: small text-only health warning labels (HWLs) on pack sides (control); inserts with cessation messages and small HWLs (inserts-only); large PHWLs showing health effects from smoking (PHWLs-only); both label types (inserts + PHWLs). Participants received a 14-day supply of their preferred cigarettes with packs modified to reflect their labeling group. After the 14-day trial, participants reported their frequency of noticing,

reading, and thinking about smoking harms and quitting benefits (assessed separately) due to labels (responses: 1 Never-5 All the time), as well as talking about labels (responses: 1 Not at all-5 Very often) and forgoing cigarettes due to labels (responses: 1 Never-4 Many times). Ordered logistic models regressed each outcome on labeling groups (control=reference), and mediation analyses assessed whether attention (i.e., average frequency of noticing & reading) mediated labeling effects on other outcomes. Analyses adjusted for baseline sociodemographics and smoking-related variables. Results: Compared to the control group, both the inserts-only and PHWL-only groups reported higher frequency of noticing labels (AOR=3.59, 95%CI=1.99-6.26; AOR=2.46, 95%CI=1.43-4.23, respectively), reading labels (AOR=2.89, 95%CI=1.64-5.10; AOR=1.79, 95%CI=1.00-2.93), thinking about smoking risks because of the labels (AOR=1.93, 95%CI=1.14-3.44; AOR=1.82, 95%CI=1.06-3.12), and talking about labels (AOR=2.30, 95%CI=1.33-4.25; AOR=2.70, 95%CI=1.53-4.77). The inserts-only group also reported more frequent thinking about quitting benefits (AOR=1.98, 95%CI=1.14-13.44). Across outcomes, effects appeared strongest for the insert + PHWL group (AOR=2.47-6.89), which also predicted forgoing (AOR=2.47, 95%CI=1.28-4.79). Attention mediated labeling effects on all outcomes, except for PHWL-only. Conclusions: Cigarette labeling that combined inserts and PHWLs appeared most effective at drawing attention to labels, thereby, and prompting desired psychosocial and behavioral responses. Lack of mediation by attention in the PHWL-only group suggests that PWHL effects may be independent of conscious engagement with labels.

FUNDING: Federal

POS5-63

TAX STAMPS IN INDONESIA: EVIDENCE OF ILLEGAL ACTIVITY

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Significance Indonesia has a tax system with eight tiers where tax differs by per-unit price and manufacturer size for cigarettes, machined kreteks and hand-rolled kreteks: four tiers for hand-rolled kreteks (115, 205, 345, 440 Indonesian rupiah (IDR)), two tiers for machine kreteks (600, 985 IDR), and two tiers for cigarettes (635, 1065 IDR). Tiered tax systems create the opportunity for industry manipulation of tax stamp system. This work examines if there is any illegal activity related to tax stamps on cigarette and kretek packs in Indonesia. Methods The Tobacco Pack Surveillance System (TPackSS) collected cigarette and kretek packs across three cities in Indonesia (Jakarta, Medan, and Surabaya) in September 2022. Purchase price, product type on packaging and tax stamp information (product type, tax tier, stick count) were evaluated by a single coder. We evaluate if tax stamps were illegally applied for different tax tiers or stick counts and whether the purchase price was less than the minimum government sales price. Results There were 314 unique packs collected and 302 packs had visible information on packaging and tax stamp for analysis. Cigarettes made up 17% of the sample, while hand-rolled kreteks and machined kreteks made up 23% and 60%, respectively. Only one pack applied the wrong product tax stamp; paying a cheaper tax than required. That pack was also one of the two cases where a tax stamp under-reported the number of sticks, which reduces the tax paid. The most prevalent issue was a purchase price below the minimum price, which was observed for 23 packs (7.6%). At least 8.2% of the unique pack sample were illegal vis-a-vis tax or price. Conclusion There is limited evidence in this sample of a tax stamp applied to the wrong product type, but there is considerable evidence of purchases below the minimum price. One limitation of this study and an area for future research is the evaluation of within product type tax stamp switching (e.g., applying a 635 IDR tax stamp on cigarettes that should be taxed 1065 IDR). We were unable to determine the price category based on brand variant information on the packaging.

FUNDING: Nonprofit grant funding entity

POS5-64

MARKET ANALYSIS OF AVAILABLE HEATED TOBACCO PRODUCT BRAND VARIANTS IN UKRAINE

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Significance The HTP market is dominated by transnational tobacco companies with 94.5% of the market held by PMI (70.2%), BAT (15.9%) and JTI (8.4%). Ukraine is among the countries with a significant presence of HTPs outside of Japan and South Korea. This study explores the range of product offerings of HTPs in Ukraine, which could provide some insight into why HTPs are popular in Ukraine. Methods This study uses NielsenIQ retail data from Feb2019-Feb2022, collected through a retail audit. We examine the annual sales value in US dollars (USD) for the years ending in February 2020, 2021, and 2022. Using manufacturer and brand information, we analyze changes in market share and the number of different unique brand variants available overall and by manufacturer during this period. Results The sales value of HTPs increased from $117.9 million(m) for Feb2019-Feb2020 to $255.2m for Feb2020-Feb2021 to $445.9m for Feb2021-Feb2022. For the year ending Feb2020, PMI had two brands, HEETS (11 variants) and Parliament (2 variants) and comprised 93.4% of the market compared to BAT with two brands, Kent (5 variants) and Neo (8 variants) that made up the remaining 6.6% of the market. By the end of Feb2021, PMI's market share decreased to 87.6%, but they introduced a third brand, FIIT (3 variants), and increased their HEETS variants to 17. BAT market share nearly doubled to 12.4% with 15 variants of Neo, and Hongta Tobacco entered the market with 4 MC variants. By the end of Feb2022, PMI's market share further decreased to 78.9%, with FIIT variants increased to 5 and HEETS to 20. BAT's market share continued to increase to 21.1% with 19 Neo variants. Hongta introduced a 5th MC variant, but still had less than 0.01% of the market. Conclusion The size and the number of different brand variants in the HTP market in Ukraine have increased from Feb2019 to Feb2022. The market is still dominated by two companies that continue to diversify their offering primarily through the BAT Neo and PMI HEETS lines. Despite this lack of competition, growing product lines offer existing and potential consumers a multitude of choices.

FUNDING: Nonprofit grant funding entity

POS5-65

ESTIMATES OF THE ECONOMIC COSTS OF TOBACCO USE IN CHINA

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Background: China is the world's largest cigarette producer and consumer. Tobacco use has caused huge health losses in China. Due to the underestimation of the economic costs of tobacco use, particular considering the huge tax and profit revenue contributed by the industry, Chinese government has been reluctant to implement comprehensive tobacco control policies, particular tax policy to urge tobacco use. **Objective:** This study calculates the economic costs of tobacco use in China including direct and indirect economic costs, with the aim to provide a rational basis for tobacco control policies in China. **Methodology:** We employed multiple data sources including China Family Panel Survey 2014-2020, the Global Burden of Disease, and the National Bureau of Statistics of China, by applying the propensity score matching method and the combination of disability-adjusted life year (DALY) as well as human capital approach to measure the direct and indirect economic costs between 2014-2020, and obtained the total economic costs by summing them up. **Results:** The direct economic costs of smoking for the observed years are approximately 73.71 billion yuan, 75.45 billion yuan, 85.92 billion yuan, and 86.33 billion yuan respectively. The indirect economic costs of smoking, calculated based on the GDP per capita, were around 1.40 trillion yuan, 1.64 trillion yuan, 2.05 trillion yuan, and 2.30 trillion yuan. Consequently, the cumulative economic burden of smoking for the observed years escalated to 1.48 trillion yuan, 1.72 trillion yuan, 2.14 trillion yuan, and 2.39 trillion yuan respectively. Notably, there was a significant increase of 61.86% in the total economic cost over six years, rising from 1.48 trillion in 2014 to 2.39 trillion in 2020. **Conclusion:** Tobacco use has brought significant economic costs to China, which is far beyond fiscal revenue generated from the industry. Chinese government should take the economic cost of tobacco use as the rational basis of tobacco control.

FUNDING: Nonprofit grant funding entity

POS5-66

NITRITE-INDEPENDENT INCREASES IN LEVELS OF TOBACCO-SPECIFIC NITROSAMINES EXTRACTED FROM SMOKELESS TOBACCO PRODUCTS USING ARTIFICIAL SALIVA

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Significance: Tobacco-specific nitrosamines (TSNA) are formed via nitrosation of nicotine and other tobacco alkaloids during tobacco processing. Users of smokeless tobacco products may be exposed to additional levels of TSNA through endogenous nitrosation of tobacco alkaloids occurring in the oral cavity. We aimed to investigate the

potential brand-specific differences of the endogenous formation of TSNA by incubating various smokeless tobacco products with artificial saliva and sodium nitrite. **Methods**: This study includes 60 varieties of smokeless tobacco representing various brands and sub-brands of products currently available on the US market. Product samples were either incubated with artificial saliva for 30 minutes at 37°C or simply extracted with artificial saliva, with and without the addition of sodium nitrate. The extracts were analyzed for TSNA by liquid chromatography-tandem mass-spectrometry using our routine protocols. A standard protocol for extraction and analysis of TSNA in tobacco products was used as a control condition **Results**: Extraction of smokeless tobacco products with artificial saliva instead of the standard buffer led to an average 1.85-fold increase in *N*-nitrosonornicotine (NNN), a potent oral carcinogen. Additional incubation with artificial saliva resulted in further increase in the measured NNN: a 2.4-fold increase compared to the standard extraction. There was no effect of sodium nitrite on these changes. Similar trends were found for other measured TSNA. Products that contain lower levels of TSNA measured by the standard procedure tended to have higher increases in TSNA levels when artificial saliva was used. **Conclusions**: The results of this study indicate that salivary enzymes and/or other components may release additional amounts of TSNA bound to tobacco as compared to the laboratory procedures that are being used for TSNA analysis in smokeless tobacco. Such binding may be in part responsible for the lower levels of TSNA found in some products when standard procedures are employed. Further research is needed to understand the sources of additional TSNA released upon incubation with saliva and the implications for user exposures.

FUNDING: Federal; Academic Institution

POS5-67

HEDONIC AND AVERSIVE TASTE RESPONSES TO PG50/VG50 AND NICOTINE IN MALE AND FEMALE RATS

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Significance: Propylene glycol (PG) and vegetable glycerin (VG) are tobacco product constituents commonly used as solvents in e-cigarettes and as humectants, which are substances used to keep things moist, in smokeless tobacco products. PG and VG may change the sensory properties of nicotine which may alter nicotine taking behavior. However, the hedonic and aversive taste responses of PG50/VG50 and its impact on nicotine reward and aversion are unknown. Our previous studies reported nicotine's hedonic and aversive taste responses. Here, we investigated the effects of PG50/VG50 and its impact on nicotine's ingestive and aversive taste responses during the taste reactivity test in male and female Sprague Dawley rats. Methods: The animals received 20 random 4-s infusions of either PG50/VG50, nicotine, or PG50/VG50 + nicotine via their intraoral catheters over a 45-minute session. The face reactions of rats were recorded, and the videos were analyzed for their ingestive and aversive responses to each solution. Results: PG50/VG50 elicited significantly greater ingestive responses compared with water in male rats, but not in female rats. In female rats, nicotine and PG50/VG50 + nicotine elicited significantly lower ingestive responses compared with water. Additionally, nicotine and PG50/VG50 + nicotine elicited significant aversive reactions in both male and female rats. Conclusion: Overall, PG50/VG50 does not specifically alter nicotine's taste responses in male and female rats. However, there are sex differences in the ingestive and aversive taste responses of nicotine and PG50/VG50 between male and female rats. Future studies will aim to evaluate the orosensory properties of a variety of PG/VG ratios and their ability to alter nicotine's taste responses.

FUNDING: Federal; FDACTP

POS5-68

THE IMPACT OF SUGAR PROFILE ON FURAN EMISSIONS FROM HOOKAH

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Introduction. Initiation and use of hookah by youth are strongly linked to sweet flavors and additives, including humectants and sugars, that are found at high levels in hookah tobacco. Previous studies have linked the sugar and humectant content of hookah tobacco to the emission of semi-volatile furans (SVFs). SVFs in hookah smoke surpass combustible cigarettes and include furfural and 5-(Hydroxymethyl)furfural (HMF) linked to systemic inflammation, and mutagenesis in animal studies. **Methods**. We prepared a 2x2 matrix of hookah tobacco formulations by adding ecologically valid levels of sugars and humectants to a commercially available unflavored hookah tobacco: medium humectants medium sugars (MHMS), medium humectants high sugars (MHHS), high humectants medium sugars (HHMS), and high humectants high sugars (HHHS). Sample generation was performed using a research-grade waterpipe connected to a Borgwaldt shisha smoking machine. A two-stage puffing topography was used to generate emissions, which were then collected on a filter pad for analysis. Semi-volatile furans [furfural, furfuryl alcohol (FFA), and HMF] were quantified using UHPLC-DAD. Statistical differences in SVFs across tobacco formulations were determined through Kruskal-Wallis test; additionally, SVFs association with humectants and sugars were examined using Pearson correlation. **Results**. Semi-volatile furans were detected in the mainstream emissions from all four ITPs. HMF ranged from 2,850 to 18,500 ug/session, with the greatest concentration found in the MHMS (p<0.05 vs HHHS). FFA was detected in levels considerably lower than HMF, ranging from 13.8 to 79.8 ug/session, with the greatest levels in MHMS (p<0.05 vs HHHS). Furfural was in the same range as FFA. Our data showed that sucrose was the main source of SVFs, regardless of the content of fructose, glucose, and humectant content. Increasing sucrose values by a factor of 1.3 in the tobaccos resulted in an increase of 3.6 X HMF emissions (p<0.001). HMF emissions from our tobacco formulations were ~300-2,600 times higher than levels reported for cigarettes. **Conclusion**. SVFs are emitted in alarming concentrations in hookah smoke when commercial levels of sugar are present in the tobacco mixture, which may drive increased toxicity of these tobacco products. Next steps include a clinical research study to determine how different levels of sugars and humectants may affect the puffing behaviors and SVF exposures in established hookah smokers.

FUNDING: Federal

POS5-69

TOBACCO USE AND IMMUNITY: EXPLORING E-CIGARETTE AND CIGARETTE USE IN IMMUNE-WEAKENED ADULTS

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Background: Tobacco use can pose a greater risk to people with weakened immune systems (WIS). In this study, we examined the association between cigarette and e-cigarette use and WIS among US adults. **Methods**: Data came from N=57,133 adults who participated in the 2021 and 2022 National Health Interview Survey. The association between cigarette and e-cigarette use and WIS due to either prescription or health conditions or both was explored using weighted multivariable regression models accounting for demographics and other health conditions. Adjusted odds ratios (AOR) with a 95% confidence interval (CI) were reported. Cigarette and e-cigarette use was defined as never [reference-group], former [used in the past but not now], and current [use now on some days or every day]. Dual use (yes vs no) of these products also was examined. **Result**: Overall, 2,631 (estimated 21.7 million) adults reported having WIS due to prescription, 2,880 (23.5 million) due to health conditions, and 4,315 adults (35.5 million) due to both. Adults with WIS due to health conditions were more likely to be current (vs. never; AOR=1.21, 95% CI: 1.05-1.40) and former (AOR=1.25, 95%CI: 1.11-1.39) cigarette smokers compared to their counterparts with no WIS. Adults with WIS due to a prescription were more likely to be former cigarette smokers (AOR=1.19, 95% CI: 1.06-1.34) compared to those with no WIS. Adults with WIS due to both reasons were more likely to be current (AOR=1.19, 95% CI: 1.05-1.35) and former (AOR=1.24, 95% CI: 1.13-1.36) cigarette smokers compared to their counterparts with no WIS. We did not observe a significant difference in dual-use by WIS for either reason or both (ps >0.05). **Conclusions**: Our findings underscore the importance of monitoring cigarettes and e-cigarette use among adults with WIS due to health conditions, prescription, or both. The findings highlight the significance of including specialized and tailored cigarette cessation programs in the standard care given to people with WIS.

POS5-70

EXAMINING VAPING FREQUENCY DIFFERENCES BY AGE, DEVICE TYPE, AND TOBACCO USE STATUS IN QATAR, EGYPT, AND IRAQ

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Significance: There is limited evidence on the association between sociodemographic characteristics and vaping frequency in the Middle East. The current study rectified this gap by examining the associations between country of residence, vaping device type, tobacco use status and age with vaping frequency in a sample of three Middle Eastern countries. **Methods:** Regular vapers completed an online survey through a link on social media platforms using paid advertisements. The respondents provided responses to a series of questions concerning demographics and vaping aspects. A Chi-square test was used to examine the association between variables of interest and days vaped per week. Bonferroni correction tests were used to examine pairwise differences in vaping frequency. **Results**: In total, 386 vapers were used in the main analyses. Qatar had lower proportions of vapers who vaped every day and higher proportions of vapers who vaped 1-3 days/week as compared to Egypt and Iraq. Qatar also had higher proportions of vapers who vaped 4-6 days/week relative to Egypt. With respect to device type, there was a higher proportion of mod users who vaped everyday compared to e-cigarette and vape pen users and a lower proportion of mod users who vaped 1-3 days/week as compared to vape pen users. Furthermore, vapers with no history of tobacco use and vapers who currently use tobacco had lower proportions of vapers who vaped everyday than vapers who are ex-tobacco users. Vapers who are ex-tobacco users, had a higher proportion of vapers that vaped 4-6 days/week than vapers with no history of tobacco use. **Conclusion**: The lower days vaped per week in Qatar is likely associated with stringent legislation relative to Egypt and Iraq. The higher proportion of mod users that vape everyday relative to e-cigarette and vape pen users suggest a need for nicotine restriction policies and price interventions to reduce vaping frequency among different device users. Furthermore, the higher proportions of vapers who are ex-tobacco users who vape everyday relative to never tobacco users and current tobacco vapers requires targeted counselling and nicotine replacement therapy.

FUNDING: Academic Institution

POS5-71

SELF-REPORTED IMPACTS OF NICOTINE VAPING ON WELLBEING IN AOTEAROA NEW ZEALAND: QUALITATIVE ANALYSIS OF OPEN TEXT RESPONSES FROM THE ITC YOUTH AND YOUNG ADULT SURVEY

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Significance: Better understanding of the positive and negative impacts of nicotine vaping on the wellbeing of young people is needed to inform policy and practice. Self-reported impacts are particularly relevant for the design of health promotion campaigns and resources. **Methods:** This qualitative study used inductive thematic analysis to explore open text responses to three questions in the ITC Youth and Young Adult Tobacco and Vaping Survey: "Can you describe how vaping affected··· i) your physical health ii) your mental health iii) other aspects of your wellbeing (e.g. financial, social, spiritual)." These open-ended questions were asked of those whose responses to corresponding questions indicated that vaping had positively or negatively affected their mental health, physical health or wellbeing. Participants (N= 3414) aged 16-29 were recruited from commercial panels in Aotearoa New Zealand. Data was collected in Aug-Sept 2023. **Results:** Reported negative impacts far outnumbered positive, with detrimental effects on fitness, respiratory health and financial wellbeing the most commonly reported impacts across age and ethnic groups. In contrast, a small number reported improved physical, mental and/or financial wellbeing after switching from smoking to vaping. Reported impacts on social wellbeing and mental health were mixed, e.g. vaping both created interpersonal conflict yet made socialising easier; vaping reportedly both eased and caused anxiety and distress. Many respondents were troubled by becoming dependent on vaping, which they saw as mentally and/or spiritually harmful. **Conclusion:** Participants reported varied (and in some cases, serious) negative effects of vaping, with social and mental health benefits also reported by some. Our qualitative findings align with the scientific consensus that vaping is harmful, though less harmful than tobacco smoking. They highlight harms beyond biomedical impacts and provide insights into lived experience that can inform policies and programmes. Prevention messages focused on fitness and financial impacts may resonate with diverse young people. Evidence that young people turn to vaping to manage mental health issues indicates a need to offer alternative coping tools that are safe.

FUNDING: Federal; FDACTP

POS5-72

SALE OF LEGAL AND ILLEGAL CIGARETTES AROUND SCHOOLS IN MEXICO

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Significance Illegal cigarettes (cigs) are a threat to public health and tobacco control efforts, they directly and indirectly expose the population to added risks when manufactured with unregulated materials and additives. In addition, illegal cigs can facilitate smoking behaviors among adolescents, by increasing accessibility and reduced prices. Therefore, their presence around schools presents a potential for greater damage, especially in less affluent areas. We aimed to document the presence of illegal cigarettes around schools in Mexico. **Methods** Using and adaptation of the Tobacco Packaging Surveillance System (TPackSS) protocol, data on the availability of cigarette packs and single sticks was collected from 504 points of sale (POS) near middle and high schools in four cities of Mexico (Mexico City, Monterrey, Guadalajara, and Juchitan). POS were classified as street vendors, kiosks, neighborhood stores, convenience stores, and supermarkets; additional information on the availability of cigarette packs, single sticks or both was collected. **Results** 128 POS were visited on Mexico City, 128 in Monterrey, 127 in Jalisco, and 121 in Juchitan. Legal and illegal cigarettes were found around the schools in all cities, as packs or single sticks. We found a total of 32 legal and 21 illegal cig packs and a total of 30 legal and 26 illegal types of single sticks. In Mexico City, we found 13 legal packs vs 5 illegal, and 14 legal vs 15 illegal single sticks. In Monterrey, we found only legal cig packs (16), 16 legal brands of single sticks and one illegal brand; Guadalajara 15 legal vs 4 illegal in packs and 13 legal vs 3 illegal on single sticks; finally, Juchitan with 13 legal pack brands vs 6 illegal and 12 legal vs 6 illegal on sticks. About the number and type of POS where illegal cigs were found also varied by city. In Mexico City 6 places sold illegal packs or singles (2 neighborhood stores, 1 kiosk and 3 street vendors); in Monterrey 12 neighborhood stores sold illegal packs or singles; in Guadalajara only 1 neighborhood store; and in Juchitán, 28 POS sold illegal cigs 24 neighborhood stores, 3 kiosks and 1 street vendor. **Conclusion** There are differences in the amount and distribution of illegal packs and single sticks around the schools, depending on the city. Differentiated measures to protect the population from the potential harm of illegal products are needed.

FUNDING: Federal

POS5-74

TOBACCO PRODUCT ADVERSE HEALTH EVENTS: FINDINGS FROM THE FDA SAFETY REPORTING PORTAL

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Significance The FDA, under the Family Smoking Prevention and Tobacco Control Act, oversees regulatory aspects of all U.S. tobacco products. It is vital to understand the impact of emerging health trends and incidents associated with various nicotine products to protect public health. This study aims to utilize the FDA's Safety Reporting Portal (SRP) to characterize and track adverse health events associated with tobacco and nicotine products over time. **Methods** The FDA SRP was utilized to extract information on adverse health events related to various tobacco products between the years 2017-2022. After data cleaning, 839 reports were categorized by two independent coders based on affected health system, frequency of adverse health event reports, and proportion of adverse health events per each health category. Additionally, variations in adverse health events over time were assessed. Statistical analysis demonstrated strong interrater reliability (Cohen's weighted Kappa: 0.9, $p<0.01$). **Results** Among the 839 reports, electronic cigarettes emerged as the primary product of concern, comprising 90.6% (n=760) of all reports, surpassing traditional cigarettes (5.1%; n=43) and other products. Notably, 45.6% of the reports highlighted the neurological system as the most impacted, with at least one adverse health event identified (n=383). This was followed by the respiratory system at 39.1% (n=328) and the digestive system at

10.7% (n=90). Among all reported adverse health events, those related to the respiratory system were most frequent, accounting for 25.9% (n=512), closely followed by concerns with the neurological (25.2%; n=499) and digestive (6.6%; n=131) systems. The majority of reports occurred in 2019 (65.7%; n=551), with a subsequent decline post-Q3 2019. **Conclusion** Electronic cigarettes dominated adverse health reports, especially affecting the neurological and respiratory systems, with reports peaking in 2019. Our findings deliver valuable insights to regulatory entities and future research efforts, enhancing our understanding of how tobacco products impact less commonly investigated physiological systems, such as the neurological and digestive systems. This study emphasizes the critical need for ongoing surveillance of emerging tobacco products to protect public health.

FUNDING: No external funding reported

POS5-75

ASSOCIATION OF CIGARETTE AND ELECTRONIC CIGARETTE USE PATTERNS WITH ALL-CAUSE MORTALITY: A NATIONAL COHORT STUDY OF 145,390 US ADULTS

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Significance: In 2020, an estimated 9.1 million US adults used e-cigarettes. Experimental, clinical, and population studies have found that e-cigarette use is associated with adverse health effects to the cardiovascular, respiratory, and immunological systems. However, the effects of e-cigarette use, with and without concurrent cigarette smoking, on mortality remain unexamined. **Methods**: Data between 2014 and 2018 were obtained from the National Health Interview Survey (NHIS), an annual cross-sectional survey of US adults. All-cause mortality status and date of death were obtained via linkage of the NHIS to the National Death Index through December 31, 2019. A 6-category composite cigarette (never, former, current) and e-cigarette (current, non-current) exposure variable was created. We examined the association of cigarette and e-cigarette use patterns with all-cause mortality using Cox models adjusted for potential sociodemographic, behavioral, and medical confounders. Sample weights and complex survey design parameters were incorporated in all analyses. **Results**: Among 145,390 participants (79,294 women [51.5%]; 60,560 aged 18-44 [47.4%]), 5,220 deaths were observed over a median follow-up of 3.5 years (508,545 total person-years). Participants currently dual using e-cigarettes and cigarettes had mortality risk that did not differ from those who currently exclusively smoke cigarettes (hazard ratio [HR], 1.11; 95% CI, 0.87 - 1.41) and was over double non-current e-cigarette using never smokers (HR, 2.14; 95% CI, 1.68 - 2.73). Compared with exclusive smoking, current e-cigarette use with former smoking was associated with a 41% lower mortality risk (HR, 0.59; 95% CI, 0.38 - 0.91). **Conclusions**: Our findings highlight the significant mortality risk associated with dual use, the most prevalent pattern of e-cigarette use. Additionally, our results suggest the addition of e-cigarette use to smoking does not reduce mortality risk compared with exclusive smoking indicating this is unlikely to be a viable strategy for those attempting e-cigarette-assisted smoking cessation. However, the improvement in mortality risk among current e-cigarette using former smokers compared with current exclusive smokers suggests that transitioning completely from cigarettes to e-cigarettes may be associated with mortality risk reduction.

FUNDING: Federal

POS5-76

EVALUATION OF SUSTAINABILITY PLANS FOR TOBACCO TREATMENT PROGRAMS PARTICIPATING IN THE CANCER CENTER CESSATION INITIATIVE

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Treating tobacco dependence in patients with cancer improves their cancer-related and overall health outcomes. The Cancer Center Cessation Initiative (C3I), as part of the Cancer Moonshot℠, supported implementation and evaluation of tobacco treatment programs (TTPs) in 52 NCI-designated cancer centers across 3 cohorts between 2017 and 2021. One year after conclusion of NCI funding, cohort 2 (in 2020) and 3 (in 2021) cancer centers (n=30) reported to NCI their sustainability plans for maintaining TTP personnel, resources, and funding. Eighteen (90%) cohort 2 and 10 (100%) cohort 3 centers had active TTPs and completed sustainability plans. Centers reported plans to sustain personnel such as tobacco treatment specialists (93%), a project lead (74%), an IT specialist (71%), a project manager (67%), and a clinical collaborator (48%). Centers planned to sustain resources for: EHR modifications (89%), equipment and computers (85%), staff education and training about the TTP (85%), community outreach and engagement (80%), office space (77%), patient recruitment support (75%), marketing and communications (74%), cessation medications (64%), and technology services (42%). Most centers (77%) reported planned sustainment of institutional funds, generally between $100K-$600K for 1-2 years, if not indefinitely. However, the most common concerns for sustainability resources were continued funding, followed by commitment for staffing and IT support. Most centers reported that maintaining patient reach, effectiveness, or cost-effectiveness metrics were important for sustaining their TTP. To this end, 43% planned to continue to use C3I reach and effectiveness reporting criteria, 46% planned to assess these outcomes in another way, and 11% had no plan to sustain TTP monitoring or evaluation. Implications: C3I cancer centers reported plans to sustain tobacco treatment specialists, project leads, IT team members, IT resources, and training. However, these centers did not always report sufficient financial resources to maintain these program aspects, which will likely hinder sustainment. Moreover, TTP sustainment may be enhanced by continued reporting of reach, effectiveness, and cost-effectiveness metrics, but not all centers have plans or means to report these metrics. Future research is needed to identify clinical practice and policy strategies that support TTP sustainment.

FUNDING: Federal

POS5-77

DOES LONG-TERM ENGAGEMENT MATTER? EVALUATION OF THE SMOKE FREE CURIOUS CESSATION CAMPAIGN FOR CANADIAN ADULTS

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Significance: Smoke Free Curious/Curieux d'arrêter (SFC) is a campaign that aims to help English and French-speaking Canadian adults aged 35-64 years old make quit attempts. The campaign adopts a non-judgmental approach, centres empathy and compassion and consists of marketing (social, out-of-home), free NRT offers, a website with quit smoking resources and a new #IAmQuitting Milestones Contest. Since 2021, paid & organic digital messaging have reached 18,505,666 people, resulting in 1,659,219 engagements with SFC knowledge products and/or quit incentives. About 36,218 people accessed the SFC website, with 9,975 ordering a NRT trial pack and 6,867 entering a contest. Utilizing a cohort of adults who smoke, the evaluation gathers feedback for campaign optimization and assesses the relationship between campaign exposure and cessation. An innovative leg of the evaluation is its focus on the impact of sustained campaign engagement on participant cessation outcomes. For the past 2 years, a subset of evaluation participants ('the intervention group' (IG)) has received monthly emails connecting them to the campaign, surveys, study results and paid incentives. Methods: Baseline n=2420 and follow-up surveys at 6, 12 and 18-months post-campaign launch (n=1285, 1304, and 1758 respectively). Replenishment occurred at 18-months. Half of the sample was randomly allocated to the IG. Qualitative methods included 13 focus groups (n=52), semi-structured interviews (n=47) and six 'mini surveys' with IG members over 2 years. Results: At 12-months, the IG had significantly greater campaign awareness, engagement and positive cessation outcomes (quit attempts, reduced daily smoking and confidence in quitting) compared to the non-IG. Qualitative findings reveal that being part of the IG instilled a sense of community and alleviated feelings of loneliness. The emails and surveys prompted self-reflection and accountability around smoking behaviour and connected participants to SFC resources to help them make quit attempts. IG participants often vocalized the importance of cessation programming that is positive, features stories from real people and includes forums that foster connection to others. Small, consistent financial incentives were appreciated and considered motivating. Access to NRT remains a challenge due to geographic/financial constraints. Conclusion: Integrating sustained engagement mechanisms into a campaign can help

to improve campaign awareness and engagement. It can be a way to help individuals feel less alone in the cessation journey, connect them directly to support and encourage frequent self-reflection, thus contributing to more favourable cessation outcomes.

FUNDING: Federal

POS5-78

SMOKE-FREE HOME RULES AND SUSCEPTIBILITY TO CIGARETTE AND E-CIGARETTE USE INITIATION IN ADOLESCENTS: THE MEDIATING ROLE OF TOBACCO TOLERANT ATTITUDES

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Significance The impact of smoke-free home (SFH) rules on adolescent tobacco initiation remains inconsistent. We investigated how SFH rules relate to the susceptibility to cigarette and e-cigarette (EC) use, along with the potential mediating role of tobacco tolerant attitudes in Hong Kong adolescents who never used tobacco. **Methods** A school-based survey was conducted in secondary school students (Grade 7-12) using self-administered questionnaires to collect information on SFH rules, attitudes toward cigarettes and ECs, susceptibility to cigarette and EC use, and other covariates. We used generalised linear mixed models to estimate the association between SFH rules and susceptibility to tobacco use, and structural equation models to explore the mediating effect of attitudinal factors on this association. **Results** Among 6,657 students (51.9% boys; mean age 14.6) from 25 randomly selected schools, 34.9% were living with smokers. Of these, 27.4% had no SFH rules, 29.5% had SFH rules with occasional violations, and 43.1% had SFH rules with no violations. Having SFH rules was negatively associated with tolerant attitudes toward smoking or ECs, having peers who used tobacco, secondhand smoke exposure at home and susceptibility to cigarette or EC use (P <0.001 to P=0.007). SFH rules and non-smoking families were associated with lower susceptibility to cigarette use, while only SFH rules with no violations were associated with lower susceptibility to EC use after adjusting for covariates. In adolescents living with smokers, SFH rules reduced the susceptibility to cigarette or EC use, primarily through a direct effect (β = -0.017, P=0.019) and indirectly by influencing attitudes toward these tobacco products (β = -0.037, P =0.009). Although SFH rules could lower the prevalence of having peers who used tobacco by reducing secondhand smoke exposure at home (β = -0.217, P <0.001), this effect did not significantly reduce the susceptibility to cigarette or EC use. **Conclusions** SFH rules were associated with lower susceptibility to cigarette or EC use in Hong Kong adolescents, and this association was partly through changing adolescents' attitudes toward tobacco use. Further research on policies and interventions on SFH rules and practice is warranted for effective tobacco prevention.

FUNDING: Other

POS5-79

EFFECT OF MENTHOL-FLAVORED ENDS ON USERS' PUFFING BEHAVIOUR & NICOTINE EXPOSURE: A CROSS-OVER TRIAL AMONG US YOUNG ADULTS

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Significance Electronic nicotine delivery systems (ENDS) have emerged as the most prevalent tobacco products among the youth in the United States, with flavors being one of the major drivers for use. Limiting flavors to menthol and tobacco for prefilled cartridge ENDS "pod-mods" was one of the first major actions taken by the FDA to reduce the spread of ENDS among young people. However, menthol flavor can present a potential risk given its popularity among young people in the US and its puffing and nicotine-enhancing properties. This study examines the effect of menthol flavor on users' puffing behavior and nicotine exposure among young people. **Methods** In this 2X2 cross-over clinical lab study, 46 current e-cigarette users aged 21-35 attended up to 60-minute *ad libitum* ENDS use sessions using 4th-generation ENDS, preceded by 12-hour nicotine abstinence. Puff topography parameters (e.g., puff number, puff volume duration, inter-puff interval) were assessed during the sessions using a validated topography instrument. Plasma nicotine concentration was measured before and after each session using gas chromatography-mass spectrometry. Baseline nicotine dependence was also measured using the Penn State Nicotine Dependence Index. **Results** The result shows that the medians of the topography parameters were higher during the menthol-flavored ENDS sessions compared to the tobacco flavor (i.e., puffing time: 1.25 mins vs. 1.03mins; average puff duration: 2.33 sec vs. 1.56 sec, total inhaled volume: 1618.23 ml vs. 1387.35 ml, average puff volume: 51.745 ml vs.35.08 ml, total puffs: 33.5 vs. 31). Also, the median for plasma nicotine boost was higher in the menthol flavor condition than the tobacco (6.05 ng/ml vs. 5.55 ng/ml). After adjusting for age, sex, BMI, and smoking time, the moderate to high dependence group was associated with significantly higher average puff duration (β=0.84, p<0.05) during menthol-flavored ENDS session (vs. tobacco session) compared to participants with no or low nicotine dependence level. **Conclusions** Results of this study suggest that menthol flavor enhances ENDS users' puffing and plasma nicotine. It highlights that limiting menthol flavor could play a potential role in curbing ENDS use and addiction among young people.

FUNDING: Federal

POS5-80

ACCULTURATION AND SMOKING CESSATION AMONG HISPANIC/LATINE ADULTS: DIFFERENCES BY SEX

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Significance: Acculturation to the United States (US) mainstream has been established as a social determinant of smoking among Hispanics/Latine individuals (H/L), the largest ethnic minority group in the US. However, less research has been documented regarding the association of acculturation and cessation, and the potential differential effect by sex. Further, most of the smoking-related research has used unidimensional or proxy measures of acculturation and has not considered H/L national subgroups in the analyses. We predicted that there are sex differences in the acculturation-cessation relationship among H/L. **Methods:** Data are from adult H/L ever smokers who participated in the 2018 Houston Health Survey (N=364). Binary logistic regression analysis was conducted to predict smoking status (current, former) with acculturation (Hispanic orientation, bicultural, American orientation) while controlling for age, partner status, employment, and national subgroup (i.e., Mexican). The analyses were conducted separately by sex groups. Sampling weights were implemented to compensate for disproportionate sampling probabilities (representing 305,123 persons). **Results:** Most participants were former smokers (55.6%), male (75.1%), between 25-44 years old (53.2%), partnered (64.7%), employed (68.5%), born in the US (51.6%), and completed the survey in English (63.3%). In adjusted models, and stratified by sex, H/L women who were bicultural or more acculturated were significantly less likely to be former smokers (vs. current smoker) compared to less acculturated women (Odds Ratio [OR]= .260, 95% CI=.246 -.276; OR= .197, 95% CI= .186 -.208, respectively). In contrast, bicultural as well as more acculturated men were significantly more likely to be former smokers compared to less acculturated men (OR=1.61, CI= 1.57-1.65; OR= 2.04; CI=1.99-2.10, respectively). Differences among H/L national subgroups also emerged. **Conclusions:** The relationship between acculturation and cessation among H/L varies by sex, whereas having an American orientation is a protective factor from current smoking among H/L men but not among H/L women. Cessation interventions should consider the role of contextual factors, such as acculturation, to maximize treatment outcomes for this growing segment of the population. The heterogeneity of the H/L population should also be considered and deserve further attention in smoking cessation research.

FUNDING: No external funding reported

POS5-81

SELF-EFFICACY AND PERCEIVED ADDICTION AS PARALLEL MEDIATORS BETWEEN NICOTINE DEPENDENCE AND SMOKING QUIT ATTEMPTS AMONG MEXICAN ADULT SMOKERS

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Background: Nicotine dependence consistently predicts smoking cessation; however, whether self-efficacy and perceived addiction mediate this relationship among populations of light smokers, as in Mexico, has been less studied. **Methods:** Data were analyzed from an open cohort of Mexican adult smokers surveyed every four months between November 2018 and November 2020, analyzing those who were followed up over two consecutive surveys (n=2,136). Participants reported at the time "t+1" the duration of the longest smoking quit attempt (SQA) during the period since the prior survey (time "t"), with participants classified as: no SQA; SQA<30 days; SQA>=30

days. At the time "t," nicotine dependence (ND) was measured with ten items from the Wisconsin Inventory of Smoking Dependence Motives (WISDM) scale, and participants reported their self-efficacy for quitting smoking in the next 6 months (1- "not at all certain" to 5- "extremely certain") and perceived addiction (responses="not addicted at all," "slightly addicted," "very addicted"). Using the Weighted Least Squares Mean and Variance-Adjusted Estimator, structural equation modeling (SEM) was used to estimate the parallel mediating effects of self-efficacy to quit and perceived addiction in explaining the association between ND and SQA (as ordinal variables), including sex and age as covariates. **Results:** Approximately 52.6% of the participants smoked less than daily, with about a quarter smoking less than 5 cigarettes a day (22.6%). The SEM showed good fit (RMSEA=0.038, 90%CI=0.034-0.043), and ND negatively predicted self-efficacy for quitting smoking (β=-0.371, p<0.001) but positively predicted addiction perception (β= 0.592, p<0.001). Self-efficacy positively predicted SQAs (β= 0.154, p<0.001), while perceived addiction negatively predicted SQAs (β= -0.086, p=0.003). The direct effect of ND on SQAs was positive and significant (β= 0.105, p=0.006). Overall, the indirect effects of ND on SQAs via self-efficacy (β= -0.57, p<0.001) and perceived addiction (β= -0.051, p=0.034) were negative and statistically significant. The total indirect effect was statistically significant and negative (β= -0.108, p<0.001). **Conclusions:** Among Mexican adult smokers, self-efficacy to quit and perceived addiction were parallel mediators of ND on SQAs. Interventions to promote self-efficacy to quit, perhaps through contingency management strategies, may help promote cessation in this population of low frequency smokers.

FUNDING: Federal

POS5-82

HOW MIGHT THE PROVISION OF SMOKING CESSATION SERVICES BE ADAPTED TO IMPROVE UPTAKE AND SUCCESS FOR PEOPLE IN LOW SOCIOECONOMIC GROUPS: A QUALITATIVE COMPONENT OF THE UK PROCESS STUDY

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Significance Smoking is a key driver of health inequalities and is an important factor in cancer incidence across the UK. Stop Smoking Services (SSS) offer a combination of behavioural and pharmacological support to help people quit smoking. Individuals who use SSS are three times more likely to successfully quit than those who try to quit unaided but uptake of services is low, particularly amongst low socioeconomic (LSE) groups. Investigation of how SSS can be more engaging and accessible for this group is essential. **Methods** The aim of this UK-wide mixed-methods study is to understand the appeal, acceptability and accessibility of SSS for people in LSE groups, and the barriers and facilitators to uptake. The qualitative component of this study is comprised of two work packages: qualitative interviews with SSS providers (n=22) and with people from LSE backgrounds who are potential or previous service users (n=115). Topic guides were informed by the COM-B Model (Capability, Opportunity, Motivation – Behaviour). Interviews were audio recorded, transcribed, and coded thematically supported by NVivo. The findings were mapped to theoretical domains of the COM-B Model in order to guide SSS interventions and policy decision-making. **Results** While analysis of interviews with SSS users is ongoing, preliminary findings from interviews with SSS providers suggest that facilitators to LSE groups accessing SSS included proximity of services, flexibility of service delivery, and free NRT provision. Barriers included waiting lists, staffing shortages, lack of service visibility and advertisement, and perceived stigma and lifestyle factors amongst LSE groups. The use of digital technology in service provision was identified as both a barrier and facilitator. Recommendations for service enhancement included improved visibility and awareness of SSS (Capability), enhanced community links to embed services or support referral pathways (Opportunity) and person-centred approaches to service delivery (Motivation). **Conclusion** Early findings from this study provide essential evidence on practical solutions for adapting SSS delivery, increasing uptake and improving outcomes, thereby reducing the overall health pressure and inequalities among individuals who smoke. The results of this study will be discussed in a roundtable event with the stakeholders (health/smoking agencies, service users, service providers from the UK) to support recommendation development.

FUNDING: Nonprofit grant funding entity

POS5-83

ASSESSING THE QUALITY OF MOTIVATIONAL INTERVIEWING COUNSELING SESSIONS DELIVERED AS PART OF A PREGNANCY SMOKING CESSATION RCT

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Significance: Motivational Interviewing (MI) counseling provides a supportive climate to help pregnant women quit or reduce smoking. OnePass is a clinical supervision instrument used to assess fidelity to MI counseling. We report on the OnePass assessments of the MI tele-counseling sessions delivered as part of SmokeFreeTogether 2.0, a smoking cessation randomized controlled trial (RCT) with pregnant women (R33HD103039). Methods: Five counselors who had approximately 100 hours of prior MI training and supervision delivered 65 MI sessions to help pregnant women quit. Adherence to MI was assessed by the MI supervisor by coding 53 sessions using the OnePass. Assessments on OnePass can range from 1 (Poor/Never) to 7 (Excellent/Always) and a score of 5 was considered as minimal competence for the counselors involved in this RCT. For reliability purposes, 30% of the 53 MI sessions (N=16) were coded by a second, independent evaluator. Results: Based on two independent coders of OnePass scores of 16 counseling sessions (30% out of the total), an excellent degree of reliability was found between the OnePass assessments of the two independent coders. The average measure ICC was .906 with a 95% confidence interval from .731 to .967 (F(15,15)= 10.651, p=.000). Over 60 hours of audio recordings were coded and more than 25 supervision meetings took place. Out of the 53 MI counseling sessions evaluated, 16 sessions had a mean score below 5 which was considered the passing score (minimal competence). With one exception, counselors showed a significant increase in the OnePass assessments over time, with 4/5 reaching an average score higher than 5 across sessions. Counselors who had a minimum of one year of experience in delivering psychotherapy sessions before the RCT were more likely to have higher OnePass scores on their MI counseling sessions. Conclusion: Feedback based on OnePass assessment of MI counseling sessions resulted in significant improvements in the quality of MI-based smoking cessation counseling. A further step is to correlate the pregnant smokers' tobacco quitting with the OnePass scores for the counseling sessions they participated in.

FUNDING: State

POS5-84

RISK FACTORS FOR CONCURRENT USE OF VAPING NICOTINE AND CANNABIS AMONG YOUTH AND YOUNG ADULTS

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Significance: While e-cigarettes remain the most commonly used nicotine product among young people, concurrent use of cannabis has become more common. Recent estimates suggest that 5.4% of 8th, 10th, 12th graders report frequent cannabis use with vaping nicotine. There is a need to identify risk factors for concurrent cannabis and nicotine use among youth and young adults, given the potential negative health risks involved. **Methods:** survey data were obtained from the Truth Longitudinal Cohort, collected from September 2020 to March 2021 among a cohort aged 15-24 years (N=6,102). Logistic regressions were used to determine risk factors for concurrent use of cannabis and vaping nicotine in the past 30 days. All models were adjusted for the effects of age, sex, race/ethnicity, financial situation, LGBQ status, household tobacco use, sensation seeking, parental education, and mental health. **Results:** Approximately 6.9% of the sample reported concurrent use. Older age (OR 18-20 years = 2.7, OR 21-24 years = 2.2), household tobacco use (OR = 2.9), higher sensation seeking (OR = 2.1), and higher mental health score (OR = 0.6, all p-values <0.01). **Discussion:** Findings suggest the need to carefully monitor reported concurrent use of cannabis and vaping nicotine

among young people. The identification of risk factors provides additional guidance for prevention and treatment efforts, suggesting the need for these efforts to address use of both substances and target those at most risk.

FUNDING: No external funding reported

POS5-85

WHEN EMOTIONS RUN HIGH, E-CIGARETTE USE INCREASES: A MIXED METHODS STUDY OF DAILY VS NON-DAILY USERS

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Significance. Users of e-cigarettes have reported coping with distress as a reason for the use of these novel tobacco products. The purpose of this study was to examine differences between daily and non-daily e-cigarette users' dependence, emotion regulation, and ability to tolerate distress. **Methods.** Using an exploratory, sequential mixed methods design, we recruited a sample of college students (n=423) to complete an online survey and follow-up interview about their e-cigarette use, emotion regulation, and beliefs about emotions. For the survey, t-test and chi-square analyses examined differences in e-cigarette dependence, emotion regulation, and beliefs about emotions between daily (n=341) and non-daily (n=82) e-cigarette users. Next, a subsample of participants from the survey (n=25) completed a 60-minute interview that asked about their emotions and e-cigarette use. Interviews were transcribed verbatim, coded per content, and a thematic analysis was employed to derive themes from the qualitative interviews. Data were integrated during the analysis phase, where qualitative findings were used to explain significant differences between groups' dependence, emotions, and beliefs found in the survey. **Results.** Daily users were significantly more dependent on e-cigarettes ($p<.001$), had higher difficulty regulating their emotions ($p<.01$), and believed negative feelings would last longer ($p<.01$) than non-daily users. Daily use was also related to the belief that emotions can change ($p<.001$) with more non-daily users endorsing this belief (65.9%) than daily users (38.1%). During the interviews, participants initially provided adaptive (healthy) coping strategies for handling negative emotions; however, when asked directly about e-cigarettes use many reported maladaptive coping strategies. **Implications.** When emotions run high, e-cigarette users may be driving dependence on these products by increasing their use. Daily users had greater difficulty regulating their emotions and had stronger beliefs about the longevity of these emotions. Cessation programs created to help e-cigarette users quit all nicotine-containing products should consider emotional regulation as an important element that could contribute to failed attempts or relapse.

FUNDING: State

POS5-86

A PILOT TO EXAMINE DIFFERENCES IN PERCEIVED STRESS, ANXIETY, AND DEPRESSION ON SUSCEPTIBILITY TO HOOKAH TOBACCO SMOKING AMONG YOUNG ADULTS

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Significance: Hookah tobacco smoking is practiced mostly by young adults. Although most young adults do not smoke hookah tobacco, many are open to its use, that is, they are susceptible. Affect-laden outcomes, such as stress, depression and anxiety may promote susceptible young adults to experiment with hookah. Whereas prior research shows that nonsmokers report less depression than smokers, outcomes of stress and anxiety have not compared these outcomes amongst non-susceptible and susceptible nonsmokers and smokers. Identifying which of these three affect-laden constructs vary most by these groups may provide insights to targeted intervention to prevent and curb use. Thus, this pilot study examined whether stress, depression and anxiety differed among hookah tobacco smokers (HTS) and nonsmokers (susceptible and not) Methods: Participants were recruited from Amazon's Mechanical Turk (Mturk) from October 2022 - October 2023 for a 15-20-minute cross-sectional online survey. The main outcomes were captured using a 4-item measure of susceptibility to HTS (Cronbach's α=.94), the 10-item Perceived Stress scale (α=.87), the 20-item State-Trait Anxiety Inventory (α=.87), and the 10-item Harvard Department of Psychiatry/National Depression Screening Day Scale (α=.87). Results: The sample consisted of 57 non-susceptible and 72 susceptible nonsmokers as well as 87 hookah smokers. The mean age was 25.4 years (SD=3.8). Most were White (64%), Hispanic (86%), female (67%), and college educated (86%). Non-susceptible nonsmokers differed significantly from smokers in reported stress (M=19.1, SD=8.6 vs. M=22.3, SD=7.2, $p<.04$), anxiety (M=8.9, SD=7.8 vs. M=12.3, SD=7.6, $p<.03$), and depression (M=8.6, SD=6.4 vs. M=11.9, $p<.008$). Reported stress, anxiety and depression did not differ significantly between susceptible nonsmokers and smokers. However, significant linear trends were found for stress, anxiety, and depression such that mean values on each outcome increased from being a non-susceptible nonsmoker to smoker ($p=.04$). All constructs were highly positively correlated. Conclusions: Whereas susceptible nonsmokers did not differ in mean levels of stress, anxiety, and depression, the linear trend suggests that for the former, increasing magnitudes of these affective outcomes may spur use. Future research should examine whether intervening on these related constructs curbs HTS. Further research should explore how these variables predict HTS to inform prevention and cessation efforts.

FUNDING: Academic Institution

POS5-87

CLUSTERING OF UNHEALTHFUL EATING AND ACTIVITY BEHAVIORS AS A FUNCTION OF SMOKING STATUS

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Significance: Unhealthy behaviors such as physical inactivity, poor diet quality, and use of cigarettes may be interdependent and confer synergistic risks to health. Much of the research investigating the clustering of unhealthful behaviors and health outcomes fails to consider the dynamic nature of these behaviors and what occurs when an individual changes a health-injurious behavior, such as cigarette smoking. This study aimed to explore the relationship between smoking status, eating, and physical activity, all modifiable risk factors. **Methods**: Cross-sectional data from the Center for Addiction & Disease Risk Exacerbation data repository, collected from US adults to investigate mechanisms whereby substance use impacts health (N = 106), were used. Smoking status was based on self-reported lifetime cigarette use. Participants reported whether eating and activity behaviors occurred "usually/often," "sometimes," or "rarely/never" using the Rapid Eating and Activity Assessment for Patients scale. Chi-square tests evaluated differences as a function of smoking status. **Results**: Participants were categorized as Currently Smoking (n=49), Formerly Smoked (n=20), and Never Smoked (n=37). There were significant differences in the consumption of meats (X^2 = 10.7-16.7, ps < .03), fats and oils (X^2s = 9.9-23.1, ps < .04), snack foods (X^2 = 11.9, p < .02), and sodium (X^2s = 12.4-13.1, ps < .02), as a function of smoking status. Individuals in the Formerly Smoked and Never Smoked groups reported fewer unhealthful choices than those categorized as Currently Smoking. No differences were found in self-reported physical activity level or the consumption of grains, fruits and vegetables, dairy, sweets, or soft drinks as a function of smoking status. While income did not vary by smoking status, Currently Smoking individuals were more likely to report that they were unable to meet basic expenses financially, which may impact ability to make healthful choices. **Conclusions:** The relationships between eating behaviors and smoking status suggest that some nutritional behaviors are more likely to cluster with smoking. Longitudinally exploring the lifestyle choices of individuals who formerly engaged in unhealthful behaviors like smoking, but now abstain, may provide important information on reducing the clustering of unhealthful behaviors.

FUNDING: Federal

POS5-88

COMPARING SMOKING PROFILES AND SMOKING SOCIAL NORMS OF NONDAILY AND DAILY CIGARETTE SMOKERS IN HONG KONG: A POPULATION-BASED CROSS-SECTIONAL STUDY

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Significance: This study compares sociodemographic characteristics, smoking profiles, and smoking social norms between nondaily and daily cigarette smokers in Hong Kong. Methods: 2413 (82.3% male) current cigarette smokers who were Cantonese-speaking and aged 15 years or above were recruited through landline and mobile random-dig-it-dialing and interviewed from February to June 2023. Current cigarette smokers were assessed the days of smoking in the past month and categorized as daily and nondaily smokers. Smoking social norms including 1) agreeing that the public approved smoking behaviors (scale of 0-10, 10=strongly agree), 2) agreeing that people important to you believed you should not smoke (scale of 0-10, 10=strongly agree), and 3) perceived number of cigarette smokers in 100 people were measured. Participants' sociodemographic characteristics and smoking profiles (i.e., time to first cigarette after waking up, average

cigarette consumption per day, quit attempts, and quit intention) were assessed. Multivariable logistic regressions yielded adjusted odd ratios (aORs) for the associations of the nondaily smokers with sociodemographic characteristics and smoking profiles. The associations of nondaily smokers with smoking social norms were assessed by linear regressions adjusting for sociodemographic characteristics. Results: 46% of current cigarette smokers were nondaily smokers. Participants who were female (aOR 1.39, 95% CI 1.13, 1.71), with younger age (P for trend <0.001), and had lower monthly household income (P for trend <0.001) were more likely to be nondaily smokers. Compared with daily smokers, nondaily smokers were associated with smoking the first cigarette later than 30 minutes after waking up (aOR 2.67, 95% CI 1.91, 3.75), consuming less than 10 cigarettes per day (aOR 2.50, 95% CI 1.75, 3.57), and ever attempting to quit smoking (aOR 1.63, 95% CI 1.25, 2.11). The quit intention was comparable between daily and nondaily smokers (aOR 1.14, 95% CI 0.86, 1.50). Nondaily smokers were more likely to agree that public approved smoking behaviors (adjusted β 0.62, 95% CI 0.45, 0.80) and perceived more people smoking cigarettes (adjusted β 1.96, 95% CI 0.25, 3.68) than daily smokers. Conclusion: Nondaily and daily smokers differed on several sociodemographic characteristics, smoking profiles, and smoking social norms. Smoking cessation treatment that is specific to nondaily smokers is needed.

FUNDING: Other

POS5-90

ONLINE MARKETING OF E-CIGARETTES AND HEATED TOBACCO PRODUCTS ON BRAND WEBSITES IN VIETNAM

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Significance: Vietnam does not regulate the sale of e-cigarettes and heated tobacco products (HTPs). Vietnam Tobacco Corporation (VINATABA) is the only entity allowed to import e-cigarettes but is not currently doing so. This study examined the product characteristics and marketing strategies on e-cigarette and HTP brand websites targeting Vietnamese consumers. **Methods:** In January 2023, an in-country collaborator identified e-cigarette and HTP brands available in Vietnam and their corresponding brand websites through Google searches. Seven websites (6 e-cigarette brands and 1 HTP brand) specifically targeting Vietnamese consumers, determined by the web domain or country selection option, were identified and included in the sample. Screen captures of a total of 543 webpages within two clicks from the homepage were coded and analyzed for product characteristics, advertising appeals and messages, and promotion strategies. **Results:** 57% (n=4) of sites contained flavored products (fruit, mint/menthol, sweets, coffee/tea, and beverages other than alcohol) and concept flavor descriptors denoting the presence of a taste, smell, or sensation. All sites (n=7) featured luxury, style, and innovation-based advertising; 86% (n=6) used masculinity, foreign appeal, and/or flavor appeal through text or images beyond flavor names; 71% (n=5) used cartoons/animation, vape cloud, Asian appeal, and/or animals; and 57% (n=4) used recreation/fun, femininity, and/or claims of cigarette-like satisfaction. All sites (n=7) included messages on responsible marketing or self-regulation and product safety; 71% (n=5) included messages on use of the products as cessation aids, claims of lower risks compared to cigarettes, organic/natural, and/or normalization/social acceptability. 86% (n=6) of sites referenced additional web presence such as social media accounts, and 57% (n=4) referenced the ability to sign up for newsletter/email alerts. Mechanisms for age-restricted site access were observed on 3 sites (43%). **Conclusion:** Despite no importation by VINATABA, we found evidence of e-cigarette and HTP manufacturers targeting Vietnamese consumers via their brand websites. Perhaps taking advantage of the lack of regulations, these manufacturers employ a variety of advertising appeals on their sites, including those targeting youth. A ban on the sale and marketing of e-cigarettes and HTPs would help protect youth from targeted advertising in Vietnam.

FUNDING: Nonprofit grant funding entity

POS5-91

ALTERED MENTAL HEALTH WITH WATERPIPE SMOKING: THE IMPORTANCE OF QUALITY SLEEP

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Background: Quality sleep improves mental health while tobacco smoking negatively impacts it. The ameliorating effect of quality sleep on the adverse impact of waterpipe smoking on life satisfaction has not been examined. Therefore, the current study examined life satisfaction among individuals with poor versus quality sleep according to waterpipe smoking dependency. **Methods:** Mental health was assessed using the Satisfaction with Life Scale (SWLS) while sleep quality was assessed using the Pittsburg Sleep Quality Index (PSQI). Additionally, the Lebanese Waterpipe Dependency Scale (LWDS-11) was used to measure waterpipe smoking dependency. **Results:** Socioeconomics and demographics were collected from 349 waterpipe smokers and 356 nonsmoker adults. The two-way ANCOVA showed a main effect of smoking dependency ($p<0.03$) and PSQI ($p<0.000$) scores without an interaction effect ($p>0.465$) for life satisfaction. Subsequent stratified one-way ANCOVA according to smoking dependency classifications revealed a main effect of PSQI ($p<0.000$) for life satisfaction in nonsmokers, and individuals with moderate and heavy dependency. Subgroup comparisons revealed lower life satisfaction scores in the individuals with poor versus sufficient sleep among the nonsmokers ($p<0.000$), moderate ($p<0.033$), and heavy ($p<0.014$) smoking dependency groups. **Conclusions:** The result revealed the negative effects of waterpipe smoking and poor sleep quality on life satisfaction. Additionally, high-quality sleep seems to rectify the negative changes in mental health attributed to smoking waterpipe. Interventions are needed to improve sleep and to include quality sleep in waterpipe smoking cessation programs.

FUNDING: Other

POS5-92

STRUCTURED MOTIVATIONAL COUNSELING PROMOTES EFFECTIVE QUITTING: A TRANSFORMING PATHWAY TO SMOKE-FREE LIVING

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Background: Smoking-related mortality remains a significant global public health concern, claiming over 8 million lives annually. In Sri Lanka, the annual mortality attributable to smoking is smokers' motivation to quit. This study aims to evaluate the effectiveness of a smoking cessation intervention among a cohort of peri-urban smokers in the Colombo district, Sri Lanka. **Methodology:** 180 smokers were randomlyselected for a prospective follow-up from a previously recruited pool of 360 smokers. Cessation interventions were applied by a trained investigator in three levels based on the WHO 5A and 5R counselling tools on the first day, one week, and one month. The quit state and compliance to quitting were assessed at the same time and after 6 months. After one month, the researchers maintained six months of non-communication; the last follow-up was made at the end. Smoking status was confirmed with smoking biomarker assessment of exhaled breath carbon monoxide (e-CO ppm) and estimated carboxyhaemoglobin(COHb%) with a Smokerlyzer® (Bedfont Scientific, UK). **Findings:** The median values of smoking duration were 21.0±17.0(IQR) years; daily consumption of cigarettes (DC) before the interventions was 4.0±4.75 (IQR) sticks, e-CO 7.0±8.0 (IQR)ppm, COHb% 1.75±1.44(IQR)%. Median Values at one-week follow-up were DC 0.14±1.0(IQR)sticks, e-CO 3.0±3.0(IQR)ppm, COHb% 1.11±0.48(IQR). Median Values at one-month follow-up following counseling were DC 0±1.0(IQR) sticks, e-CO 3.0±1.0(IQR) ppm, COHb% 1.16±0.16(IQR)%. The final Median values at the six-month follow-up were DC 0±2.0 (IQR)sticks, e-CO 4.0±3.0(IQR)ppm, and COHb% 1.27±0.48(IQR)%. The differences in all smoking variables of smokers from baseline to one week, one month, and six months were significantly different compared to the differences in nonsmokers variables including DC, CO, and COHb% in each assessment point ($p\ 0.001$) ($p < 0.001$). **Conclusion:** : A well structural smoking cessation counselling programs can successfully change a smoker's addiction through motivational counselling and objective measurements of smoking status. This can be effectively implemented even in low-resource settings with properly motivated counsellors.

FUNDING: No external funding reported

POS5-93

MIXED-METHODS INQUIRY INTO ADOLESCENT EXPOSURE TO CIGARETTE AND VAPING CONTENT IN THE MEDIA

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INTRODUCTION. Adolescent exposure to tobacco-related content on social media is common, with content most often portrayed favorably (cool, healthy, youthful), and is shown to be associated with subsequent tobacco-related attitudes and behavior. The interactive nature of the media permits high engagement, ensuring greater reach. The present mixed-methods study examined self-reported daily exposure to tobacco content in the media (specifically, portrayals of "cigarettes" and "vaping") using an ecological momentary assessment design. Given that a vaping device could contain nicotine or cannabis, we further sought to understand how youth interpreted vaping images using qualitative interviews. **METHOD.** A U.S. sample of high-school students recruited online (N=302; 18% non-binary, 51% woman/trans-woman, 31% man/trans-man; 26% Asian, 22% Black, 52% White, 9% other races; 26% Hispanic; 11% ever smoked a cigarette; 31% ever used an e-cigarette) enrolled in a 3-week multi-burst ecological protocol. Participants reported daily exposure to tobacco-related media content in social media (Instagram, Snapchat, Tiktok), entertainment media (movies, TV, music) and YouTube. A portion (n=20) subsequently underwent a semi-structured interview about exposure to substance use in the media including vaping and cigarette smoking. **RESULTS.** Roughly one-third of participants endorsed having seen cigarettes (32%) or vaping (39%) in the media in the prior week, with 4%/5% reporting daily/almost-daily exposure. Thematic analysis revealed key themes across participants for determining whether vaping images portray nicotine or cannabis, including (1) it is challenging to tell what is in a typical vaping device; (2) context cues help (age or status of the person who posted; party imagery; private vs. public setting); (3) experience with or knowledge of e-cigarette brands aids in interpretation; (4) product shape/color is informative; (5) the vape is assumed to contain nicotine because it is more common than vaping cannabis. **DISCUSSION.** Overall there is a high rate of exposure to cigarette and vaping content in this high school sample. Vaping portrayals are often ambiguous; however, participants use strategies to discern whether cannabis or nicotine is being depicted. Findings could provide guidance to refine participant reporting of tobacco-related content in order to improve reliability. Future research is needed to understand consequences of misperceptions of cannabis vs nicotine depictions.

FUNDING: Federal

POS5-94

NEIGHBORHOOD SOCIAL DEPRIVATION AND ADOLESCENT DRUG USE IN THE UNITED STATES

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Despite growing attention to the role of geographic contexts in substance use, findings on the association have been mixed. Some studies show that living in socioeconomically disadvantaged neighborhoods is positively related to substance use due to cumulative exposure to stressors. Other studies suggest that living in affluent neighborhoods is associated with a greater likelihood of substance use, as access to drugs is easier. The mixed findings may be due to a limited number of geographic units and/or heterogeneity of age in the sample. The current study examines the association between neighborhood social deprivation and substance use among US adolescents from a nationally representative sample. Data were from high school seniors from the Monitoring the Future Cross-sectional datasets in 2015-2018 (n=34,780). Outcomes included three binary indicators of drug use: cigarette use in the past 30 days, binge drinking in the past 2 weeks, and marijuana use in the past 30 days. Neighborhood deprivation was measured by Social Deprivation Index (SDI) at the zip-code of the school respondents were enrolled, which is a composite measure of population poverty, education, employment, occupation, and housing characteristics within those zip-codes (Butler et al. 2013). Survey-weighted logistic regression models estimated the association between neighborhood social deprivation and 3 different drug use indicators. Race, gender, cohorts, parental education, and high school program were included as covariates in the regression models. We also included other residential context variables: a binary indicator of being enrolled in school in the census region of the South, and a 3-category variable of metropolitan statistical areas, other metropolitan areas, and non-metropolitan areas. About 9.1%, 16.4%, and 21.3% of our study sample reported cigarette use in the past 30 days, binge drinking in the past 2 weeks, and marijuana use in the past 30 days, respectively. Neighborhood SDI was negatively associated with cigarette use and binge drinking such that greater deprivation of the neighborhood was associated with lower likelihood of cigarette use (Odds Ratio [OR]=0.72, p<.05) and binge drinking (OR=0.50, p<.001). The significant association between SDI and cigarette use, however, disappeared in the model including other covariates. SDI was not significantly related to the odds of marijuana use. Our findings reveal that geographic contexts may play a significant role in adolescent substance use. Enrolling in schools in socially deprived neighborhoods was related to lower likelihood of adolescent binge drinking. The findings warrant further investigation of moderating effects with demographic characteristics (e.g., gender, race) and with other geographic contexts (e.g., metropolitan vs. non-metropolitan areas).

FUNDING: No external funding reported

POS5-95

CORRELATION OF WEEKLY AND DAILY MEASURES OF LITTLE CIGAR AND CIGARILLO USE IN A RANDOMIZED CONTROLLED TRIAL

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Significance: While research on use of little cigars and cigarillos (LCCs) has increased, uncertainty exists about the most appropriate ways to measure LCC use behaviors in clinical trials. Given the sporadic nature of LCC use compared to the consistency of daily cigarette use, it is unclear in clinical trials if people who use LCCs accurately recall their use patterns from the previous week or month compared to recording daily measures. We used data from a recently completed daily diary study of LCC warnings to assess correlation between measures of LCC use in the past day with measures of LCC use in the past week. **Methods:** We recruited 1029 US adults who currently use LCCs some days or every day. Over the study period of 3 weeks, participants received daily surveys and, depending on their condition, warning messages through an online platform for 6 days each week, and on the seventh day of each week participants completed an in-depth survey assessing their LCC use behaviors, quit intentions, and perceptions. In the daily surveys, participants were asked "How many cigarillos did you smoke yesterday?" and the exact question was repeated for little cigars. At the end of each week, participants were asked "On how many of the last 7 days did you smoke a cigarillo" and "In the last 7 days, how many cigarillos did you smoke" and the same questions were asked for little cigars. Based on daily surveys, summary variables were derived for the number of days each week participants used LCCs and the number of LCCs used each week, with each LCC type evaluated separately. We compared these answers to the direct measures of LCC use each week. **Results:** Participants were 56% male, 63% white, 21.1% Black or African American, and 83% non-Latino. In our sample of 1029 adults, 96.1% reported current use of cigarillos, and 86.9% reported current use of little cigars. Correlation between the weekly and daily measures of cigarillos smoked in the past week ranged between 0.848 and 0.887, and the correlation for little cigars smoked in the past week ranged between 0.843 and 0.873, over the 3 week period. Similarly, the correlation between the number of days participants used cigarillos in the last week measured daily and weekly ranged between 0.850 and 0.884 over the 3-week period, and the correlation for little cigars ranged between 0.865 and 0.902. **Conclusions:** Results from our daily diary study of the impact of LCC warnings on LCC use indicate that measuring LCC use weekly provides data similar to measuring LCC use behaviors on a daily basis.

FUNDING: Federal; FDACTP

POS5-96

AN ELECTRONIC CIGARETTE POD SYSTEM DELIVERING 6-METHYL NICOTINE, A SYNTHETIC NICOTINE ANALOG, MARKETED IN THE UNITED STATES AS "PMTA EXEMPT"

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Significance: A recent report by the World Health Organization (WHO) warned that manufacturers of electronic cigarettes may replace nicotine with non-nicotine tobacco alkaloids or synthetic nicotine analogs to bypass regulatory schemes focusing on nicotine alone. In October 2023, vape stores in the United States started selling a new electronic cigarette pod system, named Spree Bar, marketed as containing "Metatine" that "is not made or derived from tobacco or nicotine". The seller claims that the products "do not meet the definition of a "tobacco product" in the Federal Food, Drug, and Cosmetic Act and do not require a Pre-Market Tobacco Application (PMTA) to be sold in the US." **Methods:** Patent databases, trademark registries and web and convenience store advertising resources were searched to clarify the chemical identity of "Metatine". High resolution liquid chromatography-mass spectrometry (LCMS) was used to detect potential nicotine analogs in Spree Bar e-liquids. **Results:** Information

provided in advertising revealed that "Metatine" is a trademark name for the compound, 2-methyl-5-[(2*S*)-1-methylpyrrolidin-2-yl]pyridine, synonymous with (*S*)-6-methyl nicotine (Chemical Abstracts Number: CAS 13270-56-9), a structural analog of nicotine. LCMS of Spree Bar e-liquids detected an ion with m/z near 177, identical to the molecular weight of 6-methyl nicotine. Patents awarded to Chinese electronic cigarette manufacturers revealed new strategies for the efficient synthesis of 6-methyl nicotine and efforts to characterize the sensory properties and use satisfaction in consumer test panels. **Conclusion:** Spree Bar is the first U.S.-marketed product containing 6-methyl nicotine, a synthetic structural analog of nicotine. The addictive, behavioral and toxicological effects of 6-methyl nicotine in humans remain unknown. The FDA needs to determine whether, in its view, 6-methyl nicotine is a form of "nicotine" within the meaning of the Tobacco Control Act, or whether 6-methyl nicotine can be regulated as a drug under the Federal Food, Drug, and Cosmetic Act (FDCA).

FUNDING: Federal; Academic Institution

POS5-97

DISPOSABLE E-CIGARETTES: TRENDS IN PREVALENCE OF USE IN GERMANY FROM 2016-2023 AND ASSOCIATED USER CHARACTERISTICS

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SIGNIFICANCE Trends in prevalence and associated factors of different types of e-cigarettes in Germany are largely unknown. This study aimed to provide data on the prevalence and trends in the use of disposable, pod and tank e-cigarettes in Germany over the last few years, and to analyse characteristics and smoking behaviours of users of different types of e-cigarettes in detail. **METHODS** We used data from 92,329 people, including 1,398 current e-cigarette users, who participated in the German Study on Tobacco Use (DEBRA): a repeated, cross-sectional, representative, face-to-face household survey of the population of Germany aged 14 years or older. Samples of approximately 2,000 people per wave were interviewed 2016-2023 (45 waves in total). We used a binomial logistic regression model with random effect for wave and restricted cubic spline terms for wave with knot positions at year 2018, 2020, and 2022 to analyse associations of the preferred e-cigarette type with survey wave. Associations between e-cigarette type and person characteristics and smoking behaviour were analysed using multilevel logistic, linear, and Poisson mixed-effects models with wave as random effect. Full pre-published study protocol: https://osf.io/45xpq. **RESULTS** The prevalence of e-cigarette use increased during the last three years, to 2.2% (95%CI=1.6,3.0) at the end 2023. Disposable e-cigarette use steeply increased since mid-2022 to 0.8% (95% CI=0.4,1.8) at the end of 2023. Use of pods steadily increased to 0.6% (95% CI=0.4,0.9) by at the end of 2023. Use of tanks peaked at 1.6% (95% CI=1.3,1.9) in November 2017, declined to 0.7% (95%CI=0.6,0.9) in December 2020 and remained consistent since at around 0.8% (95%CI=0.6,1.0). Disposable e-cigarette users were on average 3.5 years, respectively 4.1 years, younger than tank and pod users. They were more likely to be female, non-daily users, and dual users of tobacco (OR=3.70 vs. no dual use, 95%CI=1.9-7.1). There were no significant differences with regard to motivation to stop and attempts to stop smoking between the three types. **CONCLUSION** The use of e-cigarettes has increased in Germany in recent years, and this can be mainly attributed to a steep increase in the use of disposable e-cigarettes. This type of e-cigarette seem to be particularly attractive for younger people. Findings from this survey have important implications for the regulation of e-cigarettes, in particular disposable types.

FUNDING: Federal

POS5-98

A SCOPING REVIEW OF ASIAN ADOLESCENT VAPING

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Introduction There have been increasing prevalence rates of vaping among adolescents worldwide in recent years. But little is known about vaping in the Asian adolescent population. The purpose of the review is to understand the vaping behaviors among the Asian adolescent population by identifying and reviewing all the available evidence about Asian adolescent vaping internationally. **Method** A scoping review of the literature on Asian adolescent vaping from both Asian and Western contexts was performed. Three electronic databases (PubMed, Scopus, and the Cochrane Library) were scrutinized together with a grey literature search and reference check. The limitation of age of participants (10-19 years), and date of publication of studies (2010-2022) were put during the literature search. Asian ethnic categories in the review include those from East Asia, South Asia, and Southeast Asia and exclude those from the Middle East and Central Asia. **Result** The scoping review found 407 studies; after removing duplicates and irrelevant studies, and screening the titles, abstracts, and some detailed readings, 65 studies (42 from Asian contexts, 23 from Western contexts) were left for the final review. Depending on the countries' e-cigarette policies, the prevalence of Asian adolescent vaping varied from 2.1% to 32.2% for ever vaping, and from 1.0% to 11.8% for current vaping with the highest prevalence seen in Indonesia and the lowest prevalence seen in Japan. Similar and different associated factors of vaping among Asian adolescents from both contexts are also noted. Common reasons identified for vaping in both type of contexts are curiosity and peer influences. Besides, vaping is identified as a risk factor for smoking initiation including for those who have never or ever smoked. Flavored vaping and current smoking status are associated with continued vaping in Asian adolescents. Although the male gender is found to be more associated with vaping, one study from California found the highest prevalence of vaping in Asian girls. One most common contact routes of information on vaping identified in the Asian context, but not in the Western, is the internet. While the desire to quit smoking and the capacity for indoor use are the most common reasons for frequent vaping in Asian countries, nicotine concentration, nicotine dependence, and more daily vaping sessions are the top three reasons for frequent vaping in Western countries. **Conclusion** Vaping has also become prevalence among the Asian adolescent population with different prevalence rates and various associated factors among different countries and contexts. But there has been very limited research that consistently studies vaping among them worldwide. To further understand about their vaping behaviors, continuous monitoring and more specific research will need to be undertaken on these Asian adolescent population.

POS5-99

INFLUENCE OF CIGAR-RELATED SOCIAL MEDIA MARKETING CONTENT ON SUSCEPTIBILITY AND USE OF CIGAR PRODUCTS AMONG U.S. YOUTH AND YOUNG ADULTS

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Significance: Non-cigarette tobacco marketing on social media is under-regulated and has high visibility among adolescents and young adults. While advertising and health communication theories provide a strong rationale to expect that exposure to these messages will influence attitudes, beliefs, and behaviors related to tobacco use, few studies have examined the extent to which the digital media environment influences tobacco use-related outcomes. Furthermore, previous research has relied on self-reported marketing exposure measures, which are often unreliable due to endogeneity, inaccurate recall, and selection biases. Using community-level social media activity by commercial accounts as an exogenous indicator of potential exposure to marketing of cigars, little cigars, and cigarillos (CLCCs), we tested associations with self-reported CLCC outcomes among individuals residing in each community. **Methods:** We used data from the Truth Longitudinal Cohort (September-December 2019), a representative sample of US youth and young adults (age 15-28) (n=9,557). Commercial posts from X (formerly Twitter) representing CLCC marketing were retrieved, and used to calculate a rate of CLCC commercial tweets per 100,000 people in the 30 days before the survey in each respondent's county of residence. We analyzed the effects of the CLCC tweet rates on three self-reported CLCC-related outcomes: susceptibility, intention to use CLCC, and current CLCC use, accounting for social media use, age, race/ethnicity, parent education, gender, sensation seeking, household tobacco use, and marijuana ever use. Current CLCC use included blunt use. **Results:** Controlling for covariates, each increase of one tweet per 100,000, was associated with 1.3% higher odds of being susceptible to using CLCC use; 1.5% greater odds of intending to use CLCCs in the next year; and 1.3 higher odds of current CLCC use. More frequent social media use, sensation seeking, household tobacco use, and marijuana ever-use were also positively associated with susceptibility, intention to use, and current use of CLCCs. **Conclusion:** Higher rates of CLCC-related commercial tweets were associated with greater susceptibility, intentions to use, and use of CLCC products. This study demonstrates a novel approach to measuring the potential exposure to CLCC marketing on social media and examining its impact on CLCC use. Tobacco control initiatives should include efforts to monitor the role of social media in promoting tobacco use.

FUNDING: Federal

POS5-100

PERCEPTIONS OF TOBACCO PREVENTION AND CESSATION CAMPAIGNS AMONG YOUTH AND YOUNG ADULTS WHO USE MULTIPLE TOBACCO PRODUCTS

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Background: While most tobacco prevention and cessation campaigns focus on a single tobacco product, many youth and young adults concurrently use multiple tobacco products, especially combustible tobacco and e-cigarettes. The goal of this qualitative study was to understand how youth and young adults who use multiple tobacco products perceive tobacco prevention and cessation campaigns. **Methods:** We conducted six virtual focus groups with 26 US youth and young adults (ages 13-20) who reported vaping and smoking a combustible tobacco product in the past 30 days. After looking at ads from existing tobacco prevention (e.g., Real Cost, Fresh Empire) and cessation (e.g., TIPS From Former Smokers) campaigns and one novel ad, participants discussed their reactions and ideas for future ads addressing multiple tobacco products. Subsequently, we conducted a thematic content analysis of completed transcripts. **Results**: Participants were, on average, 19.2 years old, and the majority reported being female (65.4%), and white (53.9%) or Asian (23.1%). All participants reported vaping in the past 30 days, 88.5% reported smoking cigarettes in the past 30 days, and 61.5% reported smoking cigars. Central themes included: 1) when asked about ads that target multiple vs. single tobacco products, participants preferred ads about multiple tobacco products and discussed that such ads could focus on the shared consequences of vaping and smoking (e.g., lung health); 2) existing ads were described as ineffective and not relatable, in part because they appeared to be made by adults to appeal to youth, rather than by youth, and because youth already knew that using tobacco products, including vaping, was harmful; 3) many participants described ads about the health effects of tobacco use, with graphic or scary images, to be the most effective in grabbing attention and discouraging tobacco use, especially if they encouraged youth and young adults to self-reflect; and 4) most participants described never using the word "tobacco" or "e-cigarettes," (which were present in existing ads) to describe vaping, and instead used words like "nicotine," "vapes," and "nic." **Conclusions**: This preliminary evidence suggests novel ways to design effective ads for youth and young adults who use multiple tobacco products. This research can help inform FDA's ongoing communication campaigns to reach these populations with effective messages.

FUNDING: Federal; FDACTP

POS5-101

IDENTIFYING PROMISING AD THEMES FOR YOUTH AND YOUNG ADULTS WHO USE MULTIPLE TOBACCO PRODUCTS

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Background: While most tobacco prevention and cessation campaigns focus on a single tobacco product, many youth and young adults concurrently use multiple tobacco products, especially combustible tobacco and e-cigarettes. The goal of this study was to examine promising themes for use in ads targeting youth and young adults who use multiple tobacco products. **Methods:** Between October and November 2023, we conducted an online within-subjects experiment with *n*=310 US youth and young adults (ages 13-20) who reported vaping and smoking a combustible tobacco product in the past 30 days. We created a pool of 46 text-only messages from 10 themes about the consequences of both vaping and smoking (e.g., "Vaping and smoking can make your anxiety and depression worse"). Examples of the 10 message themes included mental health, health symptoms, long-term health effects with explanations for how health effects occurred (e.g., "Nicotine changes the way connections are formed in your brain, which can interfere with brain development"), and chemical exposures. We also created a set of 3 control messages with neutral information about cigarettes, e-cigarettes, and cigars. Participants were randomly assigned to view and rate 6 messages from different themes within this pool of 49 messages (46 messages + 3 control messages). Our primary outcome was perceived message effectiveness (PME), with the survey asking participant to report how much the message discouraged them from vaping and smoking tobacco products, assessed separately. We conducted pairwise comparisons in mixed models to examine the relative promise of themes on vaping and smoking PME. **Results**: The mean age of participants was 18.1 years (SD: 1.7). The majority were female (67.1%) and white (49.7%) or Black/African American (22.3%). Mixed model analyses showed that all message themes performed significantly better than the control message theme. In addition, themes about long-term health effects with explanations for how health effects occurred and chemical exposures were significantly associated with higher vaping and smoking PME scores, while themes about nicotine addiction were significantly associated with lower vaping and smoking PME scores. **Conclusions**: This preliminary evidence suggests that potential themes about long-term health effects with explanations for how health effects occurred and chemical exposures may be promising for future ads targeted to youth and young adults who use multiple tobacco products.

FUNDING: Federal; FDACTP

POS5-102

OVERWEIGHT - BUT NOT OBESE - STATUS PREDICTS HIGHER RISK OF POLY-USE TRAJECTORIES IN YOUNG ADULTHOOD DURING AND POST COVID-19 PANDEMIC

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Significance. Past research has indicated higher weight status (e.g., obesity) is associated with tobacco/nicotine, cannabis, and alcohol use in young adulthood (Daw et al., 2017; Fazzino et al., 2017; Mason & Leventhal, 2021); however, longitudinal studies are scarce and somewhat mixed, the role of higher weight status on nicotine and cannabis vaping is less clear, and little work has examined associations between higher weight status and poly-use. The current study evaluated whether obese or overweight status increased risk of belonging to a poly-use trajectory during and post COVID-19 pandemic. **Methods.** 1,303 young adults (20.5±2.3 years; 63% female; 41% Latina/o/x, 30% Asian-American/Asian, 18% Caucasian/White; 2% African-American/Black) from a public, urban university in Southern California completed health behavior surveys at six-month intervals from spring 2021 (W1) to spring 2023 (W5). Participants reported height and weight at baseline, which was used to calculate body mass index and group participants into one of four weight status categories (obese, overweight, underweight, healthy weight). Self-reported past 30-day use of six substance use products (nicotine vaping, cigarette smoking, cannabis vaping, combustible cannabis, cannabis edibles, binge drinking) were analyzed using parallel growth mixture modeling to identify poly-use trajectories. Obese and overweight status were evaluated as correlates of trajectory membership. **Results.** Four trajectories were identified: Non-Users (64.3%); Cannabis Users and Binge Drinkers (18.7%); Poly-Users (9.8%); and Nicotine/Tobacco Users and Binge Drinkers (7.2%). Overweight status predicted higher odds in the Cannabis Users and Binge Drinkers (aOR[95% CI]=1.84[1.23-2.74]) and Tobacco/Nicotine Users and Binge Drinkers (aOR[95% CI]=1.98[1.15-3.38]) vs. Non-Users trajectory. Obesity status predicted lower odds in the Nicotine/Tobacco Users and Binge Drinkers (aOR[95% CI]=.22[.05-.91]) vs. Non-Users trajectory. **Conclusions.** Higher weight status was a significant predictor of poly-use trajectories; notably, associations differed by weight status category. The marked differences between obese and overweight young adults suggest greater specificity is needed when evaluating relationships between weight status and substance use. Overweight young adults' higher odds of belonging to two poly-use trajectories compared to obese young adults' lower odds of belonging to a poly-use trajectory indicates overweight young adults may be a key target group for anti-tobacco/nicotine, cannabis and binge drinking public health initiatives.

FUNDING: Federal

POS5-103

EFFECTIVENESS OF FAMILY-BASED BEHAVIORAL INTERVENTION FOR SMOKING CESSATION IN LOW-INCOME FAMILIES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Significance: Tobacco exposure causes more diseases in children from low-income families due to higher smoking prevalence in parents and overcrowded living environment coupled with inadequate ventilation. Family-based behavioral interventions were found to be effective for smoking abstinence, but the effect remained unclear in low-income families. **Methods:** We searched PubMed, MEDLINE, Embase, CINAHL, PsycINFO, CENTRAL and Cochrane TAG Specialised Register using key terms of parents, cessation, smoking, intervention and low-income from inception to September 2023. Randomized control trials using behavioral intervention that enrolled smoking parents living in low-income suburban communities with children aged ≤18 years were included. Risk of bias was assessed using Cochrane Risk of Bias Tool 2.0. Relative risk (RR) was calculated using fixed-model effect and Mantel-Haenszel method. Intervention effects

in specific subgroups (parents vs smoking mothers, with non-asthmatic vs asthmatic children) were also estimated. Publication bias was detected using Egger's test. **Results:** Twenty-two studies were included for systematic review with 12 for meta-analysis (N=2782). Most studies were moderate to high quality (91% "some concern" and "low risks") with significant publication bias (Egger's test p=0.04). Family-based behavioral intervention was effective in reducing smoking compared with usual care (RR=1.73, 95%CI 1.38-2.18, p<0.001). Larger intervention effects were observed in both smoking parents (RR=1.81) vs. mother smoking only (RR=1.64) and parents with non-asthmatic children (RR=1.87) vs. asthmatic children (RR=0.97). Home air quality and methods to prevent secondhand smoke exposure were also found to be improved other than smoking abstinence. **Conclusions:** Family-based behavioral intervention significantly increased smoking abstinence in low-income families, particularly when provided to both parents and parents with non-asthmatic children.

FUNDING: No external funding reported

POS5-104

IDENTIFYING EFFECTIVE BEHAVIOR CHANGE TECHNIQUES IN A MOBILE CHAT-BASED SMOKING CESSATION INTERVENTION: A MACHINE LEARNING APPROACH

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S**ignificance:** Despite ample evidence on the effectiveness of mobile health interventions for smoking cessation, data on the active components that contribute to abstinence are scarce. We aimed to identify behavior change techniques (BCTs) associated with smoking abstinence in a novel mobile chat-based intervention using a machine learning approach. **Methods:** In this secondary analysis of a randomized controlled trial (ClinicalTrials.gov: NCT03182790), 624 cigarette smokers (76.8% male, mean age 42.1) in the intervention group received 3-month chat-based smoking cessation support via WhatsApp. The intervention was delivered by a live counselor who interacted with a participant in real time and provided tailored cessation advice guided by BCTs. Two coders independently coded BCTs in all chat dialogues using an established BCT taxonomy. Given the presence of multicollinearity among the BCTs, least absolute shrinkage and selection operator (Lasso) logistic regression in 5-fold cross-validation was used to select BCTs that were most predictive of biochemically validated abstinence at 3 and 6 months, respectively. Participants were randomly divided into a training (80%) and test (20%) set to establish the predictive model. Model performance and accuracy were evaluated by the area under the receiver operating characteristic (ROC) curve (AUC) and the Brier Score. **Results:** The chat dialogues of 230 smokers (73.9% male, mean age 43.0) who interacted with the counselor at least once were coded with moderate to high intercoder reliability (Kappa coefficients=0.6-1.0). Across all dialogues, 37 unique BCTs were observed. The median (IQR) number of BCTs per dialogue was 5 (3-9). "Build general rapport" (RC1) and "use reflective listening" (RC7) were observed in all conversations. Five BCTs were selected by both the 3- and 6-month Lasso models, including "provide information on consequences of smoking and smoking cessation" (BM1), "provide rewards contingent on successfully stopping smoking" (BM4), "set graded tasks" (BS9), "emphasize choice" (RD2), and "provide information on withdrawal symptoms" (RC6). The AUC (95% CI) of the 6-month model was 0.91 (0.8-0.9) with a Brier Score of 0.084. The corresponding results of the 3-month model were 0.90 (0.8-0.9) and 0.076. **Conclusion:** BM1, BM4, BS9, RD2, and RC6 were identified as key predictors of abstinence in a mobile chat-based smoking cessation intervention, which helps inform the development and refinement of similar interventions.

FUNDING: Other

POS5-105

ALTERED INSULAR FUNCTIONAL ACTIVITY AMONG ELECTRONIC CIGARETTES USERS WITH NICOTINE DEPENDENCE

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Abstract Background: Electronic cigarettes (e-cigs) use, especially among youngsters, has been on the rise in recent years. However, little is known about the long-term effects of the use of e-cigs on brain functional activity. **Methods:** We acquired the resting-state functional magnetic resonance imaging (rs-fMRI) data from 93 e-cigs users with nicotine dependence and 103 health controls (HC). The local synchronization was analyzed via the regional homogeneity (ReHo) method at voxel-wise level. The functional connectivity (FC) between the nucleus accumbens (NAcc), the ventral tegmental area (VTA), and the insula was calculated at ROI-wise level. The support vector machining classification model based on rs-fMRI measures was used to identify e-cigs users from HC. **Results:** Compared with HC, nicotine-dependent e-cigs users showed increased ReHo in the right rolandic operculum and the right insula ($p < 0.05$, FDR corrected). At the ROI-wise level, abnormal FCs between the NAcc, the VTA, and the insula were found in e-cigs users compared to HC ($p < 0.05$, FDR corrected). Correlation analysis found a significant negative correlation between ReHo in the left NAcc and duration of e-cigs use ($r = -0.273$, $p = 0.008$, FDR corrected). The following support vector machine model based on significant results of rs-fMRI successfully differentiates chronic e-cigs users from HC with an accuracy of 73.47%, an AUC of 0.781, a sensitivity of 67.74%, and a specificity of 78.64%. **Conclusions:** Dysregulated spontaneous activity and FC of addiction-related regions were found in e-cigs users with nicotine dependence, which provides crucial insights into the prevention of its initial use and intervention for quitting e-cigs.

FUNDING: Other

POS5-106

PERCEIVED ADDICTION TO VAPING AND ASSOCIATIONS WITH VAPING AND SMOKING CESSATION: FINDINGS FROM A LONGITUDINAL ANALYSIS OF THE 2016-2020 ITC ENGLAND SURVEYS

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SIGNIFICANCE: Previous research has found that greater perceived addiction to tobacco cigarettes is associated with a reduced likelihood of quitting smoking. However, the associations between perceived addiction to vaping and quitting smoking or vaping remain unexplored. Here, we examined changes in levels of perceived addiction to vaping over a four-year time span and associations between perceived addiction and smoking and vaping cessation. METHODS: This longitudinal analysis was based on 2990 participants from the England arm of the ITC Four Country Smoking and Vaping Survey (2016-2020), who had been vaping daily or weekly for at least four months at one of the three waves irrespective of smoking status (2016: n=825, 2018: n=1342, 2020: n=823). Perceived addiction to e-cigarettes was categorised as "not at all addicted", "somewhat addicted", and "very addicted". Following the preregistered analysis plan (osf.io/9muy3/), we first explored changes in perceived addiction over time. Then, we examined prospective associations of baseline levels of perceived addiction to vaping (from 2016 or 2018) with smoking and vaping cessation at follow-up (2018 or 2020) using logistic regression, adjusted for age, gender, education, smoking status, vaping duration, and time-in-sample. RESULTS: In 2016, 18% of participants reported feeling very addicted and 45% somewhat addicted to vaping. The proportion of participants who felt very addicted decreased over four years to 11% (p<0.001) and the proportion who felt somewhat addicted increased to 53% (p<0.001). Participants who felt somewhat or very addicted to vaping were less likely to stop vaping after two to four years compared to those not feeling addicted (somewhat vs. not at all addicted: odds ratio (OR) (95% confidence interval (CI)) 0.41 (0.22-0.76); very vs. not at all addicted: OR (CI) 0.25 (0.08-0.63)); however, they were more likely to stop smoking (somewhat vs. not at all addicted: OR (CI) 2.08 (1.16-3.71); very vs. not at all addicted: OR (CI) 2.28 (1.01-4.96)). CONCLUSIONS: Levels of high perceived addiction to vaping decreased among vapers over a four-year period. While higher levels of perceived addiction to vaping were associated with lower odds of vaping cessation, they may conversely increase the likelihood of quitting tobacco smoking. Tailored cessation programs that consider the varying impacts of perceived addiction on vaping and smoking cessation may be needed.

FUNDING: Federal; Academic Institution; Nonprofit grant funding entity

POS5-107

"I DON'T LIKE THE TASTE", "THEY MIGHT BE DANGEROUS" AND "I DON'T WANT TO REPLACE ONE ADDICTION FOR ANOTHER": A QUALITATIVE EXPLORATION OF ADULT SMOKERS' MAIN REASONS FOR NOT VAPING

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Significance: In both the UK and USA, a substantial proportion of adult smokers hold the misperception that e-cigarettes pose an equal or greater risk than traditional cigarettes.

While this misperception has garnered attention, there exists a dearth of research exploring the broader spectrum of beliefs, misconceptions, and apprehensions that smokers harbour regarding e-cigarettes and their collective impact on influencing adult smokers' reluctance to adopt e-cigarettes as a means to quit smoking. **Methods:** We recruited 109 smokers who do not vape (51% female; mean age 50.6 years, SD=13.2; 54% UK-based, 46% USA-based) to complete a short online survey asking them to list their reasons for not using an e-cigarette to help them quit smoking followed by any additional concerns about vaping. **Results:** All participants were daily smokers (mean cigarettes per day = 15, SD=9), 75% of whom had no plans to quit smoking. Although all participants reported being non-vapers (vaping fewer than 20 times in their lifetime), 78% had tried at least a puff of an e-cigarette, 28% reported having previously tried using an e-cigarette to quit smoking and 8% reported that they would probably use an e-cigarette in a quit attempt within the next year. The belief that e-cigarettes were equally or more harmful than 'regular' cigarettes, was held by 68% of participants. The most common reasons participants cited for not using an e-cigarette were 1) that e-cigarettes are not as satisfying as cigarettes, 2) dislike of the taste and flavour, 3) health concerns, 4) lack of trust and safety concerns, 5) concerns about addiction, 6) lack of information about e-cigarettes and 7) costs. Uncertainty about the health risks were common, with many participants citing concerns about the long-term health risks, lack of trust in the evidence and endorsement of misperceptions, including EVALI and popcorn lung. **Conclusions:** There are a wide range of reasons smokers give for not wanting to try an e-cigarette in a quit attempt. Having a fuller understanding of these reasons will help us develop interventions and messaging campaigns which can support smokers who may benefit from trying an e-cigarette during a future quit attempt.

FUNDING: Academic Institution

POS5-108

ENHANCING RECRUITMENT STRATEGIES IN TOBACCO RESEARCH: INSIGHTS INTO BARRIERS AND COMPENSATION PREFERENCES

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Background: In the post-COVID-19 era, tobacco researchers have experienced greater challenges in recruiting participants for longitudinal studies, particularly those that involve in-person interactions and biomarker collection. This study aimed to explore barriers to participation in tobacco studies among adults who use tobacco and explore ways to enhance involvement in future studies. **Methods:** This study was a cross-sectional online survey conducted at Penn State College of Medicine (Hershey, PA) from January 2023 to April 2023. Participants were recruited via email from a tobacco user registry maintained by the Penn State Center for Research on Tobacco and Health. Participants were asked questions about demographics (sex, ethnicity, race, education level, and country of birth), any nicotine product use, research participation barriers, and suggestions for improvement. Means and proportions were calculated to describe the characteristics of the participants, their experiences, and preferred solutions. **Results:** Participants (n=294) had a mean age of 46.9 years (SD 11.5) and were 67.4% female, 91% White, 3.4% Hispanic, 50% college or university graduates, and 97% US-born. About 90.8% (n=267) of participants were current tobacco users and smoked an average of 15 cigarettes per day (SD 9). The most common barriers to participation included work schedule conflicts (n=128, 43.4%), inability to attend during center hours (n=114, 38.6%), inadequate compensation (n=84, 28.5%) and no transport (n=78, 26.4%). About 28% (75/268) of participants considered study compensation as a very important factor in their decision to participate. The mean expected monetary compensation for a one-hour study visit, including questionnaire completion, basic biological measures (weight and blood pressure), and providing a biological sample, was 78.8 USD (SD 82.8). The mean expected compensation for a study visit lasting one hour and conducted completely over the phone or via Zoom was 36.2 USD (SD 39.3). The mean expected monetary compensation for traveling at least 15 miles to and from the study site was 32.2 USD (SD 70.8). A majority (91.2%, n=268) suggested shopping gift cards (i.e., Amazon, Walmart, etc.) as an additional incentive for enhancing recruitment. The most preferred method of communication for contact with study participants was email 231/268 (86.2%). **Conclusion:** Tailored recruitment strategies such as enhancing study payments and offering flexible visit schedules were suggested as key areas of improvement by most participants (92.5%). These strategies should be considered in future tobacco research as they may increase recruitment. **Public Health Significance:** Addressing barriers to participation and enhancing recruitment strategies among diverse tobacco users can indirectly contribute to promoting equity in research participation.

FUNDING: Other

POS5-109

TOKING, SMOKING, AND VAPIN': PATTERNS OF NICOTINE USE AMONG THE CANNABIS USER WITH ATTENTION TO A SEXUAL AND GENDER MINORITY POPULATION

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Significance: The changing cultural and legal factors affecting cannabis use may lead to changes in use patterns of products containing nicotine including among. Sexual and gender minorities (SGM). Understanding the relation of those who use cannabis and those using nicotine products could impact health status variably. **Methods:** Anonymous survey data was collected from community event attendees from June - September 2023. Frequency of cannabis and e-cigarettes/smokeless tobacco were categorized as low (≤9 times/month), moderate (10-19 times/month) and high (≥20 times/month) usage with low (≤5/day), moderate(6-10/day), and high (>10/day) categories for cigarette smoking. Descriptive statistics and logistic regression models characterized the relation of cannabis and tobacco products. **Results:** Among 2955 participants, 1267 (43%) reported using cannabis. Cannabis users were younger to middle-age adults (mean age: 31 yrs; 18-49 year olds: 91%), white (77%), never married (63%), and COVID-19 ever-vaccinated (84%). Over half (64%) identified as SGM. Of the never users of cannabis, over 90% did not use nicotine products. Prevalence of nicotine use was highest for e-cigarettes (16%), then smoking cigarettes (11%) and lowest for other tobacco products (4%). Among 351 high frequency cannabis users, the proportion of high frequency nicotine users were: e-cigarette users (29%), cigarette smokers (8.5%), and other tobacco (5.9%). Predictors of cannabis use include SGM, younger age, single, divorced/separated, someday or everyday vaping, someday other tobacco product use. Smoking cigarettes did not predict cannabis use. **Conclusions:** Current vaping use is much higher than cigarette smoking. Further vaping (and frequency of use) is associated with high frequency cannabis use. SGM is a predictor of marijuana use and this group has very high vaping and high smoking rates. Center for Disease Control and Prevention and University of Missouri funded this study.

FUNDING: Academic Institution; Nonprofit grant funding entity

POS5-110

INTEGRATED ANALYSIS OF SMOKING AND MULTIPLE HEALTH FACTORS ON OVERALL HEALTH OUTCOMES USING 2023 DATA

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Background: The detrimental effects of smoking on public health, a known cause of numerous premature deaths and various health complications, are well known. This study broadens the research lens by investigating how smoking, in combination with other significant health factors, impacts health outcomes. Using the latest data from the 2023 County Health Rankings & Roadmaps, interactions between smoking and other variables were examined, including obesity, STIs, teen births, insurance status, and air pollution. Methods: A comprehensive model with both backward elimination and forward selection techniques was developed using a statistical analysis platform ("R"). The model incorporated a range of health factors as predictors: smoking, obesity, STI, teen birth, insurance status, and air pollution. Health outcomes were the target variables. Guided by a population health perspective, a correlation matrix was examined for the validity of observed linear relationships. Results: The analysis revealed that smoking (coefficient = 0.4266834, $p < 0.001$), STIs (coefficient = 0.2885737, $p < 0.001$), and teen births (coefficient = 0.1559291, $p = 0.044086$) were significant influencers of health outcomes. Smoking, in particular, was a prominent factor. Additionally, the model shed light on the strong relationship between smoking and obesity, suggesting a compounded impact on health outcomes. The Adjusted R-square (0.6884) accounted for a substantial proportion of variance in health outcomes explained by these factors. Conclusion: This study with a unique current dataset (2023 County Health Rankings & Roadmaps) reinforces the critical role of smoking in health outcomes, which is further compounded when combined with other health-related factors. The interconnected nature of these variables suggests the necessity for a holistic approach in population-based strategies, focusing on a broader range of health determinants. Results offer important insights for public health policymakers, aiding in the development of targeted interventions and efficient allocation of resources. Future research should extend to longitudinal studies and include evolving health trends to enhance the precision of these predic-

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FUNDING: Federal; State; FDACTP

POS5-111

NAVIGATING THE VAPING EPIDEMIC: INSIGHTS FROM CESSATION INTERVENTIONS AT VARIOUS LEVELS

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Background: E-cigarette prevalence in Young Adults (YA, 18-24) was 11% in 2021. Middle schoolers and high schoolers (11-18) reported 7.7% in 2023. These age groups are prioritized by the National Cancer Institute (NCI) as vulnerable populations requiring more interventions. Innovative cessation efforts have been developed to combine various forms of media and evidence-based techniques. This present study assesses relatively new interventions for e-cigarette cessation at all levels (regional, state, national) to further inform access and use. Methods: Key contacts from the UR Medical Center, New York State (NYS) Quitline, and Truth Initiative were contacted to obtain recent data on e-cigarette cessation efforts at regional, state, and national levels. Participant enrollment, referrals, and demographics were used to examine the reach of vaping cessation interventions. Engagement with key contacts also provided qualitative insight of cessation program challenges. Results: Regionally, the Commit to Quit! group program has completed 7 cohorts with 170 enrollees from 13 different counties since September 2021, with 76% reporting an increase in confidence in their ability to quit post-participation. Since October 2023, the regional program Vape Escape has had 20 teens participate, using interactive and supportive environments to change vaping behaviors. From 2017 to 2022, the NYS Quitline (including resources for vaping cessation) showed decreases in incoming calls (-20.6%), provider referrals (-65.6%), and Nicotine Replacement Therapy distribution by phone (-26.0%) but has seen increases in Quit Site Sessions (161.2%) and Quit Site Page Views (334.0%). Since its launch in 2019, Truth Initiative's nationwide This is Quitting texting program for teens has been enrolling 3,000 young people each week, where roughly 60% are YA. Conclusion: Cessation resources have been adapting to the vaping epidemic with group sessions and technology-based interventions like supportive text messaging. Quitting has shifted from referrals to technological-based programs with an accessible support network. Tailoring interventions to the emerging challenges of vaping will help vulnerable populations access inclusive resources and lead healthier lives. Supported by the NCI and FDA (U54CA228110), and NY State DOH (DOH01-C35536GG-3450000). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH, the FDA or NY State.

FUNDING: Federal; State; FDACTP; Pharmaceutical Industry

POS5-112

VAPING CESSATION RESOURCES TARGETING ADOLESCENTS ON NORTH AMERICAN QUITLINE CONSORTIUM WEBSITES

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SIGNIFICANCE: The surge in youth vaping (younger than age 18), fueled by the alluring designs, enticing flavors, and strategic marketing of Electronic Nicotine Delivery Systems (ENDS) like JUUL and PuffBarr, has reached epidemic proportions, as acknowledged by the FDA. Many young individuals engaging in vaping may lack awareness or hold misconceptions about the dangers of vaping and flavor toxicity. The North American Quitline Consortium (NAQC) includes a directory of quitsites for each state, province and territory within Canada and the USA. While NAQC quitsites traditionally serve as hubs for smoking cessation information, our previous investigations have revealed gaps in dedicated resources for vaping cessation (including specifically for youth). **METHODS:** The current study delves deeper into the content specifically tailored for youth on these quitsites by using an observational audit approach confirming the presence or absence of vaping cessation resources for this understudied and underserved population. **RESULTS:** Of the 53 examined quitsites, only 41.5% (22 sites) provided explicit resources for minors. Only half (27 of 53) featured dedicated pages addressing the harmful nature of flavored vaping, with an even smaller percentage (28.3%) including resources targeted to adolescents on their splash page. Of the 27 sites with cessation resources, only 23 of them included state specific programs and resources (although some websites included information and resources targeting healthcare providers and patient referral). **CONCLUSION:** As of late 2019 and early 2020, increased regulatory measures, including a partial flavor ban by the FDA, have been imposed on the vaping industry. Despite these developments, the present findings underscore persistent shortcomings in the dissemination of information regarding the risks associated with vaping, particularly flavored vaping. Analysis of these publicly available websites indicates a lack of consistency in messaging and resources, hindering efforts to facilitate and support vaping cessation among youth. Supported by the NCI and FDA (U54CA228110), and NY State DOH (DOH01-C35536GG-3450000).

FUNDING: Federal; State

POS5-113

RESPONSE TO CALLS FROM STATE QUITLINE FROM PATIENTS REFERRED FROM A LARGE HEALTH SYSTEM

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Background: The New York State Smokers' Quitline (NYSSQL) provides free counseling and Nicotine Replacement Therapy (NRT) to current smokers and vapers trying to quit. NYSSQL has a strong history of success with an annual reach 2.7 times higher than that of similar programs in other states. In 2017, healthcare providers at the University of Rochester Medical Center (URMC) began using the Electronic Health Record (EHR) to refer patients to the NYSSQ. How well the NYSSQ has reached the patients referred at that time was assessed. Methods: NYSSQL data from URMC EHR referrals were used, collected from October 2022 to October 2023. A descriptive analysis of the response rate was performed according to the number of clients reached by the NYSSQ, the outcome of the attempts made, and the quit status and NRT eligibility of the clients reached. Results: URMC providers referred over 2100 patients to the Quitline during the period of analysis. The average percentage of total calls yielding a "reached/completed" status was 32.0%. Patients who "declined service" at the time did not always indicate they declined future Quitline use. There was a downward trend of provider referrals during the COVID-19 pandemic, most likely as a result of more patients self-referring to the Quitline via phone and telehealth options. Conclusion: More than 75% of the clients who are reached by the quitline via provider referrals receive both NRT and counseling from the NYSSQ. The Quitline is unable to reach some (230 total referrals in a six-year analysis period) due to unsuccessful calls/changed or disconnected numbers. Determining ways to improve the reach and acceptance of the NYSSQ would be beneficial in increasing the number of smokers receiving NRT and counseling. Provider referrals remain the best option for achieving patient follow-through with Quitline counseling and usage. Supported by the NCI and FDA (U54CA228110), and NY State DOH (DOH01-C35536GG-3450000).

FUNDING: Federal; State

POS5-114

ADOLESCENT AND YOUNG ADULT TOBACCO PRODUCT USE SCREENING AT TWO MAJOR HEALTH SYSTEMS IN WESTERN NEW YORK

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SIGNIFICANCE: Tobacco product use among adolescents and young adults (AYA, ages 15-25) is of urgent clinical concern. AYAs are particularly vulnerable to nicotine dependence, and clinical visits present unique opportunities to intervene. The National Institute on Drug Abuse (NIDA) and American Academy of Pediatrics (AAP) jointly recommend that all AYAs receive tobacco use screenings at clinical visits, but there is no standardization for how health systems must conduct such tobacco use screening or subsequent next steps. This project investigates common tobacco product use screenings across large two health systems and to recommend if such screenings and next steps can be standardized. **METHODS:** A short evaluation survey was emailed to 28 pediatricians and pediatric residents across two health systems in Western New York (University of Rochester Medical Center and Rochester Regional Health). The eight questions inquired about their health systems' standards for electronic health record screening and referral as well as AYA tobacco product use at each site. Responses were analyzed for descriptive statistics and qualitatively using the Grounded Theory Approach. **RESULTS:** To date, eight pediatric clinicians have replied to this ongoing

survey: six pediatricians and two pediatric residents (note: final response rates and results will be prepared and presented). All eight respondents so far do screen AYA patients for tobacco during clinical visits. Within one system, six of the six clinicians reported varied next steps after screening: all advised current tobacco users to quit, but only some clinicians also referred patients to the state quitline and/or prescribed cessation medications. Interestingly, seven pediatric clinicians did not know what percentage of their AYA patients were tobacco product users in the past 12 months based on tobacco use screening at their site. **CONCLUSIONS**: There are substantial self-reported variations in pediatric AYA tobacco product use screenings between health systems. In one health system, inconsistencies were noted. Clinical next steps also varied substantially, which could lead to misidentification of tobacco product users and/or lack of referral to cessation resources. Solutions include establishing best practice standardized screening and relevant education across health systems so clinicians will use consistent strategies to maximize the efficacy of screenings and referral to evidence-based cessation resources. Supported by the NCI and FDA (U54CA228110), and NY State DOH (DOH01-C35536GG-3450000).

FUNDING: Federal; State

POS5-115

E-CIGARETTE USE DURING PREGNANCY: EFFECTS ON TOXICANT EXPOSURE AND BIRTH OUTCOMES

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Significance: E-cigarettes (ecigs) have become popular as a means to reduce or eliminate cigarette smoking. Unfortunately, little is known about their potential for harm reduction during pregnancy. This study aimed to examine the effects of prenatal ecig use (with or without cigarettes) compared to exclusive cigarette smoking on maternal and newborn toxicant exposure and birth outcomes. **Methods:** We conducted an observational cohort study with 179 pregnant women who smoked cigarettes exclusively (n=101) or used ecigs (either exclusively or dually with cigarettes, n=78) at baseline. We collected maternal surveys and biomarkers of nicotine (cotinine, nicotine) and toxicant exposure [NNAL, volatile organic compounds (VOCs)] in every trimester, and newborn biomarkers and birth outcomes at delivery. Linear mixed models (LMMs) were used to examine maternal biomarkers as a function of current product use (exclusive cigarette smoking vs. ecig use), trimester, and other covariates. Linear and logistic regression models were used to examine newborn biomarkers, birth weight, premature birth, and other birth outcomes as a function of maternal product use closest to delivery and other covariates. **Results:** Most women maintained their baseline product use throughout pregnancy (91% of cigarette group, 85% of ecig group), and six quit (3 per group). Women used their product an average of 98% of the days recorded, with no difference by group. Maternal nicotine exposure did not differ by ecig or dual use vs. exclusive cigarette smoking. Women who used ecigs had significantly lower levels of NNAL and select VOCs (acrolein, acrylamide, and acrylonitrile), and significantly higher levels of the VOC toluene, than women who smoked cigarettes exclusively. In a subanalysis we found that women who exclusively used ecigs (n=43) had significantly lower NNAL and acrylonitrile levels, similar acrolein and acrylamide levels, and higher toluene levels than women who dual used (n=53). Newborn biomarkers and birth outcomes did not differ by maternal product use. **Conclusions:** Women who used ecigs during pregnancy experienced reduced exposure on several toxicant biomarkers compared to women who exclusively smoked cigarettes, with two notable exceptions: nicotine and toluene. Additional research is needed to investigate the effects of ecig use during pregnancy on infant and maternal health outcomes.

FUNDING: Federal

POS5-116

EXPERIENCES OF SMOKING UNACCEPTABILITY IN PEOPLE WHO CURRENTLY SMOKE IN AOTEAROA NEW ZEALAND: FINDINGS FROM THE 2022 EASE/ITC NEW ZEALAND SURVEY

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Significance: Smoking prevalence in Aotearoa New Zealand declined from 18.4% in 2011/12 to 8.3% in 2022/23. Decreasing social acceptance of smoking may have contributed to this reduction. To explore how people who smoke perceive and experience the unacceptability of smoking, we analysed data from the 2022 EASE/International Tobacco Control New Zealand Survey. **Methods:** We used data from 1,040 participants who currently smoke (698 smoked daily and 342 non-daily). Data were weighted to represent the national profile of people who smoke. Participants were asked whether they felt there were fewer places they felt comfortable smoking, tried to hide their smoking from family and friends, received disapproving looks or coughs from others while smoking, felt like an outsider within social groups due to their smoking, and felt ashamed when others saw them smoking. We excluded "Don't know" (n = 8 - 31) and "Refused" (n = 5 - 28) responses. **Results:** Nearly three fifths (58%, 95% CI 54.0 - 61.9%) reported that there were fewer places where they felt comfortable smoking. Over a third of participants reported receiving disapproving looks or coughs (35.8%, 95% CI 32.2 - 39.5%) and feeling ashamed when others saw them smoking (37.7%, 95% CI 34.0 - 41.5%). Slightly over a quarter reported trying to hide their smoking from friends and family (26.5%, 95% CI 23.5 - 29.9%) and feeling like an outsider within their social groups because they needed to smoke (25.5%, 95% CI 22.4 - 28.9%). Across all measures, people who intended to quit tended to report higher levels of agreement with statements describing smoking as a less accepted practice compared to those who did not intend to quit. For example, 45.7% (95% CI 41.0 - 50.5%) of those intending to quit at some point reported feeling ashamed when others saw them smoking in comparison to 20.9% (95% CI 15.7 - 27.3%) of those who did not intend to quit. **Conclusions:** A substantial proportion of people who smoke in Aotearoa New Zealand reported experiences and perceptions of decreased social acceptance of smoking. We found a positive association between intention to quit smoking and reports of these perceptions and experiences. Further work is required to examine whether smoking unacceptability and its consequences vary with demographic and socio-cultural factors. However, the findings suggest smoking unacceptability may contribute positively towards influencing people's behaviors and encouraging smoking cessation.

FUNDING: Federal; State; Academic Institution

POS5-117

USE OF HOMEGROWN TOBACCO BY PEOPLE WHO SMOKE IN AOTEAROA NEW ZEALAND: FINDINGS FROM THE 2022 EASE/ITC NEW ZEALAND SURVEY

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Significance: In January 2023, the New Zealand Parliament passed world-leading smokefree legislation which included significantly reducing the number of tobacco retailer outlets and mandating very low nicotine cigarettes. However, after a change of government in November 2023, the legislation is set to be repealed. One of the arguments made by opponents against introducing new smokefree measures to reduce smoking prevalence is that they may increase homegrown tobacco use. We analysed data from the 2022 EASE/International Tobacco Control New Zealand Survey to describe the use of homegrown tobacco in people who smoke. **Methods:** We analysed data from 1,040 adults aged 18 years and older who currently smoke (698 who smoke daily and 342 who smoke less than daily), including 415 Māori. Data were weighted to the New Zealand Health Survey to represent the national profile of people who smoke. We asked participants whether they had smoked cigarettes or tobacco that was homegrown in the past, whether they were likely to in the future, and how easily accessible it is. "Refused" responses were excluded. "Don't know" responses were excluded from questions about prior and future use of homegrown tobacco. **Results:** 75.4% (95% CI 72.1-78.5%) of participants reported that they had not used homegrown tobacco in the previous six months. 7.8% (95% CI 5.9-10.1) reported using it once and 11.1% (95% CI 9.1-13.6) a few times. Only 3.7% (95% CI 2.6-5.3) reported using it many times and 2.0% (95% CI 1.4-2.9) all the time. When asked how likely they were to smoke homegrown tobacco

over the next 6 months, only 3.4% (95% CI 2.4-4.7) reported they definitely would, and 8.5% (95% CI 6.5-10.9) said very likely. 9.3% (95% CI 7.4-11.6) said quite likely, 21.5% (95% CI 18.5-24.8) said not likely, 22.1% (95% CI 19.0-25.6) said very unlikely, and 35.3% (95% CI 31.6-39.1) said definitely not. When asked how easy it was to get homegrown tobacco, 9.3% (95% CI 7.4-11.7) said it would be very easy, 23.4% (95% CI 19.9-27.2) said easy, 25.6% (95% CI 22.6-28.9) said difficult, 12.3% (95% CI 10.0-14.9) said very difficult, and 29.4% (95% CI 26.0-33.1) said "Don't know". **Conclusion:** Despite over 30% of participants reporting that it would be easy to access homegrown tobacco, rates of frequent homegrown tobacco use and definite or very likely intentions to use homegrown tobacco were low. These findings strengthen the case for retaining Aotearoa New Zealand's smokefree legislation.

FUNDING: Federal; State; Academic Institution

POS5-118

THE MAJORITY OF PEOPLE WHO SMOKE IN AOTEAROA NEW ZEALAND WANT TO QUIT: FINDINGS FROM THE 2022 EASE/ITC NEW ZEALAND SURVEY

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Significance: In January 2023, the New Zealand Parliament passed world-leading smokefree legislation to significantly reduce the number of tobacco retailer outlets, mandate very low nicotine cigarettes, and ban the sale of cigarettes to anyone born after 2008. However, after a change of government in November 2023, the legislation is set to be repealed. To help investigate whether the legislation should be implemented or repealed we analysed data from the 2022 EASE/International Tobacco Control New Zealand Survey to assess among New Zealanders who smoke the percentage who want to quit, who are finding it difficult to quit, and who regret having started smoking. **Methods:** The data were from 1,040 adults aged 18 years and older who currently smoke (698 who smoke daily and 342 who smoke less than daily), including 415 Māori. Data were weighted to the New Zealand Health Survey to represent the national profile of people who smoke. We calculated the weighted percentage who want to quit smoking, plan to quit smoking, have tried to quit smoking, feel addicted to smoking, and regret having started smoking. "Don't know" and "Refused" responses were excluded. **Results:** 24.9% (95% CI 21.8-28.4%) of participants reported that they want to stop smoking "a little", 28.3% (95% CI 25.1-31.9) wanted to stop "somewhat", and 30.9% (95% CI 27.4-34.5) wanted to stop "a lot". 81.1% (95% CI 78.3-83.7) had tried to quit in the past, with 40.6% (95% CI 36.9-44.5) making a quit attempt in the past 12 months. 45.6% (95% CI 41.7-49.5) reported being "somewhat" addicted to cigarettes and 41.1% (95% CI 37.3-45.0) reported being "very" addicted. 68.3% (95% CI 64.2-72.1) planned to quit in the future and 74.1% (95% CI 70.5-77.5) agreed that if they had the chance to live their life again, they would not have started smoking, a measure of regret. **Conclusion:** The findings from this study demonstrate that most people who smoke want to quit smoking, intend to quit in the future, and regret having started smoking. However, over 80% of participants had tried and failed to quit smoking in the past. Similarly, over 80% reported that they were addicted to smoking. These results underscore the necessity for more robust measures to help people to quit smoking, calling into question the new government's plans to repeal Aotearoa New Zealand's smokefree legislation.

FUNDING: Federal; State; Academic Institution

POS5-119

PREVALENCE AND CHARACTERISTICS OF SMOKERS INTERESTED IN USING VIRTUAL REALITY FOR SMOKING CESSATION: A REPRESENTATION POPULATION SURVEY IN GREAT BRITAIN

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Significance: Cigarette smoking is one of the leading causes of morbidity in the world. Virtual reality (VR) has been used to encourage and support quit attempts. This study aimed to estimate the proportion and associated characteristics of smokers in Great Britain who were interested in VR for smoking cessation. **Methods:** Data was collected from 6,858 adults between February to April 2023, from the Smoking Toolkit Study - a monthly, nationally representative, cross-sectional survey of adults in Great Britain. Prevalence of interest was assessed descriptively and associations between interest and characteristics were analysed with weighted logistic regression models. **Results:** Of 905 (weighted) smokers, 34.6% (95% Confidence Intervals (CI):31.0%-38.5%) were interested in using VR for smoking cessation, corresponding to 2,155,580 smokers in Great Britain (0.346x6,230,000 smokers). Smokers had greater odds of reporting interest in VR for smoking cessation who were: highly motivated to quit (Odds Ratio (OR):2.41, 95%CI:1.59-3.65), had made a quit attempt in the past year (OR:1.95, 95%CI:1.37-2.77), currently trying to cut down (OR:1.90, 95%CI:1.34-2.67) and interested in VR generally (OR:10.42, 95%CI:6.97-15.57). Those 65 years and older (OR:0.29, 95%CI:0.15-0.57) and women (OR:0.69, 95%CI:0.49-0.97) were less likely to report interest. **Conclusions:** The results of this study suggest that the potential reach of a VR smoking cessation intervention would be higher in certain subgroups. As VR grows in popularity, future research should focus on strategies to reduce digital exclusion, in smokers who are women, 65 years and over, and less motivated to quit. For example, involving these subgroups in co-design activities and using novel dissemination strategies.

FUNDING: Nonprofit grant funding entity; Other

POS5-120

DEVELOPING CONTENT FOR A VIRTUAL REALITY SCENARIO THAT MOTIVATES QUIT ATTEMPTS IN ADULT SMOKERS: A FOCUS GROUP STUDY

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Significance: Virtual reality (VR) could be used to deliver messages to smokers that prompt quit attempts. However, for a VR smoking cessation intervention to be effective, the target population must find the content acceptable, relevant, and compelling. **Methods:** Using PRIME theory and narrative transportation theory, and grounded in the Person-Based Approach, this study used focus groups combined with art-based methods (participant sketches) to inform the development of VR content that will appropriately address smokers' evaluative beliefs about smoking and quitting. We analysed the data using reflexive thematic analysis. **Results:** We held four in-person focus groups at University College London between July and August 2023 (n=21). Just under half the sample were from an ethnic minority (42.8%) and women (42.9%), and the mean age was 33.6 years (standard deviation = 15.9). More than half the sample had a low motivation to quit (61.0%). We developed six themes concerning: the VR content suggested by participants, the rationale behind it, its technological execution and potential widescale implementation and longevity. Many participants downplayed the health consequences of smoking, prioritising the immediate rewards of smoking over the long-term benefits of cessation. Therefore, participants suggested content that was set in the future, showing the benefits of cessation or the negative consequences of continued smoking. Family members were recommended as supporting VR characters, to increase the content's emotional salience. Participants also suggested graphic content that would trigger anxiety and fear about smoking, suggesting that fear appeals were welcome. Participants wanted a truly novel intervention- not simply a leaflet about smoking statistics presented through VR. Participants suggested healthcare locations (such as doctors' offices) for implementation, as this would make the VR appear more legitimate as a health intervention (rather than casual entertainment) and could complement existing in-person advice. **Conclusion:** Smokers suggested content that showed the future outcomes of quitting or not quitting framed in a manner that would feel emotionally significant and personal. Future research will refine the participant-generated ideas with experts in VR design and smoking cessation.

FUNDING: Academic Institution; Other

POS5-121

THE ASSOCIATIONS BETWEEN AD EXPOSURE AND APPEAL WITH E-CIGARETTE USE SUSCEPTIBILITY AMONG YOUTH IN THE US

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Background: E-cigarettes are the most commonly used tobacco product among US youth. Previous studies have identified a positive association between youth exposure to e-cigarette ads and susceptibility to e-cigarette use; however, many were conducted prior to recent market changes, such as the rise of disposables. This study used recent data to investigate associations between e-cigarette ad exposure, ad appeal, and susceptibility to e-cigarette use among youth. **Methods:** We analyzed US data from the 2022 International Tobacco Control Policy Evaluation Project (ITC) Youth Tobacco and

Vaping Survey, an online survey of youth (ages 16-19) US youth with no prior e-cigarette use (n=2367) were included in analyses. We measured ad exposure as self-reported frequency [1=Never, 5=Very often] and total number of channels of exposure [e.g. websites/social media, range=0-17]. Participants with any exposure also reported perceived ad appeal [1=Very unappealing, 5=Very appealing]. Susceptibility was measured using 4 items: 1) curiosity about using e-cigarettes, 2) potential to use e-cigarettes in the next year, 3) potential to use e-cigarettes if offered by a friend, and 4) potential to use e-cigarettes in 5 years [1=Definitely not, 4=Definitely yes]. Participants with responses other than "Definitely not" on one or more items were defined as susceptible. Regression models investigated ad exposure and perceived ad appeal as predictors of susceptibility to e-cigarette use. **Results:** Most of the sample were female (65.5%), White (50.1%), and students (86.5%), with a mean age of 17.6 years (*SD*=1.0). Frequency of ad exposure was not a significant predictor of youth susceptibility to e-cigarettes (*OR*=1.08, *95% CI*=1.00-1.16), whereas total number of channels (*OR*=1.04, *95% CI*=1.01-1.06) was significant. Higher ratings of ad appeal were associated with susceptibility among youth (*OR*=1.20, *95% CI*=1.11-1.30). **Conclusion:** Number of channels of ad exposure and ad appeal were associated with e-cigarette susceptibility among US youth, whereas ad exposure frequency was not. Perhaps the number of channels of ad exposure, in addition to the content of ads and its perceived appeal, are important in explaining youth susceptibility to e-cigarettes. This analysis used cross-sectional data and thus cannot ascertain the causal direction between ad exposure/appeal and susceptibility. Future analyses will investigate predictors of ad exposure and potential mediating effects in adjusted models.

FUNDING: Federal; Academic Institution

POS5-122

NICOTINE AND CANNABINOID CONTENT IN VAPING PRODUCTS CONFISCATED FROM STUDENTS OF WESTERN NEW YORK SECONDARY SCHOOLS

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Significance: Electronic vaping products (EVPs) have sustained popularity among US middle and high school students. While national surveys have established trends in commonly purchased EVP devices and brands, more information is needed about the substances inhaled from EVPs by youth. This study evaluated nicotine and cannabinoid content in EVPs confiscated from secondary school students in Western New York (WNY). **Methods:** Confiscated EVPs (n=555) were collected from 10 secondary schools in WNY from 2020-2023. Active ingredients were extracted from EVPs and diluted with methanol. Gas chromatography/mass spectrometry (GC/MS) was used to simultaneously detect nicotine and nine cannabinoids (Δ9-THC, Δ8-THC, THCV, total-CBD, CBDV, CBC, CBL, CBN, and total-CBG). **Results:** Most EVPs (n=492, 89%) exclusively contained nicotine, while 10% (n=57) contained one or more cannabinoids only. Six products (1%) had detectable nicotine levels and at least one cannabinoid. Average nicotine concentration was 28.4±18.6 mg/mL and ranged between 0.1-78.3 mg/mL. Concentrations of Δ9-THC, Δ8-THC and total-CBD averaged 338.0±202.1, 199.8±258.5 and 10.9±6.5 mg/g, respectively. Among cannabinoid-containing EVPs, Δ9-THC was the most abundantly identified cannabinoid (n=41, 65%) and constituted on average 75.8±11.4% of all cannabinoids present in a product. Δ8-THC was detected in 21% (n=13) of EVPs and constituted on average 90.6±7.4% of all cannabinoids. Three EVPs contained at least 50% CBN per product. We also found high concentrations of unknown THC derivatives in 3 different EVPs. **Conclusion:** Our data suggests that the predominant EVPs used by secondary school youth in WNY continues to be highly concentrated nicotine devices. However, the study also found other psychoactive ingredients, including Δ9- and Δ8-THC, in EVPs used by students. Importantly, CBD-based EVPs appear less popular despite fewer accessibility restrictions. Several EVPs contained both nicotine and cannabinoids or other unknown chemicals, suggesting that youth may be modifying nicotine-containing EVPs with cannabinoids.

FUNDING: No external funding reported

POS5-123

VAPING ECHO FOR EDUCATION MODEL TO ADDRESS ADOLESCENT E-CIGARETTE USE IN MIDDLE AND HIGH SCHOOLS: A RESTORATIVE JUSTICE APPROACH

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The percentage of Kansas high school students using e-cigarettes daily doubled between 2017-2021. In 2021, we adapted the Extension for Community Healthcare Outcomes (ECHO) model and launched the first "Vaping ECHO for Education" to build school capacity to address this critical public health concern. This pilot trains schools to use cessation best practices and restorative justice models in place of punitive measures that have historically contributed to disproportionate policing of Black and Hispanic youth. Using a quasi-experimental pretest posttest design, we purposefully selected pilot schools considering rural/urban geography, socioeconomic status, racial/ethnic composition and a multidisciplinary school team of up to 5 people (teachers, nurses, social workers, coaches, administrators, student resource officers, etc.) to ensure diversity. The pilot involved: 1) baseline assessment; 2) training across seven ECHO sessions with didactic and case-based learning; 3) action plan development; and 4) post-training evaluation. Across the 2 pilot years, 33 middle and high school teams were selected to participate (5 urban, 7 semi-urban, 9 densely-settled rural, 7 rural, 5 frontier). Across both pilot years, there were 167 participants (year 1 = 113, year 2 = 54) at baseline assessment and 108 (year 1 = 70, year 2 = 38) who completed the post-training evaluation. Using year 1 evaluation results, we refined the program to further grow school capacity and partnerships for equitable models of youth vaping cessation. Year 2 participant data is presented. After training, participants reported enhanced knowledge (87%) and ability to apply learnings (74%), and more frequent student referral to vaping cessation resources (41%) or counseling (38%). Year 2 action plans included implementing new educational initiatives (7 of 10), cessation initiatives (6/10), changing school disciplinary policy (5/10) and building staff capacity (4/10). Four months after implementation, an average of 61% of action plan objectives were achieved. This study provided unique insights from combining the evidence-based training model and action planning process for public health. Evaluation results offer key lessons learned for translational application of the model to youth vaping in diverse communities and contexts. Learning objectives include: 1) describe components of a public health ECHO; 2) summarize program improvements to the pilot and 3) apply the Vaping ECHO model in your community.

FUNDING: State; Nonprofit grant funding entity

POS5-124

COMPARATIVE BRAIN IMAGING STUDY OF VAPING AND FOOD CUES IN YOUNG ADULT E-CIGARETTE USERS WHO HAVE NEVER SMOKED

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Significance. Rising vaping rates among young adult (YA) vaping raises concerns about nicotine addiction. A biomarker of addiction is an augmented neurophysiological response to substance-associated cues (cue reactivity; CR). Given smoking and vaping's linkage to reduced food consumption, substitutability of food and vaping is expected to be reflected in similar neural signatures during CR. **Methods**. 58 YA (18-29 yrs) non-smokers, who vaped >15 of the last 30 days, participated in functional MRI (fMRI) during a visual CR paradigm with vaping and food cues and scrambled control images. Echoplanar data were acquired with a GE 3T scanner with a temporal resolution of 2s and a spatial resolution of 3.5mm^3. Functionally defined region-of-interest (ROIs) analyses compared brain responses to vaping versus food cues. Processing followed an afni_proc.py pipeline including general linear modeling of the 14min echoplanar series using time series of 6 30s blocks of each, vape and food conditions as regressors and observed movement as covariates. ROIs were defined as 5mm radius spheres surrounding center coordinates of 17 clusters of significant (FDR corrected p<.05) response to either vape or food cues based on voxelwise t-test versus 0 (no different from baseline). Hypothesis were tested with paired t-tests comparing mean food cue to vaping CR effects in each ROI. **Results**. Response patterns to food and vaping cues were similar; all ROIs exhibited significant responses to both food and vaping cues. However, responses to food cues were stronger in 5 ROIs following FDR correction: right (t=-3.28, p=0.002) and left (t=-2.52, p<0.001) insula, right (t=7.10, p<0.001) and left (t=7.91, p<0.001) precuneus, and right medial frontal cortex (t= 3.12, p=0.003). **Conclusions.** Food and vaping cues elicit similar brain responses among YA heavy vapers, including regions associated with visual perception, motivation, and executive functions. Food cues elicited greater responses than vaping cues in regions involved in perceptual salience, self-awareness, and decision-making. Future research is needed to clarify why CR to vaping stimuli is lower than unconditioned food stimuli in brain regions that have been linked to successful outcomes in prior cigarette smoking cessation CR studies (i.e., medial frontal cortex, insula). These greater responses to food cues may facilitate conditioning to vape products and confer increased difficulty ceasing their use.

FUNDING: Federal; Academic Institution; Other

POS5-125

EFFECTS OF THREE ALTERNATIVE NICOTINE DELIVERY PRODUCTS ON OWN-CIGARETTE ABSTINENCE IN A RANDOMIZED CONTROLLED SWITCHING TRIAL

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Significance: Switching to alternative nicotine products may assist people who smoke to reduce or quit using their usual cigarettes. This research investigates the extent to which three nicotine delivery products promote complete cigarette substitution during a switch attempt. **Methods:** Adults who smoked daily but were not motivated to quit were randomized to 4 weeks of using: 1) very low nicotine cigarettes (VLNCs), 2) e-cigarettes, or 3) no product. During two separate switch weeks, participants were instructed to abstain from their own cigarettes and switch to using their study product (if assigned one). Each participant was assigned, in double-blind fashion and counterbalanced order, to use active nicotine patches during one switch week and placebo patches during the other. Participants completed nightly smartphone surveys assessing cigarette use. **Results:** Participants (*N* = 197) recorded 4,998 evening reports. Logistic regression with cluster-robust standard errors was used to predict daily reports of own-cigarette abstinence from study design factors. Average marginal effects were used to probe model results. On average, transitioning into the switch week was associated with an increase in the probability of abstinence from .080 to .360, a significant effect ($p < .001$). The switch week effect was significantly larger in the VLNC (.356) and e-cigarette (.317) groups compared to the no product group (.166; $ps < .05$). The probability of abstinence was significantly higher during the second baseline-switch Week sequence (.221) compared to the first (.158, difference $p = .001$). This was due to increased abstinence during the washout week; the magnitude of the switch week transition was smaller in the second sequence (.208) compared to the first (.323; difference $p = .001$). Use of active vs. placebo patch had a near-zero marginal effect ($p = .977$). However, when active patches were used during the first baseline-switch week sequence, the probability of abstinence increased by .071 on average ($p = .007$). When active patches were used during the second sequence, the abstinence probability decreased by .098 on average ($p = .034$, difference $p = .01$). **Conclusions:** VLNCs and e-cigarettes meaningfully increase the probability of resisting smoking one's own cigarettes, with both products producing equivalent effects. Transdermal nicotine promotes cigarette substitution, but only when provided early in the switching process.

FUNDING: Federal

POS5-126

SUCCESSFUL RETENTION OF PEOPLE WHO USE LCCS IN A 21-DAY CLINICAL TRIAL

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Significance Over 9 million US adults smoke cigars some days or every day, and chronic cigar use can cause many cancers, including lung, esophagus, and oral cavity. While the Food and Drug Administration (FDA) has authority to regulate cigar production, marketing, and distribution, implementation of cigar warning labels is on hold because of industry litigation and lack of specific health outcomes for cigar warnings labels. We describe the feasibility and protocol adherence for a 21-day diary study for randomized controlled trials (RCT) that can inform future FDA regulations and cigar warning labels. **Methods** Using a panel provider, we recruited 1029 US adults who currently use little cigars and cigarillos (LCCs) some days or every day. Participants were randomized to one of three study conditions: 1) six newly developed warnings with images, 2) six currently proposed FDA text-only warnings, 3) a control condition with no warnings. Participants received a pre-survey, brief daily surveys (conditions 1 and 2 received warning messages) through an online platform 6 days per week for 21-days, a more in-depth survey on the seventh day each week, and a post-survey at completion. All participants received two reminders each day to complete brief daily surveys. The primary outcome of the RCT was intention to quit using LCC's at posttest. All participants completed measures about LCC use and perceptions. Descriptive statistics describe this RCT for fidelity and feasibility. **Results** Of the 6728 people screened for the study, 1507 were eligible, and 1029 were enrolled and randomly assigned to a condition—339 in condition 1,346 in condition 2, and 344 in condition 3. Participants were 56% male, 63% white, 21.1% Black or African American, and 83% not Hispanic or Latino. The average completion of the daily and weekly surveys was 82.4% and 87.3%, respectively. Approximately 90.5% of participants completed the post-survey. The average attrition across the 21-day period was 9.5%. **Conclusions** This study offers evidence of the feasibility for a 21-day online longitudinal survey among adults who use LCCs. Methods that likely contributed to the high participant retention were daily engagement with participants, multiple reminders, and an appropriate incentive plan. Longitudinal studies can provide FDA with the evidence needed to strengthen LCC warnings among hard-to-reach populations.

FUNDING: Federal; FDACTP

POS5-127

EXPLORING PLEIOTROPY IN MENDELIAN RANDOMISATION ANALYSES: WHAT ARE GENETIC VARIANTS ASSOCIATED WITH "CIGARETTE SMOKING INITIATION" REALLY CAPTURING?

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Background: Methods such as Mendelian randomisation (MR) are frequently used to assess the causal effects of smoking. Genetic variants used as proxies for exposures in these analyses may have horizontal pleiotropic effects (i.e., influence outcomes via pathways other than through the exposure). This would violate a key assumption of MR, potentially undermining the validity of results and leading to erroneous causal inferences. Thus, it is crucial to ascertain whether the variants used for smoking are in fact proxying *only* smoking, or whether there is evidence of horizontal pleiotropy. Here we examine this. **Methods:** We first ran a phenome-wide association study in UK Biobank, using a genetic proxy for smoking initiation to identify phenotypes associated with smoking initiation. From the most strongly associated phenotypes, we selected those we considered could either plausibly or not plausibly be caused by smoking to examine further in subsequent analyses. We then examined associations between genetic proxies for smoking initiation, smoking heaviness and lifetime smoking and these selected phenotypes across two cohorts, UK Biobank and the Avon Longitudinal Study of Parents and Children (ALSPAC), which are subject to different patterns of selection bias. We also conducted negative control analyses among never smokers and children. **Results:** We found evidence that smoking-related genetic variants are associated with phenotypes not plausibly caused by smoking in UK Biobank and (to a lesser extent) ALSPAC, suggesting evidence of likely horizontal pleiotropy. Specifically, we found evidence that genetic risk scores for lifetime smoking index and smoking initiation were associated with most phenotypes plausibly *and* not plausibly caused by smoking, with less evidence of this for smoking heaviness. We also observed associations among never smokers and children. **Conclusion:** Our results demonstrate horizontal pleiotropy in genetic variants for smoking-related phenotypes. This has important implications when using genetic proxies for smoking-related phenotypes (and other complex traits) in genetically-informed causal inference analyses such as MR. In these analyses, negative control outcomes, unexposed groups, and triangulation approaches should be used to avoid erroneous conclusions.

FUNDING: Nonprofit grant funding entity

POS5-128

TRENDS IN HEAVY ALCOHOL AND MARIJUANA USE BY CIGARETTE SMOKING STATUS AMONG US ADULTS: AN ANALYSIS OF THE 2002-2019 NSDUH

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Introduction: Polysubstance use is associated with adverse health outcomes, yet little research has measured changes in polysubstance use. We aimed to 1) estimate trends in heavy alcohol and marijuana use by cigarette smoking and demographic subgroups, and 2) examine patient factors associated with concurrent use among adults who smoke. Methods: We conducted a repeated cross-sectional analysis of 706,891 non-institutionalized US adults ≥18 years from the 2002-2019 National Survey on Drug Use and Health. Participants were stratified into current, former, and never smoking groups. Main outcomes were prevalence of heavy alcohol use, marijuana use, and concurrent use of both substances. Results: From 2002-2019, heavy alcohol use declined from 7.7% to 6.5%, marijuana use rose from 6.0% to 11.9%, and concurrent use of alcohol and marijuana remained stable around 1.7% to 1.9%. Among adults who smoke from 2005-2019, more education was associated with higher odds of heavy alcohol use, while older ages, female gender, non-White race/ethnicity, and government-provided

health insurance were associated with lower odds. The odds of marijuana use were lower for females, older ages, and higher incomes, while use increased with relatively poorer health status, more education, government-provided and no health insurance, and serious mental illness. Compared to White adults who smoke, Black counterparts had higher odds of marijuana use (OR=1.23; 95%CI: 1.16-1.30), while Hispanic (OR=0.67; 95%CI: 0.54-0.67) and other racial/ethnic identities (OR=0.61; 95%CI: 0.54-0.67) had lower odds. Conclusions: Our study suggests marijuana use might not be sensitive to changes in the use of tobacco and alcohol.

FUNDING: No external funding reported

POS5-129

THERAPEUTIC ALLIANCE IN A MOBILE HEALTH TOBACCO CESSATION INTERVENTION: A VALIDATION STUDY IN OF THE WORKING ALLIANCE INVENTORY AMONG MEXICAN SMOKERS

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Significance The Working Alliance Inventory Short version (WAI-SF) has been studied recently as measure to assess therapeutic alliance. Its usefulness in the context of tobacco cessation in low-and-middle income countries has not been explored. This study assessed the WAI-SF validity in a mobile health tobacco cessation intervention conducted among Mexican smokers. **Methods** Quasi-experimental study, without control group, 100 smokers were recruited to participate in a mobile health tobacco cessation intervention (Decidetexto) with two measurements: baseline and 12 weeks. *Decidetexto* follows Social Cognitive Theory and consists of pre-programmed messages, keyword-based messages (e.g. desire, health), and ad-hoc messages answered by a counselor over 12 weeks (complete remote). At the end of the intervention the (WAI-SF) of 12 items was evaluated. The analysis included factor exploratory analysis of WAI-S components: a) agreement on the tasks of therapy, (b) agreement on the goals of therapy and (c) development of an affective bond. Kaiser-Meyer-Olkin estimation, Cronbach's alpha and Pearson's rating coefficients were estimated. Logistic regression models evaluated the association of WAI-SF global scale with program satisfaction and with cessation outcome variables. **Results:** Varimax rotation with 3 factors was performed using data from 80 participants, observing an average of 0.87 Cronbach alpha. Adjusted models indicated that having a greater value of the global (WAI-SF) scale was associated with having greater satisfaction among all components of the program. Whole program: AOR 1.12 (I.C. 95% 1.04, 1.21); b) digital application AOR 1.09 (I.C. 95% 1.01, 1.17); c) messages sent to cell phone AOR 1.11 (I.C. 95% 1.03, 1.20); d) sending keywords through text messages AOR 1.06, (I.C. 95% 1.01, 1.12). **Conclusions** The WAI-SF evaluated the therapeutic alliance in Mexican smokers who participated in a mobile health tobacco cessation intervention, confirming the association with variables such as satisfaction. Information that allows developing more effective cessation strategies for the populations.

FUNDING: Federal; Academic Institution

POS5-130

FLAVORED ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) USE AMONG YOUTH IN THE UNITED STATES: INSIGHTS FROM THE POPULATION ASSESSMENT OF TOBACCO AND HEALTH STUDY (2018-2019)

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Background: Electronic nicotine delivery systems (ENDS) are the most commonly used tobacco product among youth. ENDS are a distinct class of non-tobacco, non-combustible battery-operated devices that requires users to inhale vaporized liquid consisting of nicotine, propylene glycol, vegetable glycerol, and flavorings. While the U.S. Food and Drug Administration has the authority to regulate "characterizing flavors" in ENDS, current policies do not extend to all ENDS and exempt tobacco- and menthol-flavored products, as well as self-contained and disposable ENDS. **Methods**: Using data from a nationally representative sample of youth (12-17 years of age) from the Population Assessment of Tobacco and Health Study (2018–2019), we examined the prevalence of exclusive current (past 30 days) use of ENDS, including e-cigarettes, e-hookahs, e-cigars, and e-pipes; characterized first flavors used (i.e., sweet (fruit, candy, desserts, sweets, chocolate, alcoholic and non-alcoholic drinks), tobacco, mint and menthol); and explored reasons for ENDS use, among current users. Survey weighted data were used to produce prevalence estimates and 95% confidence intervals; chi square compared age and recency of use subgroups on flavors used. **Results**: Among 11,976 youths, 6.76% (n=809) reported exclusive current use of ENDS. E-cigarettes were the most common e-product used among users (93.9%), as compared to e-hookahs (4.4%), e-cigars (1.8%), e-pipes (0.6%), and other electronic products (1.8%). Approximately half (48.9%) reported using only sweet flavors as the first flavors used when initiating ENDS and 32.6% reported using a combination of sweet and tobacco/mint/menthol flavors, as compared to 17% who reported using only tobacco/mint/ menthol flavors. As compared to older youths (15-17 years), younger (12-14 years) youths reported higher prevalence of using flavored ENDS (fruit: 27.7% vs. 53.7%; candy/desserts/sweets: 14.6% vs. 25%; and mint/menthol: 24.8% vs. 40.3%; all $p<0.05$). Flavors and the belief that ENDS are less harmful than cigarettes were the primary reasons reported by youth for using ENDS. **Conclusion**: Our nationally representative findings extend existing evidence, demonstrating that sweet flavors are primary drivers for the initiation of ENDS among youth. Further studies are warranted to extend findings to other vulnerable populations, including young adults, and determine if sweet flavored ENDS lead to subsequent and continued use of additional tobacco and nicotine products.

FUNDING: No external funding reported

POS5-131

MORTALITY AND LIFE EXPECTANCY BY SMOKING STATUS IN ARGENTINA

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Significance: Argentina smoking prevalence declined from 29.5% in 2005 to 22.2% in 2018; however, it remains unacceptably high. Country´s death records do not capture smoking status, precluding analyses of tobacco use attributable mortality and tobacco policy impacts. The objective of this study is to develop mortality and life expectancy tables by smoking status and sex for Argentina. **Methods:** We adapted a validated approach by the US CISNET Lung Group that uses 1) observed overall mortality rates, 2) smoking prevalence and 3) relative risks of smoking to estimate mortality rates by smoking status. First, we obtained death counts from Argentina Vital Statistics by age and sex for the period 1994-2020, and total population counts for 1991, 2001, and 2010 census, as well as projections up to 2040. Using these, we applied age-period-cohort models to estimate sex and age-specific mortality rates for 1994-2021. We then estimated historical Argentina age-specific smoking prevalence (never, current, former smoking) by sex from 1950 to 2018 using national survey data and age, period, and cohort models. Due to lack of local studies, we collected smoking mortality relative risk estimates from the US CPS-II study. Using the resulting mortality rates, smoking prevalence and the relative risks, we then calculated age-specific mortality rates and life expectancies by smoking status, sex, age, year and birth-cohort in Argentina using an actuarial approach (Rosenberg et al). **Results:** Mortality in Argentina decreased from 1994 to 2018. Estimated life expectancy at age 40 increased from 39.7 to 41.2 years in females and from 33.4 to 36.1 years in males. Among females, life expectancy by smoking status in 2018 ranged from 42.6 (never smoking), 40.1 (former smoking) and 36.1 (current smoking), representing 6.4 and 2.5 fewer years of life expectancy for females who currently and formerly smoked versus those who never smoked, respectively. Among males, life expectancy by smoking status in 2018 ranged from 39.2 (never smoking), 35.8 (former smoking) and 31.2 (current smoking), representing 8.0 and 3.3 fewer years of life for males who currently and formerly smoked, respectively. **Conclusions:** The estimated mortality rates will serve as essential components to assess the efficacy of public health interventions to reduce tobacco use in Argentina. This approach can be applied to obtain similar estimates in other low-and-middle-income countries to support local tobacco control policy modeling.

FUNDING: Federal

POS5-132

EVIDENCE UPDATE ON E-CIGARETTE DEPENDENCE: FINDINGS FROM A SERIES OF SYSTEMATIC REVIEWS

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Significance: In 2018, the National Academies of Sciences, Engineering, and Medicine (NASEM) published a landmark report that reviewed and critically assessed the state of the emerging evidence on e-cigarettes and its impact on human health outcomes. The report had two conclusions focused on dependence: first, there is "substantial evidence" that e-cigarette use results in symptoms of dependence; and second, there is "moderate evidence" that the risk and severity of dependence are lower for e-cigarettes (EC) compared to combustible cigarettes (CC). With the NASEM report as the starting point, we conducted a series of systematic reviews to examine the evidence succession on e-cigarette dependence. Methods: We conducted a systematic review of original studies and an umbrella review of systematic reviews. We searched six electronic databases (CINAHL, Embase, MEDLINE, PsycINFO, PubMed, Cochrane Library) to identify relevant literature from September 2017 up to January 2023. The PRISMA checklist was followed, and review protocol was pre-specified. Sub-group analyses were conducted with the studies included in the systematic review. Results: In the systematic review, 92 studies were included: 2 randomized control trials, 2 cross-over trials, 4 non-randomized experimental studies, 9 longitudinal cohort studies, 62 cross sectional studies, 3 mixed method studies, 10 animal studies. In the umbrella review, 7 systematic reviews were included: 5 included human studies only, 2 included human and in vitro studies. Of the 7 reviews, 4 focused on children and adolescents. Overall, findings from both reviews support the NASEM conclusions on EC dependence. There was insufficient evidence of differences in dependence based on age, sex, gender, sexual orientation, race, ethnicity, and socioeconomic status. There is still inconsistent evidence on the relationship between dependence and e-liquid nicotine concentration, flavours, and type of EC products. Emerging evidence suggests that dual users of EC and CC may be at higher risk of experiencing symptoms of dependence compared to exclusive EC users. Conclusions: Evidence on e-cigarette dependence and the factors that mediate it continue to evolve. Some methodological challenges in this area of research are the high variability in the definitions and methods used for assessing dependence, in the populations studied, and in the types of products examined.

FUNDING: Federal

POS5-133

LATER SMOKING INITIATION PREDICTED CESSATION ABSTINENCE IN CHINESE SMOKERS: A PROSPECTIVE STUDY

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Significance Tobacco kills half of its users and leads to premature death in two in three smokers if initiated smoking in youth. Smokers who initiated at a younger age may experience higher nicotine addiction, but whether early initiation is predictive of reduced successful quitting remains unknown. In this prospective study with smoking abstinence measured at 6 months, we investigated the changes of cigarette consumption, nicotine dependence, and smoking abstinence by the age of smoking initiation (ASI). **Methods** We pooled Individual-participant data from 11 annual randomized controlled trials conducted in 2010-2021(except 2011). Participants were biochemically verified daily cigarette smokers aged ≥18 years recruited from community settings in Hong Kong. At baseline, we measured the age of initiating weekly cigarette smoking (from ≤14 to ≥23 years old). Daily cigarette consumption (CPD) and time to first cigarette after waking were collected to compute the Heaviness of Smoking Index (HSI)). After baseline assessment, participants in each trial were randomized and received behavioural cessation interventions (e.g., brief advice, referral, mobile messages) with control conditions using the least behavioural support, e.g., self-help materials. At 6 months, biochemically validated and self-reported 7-day point-prevalence abstinences were assessed. We used binary and multinomial logistic regressions to estimate the odds ratios (OR) of heavy (CPD>30) cigarette consumption, heavy nicotine dependence (HSI score >4), and smoking abstinence in association with ASI, controlling for sociodemographic characteristics, year of inclusion, and type of intervention. Intention to treat analysis was adopted. **Results** The analysis included 11948 daily cigarette smokers (19.7% female), of whom 2239 (18.7%) initiated smoking at ≤14 years, while 1915 (16.0%) initiated at ≥23 years old. Being female and having higher education were associated with later smoking initiation (all Ps<0.001). As the ASI increased from ≤14 to ≥23, the proportion of heavy cigarette consumption and high nicotine dependence significantly reduced from 6.2% to 3.0% and from 11.3% to 5.3%, yielding a lower adjusted OR of 0.87 (95%CI 0.83-0.90) and 0.87 (95%CI 0.85-0.90), respectively. Compared with ASI ≤14 years, ASI ≥23 years showed significantly higher validated (8.2% vs. 4.7%) and self-reported abstinence (18.1% vs. 10.8) at 6-month follow-up. The corresponding aORs were 1.05 (95%CI 1.02-1.07) for validated abstinence and 1.05 (95%CI 1.02-1.07) for self-reported abstinence per year increase of ASI. **Conclusion** The increase of ASI from 14 to 23 almost doubled long-term smoking abstinence in adult daily cigarette smokers receiving behavioural cessation interventions. Strengthening tobacco control policies and public education are needed to prevent early smoking initiation and promote smoking abstinence.

FUNDING: Nonprofit grant funding entity

POS5-134

PREFERENCES FOR TAILORING BEHAVIORAL COUNSELING FOR SMOKING CESSATION: QUALITATIVE ANALYSIS

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Background: Behavioral counseling can be an important and effective component of smoking cessation interventions. However, little research has been conducted investigating participants' preferences for these smoking cessation counseling programs. With the objective of improving future implementation, we sought to understand participant experience with a smoking cessation counseling program and its components. **Methods:** We conducted a qualitative analysis of in-depth interviews with participants enrolled in a tobacco treatment intervention pilot randomized clinical trial that compared the impact of behavioral counselling paired with e-cigarettes or nicotine replacement therapy on smoking outcomes. Interview topics were chosen to gain a comprehensive understanding of the participants' experiences with each of the study smoking program components, with the goal of informing future intervention implementation. Participants were asked about their experiences with various counseling elements and overall. Transcripts were coded according to the principles of the Framework for applied policy research. The codes were then examined, summarized, and grouped together into themes using the principles of grounded theory.**Findings:** Themes developed revealed an overall positive sentiment towards the use of behavioral counseling, however many participants expressed a preference for tailoring the structure to their personal needs. The majority of participants felt they received helpful advice and support from counselors, however a few participants expressed a negative sentiment about the usefulness of the counseling. There was variation in preference for counseling session duration with some participants expressing a desire for longer and more frequent counseling sessions whereas others wished to have short and less frequent sessions. Participants also expressed a preference for face-to-face sessions (either in person or video call) as opposed to telephone. **Conclusions:** Smoking cessation counseling is generally positively received and seen as a useful component in a smoking treatment intervention by current smokers who would like to quit smoking. However, there exist contrasting views on the duration and modality of how the counselling sessions could best be structured and implemented. Future research is needed to determine specific opportunities for counseling improvement and to examine the feasibility and utility of accommodating individual communication preferences.

FUNDING: Academic Institution

POS5-135

UNDERSTANDING THE INFLUENCE OF CIGAR PRODUCT MARKETING ON TWITTER/X ON CIGAR SALES IN THE UNITED STATES

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Introduction: Social media marketing of cigar products is proliferating and likely influences cigar product use. However, no studies have systematically assessed the amount and effects of exposure to this content over time using non-survey-based exogenous measures of exposure and consumption. In the present study, we use U.S.-geolocated tweet volume as an exogenous indicator of potential exposure to cigar, little cigar, and cigarillo (CLCC)-related content and employ this measure to examine the influence of digital marketing environment on CLCC sales. **Methods**: We obtained cigar sales data for 104 weeks from the week ending on 01/11/2020 to 01/01/2022 from NielsenIQ. We gathered CLCC commercial tweets in U.S. from the week ending on 12/14/2019 to 01/01/2022 using Twitter's Historical PowerTrack. We analyzed the association between CLCC-related commercial tweets and subsequent CLCC unit sales, using a four-week time lag between posting activity and sales measurement. Autoregressive error model was used to account for autocorrelated errors, controlling for average unit price and tobacco policy-related events. **Results:** Findings revealed that an increase of 1000 tweets posted in a given week was associated with a 0.7% increase in unit sales four weeks later (RR=1.007, p=0.05). Every 10-cent increase in the average unit price

was associated with an 8% decline in unit sales (RR=0.919, p<.001). **Conclusion:** CLCC sales are likely influenced by the amount of CLCC-related commercial messaging on X/Twitter. Evidence of CLCC social media marketing presence and its potential effects on tobacco use warrants ongoing surveillance and new prevention and regulation efforts countering the impact of digital promotion of CLCCs.

FUNDING: Federal

POS5-136

STORE-LEVEL CORRELATES OF CANNABIS AVAILABILITY IN LICENSED TOBACCO RETAILERS IN THREE U.S. CITIES

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Significance: The availability of cannabis products in tobacco retail outlets may have a unique impact on consumers' use behaviors, including the co-use of nicotine and cannabis. Co-use has been linked to decreased cigarette quit attempts and increased intensity of nicotine use, which may vary by tobacco product type. This study characterized the prevalence of cannabis product availability and its store-level correlates (i.e., tobacco products carried, store type) in a sample of licensed tobacco retailers in three U.S. cities to highlight potential cannabis exposures at locations likely frequented by people who use tobacco and nicotine. **Methods:** Data on the availability of cannabis (i.e., THC, CBD) and tobacco products (i.e., cigarettes, cigars, smokeless tobacco, vaping products, oral nicotine products) were collected using in-person audits of a stratified, random sample of 20% of licensed tobacco retailers in New York City, Philadelphia, and San Francisco (n = 1,091) in 2023. Logistic regression measured associations between store type (e.g., convenience store, gas station, smoke shop), tobacco product availability, and cannabis product availability. **Results:** Cannabis products were available in 12.3% (95% CI: 11.0% - 14.9%) of retailers with no significant differences between cities (p=0.097). Retailers selling vaping products (aOR=4.5, p<.001), cigars (aOR=2.6, p=0.010), and oral nicotine products (aOR=2.4, p<.001) had higher odds of selling cannabis compared to retailers that did not carry each product. Smoke shops were substantially more likely to sell cannabis compared to other types of retailers (aOR=29.7, p=0.002), controlling for tobacco products available. **Conclusion:** Although the tobacco retailers surveyed were not licensed to sell cannabis, THC and CBD-containing products were prevalent across all three U.S. cities. Cannabis availability was more common in retailers carrying products that are often co-used with cannabis (e.g., cigars used to make blunts) or that have a similar route of administration (e.g., vapes). Future research can examine the impact of retailer characteristics, including the co-availability of tobacco and cannabis, on nicotine use behavior and the co-use of tobacco and cannabis.

FUNDING: Federal

POS5-137

CIGARETTE SMOKING RELAPSE AMONG RECENT FORMER SMOKERS WHO SWITCHED TO E-CIGARETTES OR OTHER TOBACCO PRODUCTS

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Significance: Electronic cigarettes (or e-cigarettes) have been studied as a cessation tool in clinical trials and longitudinal studies. Less well-studied is how e-cigarette use among former smokers affects smoking relapse, a concept that is not well-defined. A recent paper looked at this issue but only used any cigarette smoking in the past 12 months as their smoking relapse measure. We examine how use of different definitions of relapse might affect findings. **Methods:** The Population Assessment of Tobacco and Health (PATH) Study is a nationally representative longitudinal cohort study of the civilian, noninstitutionalized population. Our study included 1,686 adult participants who participated in three consecutive waves and were: 1) established current smokers at the baseline wave; 2) no current cigarette smoking at follow-up 1; and 3) participated in follow-up 2. We combined two cohorts of these recent former smokers: cohort 1 from PATH waves 1-3 (2014-2016), and cohort 2 from waves 2-4 (2015-2017). We adopted three measures to assess smoking relapse at follow-up 2, ranging from the strictest definition (any smoking at all in the past 12 months, our Measure 1) to two measures that are successively more lenient in permitting occasional lapses: any past 30-day smoking (Measure II); and having smoked on >=3 days in the past 30 days (Measure III). We conducted multivariable logistic regressions to examine whether recent former smokers who had switched to e-cigarettes or any tobacco product at follow-up 1 were more or less likely to relapse compared with those who remained tobacco free. Both current and daily use of e-cigarettes and of any tobacco product at follow-up 1 were evaluated. **Results:** More than half (54.8%, 95% CI, 52.2% to 57.5%) of recent former smokers relapsed based on Measure I, 40.3% (95% CI, 37.3% to 43.3%) relapsed using Measure II, and 30.1% (95% CI, 27.2% to 33.1%) using Measure III. Compared with those who remained tobacco free, recent former smokers who switched to current e-cigarette use were marginally more likely to relapse using Measure I (adjusted risk difference [aRD] = 7.51 percentage points, 95% CI, -0.46 to 15.48) but showed no difference in the likelihood of smoking relapse using Measure II (aRD = -0.28 percentage point, 95% CI, -7.60 to 7.05) or Measure III (aRD = -1.70 percentage points, 95% CI, -8.26 to 4.87). Those who switched to current use of any tobacco product reported marginally higher likelihood of relapse using Measure I, but no change in relapse likelihood using Measures II or III. We found similar results for daily e-cigarette or tobacco product use. **Conclusion:** Compared with tobacco-free recent former smokers, those who switched to current e-cigarette use may be more likely to slip but showed no difference in the likelihood of cigarette smoking relapse, especially when not defining relapse as any lapse during the 12 months following quitting.

FUNDING: No external funding reported

POS5-138

EVALUATING THE IMPACT OF HEALTH WARNING LABELS ON E-CIGARETTE RISK PERCEPTION AMONG CANADIAN SMOKERS

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Significance In July 2020, the Canadian government mandated that Nicotine Vapor Products (NVPs) packages must include the statement 'WARNING: nicotine is highly addictive'. Previous studies have predominantly focused on NVP users' notice of warning labels and their perception of nicotine's risks, with little known about the e-cigarette users who read or closely observe Health Warning Labels (HWLs) and the risk perception elicited by e-cigarette HWLs. ***Method*** From May to November 2023, a quarterly survey was conducted among a Canadian cohort of adults who smoked combustible cigarettes. Participants who heard about NVPs were queried on their risk perceptions induced by health warnings on vaping products ('A little' to 'extremely' vs. 'Not at all '=reference; observations = 5090; individuals = 2992). Those noticing HWLs were asked about their reading frequency on vaping devices and e-liquid packaging in the past 30 days ('Rarely' to 'Very often' vs. 'Never '=reference; observations = 254; individuals = 196). Participants not noticing HWLs were recoded as never having read them. Generalized estimated equations logistic regression models, both unadjusted and adjusted, analyzed these outcomes against sociodemographic factors and vaping frequency. ***Results*** In the cohort aware of e-cigarettes, a large majority (90.66%) never read or closely observed HWLs. Less than half (42.66%) reported e-cigarette risk perception. Among past 30-day e-cigarette users who read HWLs on NVP packages, the most frequent response was sometimes reading (46.06%), with a majority (76.38%) experiencing increased risk perception due to HWLs. After adjustment, older individuals were less inclined to read HWLs (AOR = 0.62, $p < 0.01$), while non-white individuals (AOR = 1.62, $p < 0.01$) and more frequent vapers (AOR = 2.19, $p < 0.01$) were more inclined. Both non-daily (OR = 1.63, $p < 0.01$; AOR = 1.24, $p = 0.05$) and daily vapers (OR = 1.39, $p < 0.01$) perceived greater risks due to HWLs. However, for daily users, this perception wasn't significantly different compared to exclusive smokers after adjusting for demographics (AOR = 1.02, $p = 0.85$). Past 30-day vapers who read HWLs reported decreased risk perception with increased vaping frequency (OR = 0.45, $p = 0.02$; AOR = 0.44, $p = 0.02$). ***Conclusion*** Young non-white individuals are more likely to read HWLs compared to other demographics. Generally, e-cigarette usage was associated with a higher risk perception due to HWLs. However, among current NVP users who read HWLs, increased e-cigarette use relates to lower risk perception. The study indicates that tailored HWLs on e-cigarette packages, focusing on younger, non-white users, can more effectively shape risk perceptions, especially considering usage frequency. Greater exposure of current users to e-cigarette packaging labels highlights the need for more data to understand HWLs' impact on risk perception.

FUNDING: Academic Institution

POS5-139

PERCEPTIONS OF NICOTINE POUCH MARKETING FEATURES AMONG OHIO APPALACHIAN ADULTS WHO SMOKE CIGARETTES

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Significance: Sales of oral nicotine pouches (ONPs) continue to increase in the United States. Although ONPs are frequently cross-promoted with cigarettes and feature claims such as "tobacco-free" in their marketing, little research has evaluated the perceptions of ONP marketing features among cigarette smokers. We evaluated responses to various ONP marketing features among a sample of adults who smoke cigarettes in Ohio Appalachia. Methods: Adult cigarette smokers (N = 41) participated in one of two clinical trials assessing the abuse liability of ONPs. In these trials, participants sampled 2-3 different ONP brands for 30 minutes and, 6 months later, completed an online follow up survey to assess perceptions of ONP marketing features and to capture changes in ONP use. In open-ended items, participants described how they perceived specific marketing features, including "synthetic nicotine" and "tobacco-free nicotine" language. Two independent raters qualitatively coded all responses (Krippendorff's alphas >0.95). Results: Nearly half (46.3%) of participants (63.4% men, 85.4% white non-Hispanic, mean age=39.6 years; 85.4% response rate) reported using ONPs between their trial participation and the 6-month follow up. Participants perceived "synthetic nicotine" to indicate ONPs contained nicotine made from a laboratory and not natural tobacco leaves (61%), had no meaning or were unsure (22%), and perceived them be more appealing (48%) or less appealing (20%) than ONPs without synthetic nicotine. "Tobacco-free nicotine" was perceived to indicate ONPs contained no tobacco (29%), had no meaning or participants were unsure (24.4%), and contained nicotine made from a laboratory and not natural tobacco leaves (20%). Conclusion: Although "synthetic" and "tobacco-free" descriptors both convey the absence of tobacco leaf from ONPs, these marketing features are interpreted distinctly by cigarette smokers who have tried ONPs. While most participants correctly indicated that "synthetic" nicotine is not derived from tobacco leaves, nearly one quarter of participants were unsure what "synthetic" or "tobacco-free" nicotine meant. Moreover, one fifth of participants thought "tobacco-free" nicotine meant that nicotine was not derived from tobacco leaves. Future research describing how these perceptions of ONP marketing translate to behavioral outcomes is needed.

FUNDING: Academic Institution

POS5-140

HOPE AND RESILIENCE: THE POTENTIAL ROLE OF EFFICACY LABELS IN SUPPORTING WARNING LABELS ON COMMERCIAL TOBACCO PACKAGING

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Significance: Pictorial warning labels (PWLs) featured on tobacco packaging typically present serious health risks that aim to arouse fear among people who smoke. While this approach may motivate quit attempts and behaviour changes, such as foregoing and delaying smoking, threat appeals may also elicit maladaptive responses. The extended parallel processing model (EPPM) suggests PWLs are more likely to stimulate quitting when people who smoke feel confident to make a quit attempt (self-efficacy) and anticipate quitting will lead to benefits (response-efficacy). We explored whether an on-pack efficacy label could complement PWLs by promoting self- and response-efficacy. **Method:** We conducted in-depth, in-person interviews with 27 people from Aotearoa New Zealand (16 women; eight Māori (the Indigenous peoples of NZ); age range 19-68) who currently smoked roll-your-own tobacco. Using materials we provided, participants created warning and efficacy labels for a tobacco pouch. Efficacy labels comprised an explanatory message outlining either methods or benefits of quitting, delivered in a testimonial or informational tone, and an image and headline participants thought would prompt thoughts of quitting. We explored eight concepts: creating a better life (financial and other costs of smoking); managing social situations; knowing smoking triggers; taking back control or freedom; health and recovery; setting a quit date; dealing with cravings; and positive role models. **Results:** Most participants viewed efficacy labels as encouraging and empowering, and an important complement to PWLs. All concepts received support; those encouraging participants to imagine a smokefree life, offering practical tips, and outlining short-term benefits received strong support. We identified two overarching themes: first, participants viewed cessation as a hopeful journey where they quickly experienced benefits of quitting, developed resilience to overcome setbacks, and no longer faced judgement and stigma. Second, they saw efficacy messages as returning and fostering agency; participants disliked didactic messages and wanted to feel enabled to make their own decisions. **Conclusion:** Current PWLS leave people who smoke feeling alienated, criticised, and disempowered. Efficacy labels could encourage quitting by empowering people who smoke to believe they can become smokefree. Because the people who smoke are not a homogenous group, efficacy labels should feature diverse positive themes.

FUNDING: Federal

POS5-141

SIMULATION MODELING OF EXCLUSIVE AND DUAL E-CIGARETTE AND CIGARETTE USE BASED ON EMPIRICAL ESTIMATES OF USE AND TRANSITION RATES

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Significance: While e-cigarette use has increased in US adults, particularly in younger adults, cigarette smoking has reached historical lows. Simulation models have helped assess the potential impact that e-cigarettes might have on smoking use and related mortality in the US and elsewhere. However, given the recent emergence of e-cigarettes, most models to date have not incorporated national-level empirical e-cigarette and cigarette use and transitions data, limiting their applicability. **Methods:** We developed a novel two-product tobacco Markov simulation model that uses nationally representative estimates of time-varying e-cigarette and cigarette use and transitions. Age-specific smoking initiation and cessation by sex and cohort were estimated using NHIS data from 1965-2022 by the CISNET consortium. Age-specific e-cigarette initiation and cessation and transitions between products by sex were estimated using longitudinal data from the PATH study waves 2-5, distinguishing estimates from 2015-2017 versus 2017-2019 since e-cigarette transition patterns changed. Baseline analyses assumed an e-cigarette use mortality risk of 15% that of cigarettes. The model simulates US cohorts and projects smoking and e-cigarette exclusive and dual use prevalence and related mortality from 1965-2065. **Results:** The model reproduces well historical patterns of US adult smoking and e-cigarette prevalence by age and sex, capturing not only overall use trends, but also exclusive and dual use prevalence. Under current empirical estimates of cigarette and e-cigarette use initiation, cessation and transitions, the model projects that smoking would continue to decrease in adults, reaching a prevalence of ~7% in 2065. Overall e-cigarette use prevalence would decrease to ~2%. Among adults ages 18-24, prevalence would remain around 11% for cigarettes and reach ~12% for e-cigarettes. Among adults 65+, prevalence would reach 3% for cigarettes and ~1.5% for e-cigarettes. Cigarette and e-cigarette use would translate into 12,435,000 premature deaths from 2022-2065. **Conclusions:** While e-cigarette use has increased in younger adults, under current patterns of cigarette and e-cigarette use transitions, prevalence is projected to peak at current levels. Overall smoking will continue to decrease as younger cohorts with lower prevalence reach older ages. Regardless, millions of premature deaths due to tobacco will occur in the US in the next 40 years, driven primarily by cigarette smoking.

FUNDING: Federal; FDACTP

POS5-142

CORRELATES OF TOBACCO USE AMONG TEENS AND YOUNG ADULTS IN VIETNAM

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Background: With the changes in the tobacco product landscape, tobacco use among teens and young adults is changing. We analysed data from the 2020 Provincial Global Tobacco Survey (PGATS) to assess current tobacco use and correlates of tobacco use in this population in Vietnam. **Methodology:** Data were collected from 34 provinces and cities throughout Vietnam. The sample included 80,166 participants, of which 9478 were young adults aged 15-24. Weighted values were calculated for every participant in the dataset and included in all analyses. **Results:** Among those 15-24, 24.4% (95% CI: 22.3%-26.6%) of males and 0.8% of females were current smokers, (95% CI: 0.3%-2.1%). Shisha use among men was 0.3% (95% CI: 0.1%-0.9%) and 0% among their females. About 0.6% (95% CI: 0.2%-1.4%) males and 0.4% (95% CI: 0.1%-1.2%) females were using smokeless tobacco products. About 11% (95% CI: 8.4%-14.2%) of males were currently using electronic cigarettes versus 2.7% (95% CI: 1.3%-5.4%) of females. Regarding daily smoking, 17.3% (95% CI: 15.5%-19.3%) males reported that they were daily smoking while 0.7% (95% CI: 0.3%-2.1%) females did. The prevalence of daily smokeless tobacco user was 0.2% (95% CI: 0.1%-0.3%) among males and 0% (95% CI: 0.0%-0.1%) among females. Mean age of first started smoking tobacco daily was the same for males and females (16.7 years). About 2.2% (95% CI: 0.8%-5.6%) males reported an intention to quit. No females reported intention to quit. Correlates of current smoking status including gender (males), exposure to second hand smoke at home and offices, and exposure to digital tobacco advertising from internet/Facebook/zalo/social media platforms. There was no significant difference in current smoking prevalence between urban and rural areas. **Conclusions:** Male smoking prevalence was significant higher than among females which is similar to trends in the adult population in Vietnam. Males were also more likely to use electronic cigarettes. The association between digital advertising and tobacco use indicates a need to focus policies on addressing tobacco product

advertisement on social media platforms. In addition, rates of e-cigarette use indicate a need to expand current regulations to include these products. Finally, findings suggest a need for further promotion and enforcement of smoke free air laws. Second-hand smoking interventions should be promoted, targeting home and office settings. The Tobacco Control Law should focus on controlling tobacco product advertisement on social media platforms

FUNDING: Federal

POS5-143

ONLINE MARKETING OF E-CIGARETTES AND HEATED TOBACCO PRODUCTS ON BRAND WEBSITES IN CHINA

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Background: Effective October 2022, China banned flavored e-cigarettes (EC) other than tobacco flavors, sales of EC to minors under 18, and online EC sales unless overseen by China's State Tobacco Monopoly Administration. Additionally, sales of heated tobacco products (HTPs) are prohibited. This study explores product features and marketing strategies on EC and HTP brand websites in China post-implementation of these new EC sales restrictions. **Methods:** We identified EC and HTP brands available in China through searches on Baidu, the most used search engine in the country. The respective brand websites specifically targeting people in China, determined by web domain or country selection option, were accessed using an internet connection from within China or a Chinese IP address via VPN was used. We coded and analyzed a total of 687 web pages (within two clicks from the homepages) across 29 EC and 3 HTP websites captured between June and November 2023. **Results:** One website (HTP) offered online sales. 81% (23 EC, 3 HTP) of websites portrayed their brands as responsible or capable of self-regulation; 53% (16 EC, 1 HTP) restricted site access based on viewers' age; 44% (13 EC, 1 HTP) mentioned that products are for adults only; and 31% (8 EC, 1 HTP) included health warnings. Flavors other than tobacco were present on 22% (6 EC, 1 HTP) of websites, with fruit flavor being most prevalent (6 EC, 1 HTP), followed by mint/menthol (5 EC, 1 HTP), coffee/tea (3 EC, 1 HTP) and other non-alcoholic beverages (4 EC). Concept flavor descriptors denoting a taste, smell or sensation were observed on 5 EC and 1 HTP websites. Other common marketing messages included claims of lower health risks than cigarettes (47%, 12 EC, 3 HTP), assurance of device safety (41%, 11 EC, 2 HTP), and cessation assistance (28%, 6 EC, 3 HTP). Prevalent advertising appeals included claims of innovation (78%, 23 EC, 2 HTP), luxury/high status (50%, 14 EC, 2 HTP), and lexical or visual flavor depictions beyond flavor names (44%, 11 EC, 3 HTP). **Conclusion:** Findings reveal a significant focus on portraying companies as responsible and capable of self-regulation, coupled with limited emphasis on age restrictions and health warnings on their websites. The presence of flavored products and online sales, despite regulatory restrictions, suggest the need for enhanced monitoring and enforcement to mitigate potential health risks associated with EC and HTP online marketing in China.

FUNDING: Nonprofit grant funding entity

POS5-144

FREQUENCY AND RISK FACTORS OF CONCURRENT USE OF E-CIGARETTE AND COMBUSTIBLE TOBACCO PRODUCTS AMONG YOUTH AND YOUNG ADULTS

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Significance: More young people are reporting concurrent use of two or more tobacco products, with cigarettes and e-cigarettes being the most common combination. Dual use of tobacco products among young people is concerning, as users are exposing themselves to nicotine during a critical developmental period. This study provides recent estimates for current use of e-cigarettes only, combustibles (e.g., cigarettes and little cigar, cigarillos, and cigars (LCCs)) only, and dual use of e-cigarettes and combustibles among youth and young adults and determines risk factors for each. **Methods:** Data was obtained from the Truth Longitudinal Cohort, a nationally representative survey of 15-24-year-olds, who reported having ever used cigarettes, LCCs, or e-cigarettes (October 2022-February 2023). Self-reported past 30-day use of products was used to categorize dual use status. Descriptive analyses were conducted and comparisons of sociodemographic risk factors by dual use status were determined using chi-square tests. Multinomial regression models to predict dual use status controlling for age, sex assigned at birth, race/ethnicity, sexual orientation, parental education, perceived financial situation, and household cigarette/e-cigarette use. **Results:** Of the sample (N=2334), 57.2% were non-current users of either product, 24.6% were current users of e-cigarettes only, 6.6% were current users of combustibles only, and 11.7% were dual users. Significant differences were found across age, sex, sexual orientation, perceived financial status, and household cigarette/e-cigarette use by dual use. Multinomial regression models showed that females had 41% lower odds (p=0.01) of dual use than men, those with greater financial means had 36% lower odds (p=0.04) of dual use than those whose finances do not meet or just meet basic expense, and those who live with someone who uses cigarettes or e-cigarettes has 5.3 times greater odds (p<0.001) of dual use than those who do not live with others who use the products. **Conclusion:** Dual use of e-cigarette and combustible tobacco products among young people is common. Risk factors for dual use include identifying as male, lower perceived financial situation, and living with a user of tobacco products. Identifying as male and as living with a user of tobacco products are also risk factors for e-cigarette use only and combustible use only, highlighting that these are important risk factors for preventions and cessation efforts to consider. Results on current use and risk factors can inform interventions and policies focused on reducing use of nicotine and tobacco among youth and young adults by identifying those at highest risk of dual use.

FUNDING: Other

POS5-145

ENGAGEMENT WITH DISCORD AMONG TREATMENT-SEEKING YOUNG USERS OF E-CIGARETTES IS ASSOCIATED WITH HIGHER CONFIDENCE TO QUIT/STAY QUIT

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Significance Most young people who use e-cigarettes want to quit; digital cessation programs can increase likelihood of success. This pilot assessed the benefit of adding an online forum via Discord to an existing vaping cessation program (This is Quitting). To estimate uptake and engagement with the forum among treatment-seeking youth and young adults. **Methods** Between February and April 2023, 527 This is Quitting (TIQ) participants (aged 13-24 years) were invited to join Discord with other TIQ users (TIQ Discord). Participants completed baseline and 1-month follow-up surveys. Descriptive statistics were used to describe uptake and engagement with the community. Fisher's exact tests compare within-participant changes in confidence in ability to quit and vaping behaviors across those who joined and engaged with Discord versus those who did not. **Results** Of 527 participants, 333 (63.2%) completed follow-up. Among responders, 54.9% (n=183) reported joining the TIQ Discord. Among responders who joined, 61.7% (n=113) contributed ≥1 message. Among those who contributed, the mean number of contributed messages was 4.0 (median=1, range=1-51) and reactions was 0.31 (median=0, range=0-14). Engaging with the TIQ Discord was positively associated with increased confidence in quitting at follow-up (p=0.02), but vaping abstinence at follow-up did not differ(p=0.87). **Conclusion** Over half of participants joined the TIQ Discord, an uptake rate higher than typically observed for online cessation communities. Engagement was positively associated with proximal outcomes, but self-selection prevents causal attribution. Pilot results suggest acceptability of Discord for providing digital cessation support to youth and young adults as adjunct to a text message cessation intervention.

FUNDING: Other

POS5-146

FACILITATORS AND BARRIERS TO THE IMPLEMENTATION OF INCENTIVES WITHIN SMOKING CESSATION PROGRAMS FOR (EXPECTANT) PARENTS: A MIXED-METHODS SYSTEMATIC REVIEW

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SIGNIFICANCE: Prevalence of smoking in pregnancy persists at 8% in the European Region, despite widespread awareness of the risks of exposure to parental smoking. Financial incentives, provided upon validated smoking cessation, hold substantial potential to cost-effectively promote cessation. To facilitate wider adoption, our aim was to systematically review evidence addressing how incentives can be implemented as part of smoking cessation programs for (expectant) parents. **METHODS:** We conducted a systematic search to identify scientific and grey literature reporting on the implementation of incentives as part of smoking cessation programs for (expectant) parents and describing facilitators and/or barriers to implementation. Characteristics of the studies, interventions, incentives and implementation were collected, and findings were synthesized both in tabular and narrative formats. **RESULTS:** The search yielded 691 unique scientific and 273 unique grey literature records. Twenty-five articles from scientific literature and 12 articles from grey literature were included, supplemented by 7 scientific literature articles from reference and citation searches. These were published between 2000 and 2023 and reported on implementation endeavors in the USA (n = 22), UK (n = 12), Australia (n = 4), New Zealand (n = 2), the Netherlands (n = 2), France (n = 1) and the WHO European Region (n = 1). Pregnant women were the primary target population of all interventions described, few additionally targeted women's significant other and the majority extended their scope into the postpartum period. The majority of interventions required on-site biochemical validation of abstinence. The implementation barriers identified related, most importantly, to the limited accuracy of biochemical validation and its extensive demand of time and resources for both providers and participants. Public and policy-maker skepticism further challenged implementation, while facilitators included accessible, acceptable and standardized procedures integrated into existing workflows. **CONCLUSION:** This systematic review provides insight into the challenges and opportunities of implementing financial incentives in smoking cessation programs for (expectant) parents. The findings can inform future implementation and research efforts in various contexts, and ultimately contribute to increased smoking cessation rates among (expectant) parents.

FUNDING: State; Academic Institution

POS5-147

SWITCHING TO E-CIGARETTES AS HARM REDUCTION AMONG INDIVIDUALS WITH CHRONIC DISEASE WHO CURRENTLY SMOKE: RESULTS OF A PILOT RANDOMIZED CONTROLLED TRIAL

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Background: Smoking exacerbates conditions like chronic obstructive pulmonary disease (COPD), asthma, coronary artery disease (CAD), and peripheral arterial disease (PAD), yet nearly half of people with chronic conditions smoke. Switching to e-cigarettes (EC) may be an effective harm reduction strategy for those struggling to quit. We aimed to evaluate the extent to which people with chronic conditions who currently smoke switch to ECs, and the impact of switching on respiratory health. **Methods:** In a pilot randomized controlled trial (RCT), patients with COPD, asthma, CAD, and PAD who currently smoke were randomized to either receive EC or combination nicotine replacement therapy (NRT) along with behavioral counselling. We collected COPD, asthma, CAD/PAD symptoms; acceptability and feasibility of the intervention; and cigarettes per day (CPD) and EC use at baseline, 3-, and 6-month follow up. Descriptive statistics were calculated to characterize the overall study sample. Chi-square and Wilcoxon rank sum tests were conducted to explore changes in CPD and condition-specific assessments (CAT, SAQ-7, ACT) across treatment arms at 3- and 6-months. A linear regression analysis was conducted to compare feasibility and acceptability outcomes. **Results:** Among participants, 58.7% had COPD, 33.1% had asthma, and 24.0% had CAD/PAD, with 15.7% of participants having a combination of two or more conditions. Participants on average smoked 18 cigarettes per day (SD: 10) at baseline. At 3-months, participants in the EC arm (n=63) on average reduced their CPD by 54.3% vs. 59.5% in the NRT arm (n=58), p=0.56. At 6-months, 17.5% had switched completely to ECs vs 22.6% who quit smoking in the NRT arm. There was a significant point reduction in CAT scores from baseline to 3 months (5.5-point reduction in the EC arm vs. 1.5-point reduction in the NRT arm, p=0.03); asthma and CAD/PAD scores were not significantly different from baseline to 3- and 6-month follow up. On average, participants had a mean EC satisfaction (SD) score on the effectiveness domain of 68.6 (26.6), the convenience domain of 87.4 (22.6), and the overall satisfaction domain of 74.5 (27.0) and 87% completed at least 1 counseling session. **Conclusions:** ECs represent an acceptable and potentially effective means of harm reduction amongst smokers with chronic conditions. More research is needed to inform tobacco regulatory science about the health effects and behavior of switching to ECs.

FUNDING: Academic Institution

POS5-148

ASSOCIATIONS OF NICOTINE REPLACEMENT THERAPY SAMPLING WITH SMOKING ABSTINENCE IN WOMEN SMOKERS CALLING A WOMEN QUITLINE IN HONG KONG

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Significance Randomised trials have shown the effectiveness of nicotine replacement therapy sampling (NRT-S) in promoting smoking abstinence, but the evidence in real-world settings is scarce. We examined the associations of 1-week NRT-S use with smoking abstinence and reduction among users of a women quitline in Hong Kong. **Methods** We analysed data of 545 current (past 30-day) women smokers (mean age: 37.7 years; 99.5% daily smokers) who called the women quitline and received nurse-delivered smoking cessation counselling from November 2006 to August 2023. Smoking status and behaviours, and other characteristics were assessed at baseline, 1 week, 1 month, 3 and 6 months. At baseline, we offered a 1-week supply of NRT-S for free to participants who were willing to use. All participants followed at 1 month were assessed for the use of NRT-S and were categorised into 3 groups: nonusers (n=255, 46.8%), users of <1 week (n=112, 20.5%), and 1-week users (n=178, 32.7%). We used robust Poisson regression models to calculate the adjusted risk ratios (aRR) of self-reported 7-day point prevalence of abstinence (PPA), continuous abstinence, and smoking reduction (cigarette consumption reduction from baseline ≥50% among continued smokers) at 3 and 6 months by the use of 1-week NRT-S, adjusting for baseline age, education, marriage, nicotine dependence, intention to quit, quit attempts, and perceptions of quitting. Participants with missing data on abstinence at 3 and 6 months were assumed to be non-abstinent. **Results** Compared with nonusers, 1-week NRT-S users had higher self-reported 7-day PPA at 3 months (aRR 1.66, 95% CI 1.24-2.20) and 6 months (aRR 1.71, 95% CI 1.29-2.25), and higher 60-day continuous abstinence at 3 months (aRR 1.55, 95% CI 1.03-2.33) and 150-day continuous abstinence at 6 months (aRR 2.06, 95% CI 1.33-3.20), adjusting for baseline covariates. Among continued smokers, the smoking reduction rates were higher in 1-week NRT-S users at 3 months (aRR 1.66, 95% CI 1.27-2.17) and 6 months (aRR 1.47, 95% CI 1.07-2.02) than nonusers. NRT-S users of <1 week had no significant differences in smoking abstinence and reduction rates at 3 months and 6 months compared with nonusers, in crude and adjusted models (all p>0.05). **Conclusion** In a real-world setting, use of 1-week NRT-S was associated with higher self-reported smoking abstinence and reduction rates among women smokers enrolled in a women quitline.

FUNDING: Other

POS5-149

WHERE DO E-CIGARETTE USERS OBTAIN E-CIGARETTES FROM? FINDINGS FROM A RAPID RESPONSE SURVEY IN 17 STATES IN THE UNITED STATES IN 2023

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Background: Examining sources of e-cigarette access plays an important role in determining the overall effectiveness of e-cigarette regulations. However, these sources are difficult to measure and regulate. **Objective:** The objective of this research is to examine the sources of e-cigarettes among adult ever users of e-cigarettes in the United States (U.S.). **Methods:** Based on data from a rapid response survey of a probability sample of 6,150 adults (18+) in 17 U.S. states (Alabama, Arkansas, California, Indiana, Illinois, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Ohio, Oklahoma, South Carolina, Tennessee, Virginia, and West Virginia) collected in April-May 2023 by the American Cancer Society, we used multinomial logit regression to examine associations between sources of e-cigarettes and users' socio-demographics. **Results:** In the sample, 2,011 adults (32.7%) reported ever using e-cigarettes—884 (14.4%) currently used and 1,127 (18.3%) formerly used. Most respondents who ever used e-cigarettes reported purchasing e-cigarettes last time at a store (67.8%), followed by receiving/purchasing from informal sources (e.g., friends/family members/free samples) (23.6%), and purchasing online (8.6%). The likelihood of obtaining e-cigarettes from informal sources over store purchases was lower among adults 21 years and older (relative risk ratio, RRR:0.29, P<.001 for 21-29-year-olds; RRR:0.33, P<.001 for 30-44-year-olds; RRR:0.26, P<.001 for 45+ adults) compared to under-21 adults. The likelihood of purchasing online over store purchase was greater among Asians (RRR:3.39, P=.02) compared to Hispanics, individuals with high income (RRR: 1.85, P=.03) compared to those with low income, and residents in California (RRR:4.84, P=.02), Michigan (RRR:5.30, P=.01), Oklahoma (RRR:3.93, P=.04), and West Virginia (RRR:3.84, P=.04) compared to residents in Alabama. Prefilled (RRR:3.05, P<.001), refillable (RRR:3.57, P<.001), or mod e-cigarettes (RRR:2.57, P<.001) were more likely to be purchased online compared to disposable e-cigarettes. **Conclusion:** Informal sources and online retailers remain largely unregulated, yet account for 32.2% of e-cigarette sales. The greater propensity of obtaining e-cigarettes from informal sources among under-21 adults and of online purchase among Asians, high-income populations, and residents in several states indicates e-cigarette access loopholes with the potential to increase disparities and underscores the importance of enhancing e-cigarette market surveillance of informal and online sources.

FUNDING: Other

POS5-150

PREFERENCES FOR INDIVIDUALIZATION IN SMOKING CESSATION TREATMENT PROGRAMS INCORPORATING E-CIGARETTES AS NRT

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Background: Nicotine replacement therapy (NRT) and behavioral counseling are effective means to help smokers quit, but quit rates are still low. E-cigarettes may be a useful addition, but it is uncertain how best to integrate e-cigarettes into smoking treatment programs. With the objective of enhancing future smoking treatment program implementation, we sought to explore patient perceptions of a program combining the use of counseling with e-cigarettes compared to NRT plus counseling. Methods: We performed a qualitative analysis of in-depth interviews with participants (n=27) enrolled in a tobacco treatment intervention pilot randomized controlled trial (RCT) that compared the impact of behavioral counseling paired with e-cigarettes or NRT on smoking outcomes. Participants were asked about potential improvements to the smoking treatment program and were prompted to share their experiences with study program components including the products (i.e. e-cigarettes and NRT), text-message smoking diary, and counseling. Transcripts were coded according to the principles of the Framework analysis for applied research. Codes were then summarized and grouped together into themes using the principles of grounded theory. Results: An overarching theme emerged emphasizing the interviewees' preference for greater choice and individualization in the program. Regardless of product assigned, participants expressed desire for choice and the flexibility to use a combination of products. Participants suggested varying intensities and modalities for counseling sessions. Similarly, when discussing the texting diary, participants expressed a strong desire to have the diary tailored to their schedule and preferences citing a variety of contrasting opinions regarding timing and intensity of the texts. Furthermore, while some participants found the diaries useful to keep track of cigarettes smoked, others found them to be triggering leading to a perceived increase in cigarettes smoked per day. Conclusion: Participants called for increased personalization of the program. Changes in duration and frequency of study components to allow for increased flexibility and customization could potentially facilitate an increased adherence to a smoking treatment program, however, the logistics of tailoring a program to individual preferences is likely to be challenging. More research is required to explore the potential feasibility and efficacy of increased customization in smoking treatment programs.

FUNDING: Academic Institution

POS5-151

SCHEDULES OF SUBSTANCE USE: COPING IN THE FACE OF DISCRIMINATION

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Introduction: Perceived experiences of discrimination evoke responses shaped by gender, cultural dynamics, and the economic landscape. When discrimination is understood as a stressful event, the responses to these experiences are often framed as "coping", which carries cultural nuance. Personal stories from our focus group participants uncover diversity in coping strategies, allowing us to explore individual responses within personal and cultural contexts. We examine the interplay between spontaneous and routine responses to acute discrimination - how individuals integrate substance use into their everyday lives. **Methods:** We conducted 7 virtual focus groups with adults who endorsed use of cigarettes, nicotine vapes, marijuana, and/or alcohol. The pilot focus group included Latina/o, Asian, and Black men and women.The subsequent 6 focus groups were stratified by ethnic and gender identity. Participants were asked about their experiences of discrimination, poly substance use, mental health, stress and responses to stressors. Utilizing a team-based inductive and deductive analytical method, data were examined through open-coding and collaborative deliberation. **Results:** Respondents delineated the practicalities of using substances, situated within the structures of their lives.Participants described coping with the stress of discrimination through strategies traditionally viewed as"maladaptive"(e.g. substance use)or "adaptive"coping (e.g. exercising)– occurring spontaneously and/or as part of routines. **Conclusion:** While substance use was sometimes viewed as a coping response to acute discrimination, the coping response was situated within larger schedules that dictated the timing of substance use- implying variation in coping strategy to parallel type of discrimination faced, prolonged versus momentary.Discussion with our focus groups revealed overlap between both "maladaptive"and "adaptive"coping responses as a mix of spontaneous and routine experiences.

FUNDING: Federal

POS5-152

A QUALITATIVE STUDY OF TOBACCO INITIATION, USE, REPORTING AND CESSATION AMONG WOMEN IN CHINA

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Objective This study aims to investigate Chinese females' motivation to smoke, characteristics of smoking behavior, reasons for quitting, and attitudes and perceptions of female smoking behavior. **Methods** Semi-structured focus groups were used to explore both women and men's perception of women's tobacco use, and women's tobacco use behaviors, beliefs, attitudes, perceptions, and motivations for tobacco use and quitting in Beijing, Changsha and Shenzhen. In total, 288 participants were interviewed, which included 120 female smokers, 61 female nonsmokers, 66 female former smokers and 41 men. Nvivo software was used for data analysis. **Results** Although some female non-smokers expressed negative sentiments towards female smoking, most participants believe more women are smoking nowadays, and social acceptance of female smoking is higher than decades ago. Young women participants were more open to next generation's smoking compared to their mothers. Female smokers started smoking at different times in life and for different reasons. For example, smoking initiation at school typically were influenced by acquaintances and friends, and the perception of smoking as a token token of fashion, courage, and independence, The alluring fascinating packages of "lady's cigarettes" is another influencing factor at this stage in life. Smoking initiation after entering the work force was found to be associated with pressure relief or relationship building. And smoking after retirement were more related to the

sense of emptiness. Female smokers tend to conceal their smoking behavior to their parents, strangers, and nonsmokers. Most female smokers have little interest in quitting. However, nearly all female smokers agreed that they would seriously consider quitting smoking when they prepare for, or have become pregnant. **Conclusion** Female smoking might be more acceptable in big cities nowadays in China, and the social and cultural constraints that previously prevented many women from smoking are weakening. Public awareness about tobacco hazards and cessation services needs to be improved. Pregnancy might be a gold opportunity for female smoke to quit. Specific interventions should be tailored for each group to prevent them from smoking initiation. In addition, concealing smoking might bring a challenge for self-report tobacco survey for female.

FUNDING: Academic Institution; Nonprofit grant funding entity

POS5-153

CHARATERISTICS OF E-CIGARETTE USE BEHAVIORS AMONG YOUTH IN CHINA: FINDINGS FROM THE NATIONAL YOUTH TOBACCO SURVEY, 2021

Lin Xiao, MD, PhD, Xinbo Di, Shiwei Liu, Xinying Zeng. Chinese Center for Disease Control and Prevention, Beijing, China.

Background Youth e-cigarette use has increased rapidly globally but is understudied in China. This study examined e-cigarette use behaviors among Chinese middle and high school students. **Methods** We conducted cross-sectional analyses of a nationally representative sample of 269,250 middle and high school students participating in the 2021 China National Youth Tobacco Survey. Prevalence estimates were weighted to account for complex sampling design. **Findings** In 2021, 86.6% of secondary school students reported having heard of e-cigarettes. An estimated 16.1% and 3.6% of youth students reported ever and current e-cigarette use. Among ever users, 63.6% of them tried to use e-cigarettes because of curiosity, 82.4% of them tried to use e-cigarette at the age ≤ 15 years, and 62.4% of them got the first e-cigarette from classmates or friends. Among current users, 22.2% of them bought e-cigarette online during the past 30 days, and 70.8% of them had not been refused purchase of e-cigarettes because they were aged <18 years when they bought e-cigarettes. RELX and YOOZ were the most commonly reported usual brands among current users, with the proportion of 37.2% and 33.4%, respectively. An estimated 63.8% of secondary school current e-cigarette users reported use fruit-flavored e-cigarettes. 27.0% of secondary school students had been exposed to e-cigarette advertisement and the most common way is e-cigarette experience store or retail store (14.2%). An estimated 41.0% of secondary school students had seen relevant information about the hazards of e-cigarettes in the past 30 days, and the most common way is through internet (24.4%). **Interpretation** E-cigarette use rates were relatively low among Chinese adolescents but have been increasing. Policies to reduce youth e-cigarette use such as education programs emphasizing the harmful and addictive natures of e-cigarettes, restricting flavors in e-cigarette ingredients, banning e-cigarette marketing might help reduce the uptake. **Funding:** 2021 Chinese Central Government Fund.

FUNDING: State; Academic Institution

POS5-154

USE OF CESSATION TREATMENTS AMONG PATIENTS OF SMOKING CESSATION CLINICS: FINDINGS FROM 2019-2023, CHINA

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Significance: Smoking cessation medication and behavioral counseling increase the likelihood of successful quitting, particularly when used in combination. As in China over 308 million adults were current smokers, the Chinese government started to support establishment of smoking cessation clinics (SCCs) in each province to offer counseling and medication for smokers since 2014. This study aimed to identify status about adoption and implementation of cessation treatment in SCCs, which may facilitate refinement cessation strategies in China. **Methods**: The data collected when patients visited the clinics for the first time and received follow-up at 1 month and 3 months after the initial visit. Cessation treatments provided by trained practitioners in SCCs consists of counseling, counseling with the first-line cessation medication (including varenicline, bupropion, and nicotine replacement therapy), or with traditional Chinese medicine (TCM, including acupuncture, ear acupuncture, and Chinese herbal). Counseling were delivered based on the 5As (Ask, Advise, Assess, Assist, and Arrange follow-up) and 5Rs (Relevance, Risks, Rewards, Roadblocks, and Repetition) theory model, with recommended duration ≥10 minutes for each session. According to the Fagerström test for cigarette dependence (FTCD) scores, the degree of cigarette dependence was measured: high dependence (≥7), moderate dependence(4~6), and low dependence (≤3).We used pooled data from July 2019 to November 2023; only patients of 18 years old and above were included (N=102,997). **Results**: Of the 102,997 patients (Mage= 51.2±15.0 years old, 96.5% male). Mean FTCD sore was 4.4±2.5. The total rate of the first-line cessation medication use was 12.8%. The rate was the highest in the high cigarette dependence group, followed by moderate and low dependence group (19.3%, 13.0% and 8.0% respectively, p-value<0.001). The first-line cessation medication use rates were varenicline (5.8%), bupropion (5.1%), nicotine patch (1.5%), and gum (0.4%) respectively. Not covered by national medical insurance and relatively high price of the first-line cessation medication affects the patient's acceptance and the equipment in SCCs. Thus, SCCs were prone to offering the first-line cessation medication to patients with high cigarette dependence, considering it is more necessary for them. Although there is insufficient evidence on the role of TCM in cessation, some SCCs still use it for treatment for its accessibility. The rate of TCM use was 2.0%. **Conclusion:** Counseling plays a major role in cessation treatment in SCCs, and the rate of the first-line cessation medication use is low in China. Insurance coverage of the first-line cessation medication is necessary to increases the availability and utilization for every smoker willing to quit. Future research is needed to verify the effectiveness of TCM.

FUNDING: No external funding reported

POS5-155

SURVEY ON THE IMPLEMENTATION OF TOBACCO CONTROL RELATED CONTENT IN THE 'MINOR PROTECTION LAW' IN SOME CITIES

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Significance: Enacted in June 2021, new "People's Republic of China Law on the Protection of Minors" (hereinafter referred to as the "Minor Protection Law") has updated its tobacco control measures. Key changes include: 1. Broadening tobacco's definition to encompass e-cigarettes. 2. Banning tobacco sales to minors, especially near schools, with mandatory signs declaring 'No tobacco sales to minors.' Verification of age through ID is required when in doubt. 3. Smoking is outlawed in minors' frequented public areas. A 2021 survey revealed that 56.4% of middle schoolers observe smoking in homes and public spaces. This study examines the enforcement of the first two provisions of the law. This significance of this study lies in evaluating how the new "Minor Protection Law" is applied in controlling tobacco sales to minors and near schools. **Methodology:** From September to December 2021, the ThinkTank Research Center for Health Development surveyed various Chinese cities across different tiers. In each city, an urban and a suburban district were chosen, and five primary and secondary schools per district were randomly selected to study cigarette sales points near schools and the display of 'No tobacco sales to minors' signs." The survey assessed tobacco and e-cigarette sales to minors in 8 cities and for e-cigarettes in 7 cities. using supervised minors to make experiential purchases. **Results:** In the survey of 160 schools, 60% had nearby cigarette sales points within 200 meters, 30% within 100 meters, and 4.4% within 50 meters. On average, per 100 schools, there were 7, 50, and 271 sales points at these distances, respectively. Over half (55.5%) didn't display the required 'No tobacco sales to minors' sign. A significant majority (96.5% of cigarette and 71.2% of e-cigarette outlets) sold to minors. Most failed to check IDs, violating the law against selling tobacco to minors. **Conclusion:** The implementation of the 'Minor Protection Law's' tobacco control measures is inadequate. Enhancements in national legislation are needed, particularly specifying the 'around schools' area (e.g., within 200 meters of school gates). More robust publicity, law enforcement, and the immediate removal of tobacco sales points near schools are essential. Increased efforts in both public awareness and legal enforcement are crucial to effectively safeguard minors' health under this law.

FUNDING: Nonprofit grant funding entity

POS5-156

UNDERSTANDING PUBLIC PERCEPTION AND USAGE OF HOOKAH/ WATERPIPE ON TWITTER/X IN THE US BY APPLYING LARGE LANGUAGE MODELS

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Significance: Hookah/waterpipe tobacco smoking has gained popularity in recent years, which is in part due to the aggressive online advertisement of hookah/waterpipe. This study aims to understand how the public perceived hookah/waterpipe tobacco smoking, especially the prevalence of hookah smoking in the US by analyzing Twitter/X data. **Methods**: From March 2021 to March 2023, we identified tweets related to hookah/waterpipe using keywords such as 'hookah', 'waterpipe', and 'shisha'. From them, we have identified 299,544 unique non-commercial tweets from the US. We manually labeled 2,300 randomly selected tweets for the attitude toward hookah/waterpipe and if it is a hookah user. With the data augmentation (synonym replacement and back translation), 14,365 labeled tweets have been generated and used to fine-tune the cutting-edge large language model (Llama2) pre-trained on 7 billion documents. The trained Llama2 model was used to label other non-commercial tweets for the attitude and if it is a hookah user. **Results**: For our dataset, the built Llama2 model reached a 0.816 F1 score for the attitude and a 0.86 F1 score for hookah users, which indicates a good model performance. Among non-commercial tweets, the proportion of tweets with a positive attitude (57.0%, 170,597/299,544) than those with a negative attitude (16.7%, 50,196/299,544). Among hookah Twitter users, 82.0% held a positive attitude toward hookah/waterpipe while only 7.5% held a negative attitude. In contrast, among non-hookah Twitter users, 29.6% of them have a positive attitude vs. 27.0% have a negative attitude. In general, Twitter users from the Eastern states were more likely to hold a positive attitude toward hookah/waterpipe than those from the Western states in the US. The proportion of hookah Twitter users in the Eastern states (such as New York and Georgia) was relatively higher than those in the West (such as Utah and California). While hookah Twitter users are more likely to post positive tweets at night, non-hookah Twitter users are relatively more likely to post positive tweets in the daytime. **Conclusion**: We successfully characterized the attitude of tweets toward hookah/waterpipe and whether they are hookah users, as well as their geographic distribution in the US. Our results provide a comprehensive understanding of the public perception of hookah/waterpipe and their usage on Twitter in the US, which could help with future potential targeted intervention campaigns.

FUNDING: Federal; FDACTP

POS5-157

MISPERCEPTION OF ELECTRONIC CIGARETTE HARMS ON SOCIAL MEDIA

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Significance: While the long-term health effects of e-cigarettes remain unknown, e-cigarette use (vaping) is significantly associated with many health symptoms and diseases (especially respiratory and cardiovascular symptoms). However, misperceptions about the relative harms of e-cigarettes are prevalent, which might partially contribute to the recent vaping epidemic, especially in youth and young adults. This study aims to understand the prevalence of misperceptions about the harm of e-cigarettes on social media. **Methods**: We have collected e-cigarette/vaping-related Twitter/X posts from March 2021 to March 2023 using relevant keywords. Further filtering allows us to identify 55,992 unique tweets mentioning the harm of e-cigarettes. Two human coders manually labeled 3,000 randomly selected tweets, which included four categories (not harmful, equal to or more harmful than combustible cigarettes, less harmful than combustible cigarettes, and others). These manually labeled tweets were used to train a state-of-the-art language representation model - RoBERTa (Robustly Optimized Bidirectional Encoder Representations from Transformers Approach). The trained RoBERTa model was used to label the rest tweets. **Results**: We successfully built the RoBERTa model for our dataset, which reached over 0.7 for the F1 score. Among 55,992 tweets, we identified 6,091 tweets (10.9%) of "Not harmful", 3,382 tweets (6.0%) of "Equal to or more harmful than cigarettes", 15,901 tweets (28.4%) of "Less harmful than cigarettes", and 30,618 tweets (54.7%) of "Others". While the number of tweets in "Not harmful" showed a slight decrease longitudinally, the number of tweets in either "Equal to or more harmful than cigarettes" or "Less harmful than cigarettes" increased slightly over time during our study period. In the "Not harmful" category, out of 1,604 unique accounts, six Twitter accounts have posted 24.3% (1,479/6,091) of tweets. In the "Less harmful than cigarettes" category, out of 5,060 unique accounts, three Twitter accounts have posted 15.1% (2,396/15,901) of tweets. **Conclusion**: Misperceptions of e-cigarettes on social media are prevalent. While more Twitter users considered e-cigarettes "Less harmful than cigarettes" than those considered "Equal to or more harmful than cigarettes", a significant number of users considered e-cigarettes not harmful, which should draw more attention from public health professionals and educators.

FUNDING: Federal; FDACTP

POS5-158

UNDERSTANDING THE PROMOTION OF HOOKAH/WATERPIPE PRODUCTS AND RELATED ACTIVITIES ON TWITTER/X IN THE US

Zidian Xie[1], Puhua Ye[2], Mengwei Wu[2], Yiwei Han[2], Yuka Shimazaki[2], Dongmei Li[1]. [1]University of Rochester Medical Center, Rochester, NY, USA, [2]University of Rochester, Rochester, NY, USA.

Significance: In recent years, Hookah bars and cafes have grown in popularity, particularly in urban areas and around college campuses. In states or localities with smoke-free laws, hookah bars often receive an exemption. It was estimated that 820,000 middle and high school students reported ever using hookah in 2023. This study aims to understand how hookah/waterpipe products and hookah tobacco smoking activities were promoted on Twitter/X. **Methods**: From March 2021 to March 2023, we collected tweets related to hookah/waterpipe using keywords such as 'hookah', 'waterpipe', 'shisha', and 'hubble-bubble'. From them, we have identified 23,803 unique commercial/promotional tweets from the US that promoted hookah/waterpipe products. The deep-learning language model BERTopic (Bidirectional Encoder Representations from Transformers) was used to characterize main topics of commercial tweets related to hookah/waterpipe. **Results**: We observed a slowly decreasing trend in promoting hookah/waterpipe products and related smoking activities on Twitter/X in the US from 2021 to 2023. Most commercial tweets related to hookah/waterpipe were posted from late afternoon to early morning, especially during weekdays. Out of 10,430 unique Twitter accounts posting commercial tweets related to hookah/waterpipe, ten of them have posted 13.75% (3,273/23,803) of tweets. Among them, some Twitter accounts have millions of followers on Twitter/X. The main topics for commercial tweets included "Nightlife entertainment and dining", "The sale or advertisement of hookah products", "Parties on weekend with free admission for ladies", "Ads from Hookah lounges and clubs (mainly Atlanta and Miami)", and "Promoting tobacco products smoking". **Conclusion**: Twitter/X has been extensively used for promoting hookah/waterpipe products and related social activities. While it remains to be further determined how much these promotion messages on social media influence hookah/waterpipe use, regulating these commercial/promotional messages on social media, and especially restricting their reach to youths, should be one of the priorities to protect public health.

FUNDING: Federal; FDACTP

POS5-159

AWARENESS OF E-CIGARETTE CESSATION AND PREVENTION MEDIA CAMPAIGNS LEAD TO GREATEST INTENTIONS TO QUIT AMONG CURRENT VAPERS

Linda Q. Yu, PhD, Elizabeth K. Do, PhD, Tyler Minter, MA, Kristiann Koris, Bushraa Khatib, MA, Megan A. Jacobs, MPH, Amanda L. Graham, PhD, Elizabeth C. Hair, PhD. Truth Initiative, Washington, DC, USA.

Background: Increasing intentions to quit among youth and young adults who vape e-cigarettes can lead to quit efforts and ultimately drive down vaping rates among this vulnerable population. This study compares the impact of media campaigns with cessation-focused messaging vs. prevention-focused messaging on intentions to quit among current vapers. **Methods:** Logistic regression models assessing the relationship between weekly campaign awareness and intention to quit vaping within the next 6 months were conducted in a sample of current vapers in a cross-sectional, weekly survey of youth and young adults from March 2022 - August 2023. Campaign awareness was modelled with four levels (no ad awareness, cessation and prevention, cessation only, prevention only). A separate model measured exposure frequency of cessation and prevention advertisement on intentions to quit vaping. **Results:** Current vapers who had awareness of both cessation and prevention campaigns had the greatest odds of intentions to quit vaping in the next 6 months (odds ratio, OR = 1.55, $p < 0.001$), relative to no awareness. Current vapers who were only aware of cessation campaigns (OR = 1.40, $p = 0.003$) or who were only aware of prevention-only campaigns (OR = 1.23, $p = 0.048$) also had greater odds of intention to quit vaping compared to no awareness, albeit reduced relative to those who were aware of both campaigns. Among the participants who reported being aware of both cessation and prevention campaigns, frequency of exposure increased odds of intentions to quit vaping in the next 6 months, with participants who were in the quartile reporting the highest level of exposure frequency (OR = 1.70, $p < 0.001$) being significantly more likely to intend to quit relative to the reference group of the bottom quartile of exposure frequency. **Conclusion:** Awareness of both cessation and prevention messaging together significantly predicted intentions to quit

in current vapers compared to either alone, with greater frequency of awareness corresponding to a greater likelihood of intending to quit. Findings suggest that both types of messaging in conjunction should be employed to convince current vapers to quit vaping.

FUNDING: No external funding reported

POS5-160

CHARACTERIZING REASONS FOR E-CIGARETTE USE AMONG FILIPINO PEOPLE WHO SMOKE CIGARETTES

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Significance: Nearly one-third of adults in the Philippines smoke. E-cigarettes may influence cigarette and nicotine consumption among people who smoke. Evidence suggests e-cigarette use among Filipino youth and adults is on the rise, but little research has investigated use among people who smoke. This study examined rates of e-cigarette use and reasons for use among Filipinos who smoke. **Methods:** Data on Filipino adults (≥18) who smoke (n=886) were collected in 2023 from an existing online panel. Respondents were asked to select one primary reason for e-cigarette use from a pre-populated list of 15 reasons. We created a five-category variable that included the top four reasons to use, respectively, plus an "all other reasons" category. We used chi-square tests to assess differences in reasons for use by demographics. **Results:** Overall, 69.7% (n=618) of the sample used e-cigarettes in the last month. Rates of use were highest among males (57.4%) and people under 35 (73.5%), and relatively equal across low- (35.7%), middle- (35.5%), and high-income (28.8%) individuals. Among those who used e-cigarettes, the most endorsed primary reasons for e-cigarette use were: "To cut down smoking cigarettes" (26.2%), "To help quit smoking" (25.1%), "To use when I am not allowed to smoke cigarettes" (11.5%), and "Vaping is less harmful than smoking to others around me" (11.5%). Overall, there were no significant differences in reasons for use by age (p=0.70) or income (p=0.17), but there were significant differences by gender (p=0.02). While a similar proportion of men and women selected their primary reason for using an e-cigarette was to use when smoking is "not allowed" (47.9% vs. 52.1%) or because vaping is "less harmful" to others (47.9% vs. 52.1%), a greater proportion of men vs. women reported their lead reason for e-cigarette use was "quit" (67.1% vs. 32.9%) or "cut down" (59.3% vs. 40.7%) smoking cigarettes. **Conclusion:** Over one-half of our sample of Filipinos who dual use cigarettes and e-cigarettes reported their primary reason for e-cigarette use was to help quit or reduce smoking cigarettes. These preliminary findings suggest e-cigarettes are widely perceived as a smoking cessation aid, particularly among men. Future research is needed to confirm findings, examine perceptions of e-cigarettes as a cessation tool, and support regulations that reduce e-cigarette uptake among nicotine naïve populations while bolstering cessation efforts for all demographics.

FUNDING: Nonprofit grant funding entity

POS5-161

WITHIN- AND BETWEEN-PERSON ASSOCIATION BETWEEN INSOMNIA SYMPTOMS AND SMOKING

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Significance The causal direction of the relationship between insomnia symptoms and smoking is unknown. We used ecological momentary assessment (EMA) to explore associations between insomnia symptoms and smoking. **Methods** This intensive longitudinal study included daily smokers who participated in a two-arm, RCT (allocation ratio 1:1) to examine the effectiveness of EMA-based interventions for smoking cessation. Each participant completed five fixed-interval signal-contingent EMAs each day for 1-week. Whether smoking and the number of cigarettes smoked within the past three hours were self-reported in each EMA. Participants' insomnia symptoms were self-reported using three items from the Insomnia Severity Index, including difficulties in falling asleep, difficulties in staying asleep, and problems waking up too early on a 0-4 scale (0=none, 4=very) in the first EMA daily, and the sum of these three items created an overall insomnia symptoms score (0-12), with higher scores indicating greater severity. We used multilevel regression to examine if insomnia symptoms predicted subsequent smoking. **Results** 449 daily smokers (male 66.6%; mean age 36.8 years, SD 10.7 years) completed 12,091 EMAs (completion rate 76.9%). They reported 9895(81.8%) EMA episodes of smoking. Among 2262 EMAs measuring insomnia symptoms, 45.1%, 44.8%, and 46.9% reported difficulty falling asleep, difficulty staying asleep, and problem waking up too early, respectively. Within-person, a higher overall insomnia symptoms score last night predicted a higher probability of smoking (OR=1.24, 95%CI=1.09-1.41) and more cigarettes smoked (b=0.49, 95CI=0.34-0.65) the following day. Between-person, no association between insomnia symptoms score last night and smoking the following day was found. **Conclusions** The positive temporary association between insomnia symptoms and smoking at the within-person level suggests a potential immediate effect of insomnia on smoking. These results suggested the importance of employing just-on-time interventions addressing insomnia for smoking cessation.

FUNDING: Other

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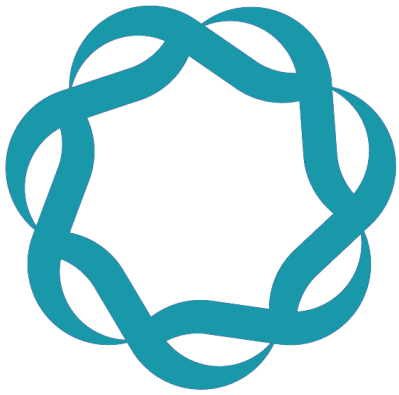

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