STATE EPIDEMIOLOGICAL PROFILE 2024

SUBSTANCE USE TRENDS IN HAWAIʻI

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STATE EPIDEMIOLOGICAL OUTCOMES WORKGROUP

State Epidemiological Profile 2024: Substance Use Trends in Hawai‘i
State Epidemiological Outcomes Workgroup (SEOW)

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The findings and opinions presented in this epidemiological profile are those of the authors and do not necessarily represent the views of the sponsoring or partnering agencies.

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Executive Summary

The objective of this epidemiologic profile is to address the goals of the Strategic Prevention Framework - Partnerships for Success (SPF-PFS) program for the state of Hawai‘i, in partnership with the Alcohol and Drug Abuse Division (ADAD) at the Hawai’i State Department of Health (DOH), based on funding from the Substance Abuse and Mental Health Services Administration (SAMHSA), which aims to use data to identify substance use patterns, determine substance use trends in defined geographic areas, and support the development and implementation of comprehensive and evidence-based prevention efforts. The profile includes Hawai‘i data available from 2018 through 2023, with a focus on 2020 to 2023, with indicators and data sources provided in the full report.

Data Sources

This report primarily reports data from the Hawai‘i Behavioral Risk Factor Surveillance System (BRFSS) and the Hawai‘i Youth Risk Behavior Survey (YRBS). The BRFSS is an annual national survey that collects data on demographics and health-related topics through interviews with adults. The YRBS is a biennial survey administered to public school students that assesses demographic characteristics and health-risk behaviors. Both BRFSS and YRBS use stratified random sampling methods, and data are weighted by demographic characteristics.

Data Summary

Key findings are highlighted below.

Alcohol

- Current alcohol use and binge drinking were significantly more prevalent among high school (HS) students than middle school (MS) students. Current alcohol use was significantly higher among MS students who reported ever being depressed or ever having mental health issues; similarly, binge drinking was significantly more prevalent among HS students who reported depression in the last year relative to those who did not.
- By race and ethnicity, Native Hawaiian (NH) MS and HS students had the most prevalent current alcohol use, while Black MS students and NH HS students had the highest prevalence of binge drinking. Transgender MS students had significantly more prevalent current alcohol use and binge drinking than cisgender MS students. HS students who identified with a sexual and gender minority (SGM) group had significantly higher current alcohol use.
- From 2020-2023, in the state of Hawai‘i, more than half of all adults reported drinking in the last 30 days and a quarter of adults reported binge drinking. Binge drinking was highest among those aged 24-35 years, while daily drinking was highest among those aged 65 years and older. Male respondents reported significantly higher current drinking, binge drinking, and daily drinking than female respondents. For all adults, higher income was associated with more prevalent current alcohol use.
- Current alcohol use was highest among White adults, while binge drinking was highest among Other Pacific Islander (OPI) and NH adults. Among emerging adults (18-29 years of age), those who identified with a SGM group reported significantly more prevalent binge drinking.

- Emerging adults with a history of depression had more prevalent current alcohol use than those without. Binge drinking and heavy drinking were significantly more prevalent among adults who reported 16 or more poor mental health days in the past month and those without health insurance.

Nicotine products

- E-cigarette use was more prevalent than cigarette use among MS and HS students.
- 17.7% of adults reported current nicotine use. Male respondents were significantly more likely to currently use any nicotine product, and more than one nicotine product, than female respondents. Among emerging adults, cigarette use has trended downwards since 2018, while e-cigarette use has trended upwards. E-cigarette use was most common among the 18-24 year age group, while cigarette use was most common among the 35-44 year age group. 5.9% of emerging adults reported currently using 2 or more nicotine products.
- Any current nicotine use was highest among NH and OPI adults. Adults who reported higher poverty had higher prevalence of current nicotine use, e-cigarette use, cigarette use, and poly-nicotine product use. Both e-cigarette use and cigarette use were most prevalent among OPI MS and HS students.
- SGM emerging adults had significantly more prevalent any nicotine use and e-cigarette use than non-SGM emerging adults. Additionally, HS students who identified with a SGM group had significantly higher current e-cigarette use compared to non-SGM peers. Transgender MS and HS students had significantly more prevalent cigarette use than cisgender students.
- Among emerging adults (18-29 years of age), any current nicotine, cigarette, and poly-nicotine product use were higher among those with a history of depression, while current cigarette use was higher among those without health insurance.
- For all adults, higher numbers of poor mental health days reflected higher prevalence of any current nicotine use, e-cigarette use, and cigarette use. In the same group, lower education was associated with higher prevalence of any current nicotine use.

Cannabis

- Current cannabis use was significantly more prevalent among HS students who reported depression in the last year; likewise, early cannabis initiation was significantly more prevalent among MS students who reported ever being depressed.
- Cannabis use was most prevalent among OPI MS students (mirroring trends for MS cigarette and e-cigarette use by race and ethnicity). NH MS students had the highest prevalence of early cannabis initiation. Among HS students, current cannabis use was highest among Black students.
- Current cannabis use and early cannabis initiation were significantly higher among MS students who were transgender relative to those who were cisgender. HS students who identified with a SGM group had significantly more prevalent current cannabis use than those who did not (mirroring trends of HS e-cigarette and alcohol use by SGM status).
- From 2020 to 2022, more than 20% of emerging adults (18-29 years of age) reported current cannabis use in the past 30 days, while about a tenth of all adults reported cannabis use. Male adults had higher prevalence of current and near-daily cannabis use (25+ days in the past month) than female adults.

- NH adults had the highest prevalence of near-daily cannabis use compared to other racial and ethnic groups, and Gen Z (born 1997-2013) had the highest prevalence of all generations. Adults with a history of depression had significantly more prevalent current and near-daily cannabis use than those without; similarly, adults with less than high school-level education had significantly more prevalent current and near-daily cannabis use than those holding college degrees.
- SGM emerging adults had significantly more prevalent current and near-daily cannabis use.
- Higher poverty among all adults was associated with more prevalent current and near-daily cannabis use. Emerging adults who reported 16 or more poor mental health days in the past month had significantly more prevalent current and near-daily cannabis use (compared to those who reported none). Those without health insurance had significantly more prevalent near-daily cannabis use (compared to those with health insurance).

Co- and Poly-Substance Use

- Among MS and HS students, NH students had the highest prevalence of poly-substance use (alcohol, nicotine, and cannabis), cannabis-alcohol co-use, and nicotine-alcohol co-use, while OPI students had the highest prevalence of nicotine-cannabis co-use (followed by NH). Co- and poly-substance use were significantly more prevalent among transgender MS students relative to cisgender students.
- Poly-substance use was significantly more prevalent among MS students who reported ever being depressed (as was cannabis-nicotine co-use) and HS students who reported depression in the last year.
- The most common pattern of use among emerging adults from 2020-2022 was alcohol alone (27.3% of this age group), followed by alcohol and nicotine co-use (10.6%) and alcohol-nicotine-cannabis poly-use (8.0%). Male emerging adults had significantly more prevalent nicotine-alcohol co-use. By age group, adults aged 18-24 years had the highest prevalence of all co- and poly-substance use.
- Emerging adults who identified with a SGM group had significantly more prevalent co- and poly-substance use than those who did not. Emerging adults with a history of depression had significantly more prevalent co- and poly-substance use than those without. Nicotine-cannabis co-use was more prevalent among emerging adults in poverty.
- Among all adults, co-use and poly-use varied by race and ethnicity: cannabis-alcohol co-use was highest among White respondents, nicotine-alcohol co-use was highest among NHOPI respondents, and nicotine-cannabis co-use was highest among Black respondents. All adults who were without health insurance had significantly more prevalent co- and poly-substance use (compared to those with health insurance), as did those with less than high school-level education (compared to those with a college degree).

Geolocation and Substance Use

- The prevalence of alcohol use and poly-substance use (alcohol, nicotine, and cannabis) were highest in Maui County. Nicotine use and cannabis use were highest in Hawai‘i County, as well as a number of co-use patterns: nicotine-cannabis, cannabis-alcohol, and nicotine-alcohol.

- Across all communities examined, alcohol use was highest in Kealakehe, Hawai‘i; nicotine use was highest in Leilehua, O‘ahu; and cannabis use was highest in Ka‘ū, Hawai‘i.
- The communities with the highest prevalence of substance co-use and poly-use were in Hawai‘i County. Nicotine-alcohol co-use was highest in Leilehua, Hawai‘i; nicotine-cannabis co-use was highest in Ka‘ū, Hawai‘i; cannabis-alcohol co-use was highest in Honoka’a, Hawai‘i; and poly-substance use was highest in Honoka’a, Hawai‘i.
- The City and County of Honolulu had the lowest prevalence of alcohol use and cannabis use, along with the lowest prevalence of cannabis-alcohol and nicotine-cannabis co-use. Nicotine use and nicotine-alcohol co-use were least prevalent in Kaua‘i County.

Conclusions

Significant disparities in substance use trends were found by sex, age, race and ethnicity, socioeconomic status, gender identity, sexual and gender minority status, mental health, and location. In particular, NHOPI residents, people with low socioeconomic status (low education, low income, or without health insurance), and those with poor mental health exhibited generally higher levels of substance use and co-/poly-substance use.

Male adults had generally more prevalent alcohol, nicotine, and cannabis use than female adults. Younger adults (between the ages of 18 and 24) accounted for the highest prevalence of cannabis-alcohol, nicotine-alcohol, nicotine-cannabis, and poly-substance use, along with the highest prevalence of any nicotine and e-cigarette use; meanwhile, Gen Z (born between 1997 and 2013) had the highest current cannabis use prevalence. Some patterns of substance use were more prevalent in middle age (e.g., cigarette smoking) or older age (e.g., daily drinking).

NHOPI respondents had generally more prevalent substance use and co-/poly-use relative to other racial and ethnic groups. NH youth displayed the highest levels of alcohol use, early cannabis initiation, cannabis-alcohol co-use, nicotine-alcohol co-use, and poly-substance use; OPI youth had the most prevalent cigarette and e-cigarette use, as well as nicotine-cannabis co-use. NH emerging adults accounted for the highest prevalence of binge drinking and cigarette-use, while NH adults had the highest near-daily cannabis use and nicotine-alcohol co-use. OPI emerging adults had the highest current cannabis prevalence, and OPI adults had the highest prevalence of any-nicotine use and binge drinking.

Adults without health insurance had more prevalent binge and heavy drinking as well as co- and poly-substance use, while those with less than high school-level education had more prevalent co- and poly-substance use, nicotine use, and current and near-daily cannabis use. Higher income was associated with more prevalent alcohol use, while greater poverty was associated with higher nicotine and cannabis use.

Transgender MS students had more prevalent alcohol use and binge drinking, cigarette and e-cigarette use, cannabis use and early cannabis initiation, and co- and poly-substance use. SGM HS students had more prevalent alcohol, e-cigarette, and cannabis use than non-SGM students, while SGM emerging adults had more prevalent binge drinking, any nicotine and e-cigarette use, current and near-daily cannabis use, and co- and poly-substance use.

Youth who had ever had depression or were recently depressed had more prevalent alcohol use, cigarette and e-cigarette youth, cannabis use, and poly-substance use. Emerging adults with a history of depression had more prevalent alcohol and nicotine use, and those with 16+ poor mental health days had more prevalent current and near-daily cannabis use and poly-substance use (relative to those with none). Adults reporting 16+ poor mental health days had

more prevalent binge and heavy drinking and nicotine use, while those with a history of depression had more prevalent current and near-daily cannabis use.

By geographic location, Maui County and Hawai‘i County had relatively high prevalence of substance use and co-/poly-use. Alcohol use and poly-substance use were highest in Maui County; nicotine use and cannabis use were highest in Hawai‘i County, as well as nicotine-cannabis, cannabis-alcohol, and nicotine-alcohol co-use.

Introduction

Background and Purpose of the Report

The Hawai‘i State Epidemiological Outcomes Workgroup (SEOW) is a partnership between the Thompson School of Social Work and Public Health at the University of Hawai‘i at Mānoa and the Alcohol and Substance Abuse Division (ADAD) of the Hawai‘i State Department of Health (DOH). The overall objective of the Hawai‘i SEOW is to identify, collect, analyze, and report epidemiologic data regarding substance use in Hawai‘i to identify emerging trends, build capacity for stakeholders within the community to use data, facilitate shared language about substance use, and develop data-driven recommendations for prevention efforts. The SEOW provides data and information about consumption, protective and risk factors, and consequences associated with substance use, particularly alcohol, nicotine products, and cannabis use, to support substance misuse prevention and treatment providers, policy-makers, citizens, and researchers to make informed decisions. The SEOW is funded through a federal grant from the Substance Abuse and Mental Health Services Administration (SAMHSA): Strategic Prevention Framework Partnerships for Success (SPF-PFS), in partnership with ADAD.

For past SPF-PFS funding cycles (2013-2018; 2018-2023) a central focus was placed upon underage drinking within Hawai‘i. The focus for the State of Hawai‘i for the current SPF-PFS funding cycle (2023-2028) has been broadened to focus on alcohol, nicotine, and cannabis, three of the most widely used substances in the U.S. and the state of Hawai‘i, with particular attention on youth and emerging adults. For this particular epidemiologic profile, the goal was to summarize alcohol, nicotine, and cannabis use along with poly-substance use of these three substances across a wide age range by drawing upon Hawai‘i data from the following data sources: Hawai‘i Youth Risk Behavior Survey (HI-YRBS), the Center for Disease Control and Prevention’s (CDC) Behavioral Risk Factor Surveillance System dataset, and the Hawai‘i Behavioral Risk Factor Surveillance System (HI-BRFSS). In addition to summarizing substance use prevalence, a focus was placed upon contextualizing substance use in relation to geolocation and associated with certain behavioral health indicators. Analyses were conducted to disaggregate data by age groups and priority populations within the state.

As identified in this profile, priority populations in Hawai‘i are those that experience unique risks and outcomes related to substance use. These include vulnerable, underserved, and underrepresented populations. The social determinants of health framework calls attention to the socioeconomic, political, and environmental factors that give rise to disparate health behaviors and outcomes among vulnerable groups. Social determinants of health are the “conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life-risks and outcomes,” including access to high quality education and health care (Healthy Hawai‘i Strategic Plan, 2022). Differential access to environments and resources that would facilitate good health behaviors and outcomes, including those related to substance use, give rise to health disparities. Priority populations identified within the state and highlighted in this profile include racially and ethnically marginalized individuals (specifically Native Hawaiian, Other Pacific Islander, and Filipino residents), LGBTQ+ individuals, and people with low socioeconomic status, whose patterns of substance use warrant specific attention. We also examine differences related to geolocation within the state. The overall priority for these and all communities is to reduce problematic substance use and adverse outcomes.

State of Hawai‘i Demographics

In 2023, the estimated total resident population in the State of Hawai‘i was 1,435,138 (U.S. Census Bureau, n.d.[b]). There are five counties across the state: Kaua‘i County, City and County of Honolulu, Maui County, Kalawao County (population 81 in 2023), and Hawai‘i County. Based on 2020 Census calculations, the majority of the state's land area is rural (95.3%), with all counties over 96% rural except Honolulu County (69.1%; U.S. Census Bureau, n.d.[c]). In 2020, rural areas were home to 13.9% of the state's population and urban areas to 86.1% (Liddell, 2020).

Hawai‘i is known for its diverse population, with significant cultural and ethnic influences from Asia and the Pacific Islands. The 2020 Census Diversity Index breakdown at the county level was: Hawai‘i (77.7%), Maui (77.1%), Kaua‘i (76.6%), and Honolulu (73.6%; U.S. Census Bureau, 2021). In 2020, 27.1% Hawai‘i residents identified as Native Hawaiian (NH) and Other Pacific Islander (OPI) alone or in combination, 10.8% as NH and OPI alone, 37.2% as Asian, 22.9% as White (non-Hispanic), 25.3% as two or more races, 9.5% as Hispanic/Latino, and 1.6% as Black/African American (U.S. Census Bureau, 2021). The state has one of the highest proportions of mixed-race and mixed-ethnicity residents, with the proportion of two or more races in Hawai‘i two and a half times higher than the national proportion of 10.2% in 2020 (U.S. Census Bureau, 2021). From 2019-2023, the proportion of foreign-born residents was 18.1% and 25.1% of the population spoke a language other than English at home (U.S. Census Bureau, n.d.[b]).

Individuals aged 18-64 accounted for 58.5% of the state population; individuals under 18 years for 20.5%; and individuals 65+ years for 21.1% (U.S. Census Bureau, n.d.[b]). 26.3% of the population (aged 25 years+) had completed high school or equivalent and 37.0% had a bachelor's degree or higher (U.S. Census Bureau, n.d.[a]). 10.1% of the state population lived in poverty, compared to 12.5% nationally (U.S. Census Bureau, n.d.[a]). 3.2% of residents did not have health care coverage, compared to 7.9% in the U.S. (U.S. Census Bureau, n.d.[a]).

In 2017, more than 10% of public high school students in the state identified as lesbian, gay, bisexual, or questioning, while more than 3% of adults identify as lesbian, gay, or bisexual and 0.6% identify as transgender or gender non-conforming. Sexual and gender minority groups in the state are racially diverse. The same year, fewer than 1 in 5 LGB youth students were White (compared to 24% Filipino, 22% NH, and 7% Japanese), and less than half of LGB adults were White (compared to 18% NH, 15% Filipino, and 9% Japanese; Holmes et al., 2017).

Substance Use Overview

With alcohol, nicotine, and cannabis being the most widely used substances in the U.S., in 2023 we saw that 47.5% of Americans aged 12 years and older used alcohol in the past month, 22.7% used tobacco products or vaped nicotine in the past month, and 15.4% used cannabis in the past month (SAMHSA, 2024). Prevention efforts have typically tended to focus heavily on youth and adolescent age groups; however, there has also been a shift in the focus of prevention efforts to emerging adults because the prevalence of substance use and substance use disorders (including drugs and alcohol) are higher for this age group (SAMHSA, 2024). For example, in the U.S. cannabis use in the past month for young adults aged 18-25 was 25.2%, compared to 15.0% for adults aged 26 and older and 6% for youth (aged 12-17; SAMHSA, 2024). Thus, data for youth, emerging adults, and all adults are presented throughout this profile. This edition of the profile updates these data for Hawai‘i while highlighting trends, patterns, and contexts of substance use. We specifically foreground substance co-use and poly-use of alcohol, nicotine,

and cannabis, which have been linked with more adverse outcomes than use of alcohol, nicotine, or cannabis individually – including more problematic usage and poorer health outcomes.

Alcohol

Alcohol is the most widely consumed substance in the U.S. and a leading cause of preventable death (CDC, 2024e). In 2023, 177.3 million people aged 12 years and older (62.5%) used alcohol in the past year (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2024a), while 134.7 million (47.5%) used alcohol in the last month (SAMHSA, 2024). Excessive alcohol use is related to more than 200 diseases and conditions, such as liver disease, cardiovascular disease, and cancer (NIAAA, 2024c), and accounts for 178,000 annual deaths in the U.S. and 600 annual deaths in Hawai‘i (CDC, 2024e; CDC, 2024a). Complications from heavy alcohol use affects multiple body systems, causing conditions such as liver disease, cardiovascular issues, neurological impairments, weakened immunity, along with increased cancer risk, while also facilitating the spread of diseases, like HIV and COVID-19, based on increased risky behaviors. Through healthcare costs, legal expenses, and lost productivity, excessive alcohol use is responsible for $250 billion in annual economic costs nationally and $937.4 million in Hawai‘i (Hawai‘i Health Data Warehouse [HHDW], 2022a).

Nicotine

Tobacco and nicotine products are also widely used in the U.S., with 64.4 million Americans aged 12 years and older (22.7%) reporting past-month use of tobacco or vaped nicotine products in 2023: of these, cigarettes were the most common product (38.7 million in the past-month), followed by e-cigarettes (26.6 million in the past-month; SAMHSA, 2024). Tobacco products typically refer to those containing or extracted from tobacco leaves, including combustible cigarettes, cigars, smokeless products such as snuff, and tobacco-derived e-liquids for cartridges used in electronic nicotine delivery systems (ENDS). Tobacco products contain nicotine, the addictive component, and are derived from the tobacco plant, *Nicotiana tabacum*; however, not all nicotine products are derived from tobacco leaves. Nicotine products, sometimes misleadingly branded as non-tobacco or tobacco-free, refer more specifically to those containing synthesized nicotine within a lab environment (FDA, 2024). Also called non-tobacco nicotine (NTN) products, these include e-liquids for ENDS, pouches (such as ZYN and on!), and edibles (e.g., gummies, mints, gum). Both tobacco and non-tobacco nicotine (NTN) all fall under the nicotine products umbrella regardless of whether it was derived from tobacco leaves or synthesized in a laboratory. Because nicotine products like vapes are easily concealed, they can be more discreetly used than combustible tobacco products, generating more frequent use and increased risk for nicotine addiction; meanwhile, fruit and candy flavors appeal to youth and reduce the perception of harm (Winickoff et al., 2024). Most e-liquids contain propylene glycol, glycerin, flavorings, carcinogens (such as aldehydes), heavy metals (such as nickel, tin, and lead), and other harmful chemicals, such as formaldehyde (Winickoff et al., 2024). It is worth noting that a number of these newer products are not currently assessed on national surveillance system surveys.

Tobacco use has been linked with an array of chronic conditions (including cancer, cardiovascular disease, lung disease, and type 2 diabetes) and is the leading cause of preventable disease and death in the country. It accounts for 480,000 annual deaths in the U.S. and 1,400 in Hawai‘i, as well as $225 billion in annual medical expenses nationally and $611 million in Hawai‘i (HHDW, 2022b; Campaign for Tobacco Free Kids, 2024). The short- and long-term

health impacts of relatively novel and quickly evolving NTN products (such as vaping cartridges and pouches) are less well understood, but the consumption of nicotine—a highly addictive stimulant—has documented health consequences (including cardiovascular and cognitive; Drope et al., 2017), particularly for young people whose brains are still developing (England et al., 2015). Additionally, the chemicals in e-liquids have been linked with lung damage and heart disease (Broderick, 2024), although the products vary and the nicotine and non-nicotine products in e-liquids should be studied for closer examination (Frie et al., 2022). Hawai‘i was the first U.S. state to raise the minimum age of purchase and use of tobacco/nicotine products to 21 years, contributing to significant statewide reductions in smoking and chronic disease rates over the last two decades (Reuters, 2015); however, ENDS use among young people is rising across the U.S. (Fadus, Smith, & Squeglia, 2019).

Cannabis

Marijuana, now more commonly referred to as cannabis, is the most commonly used *federally* illegal drug in the U.S. In 2023, 43.6 million Americans aged 12 years and older used cannabis in the last month (15.4%; SAMHSA, 2024). Of past year use among those aged 12 years and older, smoking was the most common mode of consumption (77.0%), followed by eating or drinking (48.3%) and vaping (38.3%; SAMHSA, 2024). There has been a steady increase in adult cannabis use nationally from 2013-2022 (while youth rates remained constant), which has been attributed to medicinal and recreational legalization in some states and concurrent changes in beliefs and attitudes regarding cannabis (Mattingly, Richardson, & Hart, 2024; Carliner et al., 2017).

The main chemical compounds in cannabis that have been studied are delta-9 tetrahydrocannabinol (THC), which is the psychoactive component, and cannabidiol (CBD), which is non-psychoactive – two cannabinoids (compounds that bind with cannabinoid receptors in the body) of more than 100 found in cannabis plants. Cannabis describes all products derived from the cannabis plant. It denotes those products containing more than 0.3% delta-9 THC by dry weight and is classified as a Schedule I controlled substance (21 U.S.C. §802[16]; 21 U.S.C §812[b][1]; 7 U.S.C. §1639[o]). Hemp products, and CBD products that come from hemp, are federally legal in all 50 states, although some states ban any level of THC; in the State of Hawai‘i, hemp products (and hemp-derived CBD products) are legal if they contain less than 0.3% delta-9 THC. While marijuana remains federally illegal, as of the reporting of this profile, 38 states—including Hawai‘i—have legalized its medical use, and 24 have legalized adult-use (or recreational) cannabis, which does not include Hawai‘i.

Cannabis products include the flower itself, the most commonly used form of the product (Hammond et al., 2022), which is dried, cured, and smoked (via joint, blunt, pipe, bong, or vaporizer). Extracts and concentrates of THC and/or CBD can be liquid or solid (including hash oil, dabs, wax, resin, hashish, budder, and crumble), and can be smoked, vaporized, or eaten. Other products include tinctures (usually placed under the tongue with a dropper or spray); oils (usually vaporized, placed under the tongue, or eaten); and edibles (foods and drinks infused with cannabis flower or concentrate, such as baked goods, gummies, chocolates, and tea; Spindle et al., 2019).

Cannabis use has been shown to negatively affect brain function, heart health, lung health, and mental health (CDC, 2024c). In 2019, an outbreak of e-cigarette or vaping product use-associated lung injury (EVALDI) claimed the lives of more than 60 individuals and thousands were hospitalized after vaping oils containing vitamin E were implicated (CDC, 2021).

Among adolescents specifically, cannabis use has been associated with altered cognitive functioning, poorer academic outcomes, and greater likelihood of anxiety and depression (Lorenzetti et al., 2020; Hosseini & Oremus, 2019). Conversely, its medicinal applications—with varying levels of THC and CBD—have been studied for various ailments with varying degrees of success, which have included its therapeutic role for chronic pain and treatment for symptoms (e.g., multiple sclerosis [MS], preventing and treating chemotherapy-induced nausea and vomiting, glaucoma, cancer, epilepsy, and HIV; Bridgeman & Abazia, 2017; National Academies of Sciences, Engineering, and Medicine, 2017).

Co- and Poly-Substance Use

Substance co-use and poly-use describes the use of two or more substances during a specific period of time (in the present report, past 30 days). Co- and poly-substance use can include simultaneous use or coadministration (using multiple substances on the same occasion or in the same delivery system), sequential use (using one substance after another), and concurrent use (using multiple substances on different occasions or days). For the current profile, we do not have data on types of co-use administration.

The use of more than one substance has been shown to confer greater risks than use of a single substance and non-use. For example, simultaneous use of alcohol and cannabis is associated with higher and more frequent consumption, greater likelihood of dependence, and increased risk of adverse outcomes, including depression and intoxicated driving (Midanik, Tam, & Weisner, 2007; Yurasek, Aston, and Metrik, 2017). Similarly, cannabis and tobacco co-use is related to greater consumption of both (Tucker et al., 2019a) and adverse outcomes such as adolescent delinquency and mental health problems (Tucker et al., 2019b). In regard to nicotine vaping and alcohol use among adolescents, there is a greater likelihood of initiating the use of the second substance at a later point in time, exhibiting a reciprocal effect (Lozano et al., 2021). This present report foregrounds patterns and correlates of co- and poly-use of alcohol, nicotine, and cannabis in Hawai‘i.

Priority Populations

The contexts and outcomes of substance use are unique for subpopulations that are underrepresented and underserved. These include sexual and gender minority individuals, racial and ethnic minority individuals, and individuals with low socioeconomic status. Critically, systems of oppression can overlap so that members of multiple marginalized groups experience compounded barriers to good health, including problematic substance use and negative consequences of use. Additionally, the health, social, and legal consequences associated with substance use can exacerbate marginalization (e.g., disproportionate medical expenses, fines, stigma, incarceration rates, etc.), such that substance use disparities can both reflect and amplify sexual and gender, racial and ethnic, and socioeconomic inequalities.

Sexual and Gender Minority Individuals

Across the U.S., sexual minority (e.g., gay, lesbian, bisexual, queer) and gender minority (e.g., transgender, non-binary) individuals are more likely to heavily use nicotine, alcohol, and cannabis than heterosexual and cisgender individuals (Gonzalez et al., 2016; Hughto et al., 2021; Dyar, 2022). Cultural factors may help explain the trend: some studies find higher levels of substance use in LGBT community groups (yet, at the same time, these same community groups are a critical resilience factor for SGM individuals; Hwahng & Kaufman, 2024). Furthermore,

tobacco and alcohol industries specifically target LGBT communities (Acosta-Deprez et al., 2021; Whiteley et al., 2023). In turn, higher levels of nicotine- and alcohol-related messaging and advertising are associated with higher levels of use (Emory et al., 2019; Niederdeppe et al., 2021).

Hawai‘i has been a leader in enacting policies that protect SGM people; however, the substantial disparities in substance use and misuse among SGM youth and adults in Hawai‘i are similar to trends observed across the U.S., indicating ongoing gaps in care and resources (Holmes et al., 2017; Ching et al., 2018). Structural oppression and related psychosocial factors contribute to patterns and outcomes of substance use among SGM individuals. In Hawai‘i, LGB youth are more likely to experience physical, sexual, and emotional abuse, and have a significantly higher prevalence of mental distress and suicidal ideation, compared to heterosexual youth (Holmes et al., 2017). Because these groups are more likely to experience discrimination, victimization, and poor mental health (including depression), substance use may function as a coping mechanism (Hwahng & Kaufman, 2024). Nonetheless, there exists a paucity of resources or programs aimed at addressing the higher rates of substance use disorders and related factors within the Hawai‘i SGM community, despite some potentially useful models of care being implemented elsewhere (Pham et al., 2022).

Consequences of substance use for SGM individuals include adverse physical health outcomes (i.e., infectious and chronic diseases) and mental health problems. For example, when alcohol use contributes to more risky sexual activity, the risk of HIV—already elevated among some SGM individuals—is increased (Lauckner et al., 2023). Increased substance use also puts SGM individuals at heightened odds for developing chronic conditions; e.g., more frequent and heavier nicotine use increases the risk of respiratory and cardiovascular diseases (Hwahng & Kaufman, 2024).

Racial and Ethnic Minority Individuals

Historical trauma, including colonization and cultural oppression, have been associated with higher risks related to substance use (Gameon & Skewes, 2021). Poverty and marginalization may contribute to mental health problems and related substance use problems connected with racially and ethnically marginalized groups (Karaye, Maleki, & Yunusa, 2023). A recent systematic review found an underutilization of treatment services by Asian Americans, Native Hawaiians, and Pacific Islander (AANHPI) communities (Choi et al., 2024). AA and NH residents in Hawai‘i have been found to be less inclined to speak with a mental health provider or physician regarding drinking related issues (Goebert & Nishimura, 2011).

National surveys show racial and ethnic disparities in rates of substance use and patterns of substance use in addition to disparate outcomes related to racial and ethnic groups (SAMHSA, 2024). However, for the National Survey on Drug Use and Health (NSDUH; SAMHSA, 2024), many times estimates are not calculated for Asian American (AA), NH, and PI populations due to a lack of estimate precision or are grouped together and are rarely disaggregated (Quint et al., 2023). Even with limited substance use research focused on NH and PI communities, when data is disaggregated, higher prevalence for substance use trends are seen (Choi et al., 2024) along with substance use disorders, like alcohol use disorder (AUD; Subica, 2022). In a recent report from the Office of Hawaiian Affairs (OHA, 2022), a number of substance use indicators for Native Hawaiian youth were significantly higher compared to state averages, e.g., consuming alcohol in the past 30 days, binge drinking in the past 30 days, currently using marijuana, and those who had currently drank or used marijuana in the past 30 days. In addition, they also noted

a higher number of Native Hawaiian adults who were current smokers compared to the state average. Among AA ethnic groups, Filipinos have some of the highest prevalence for past year drug use compared to other groups (Bersamira et al., 2017).

As with SGM groups, tobacco and alcohol industries target racial and ethnic minority groups with advertising (Carroll et al., 2020; Rose et al., 2019). Additionally, socioeconomic factors may partly explain the disparities in substance use and outcomes between racial and ethnic groups, including poverty, unemployment, lower educational attainment, lack of access to health care (Karaye, Maleki, & Yunusa, 2023). Historical loss and cultural trauma (e.g., illegal annexation and cultural genocide) has related to generational wealth disparities, lower educational and employment opportunities, and further poverty exacerbated by ongoing discrimination, all contributing to increased substance use risk, which can be directly or indirectly related to morbidity and mortality (Daniels et al., 2022). When examining historical trauma in connection to substance use among community-college Native Hawaiian students, it was shown to indirectly relate to higher substance use through perceived discrimination or directly to lower substance use, potentially through increased pride in one's culture (Pokhrel & Herzog, 2016).

Individuals of Low Socioeconomic Status (SES)

Socioeconomic status encompasses economic resources and social position. It can include factors such as income and educational attainment, as analyzed in this report, along with occupational status, employment status, housing status, and living conditions. People with lower SES generally have less access to financial, educational, social, and environmental resources that would facilitate good health behaviors and outcomes. National studies suggest that individuals with higher SES may consume similar or greater amounts of alcohol than those with lower SES (Collins, 2016), while lower SES is associated with increased use of nicotine (White et al., 2016) and cannabis (Jeffers et al., 2021).

Despite similar or lower rates of alcohol use among low SES groups, they bear a disproportionate burden of negative outcomes related to alcohol use, including alcohol use disorder (AUD) and alcohol-related mortality (Collins, 2016). Similarly, low SES individuals face higher exposure to subsequent harms associated with nicotine and cannabis use. Tobacco cessation success rates are lower (Hiscock, Judge, & Bauld, 2011) and the incidence of tobacco-related diseases, such as lung cancer and diabetes, is higher (CDC, 2024f). Cannabis use disorder (CUD) is also higher among low-income groups (Hasin, Shmulewitz, and Sarvet, 2019).

Methods

Data Sources

The **Behavioral Risk Factor Surveillance System** (BRFSS) is an annual national telephone survey among adults with both cell phones and landline telephone numbers conducted in collaboration between state health agencies and the Centers for Disease Control and Prevention (CDC). The Hawai‘i BRFSS is conducted by the Hawai‘i State DOH, Chronic Disease Prevention and Health Promotion Division, in collaboration with the CDC. The survey includes data on preventive health practices and risk behaviors, as well as chronic diseases, injuries, and preventable infectious diseases. The BRFSS also includes differing optional modules by state and state-added questions, including a cannabis module, which the state of Hawai‘i added to its 2020, 2021, and 2022 survey. Participant responses are weighted to

represent the adult population at the state level by age, gender, race/ethnicity, education level, marital status, home ownership, telephone source, and county of residence. Further information on the sampling and survey methodology is available from the HHDW (https://hhdw.org/data-sources/behavioral-risk-factor-surveillance-system/) and CDC (https://www.cdc.gov/brfss/) websites. For the current report, BRFSS data were obtained both from the publicly available CDC dataset, as well as via a data use request and agreement with the Hawai‘i State Department of Health for the Hawai‘i BRFSS; the latter dataset was primarily utilized to capture data on priority populations (e.g., DOH-defined race/ethnicity, sexual and gender minority status, etc.) not publicly available at the records-level from CDC.

The indicators for substance use utilized in this report from the BRFSS dataset, which are defined in detail in the results sections, included:

- Current Alcohol: Any past 30-day alcohol use
- Binge Drinking: Any past 30-day binge drinking
- Heavy Drinking: Any past 30-day heavy drinking
- Daily Drinking: Alcohol use for 30 of the past 30 days
- Current Nicotine: Use of cigarettes, e-cigarettes, and/or chewing tobacco at least on some days
- Current e-Cigarettes: Use of e-cigarettes at least on some days
- Current Cigarettes: Use of cigarettes at least on some days
- Current Chewing Tobacco: Use of chewing tobacco at least on some days
- Poly-Product Use: Use of two or more nicotine products at least on some days
- Current Cannabis: Any past 30-day cannabis use
- Near-daily Cannabis: Cannabis use for 25 or more days in the past 30 days
- Method of Use: Primary method of cannabis use
- Reason for Use: Purpose for using cannabis
- Poly-Substance Use: Any current use of alcohol, nicotine, *and* cannabis
- Nicotine-Cannabis Co-Use: Any current use of nicotine *and* cannabis
- Nicotine-Alcohol Co-Use: Any current use of nicotine *and* alcohol
- Cannabis-Alcohol Co-Use: Any current use of cannabis *and* alcohol

The **Youth Risk Behavior Survey** (YRBS) is a national biennial survey conducted among public school students to assess behaviors that contribute to the leading causes of death and disability statewide in each participating state. It provides valuable insights into trends related to risky behaviors, such as substance use, violence, and sexual behaviors. Two different surveys are administered: one to middle school students (grades 6-8) and one to high school students (grades 9-12). The sample is derived using a two-stage, stratified random sampling method, and results are weighted by sex, grade level, and race/ethnicity. The Hawai‘i YRBS is a joint effort between the Hawai‘i State Department of Education (DOE), Hawai‘i State Department of Health (DOH), the University of Hawai‘i (UH) College of Education, and the CDC. Further information on the sampling and survey methodology is available on the HHDW (https://hhdw.org/data-sources/youth-risk-behavior-survey/) and CDC (https://www.cdc.gov/yrbs/index.html) websites. For the current report, data from the Hawai‘i YRBS (HI-YRBS) were obtained via a data request and agreement with the Hawai‘i State Department of Health.

The indicators for substance use utilized in this report from the HI-YRBS dataset, which are defined in detail in the results sections, included:

- Current Alcohol: Any past 30-day alcohol use
- Binge Drinking: Any past 30-day binge drinking
- Early Alcohol Initiation: Alcohol use before age 13 years
- Current e-Cigarettes: Any past 30-day e-cigarette use
- Current Cigarettes: Any past 30-day cigarette use
- Current Cannabis: Any past 30-day cannabis use
- Lifetime Cannabis: Ever used cannabis
- Early Cannabis Initiation: Cannabis use before age 13 years
- Poly-Substance Use: Any past 30-day use of alcohol, e-cigarettes/cigarettes, *and* cannabis
- Nicotine-Cannabis Co-Use: Any past 30-day use of e-cigarettes/cigarettes *and* cannabis
- Nicotine-Alcohol Co-Use: Any past 30-day use of e-cigarettes/cigarettes *and* alcohol
- Cannabis-Alcohol Co-Use: Any past 30-day use of cannabis *and* alcohol

Data Considerations

The findings presented in this report derived from data collected through the state BRFSS and YRBS and are subject to several important limitations and considerations. First, all surveys are cross-sectional in nature. While multiple years of data were pulled and stacked to ensure adequate sample size (e.g., BRFSS years 2020-2023, with state cannabis questions only for 2020-2022), data collected from each year is cross-sectional and does not follow the same individuals over time. This precludes tracking longitudinal changes in behavior over time or making causal claims about what might have been a result of another behavior, what tends to be called temporal causality (i.e., changes in behavioral outcomes related to changes in contextual factors over time) or what some colloquially reference as cause-and-effect. Additionally, self-reported data introduce risk of recall bias and social desirability bias, which means the accuracy of reported substance use behaviors and associated factors should always be interpreted carefully due to these potential influences on the data. Some individuals might not fully remember, or they might want to portray themselves in a certain way, which can impact the quality of data. Also, despite robust, complex sampling design, reliance on telephone, online, and school-based surveys may have excluded certain segments of the population. Further, BRFSS and YRBS are available only to non-institutionalized, legal citizens and permanent residents. For YRBS, data only includes those of public school students.

In addition, individuals were categorized into a single racial and ethnic group based on their self-reported race and ethnicity, subjecting responses to respondents' personal interpretation of racial and ethnic categories and potentially obscuring the specific behavioral outcomes for multiracial and multiethnic individuals. BRFSS respondents can choose up to six ethnicities, after which the Hawai‘i Health Data Warehouse (HHDW) selects a single ethnicity for reporting purposes. The HHDW race and ethnicity documentation methodology for calculating Hawai‘i DOH-defined race/ethnicity is as follows: if Native Hawaiian (NH) or Part NH was one of the multiple ethnicities listed, NH is coded; if a non-White ethnicity is listed with a White ethnicity, the non-White ethnicity is coded; if there is more than one non-White ethnicity listed, the first one is coded; and if there is more than one White ethnicity listed, the first one is coded (HHDW, 2024). For YRBS, the methodology for Hawai‘i DOH-defined race and ethnicity HHDW is identical; however, for some years (2011-2021) the CDC source race/ethnicity variable incorporated Hispanic/Latino, which was then coded as "Other" for Hawai‘i DOH-defined race/ethnicity (Hawai‘i Health Data Warehouse, 2024).

In this report, the indicators of interest are presented in the form of a weighted percent (point estimate) of the underlying population with 95% confidence intervals (95% CIs) for the point estimate. Confidence intervals may be interpreted as a margin of error, such that the true population parameter falls within the upper and lower bound of the confidence interval. The confidence intervals are represented as error bars throughout this profile on the bar graphs. When comparing point estimates between groups, if the confidence intervals from one group do not overlap with the other group (i.e., the error bars on the graph do not overlap), then the difference is statistically significant. The width of the confidence intervals largely depend on the sample size available; in cases where the sample size is inadequate to yield meaningful differences, data are suppressed to avoid misinterpretation of the results. For this report, suppression was used when there were less than 30 individuals in a group and we have indicated each instance when suppression was utilized.

In Hawai‘i, a school complex area refers to an administrative grouping of schools within the Hawai‘i DOE, which operates as a single, statewide public school district. Each complex area typically includes: 1) One high school and its associated feeder schools, though this may vary depending on the size of the schools, and 2) Geographic organization: complex areas are based on specific sections of an island, serving the communities within those regions. This structure facilitates streamlined management and coordination of resources within each community. Although the data do not originate from students, the school complex area is used as an organizational framework for HI-BRFSS data. In this profile, we refer to them as community to reduce confusion, emphasizing that the data reflect adults residing within these geographic areas.

All 95% confidence intervals were calculated utilizing the logit transformation method, which may result in some marginal differences between other organizations reporting similar data. All analyses were conducted using R version 4.4.0 with integrated development environment RStudio version 2023.06.0.

COVID-19 Disclaimer

Data from 2020, 2021, and potentially 2022 should be interpreted with caution due to the impact of the COVID-19 pandemic on substance use patterns, data collection processes, and reporting accuracy. The pandemic introduced unique stressors and caused significant disruptions, including school closures, lockdowns and social isolation, changes in access to substances among youth, and healthcare system interruptions. These factors may have influenced patterns and prevalence of use, as well as the accuracy and completeness of data collection during this period. Any observed trends and comparisons with other years should be considered within this context.

Alcohol Use in Hawai‘i

Introduction

Alcohol use has been linked to numerous short- and long-term health consequences, from injuries sustained while intoxicated to cancer and other chronic conditions developed after prolonged use. Excessive alcohol use can be related to social, mental, and cognitive health consequences, including anxiety and depression, learning and memory problems, and downstream effects such as diminished work and school performance. Many of the negative outcomes of problematic alcohol use can compound: for example, impaired driving accidents can lead to negative physical, mental, and legal ramifications.

Youth (<18 years old)

Early adolescence is a key developmental period for the initiation of alcohol use and later trajectories of alcohol use in adulthood: for example, heavy alcohol use during adolescence is associated with heavy use during adulthood (Quigley et al., 2019). Adolescent initiation is also a risk factor for downstream consequences of alcohol use, including academic and employment problems, other substance use, and criminal or violent behavior (Quigley et al., 2019). Risk factors for adolescent alcohol use include family history of alcoholism, peer and social relations (Chartier, Hesselbrock, & Hesselbrock, 2010), advertising targeting youth (Padon et al., 2018), and pro-alcohol messaging on social media, in part via advertising and in part via personal profiles (Moreno & Whitehill, 2014).

Youth alcohol consumption is associated with a range of physical, psychological, social, and legal consequences. Physical health effects can include injuries, interference in brain development, alcohol overdose, and increased risky sexual behavior, such as unprotected sex and sexual activity with multiple partners (Quigley et al., 2019), which can lead to negative health outcomes, including sexually transmitted infections and unplanned pregnancy (CDC, 2024g). Mental health consequences include the development of Alcohol Use Disorder (AUD), mood disorders (such as anxiety and depression), sleep disturbances, and an increased risk of suicide attempts (Quigley et al., 2019). Impaired driving or riding with an impaired driver can lead to motor vehicle accidents and physical, mental, social, and legal consequences.

Emerging Adults (18-29 years old)

Alcohol use generally peaks during the early twenties. Alcohol use among emerging adults is associated with health and social consequences, including risker sexual behaviors, poorer academic performance, and alcohol-impaired driving (Wells et al., 2010; White & Hingson, 2014; Jewett et al., 2015). Emerging adults are more likely to misuse alcohol (such as engaging in binge drinking) due to socio-environmental and practical factors, including peer pressure and ease of access to alcohol (Esser et al., 2022). Over time, binge drinking can contribute to the development of AUD (NIAAA, 2024b) and chronic health problems such as liver disease and cancer (NIAAA, 2024d). Binge drinking can also indirectly contribute to chronic conditions, including obesity, diabetes, and cancer, via poorer health behaviors such as overeating (Buscemi et al., 2021).

Adults (18+ years old)

Adult alcohol use in the United States is a leading cause of preventable death, associated with injuries and chronic conditions such as heart disease, liver disease, and cancer (Esser et al., 2022, 2024). Alcohol use and misuse are also associated with disrupted sleep and depression

(Stein & Friedmann, 2005; McHugh & Weiss, 2019). Individual and structural factors contribute to adult alcohol use. For example, adults struggling with impulse control and emotional regulation have been shown to be at a higher risk for alcohol use and resulting negative consequence of alcohol use (Dvorak et al., 2014), while social determinants of health, such as neighborhood poverty, have also been linked to increased risk of problematic alcohol use (Cerdá et al., 2010).

Indicators and Definitions

This section focuses on alcohol use in the state of Hawai‘i by differing groups across different age spans based on the following indicators:

- *Current Alcohol*:
    - **YRBS Middle & High School**: Students who consumed any alcohol in the past month; specifically, those that self-reported using alcohol at least one day out of the past 30 days.
    - **BRFSS**: Adults who consumed any alcohol in the past month; specifically, those that self-reported using alcohol at least one day out of the past 30 days.
- *Binge Drinking*:
    - **YRBS Middle School**: Students who self-reported five or more drinks of alcohol in a row, that is, within a couple of hours on one or more of the past 30 days.
    - **YRBS High School**: Students who self-reported four or more drinks of alcohol in a row for female students, or five or more drinks of alcohol in a row for male students (within a couple of hours), on at least one day during the past 30 days.
    - **BRFSS**: Adults who self-reported drinking 5 or more alcoholic drinks for men, or 4 or more alcoholic drinks for women, during at least one single occasion in the past 30 days.
- *Heavy Drinking*:
    - **BRFSS** (only): Adults who self-reported drinking more than 14 alcoholic drinks per week for men, or more than 7 alcoholic drinks per week for women, during the past 30 days.
- *Daily Drinking*:
    - **BRFSS** (only): Adults who self-reported drinking alcohol every day in the past 30 days.
- *Early Alcohol Initiation*:
    - **YRBS Middle & High School** (only): Students who self-reported having at least one drink of alcohol before the age of 13 years.

Prevalence and Trends

Youth (<18 years old)

Figure 1. Any past 30-day alcohol use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

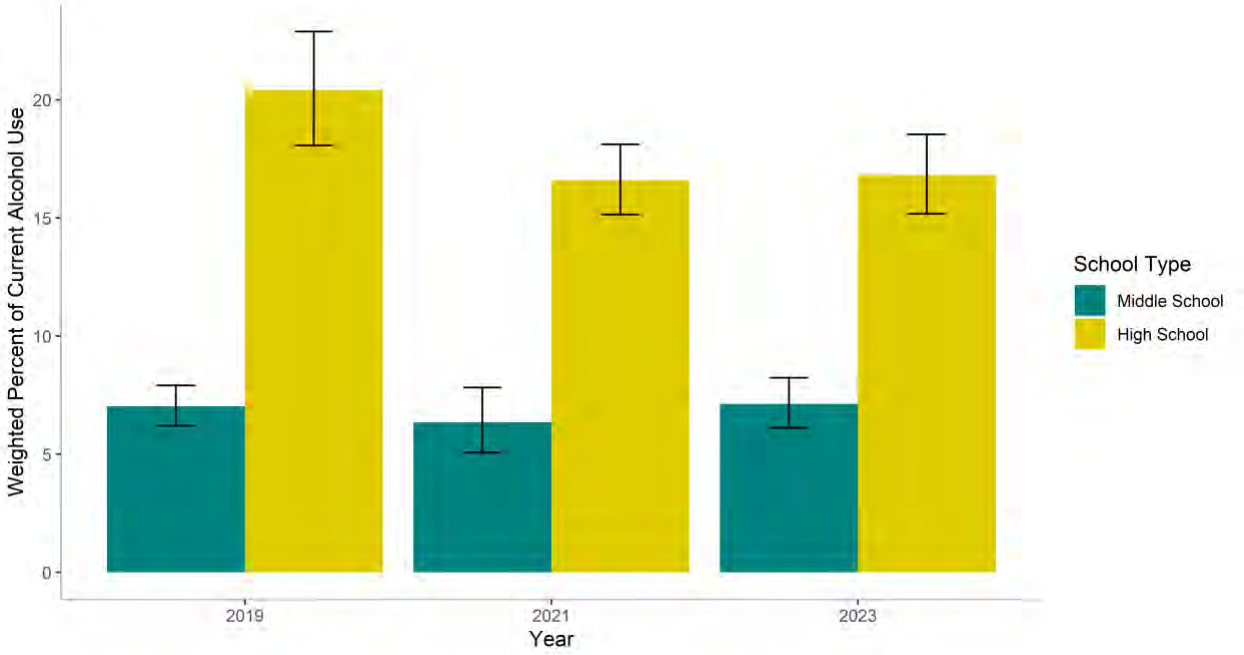


Figure 2. Any past 30-day binge drinking among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

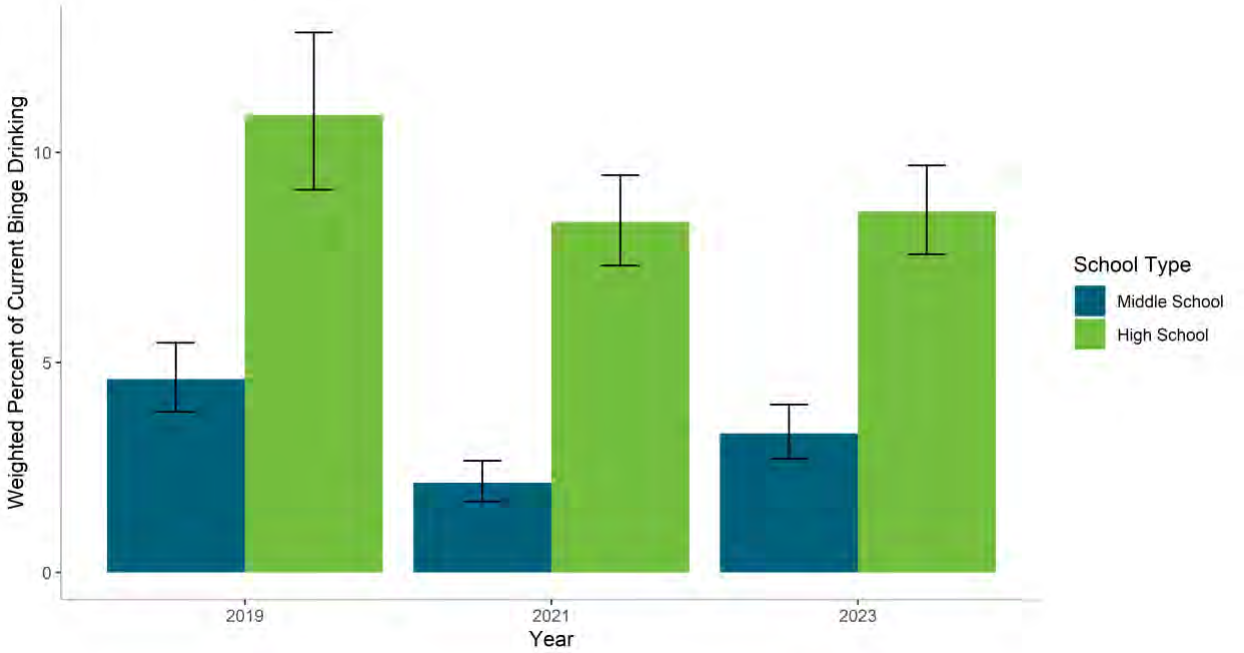
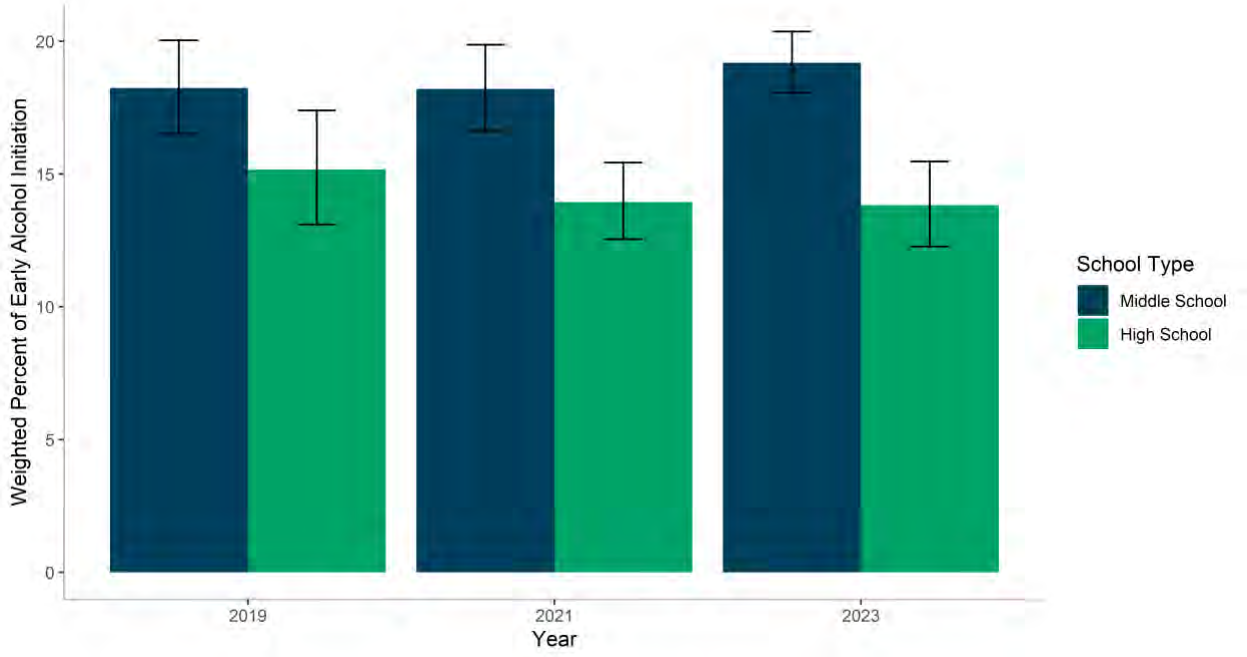


Figure 3. Early alcohol initiation (self-reported alcohol use before 13 years old) among middle and high school student by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 1-3

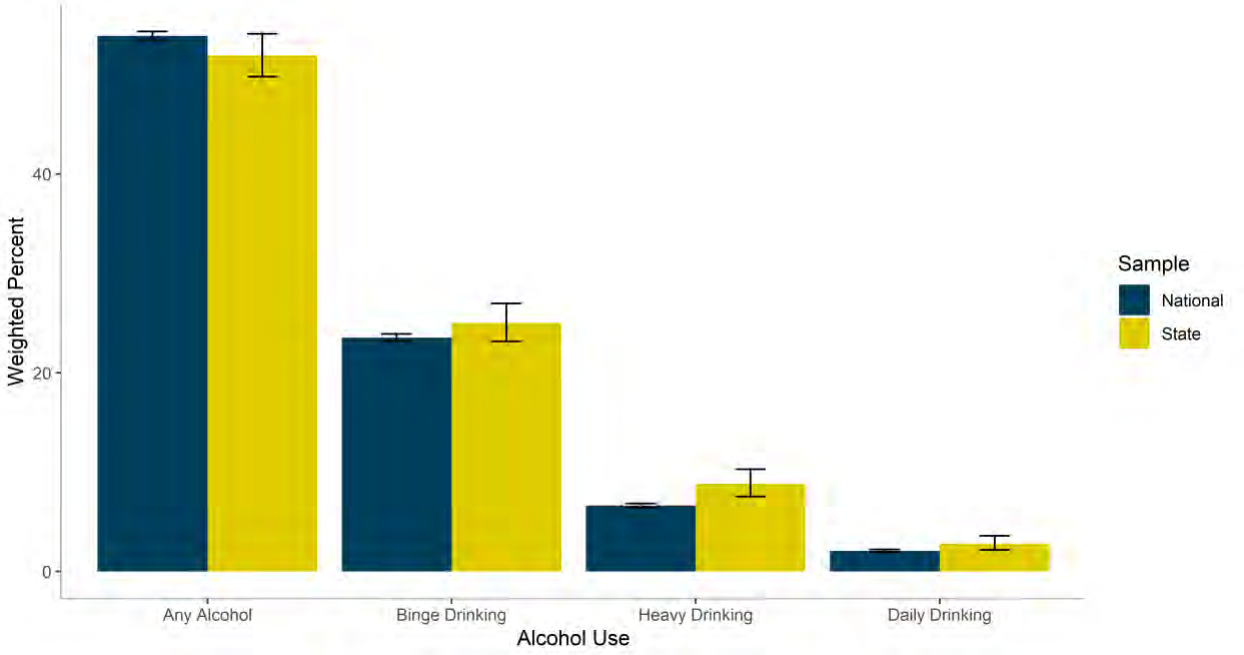
As seen in Figure 1, in 2019, 2021, and 2023, current alcohol use was significantly higher among high school (HS) students than middle school (MS) students (**20.4%** [95% CI: 18.1-22.9%] compared to **7.0%** [95% CI: 6.2-7.9%] in 2019; **16.6%** [95% CI: 15.1-18.1%] compared to **6.4%** [95% CI: 5.1-7.8%] in 2021; and **16.8%** [95% CI: 15.2-18.5%] compared to **7.1%** 95% CI: 6.1-8.2%] in 2023). Alcohol use by both groups was lower (though not significantly) in 2021 compared to pre-pandemic 2019 levels. In 2023, HS alcohol use was slightly higher than 2021 (but lower than the 2019 prevalence), while MS alcohol use prevalence was highest in 2023 (greater than the 2019 and 2021 prevalence); however, these differences were not statistically significant and should be interpreted cautiously.

Over the same years, binge drinking followed similar patterns (Figure 2). Binge drinking was significantly higher among HS students than MS students (**10.9%** [95% CI: 9.1-12.9%] compared to **4.6%** [95% CI: 3.8-5.5%] in 2019; **8.3%** [95% CI: 7.3-9.5%] compared to **2.1%** [95% CI: 1.7-2.7%] in 2021; and **8.6%** [95% CI: 7.6-9.7%] compared to **3.3%** [95% CI: 2.7-4.0%] in 2023). Binge drinking prevalence was higher among both groups in 2019 compared to 2021 and 2023, then slightly higher in 2023 from 2021, but none of these differences were statistically significant. Unlike the indicator for any current alcohol use, the difference in binge drinking among MS students did show a statistically significant decrease from 2019 to 2021 during COVID-19, but 2023 was not statistically significant from 2019 levels and the prevalence did slightly increase back up from 2021 to 2023 but not to 2019 levels.

Early alcohol initiation (i.e., alcohol use before 13 years old) was more prevalent among MS students than HS students (Figure 3), and significantly so in 2021 and 2023. In 2019, the prevalence for HS was **15.2%** (95% CI: 13.1-17.4%) compared to **18.2%** (95% CI: 16.5-20.3%) for MS; in 2021, it was **13.9** (95% CI: 12.5-15.4%) compared to **18.2** (95% CI: 16.6-19.9%); and in 2023, it was **13.8%** (95% CI: 12.3-15.5%) compared to **19.2%** (95% CI: 18.0-20.4%). Early alcohol initiation varied by year, though not significantly. Compared to 2019, early alcohol initiation was lower in 2021 among HS students but remained the same among MS students; from 2021 to 2023, the prevalence was slightly lower among HS students and higher among MS students.

Emerging Adults (18-29 years old)

Figure 4. Past 30-day alcohol use and patterns of use among emerging adults (18-29 years old) in Hawai‘i compared with the national sample, BRFSS 2020-2023



All Adults (18+ years old)

Figure 5. Past 30-day alcohol use and patterns of use among all adults (18+ years old) by sex assigned at birth in Hawai‘i, BRFSS 2020-2023

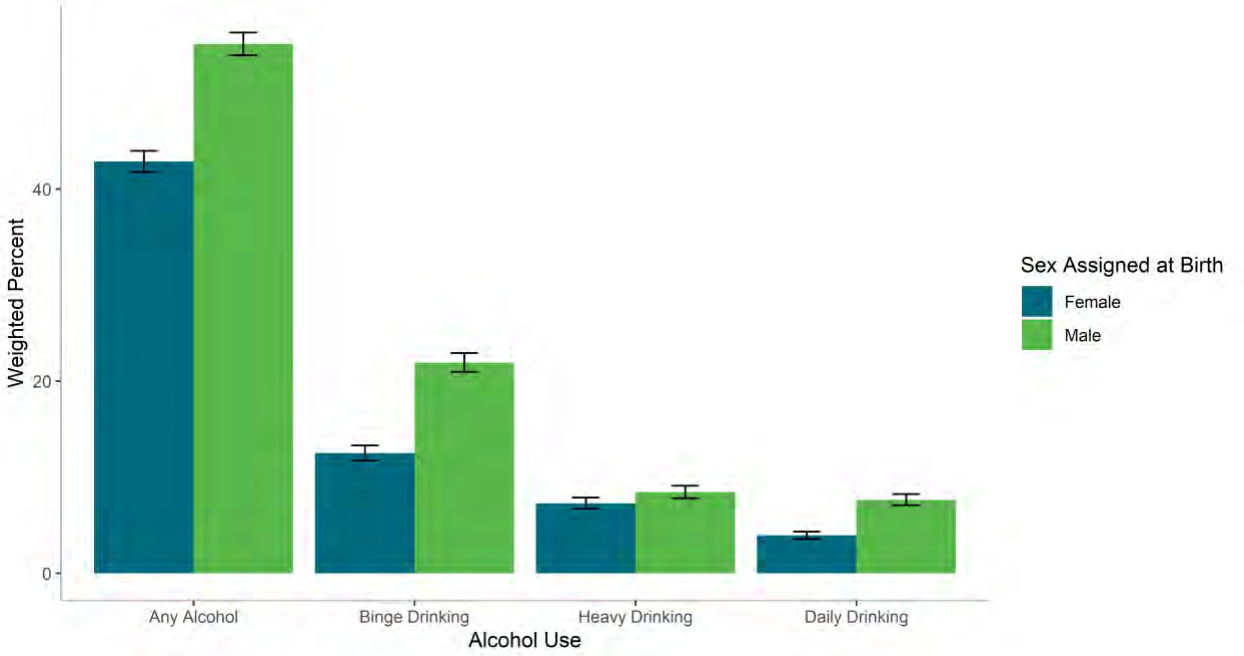
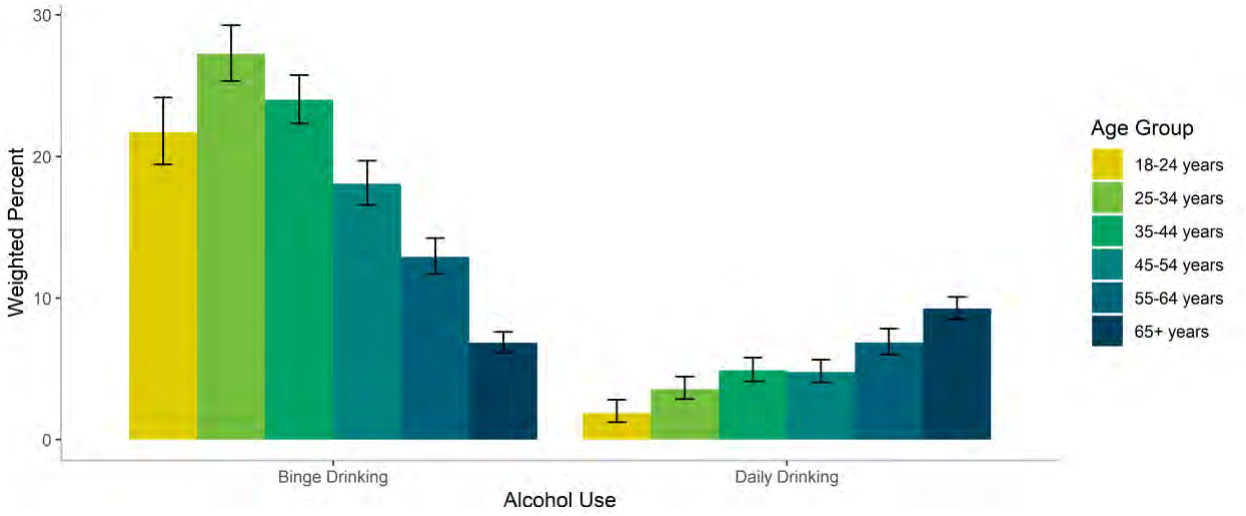


Figure 6. Past 30-day binge drinking versus daily drinking among all adults by age group in Hawai‘i, BRFSS 2020-2023



Summary of Figures 4-6

Among emerging adults (18-29 years old) in Hawai‘i (Figure 4), **51.9%** (95% CI: 49.8-54.1%) had at least some alcohol *in the past 30 days*, with **25.0%** (95% CI: 23.2-27.0%) having engaged in binge drinking and **8.8%** (95% CI: 7.5-10.3%) in heavy drinking, while **2.8%** (95% CI: 2.2-3.6%) reported drinking on a daily basis during the past 30 days. Emerging adults in Hawai‘i had a marginally lower prevalence of current alcohol use and binge drinking relative to emerging adult national estimates from BRFSS (Figure 4) during the same time period (national prevalence estimate: **53.9%** [95% CI: 53.4-54.3%] and **23.5%** [95% CI: 23.2-23.9%], respectively). However, the prevalences of both heavy drinking and daily drinking were significantly higher among emerging adults in Hawai‘i compared to national estimates (**6.6%** [95% CI: 6.4-6.9%] and **2.1%** [95% CI: 1.9-2.2%], respectively).

Male adults (18 and over) in Hawai‘i (Figure 5) had significantly higher prevalences of past 30 day alcohol use (**55.1%** [95% CI: 53.9-56.3%] compared to **42.9%** [95% CI: 41.8-44.0%] for female respondents), binge drinking (**21.9%** [95% CI: 21.0-22.9%] compared to **12.5%** [95% CI: 11.8-13.3%] for female respondents), and daily drinking (**7.6%** [95% CI: 7.1-8.2%] compared to **3.9%** [95% CI: 3.6-4.4%] for female respondents). However, the difference in heavy drinking by sex was not significant.

Among all adults (Figure 6), the oldest age group (aged 65 years and older) accounted for the highest prevalence of daily drinking (**9.3%**, 95% CI: 8.5-10.1%) and the lowest prevalence of binge drinking (**6.8%**, 95% CI: 6.2-7.6%). The youngest group of adults (aged 18-24 years) had the lowest prevalence of daily drinking (**1.9%**, 95% CI: 1.2-2.8%), significantly lower than the prevalence for those aged 25 years and older (**3.6%** [95% CI: 2.9-4.5%] among those aged 25-34 years; **4.9%** [95% CI: 4.1-5.8%] among those aged 35-44 years; **4.8%** [95% CI: 4.0-5.6%] among those aged 45-54 years; and **6.9%** [95% CI: 6.0-7.8%] among those aged 55-64 years). Binge drinking was most prevalent among the 25-34 years age group, followed by 35-44 years and 18-24 years.

Priority Populations

Youth (<18 years old)

Figure 7. Past 30-day alcohol use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

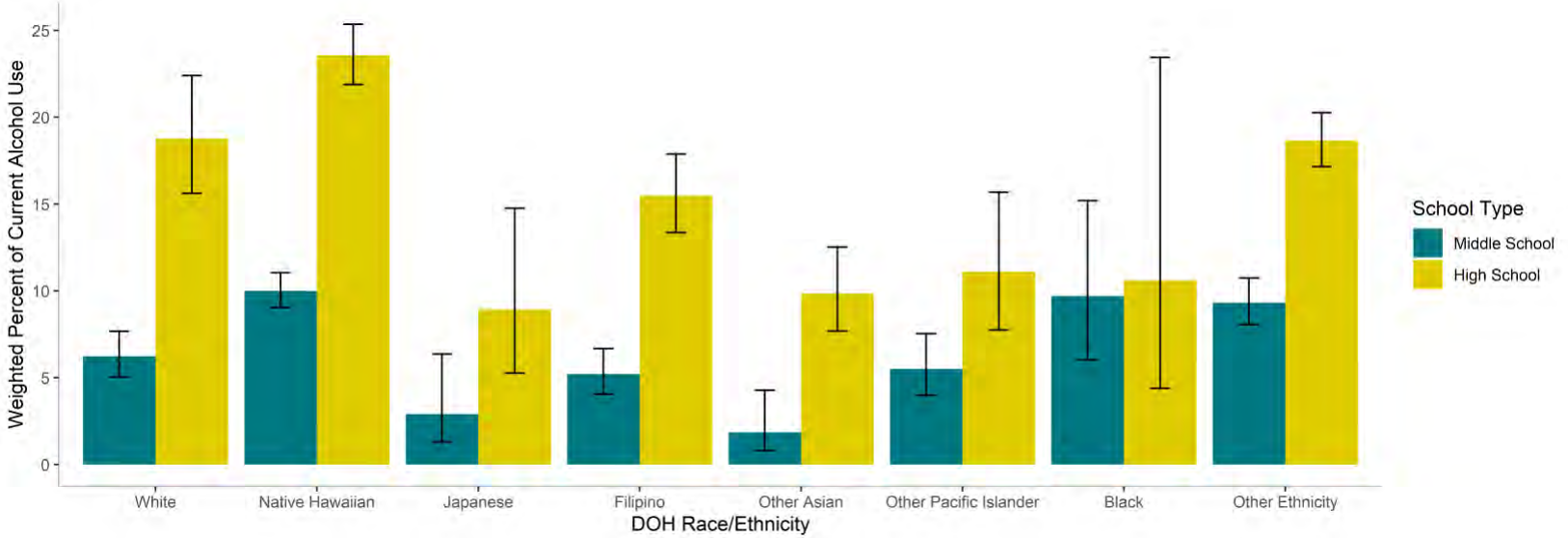


Figure 8. Past 30-day binge drinking among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

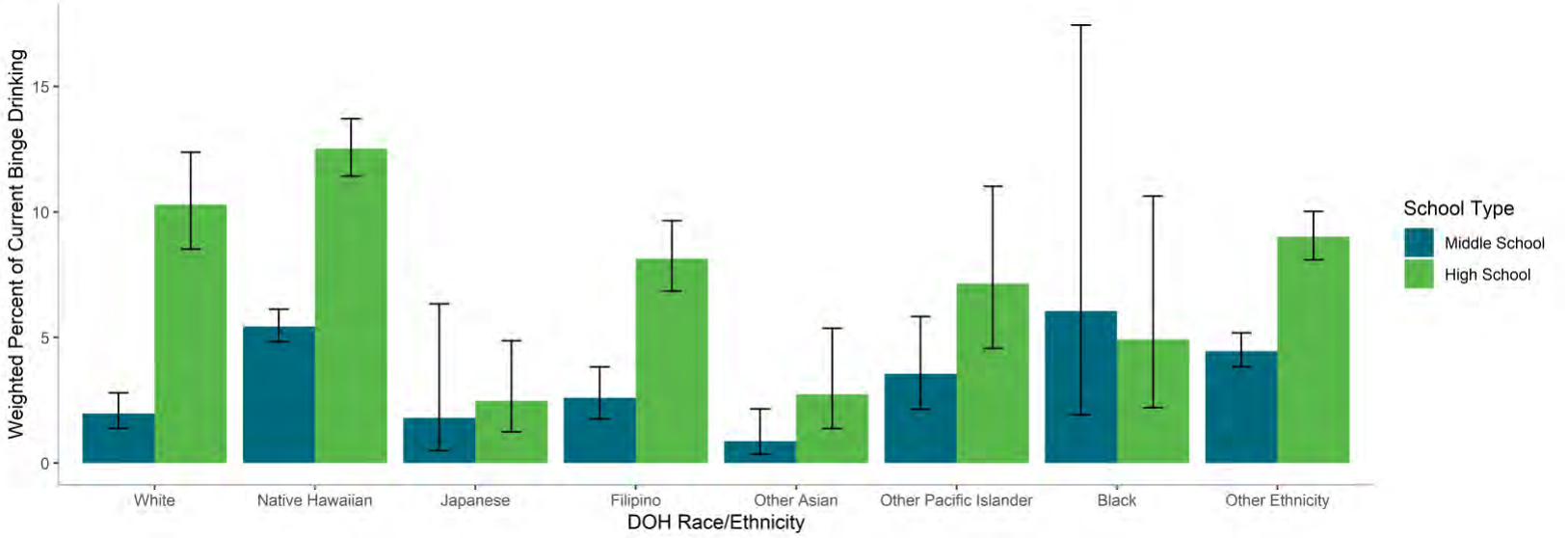


Figure 9. Past 30-day alcohol use among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

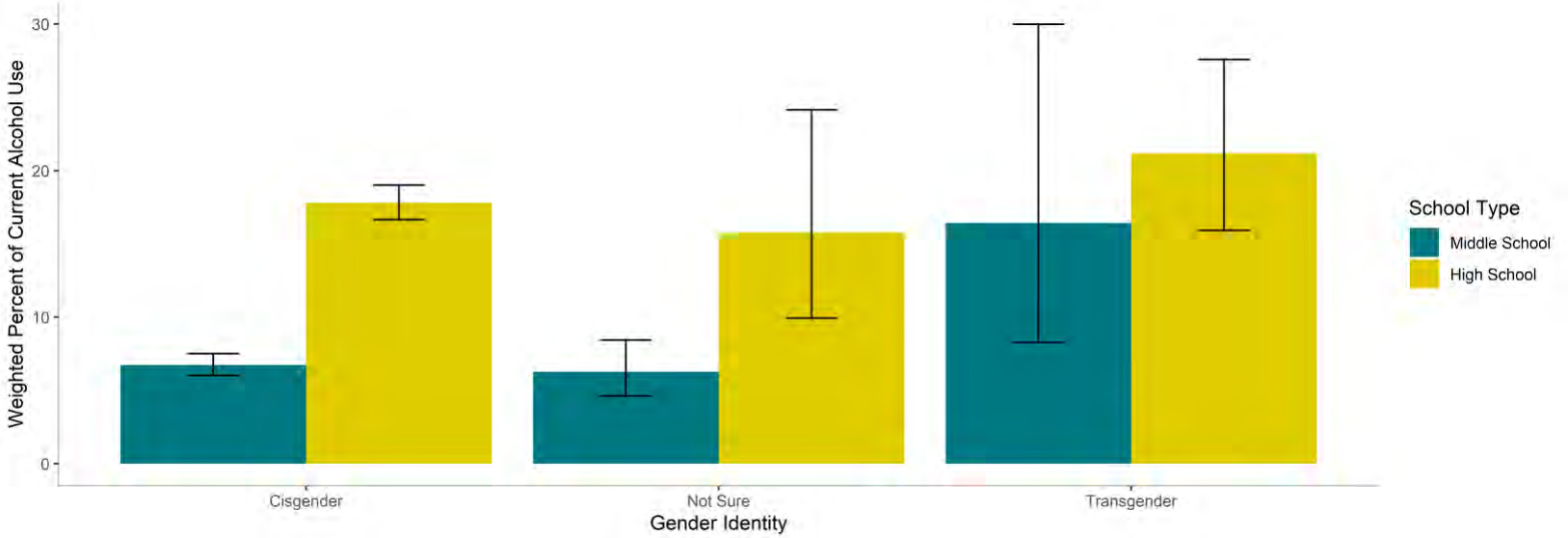


Figure 10. Past 30-day binge drinking among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

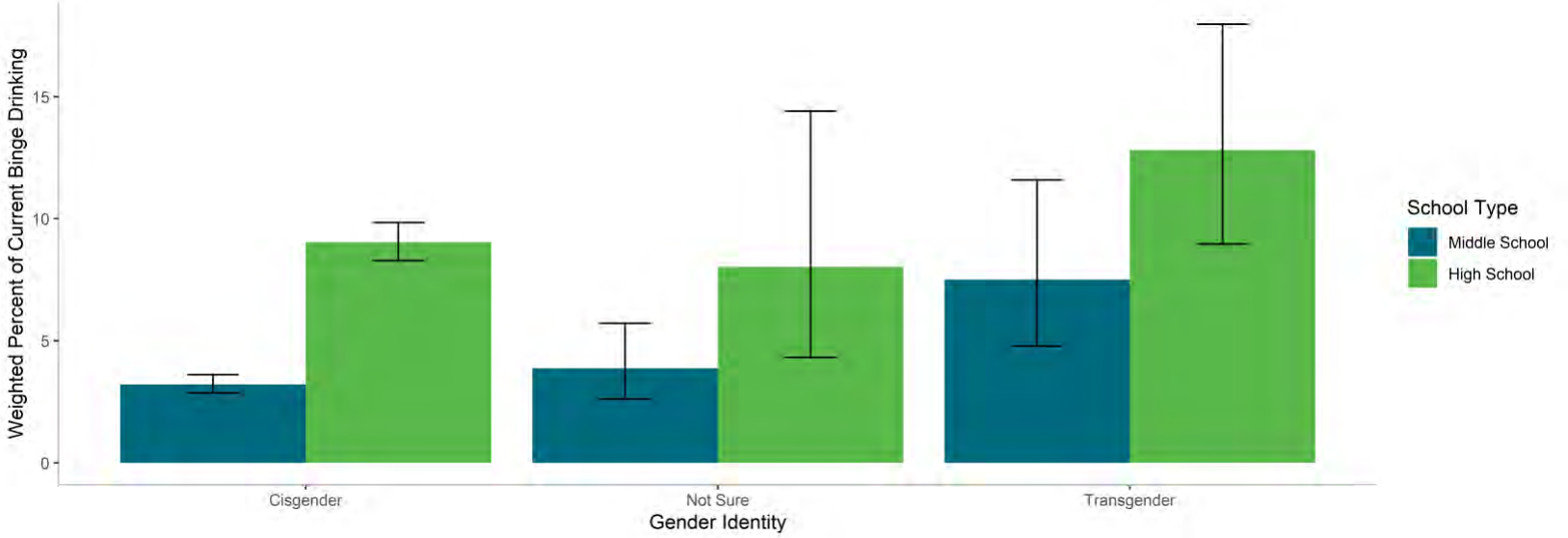


Figure 11. Past 30-day alcohol use among middle and high school student by sexual and gender minority status, combined Hawai‘i YRBS 2021 and 2023

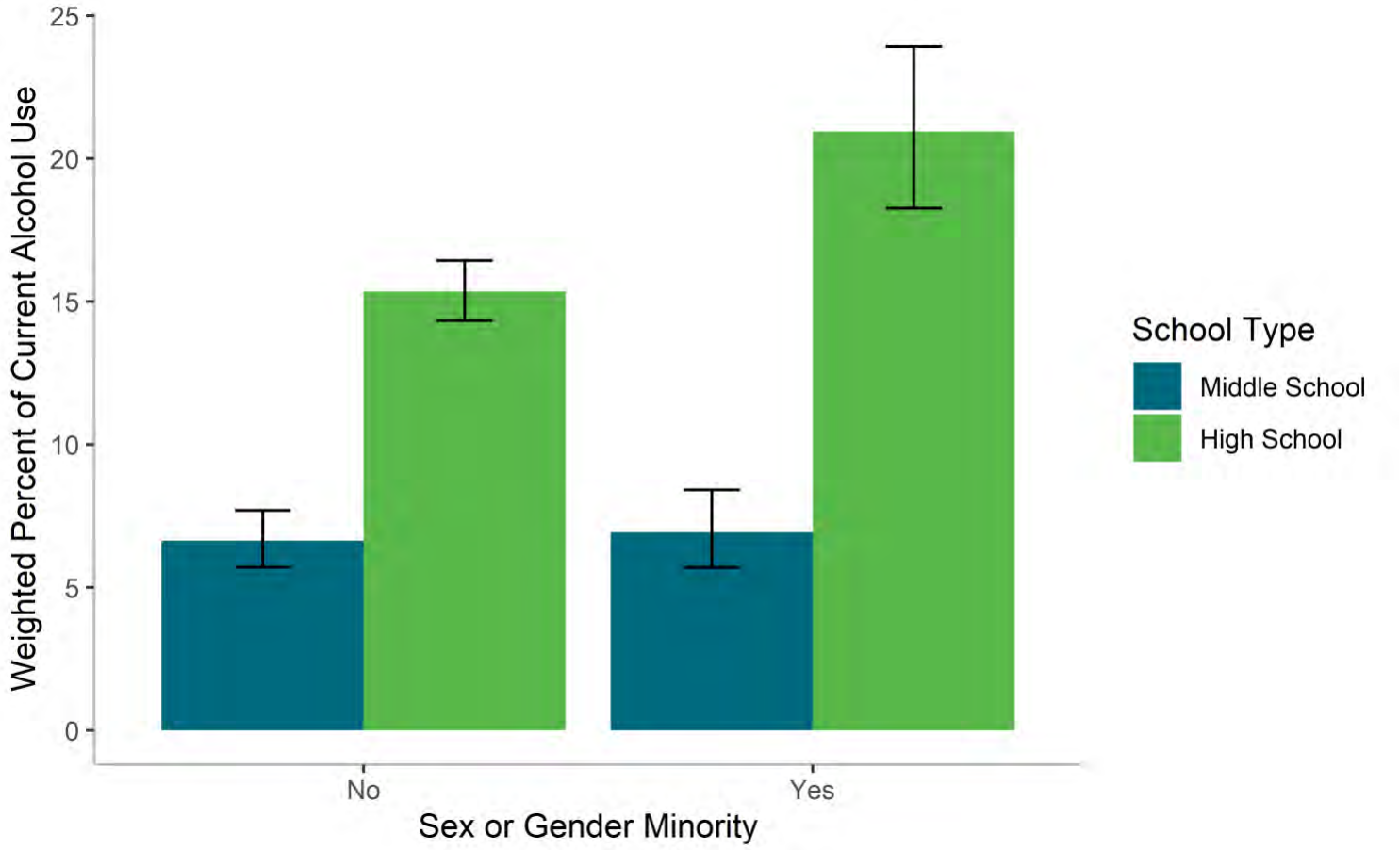


Table 1. Past 30-day alcohol use percentage and 95% confidence intervals (CIs) among middle and high school student by DOH-defined race/ethnicity* and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	6.9% (4.85%, 9.8%)	6.1% (3.9%, 9.3%)	5.8% (4.2%, 8.1%)	6.2% (5.1%, 7.7%)
Native Hawaiian	10.0% (8.4%, 11.9%)	10.2% (8.5%, 12.3%)	9.7% (8.2%, 11.5%)	10.0% (9.1%, 11.0%)
Japanese	3.7% (1.3%, 9.8%)	1.0% (0.3%, 3.3%)	1.8% (0.4%, 7.5%)	2.9% (1.3%, 6.3%)
Filipino	6.6% (5.5%, 7.8%)	4.0% (2.3%, 6.9%)	5.0% (3.3%, 7.6%)	5.2% (4.1%, 6.7%)
Other Asian	0.4% (0.13%, 1.2%)	3.9% (1.5%, 9.7%)	2.2% (0.8%, 5.8%)	1.9% (0.8%, 4.3%)
Other Pacific Islander	6.0% (4.9%, 7.2%)	3.8% (2.1%, 6.9%)	6.2% (3.6%, 10.7%)	5.5% (4.0%, 7.5%)
Black	2.9% (0.53%, 14.3%)	9.9% (4.2%, 21.4%)	11.9% (3.8%, 31.6%)	9.7% (6.1%, 15.1%)
Other Ethnicity	11.5% (10.1%, 13.0%)	8.1% (6.0%, 11.0%)	9.4% (7.6%, 11.6%)	9.3% (8.1%, 10.7%)
Cisgender	6.9% (6.1%, 7.8%)	6.3% (5.0%, 7.9%)	7.0% (5.9%, 8.2%)	6.7% (6.0%, 7.5%)
Unsure Gender	6.9% (3.0%, 15.1%)	5.6% (3.3%, 9.5%)	6.8% (3.9%, 11.5%)	6.3% (4.6%, 8.4%)
Transgender	17.6% (8.3%, 33.5%)	16.9% (5.2%, 43.2%)	15.0% (7.2%, 28.7%)	16.4% (8.3%, 29.9%)
High School				
White	19.4% (15.1%, 24.5%)	19.9% (14.8%, 26.3%)	17.2% (13.4%, 21.8%)	18.8% (15.6%, 22.4%)
Native Hawaiian	29.9% (26.7%, 33.4%)	20.2% (17.7%, 22.9%)	20.7% (18.5%, 23.1%)	23.6% (21.9%, 25.4%)
Japanese	6.1% (2.1%, 16.9%)	8.3% (5.16%, 13.2%)	17.3% (10.6%, 27.0%)	8.9% (5.3%, 14.7%)
Filipino	17.1% (14.3%, 20.3%)	14.2% (11.3%, 17.6%)	15.2% (11.5%, 19.9%)	15.5% (13.4%, 17.9%)
Other Asian	11.4% (8.0%, 15.9%)	8.1% (4.3%, 15.0%)	8.8% (2.8%, 24.0%)	9.8% (7.7%, 12.5%)
Other Pacific Islander	11.5% (6.0%, 20.9%)	10.3% (6.4%, 16.2%)	11.0% (5.7%, 20.3%)	11.1% (7.8%, 15.7%)
Black	19.8% (8.3%, 40.3%)	9.1% (3.0%, 24.7%)	9.6% (2.2%, 33.4%)	10.6% (4.5%, 23.2%)
Other Ethnicity	25.4% (22.8%, 28.1%)	17.1% (15.2%, 19.2%)	17.1% (14.5%, 20.1%)	18.7% (17.2%, 20.3%)
Cisgender	20.4% (18.1%, 22.8%)	16.5% (15.1%, 17.9%)	16.7% (15.0%, 18.5%)	17.8% (16.6%, 19.0%)
Unsure Gender	15.0% (7.4%, 28.0%)	17.2% (8.9%, 30.7%)	14.7% (7.5%, 26.8%)	15.8% (10.0%, 24.1%)
Transgender	18.2% (10.1%, 30.6%)	20.2% (11.0%, 34.0%)	23.8% (15.7%, 34.3%)	21.2% (15.9%, 27.6%)

**AIAN suppressed due to sample size.*

Table 2. Past 30-day binge drinking percentage and 95% confidence intervals among middle and high school student by DOH-defined race/ethnicity* and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	3.1% (1.7%, 5.4%)	0.9% (0.4%, 2.3%)	1.9% (1.0%, 3.8%)	2.0% (1.4%, 2.8%)
Native Hawaiian	6.9% (5.5%, 8.6%)	3.8% (3.0%, 4.8%)	5.4% (3.9%, 7.3%)	5.4% (4.8%, 6.1%)
Japanese	2.4% (0.6%, 9.3%)	0.5% (0.1%, 2.4%)	0.4% (0.1%, 2.7%)	1.8% (0.5%, 6.3%)
Filipino	4.1% (2.4%, 6.8%)	1.4% (0.6%, 3.1%)	2.2% (1.3%, 3.7%)	2.6% (1.8%, 3.8%)
Other Asian	0.2% (0.0%, 0.7%)	1.8% (0.5%, 6.1%)	1.1% (0.3%, 5.0%)	0.9% (0.4%, 2.1%)
Other Pacific Islander	5.0% (4.0%, 6.2%)	1.4% (0.6%, 3.2%)	2.8% (0.8%, 9.6%)	3.5% (2.1%, 5.8%)
Black	1.0% (0.1%, 7.3%)	4.9% (1.8%, 12.8%)	9.8% (1.6%, 42.1%)	6.0% (2.0%, 17.1%)
Other Ethnicity	7.0% (5.9%, 8.3%)	3.3% (2.3%, 4.8%)	4.2% (3.3%, 5.4%)	4.5% (3.8%, 5.2%)
Cisgender	4.2% (3.5%, 5.0%)	2.1% (1.7%, 2.6%)	3.2% (2.5%, 4.0%)	3.2% (2.9%, 3.6%)
Unsure Gender	6.3% (2.7%, 14.0%)	2.8% (1.3%, 6.1%)	3.8% (2.0%, 7.5%)	3.9% (2.6%, 5.7%)
Transgender	14.2% (5.6%, 31.8%)	3.5% (1.2%, 10.0%)	8.5% (3.5%, 19.2%)	7.5% (4.8%, 11.6%)
High School				
White	9.4% (6.4%, 13.7%)	13.7% (10.0%, 18.4%)	7.7% (5.1%, 11.4%)	10.3% (8.5%, 12.4%)
Native Hawaiian	15.0% (13.1%, 17.1%)	10.5% (8.4%, 12.9%)	12.2% (10.4%, 14.3%)	12.5% (11.4%, 13.7%)
Japanese	0.3% (0.1%, 1.0%)	2.0% (0.7%, 5.4%)	8.6% (3.4%, 20.0%)	2.5% (1.2%, 4.9%)
Filipino	10.9% (8.3%, 14.1%)	5.4% (4.1%, 7.1%)	8.3% (5.9%, 11.5%)	8.1% (6.9%, 9.7%)
Other Asian	2.7% (0.6%, 10.8%)	3.1% (1.2%, 7.3%)	2.4% (0.6%, 9.6%)	2.7% (1.4%, 5.4%)
Other Pacific Islander	8.1% (4.3%, 14.7%)	4.3% (2.3%, 7.8%)	7.7% (3.5%, 16.2%)	7.1% (4.6%, 11.0%)
Black	14.5% (4.4%, 38.5%)	5.7% (1.2%, 22.7%)	1.7% (0.4%, 7.2%)	4.9% (2.2%, 10.5%)
Other Ethnicity	14.2% (12.2%, 16.4%)	8.0% (6.5%, 9.9%)	7.7% (6.4%, 9.1%)	9.0% (8.1%, 10.0%)
Cisgender	10.6% (8.9%, 12.5%)	8.3% (7.2%, 9.5%)	8.3% (7.3%, 9.5%)	9.0% (8.3%, 9.8%)
Unsure Gender	8.6% (2.7%, 24.4%)	8.3% (3.5%, 18.3%)	7.2% (2.6%, 18.4%)	8.0% (4.3%, 14.4%)
Transgender	11.4% (5.9%, 20.7%)	11.4% (6.3%, 19.8%)	14.7% (8.1%, 25.4%)	12.8% (9.0%, 17.9%)

**AIAN suppressed due to sample size.*

Summary of Figures 7-11 & Tables 1-2

For the combined years 2019, 2021, and 2023, current alcohol use among MS and HS students varied by race and ethnicity (Figure 7). For MS students, alcohol use was highest among Native Hawaiian (NH; **10.0%**, 95% CI: 9.0-11.0%), Black (**9.7%**, 95% CI: 6.0-15.2%), and Other Ethnicity (**9.3%**, 95% CI: 8.1-10.7%). The prevalence of alcohol use was significantly higher among NH and Other Ethnicity than White (**6.2%**, 95% CI: 5.0-7.7%), Other Pacific Islander (OPI; **5.5%**, 95% CI: 4.0-7.5%), Filipino (**5.2%**, 95% CI: 4.0-6.7%), Japanese (**2.9%**, 95% CI: 1.3-6.4%), and Other Asian (**1.9%**, 95% CI: 0.8-4.3%). For HS students, NH also had the highest prevalence of current alcohol use (**23.6%**, 95% CI: 21.9-25.4%), followed by White (**18.8%**, 95% CI: 15.6-22.4%), Other Ethnicity (**18.7%**, 95% CI: 17.2-20.3%), and Filipino (**15.5%**, 95% CI: 13.4-17.9%). The prevalence for NH HS students was significantly higher than for Japanese, Filipino, Other Asian, OPI, and Other Ethnicity. Table 1 has a further breakdown for each year along with the combined years, which were used for strengthening the precision of the analyses. It is also worth noting that American Indian and Alaska Native (AIAN) numbers were suppressed due to low sample size across all figures and tables in this section.

Binge drinking trends among MS and HS students similarly differed by race and ethnicity (Figure 8). Among MS students, binge drinking was most prevalent among Black students (**6.0%**, 95% CI: 1.9-17.4%), followed by NH (**5.4%**, 95% CI: 4.8-6.1%) and OPI (**3.5%**, 95% CI: 2.1-5.8%); it was least prevalent among Other Asian (**0.9%**, 95% CI: 0.3-2.2%), Japanese (**1.8%**, 95% CI: 0.5-6.3%), and White students (**2.0%**, 95% CI: 1.4-2.8%). Among HS students, NH had the highest prevalence of binge drinking (**12.5%**, 95% CI: 11.4-13.7%), followed by White (**10.3%**, 95% CI: 8.5-12.4) and Other Ethnicity (**9.0%**, 95% CI: 8.1-10.0), and least prevalent among Japanese (**2.5%**, 95% CI: 1.2-4.9%) and Other Asian (**2.7%**, 95% CI: 1.4-5.4%). See Table 2 for a year-by-year breakdown.

The prevalence of current alcohol use was significantly higher among transgender MS students (**16.4%**, 95% CI: 8.3-30.0%) than cisgender (**6.7%**, 95% CI: 6.0-7.5%), whereas for HS students (Figure 9), the prevalence of alcohol use was higher among transgender individuals but not significantly so. Binge drinking followed the same patterns (Figure 10). For MS students, the prevalence of binge drinking was significantly higher for transgender individuals (**7.5%**, 95% CI: 4.8-11.6%) than cisgender (**3.2%**, 95% CI: 2.9-3.6%), while for HS students, the prevalence was higher among transgender students but not by a significant amount. Tables 1 and 2 show further yearly breakdowns for alcohol use and binge drinking based on gender identity.

In 2021 and 2023, current alcohol use by sexual and gender minority (SGM) status varied between MS and HS students (Figure 11). Among MS students, the prevalence of alcohol use was slightly higher among SGM students, but not significantly (**6.9%** [95% CI: 5.7-8.4%] compared to **6.6%** [95% CI: 5.7-7.7%]). Among HS students, current alcohol use was significantly more prevalent among SGM individuals (**21.0%** [95% CI: 18.3-23.9%]) than non-SGM individuals (**15.4%** [95% CI: 14.3-16.4%]).

Emerging Adults (18-29 years old)

Figure 12. Any past 30-day alcohol use among emerging adults (18-29 years old) by Hawai‘i DOH-defined race/ethnicity, Hawai‘i BRFSS 2020-2022

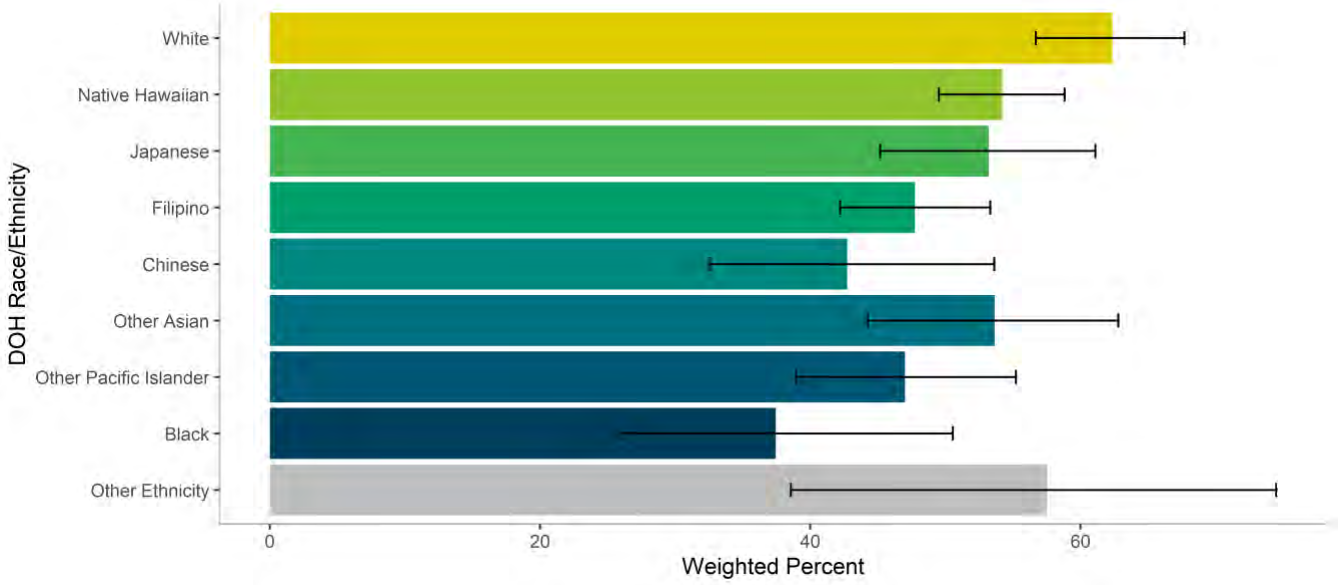


Figure 13. Any past 30-day binge drinking among emerging adults (18-29 years old) by Hawai‘i DOH-defined race/ethnicity, Hawai‘i BRFSS 2020-2022

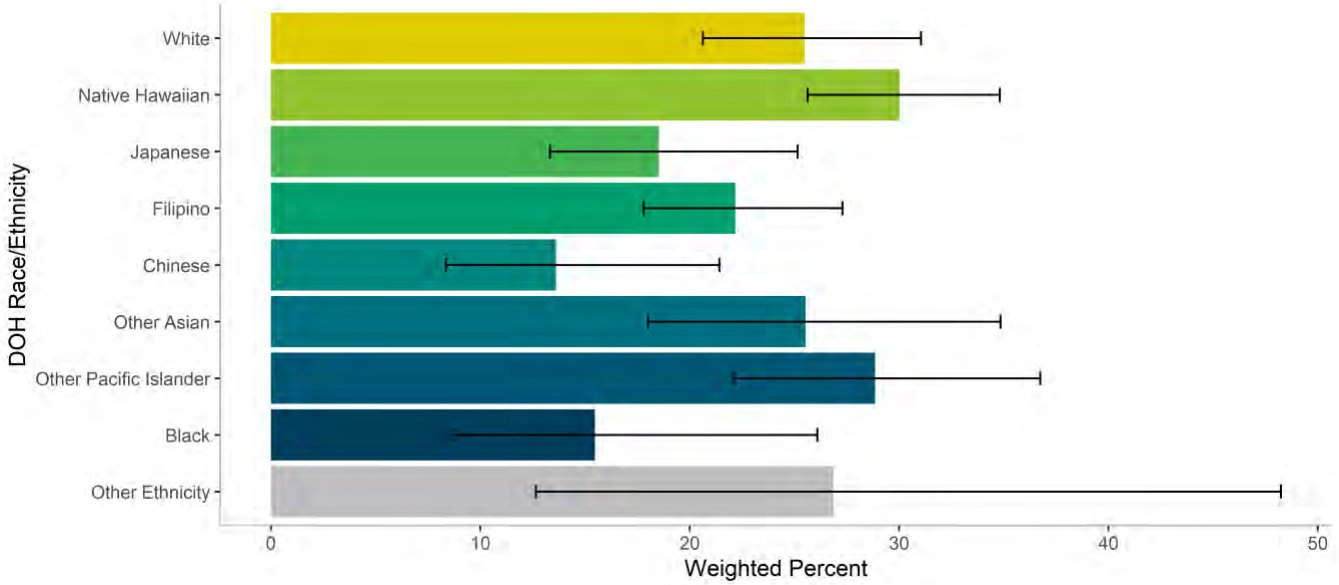
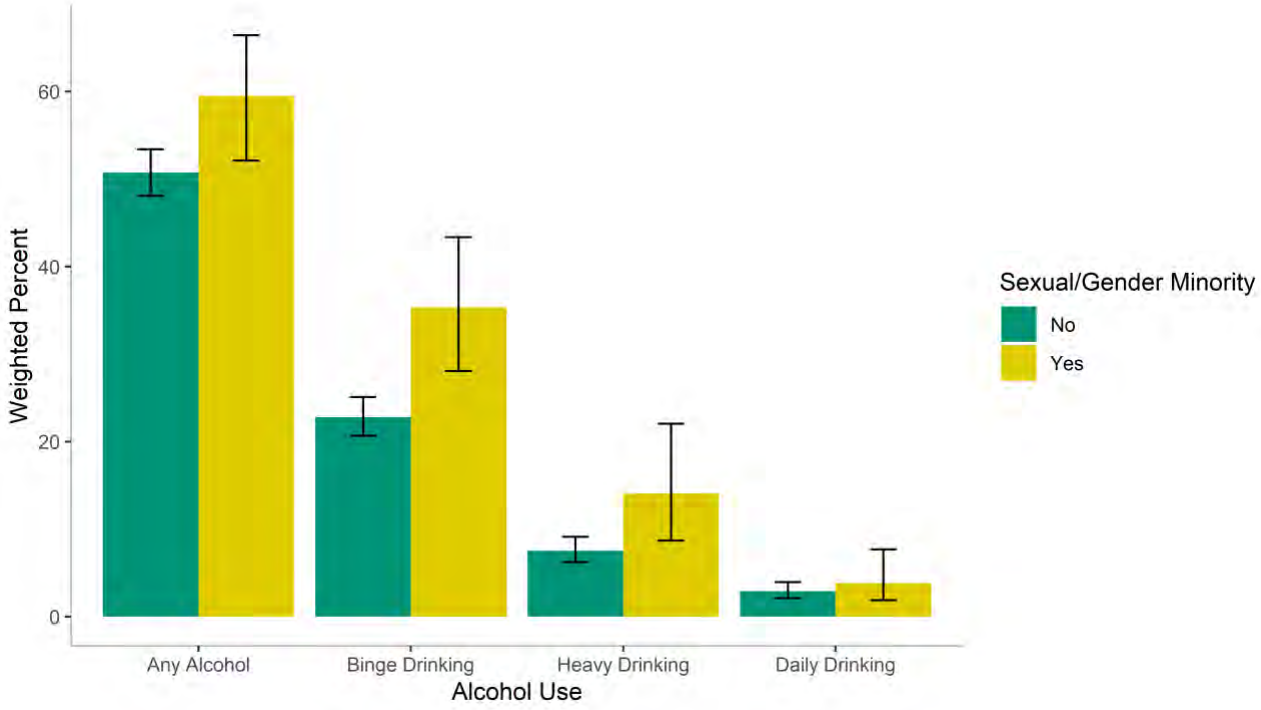


Figure 14. Past 30-day alcohol use and patterns of use among emerging adults (18-29 years old) by sex/gender minority status, Hawai‘i BRFSS 2020-2023



All Adults (18+ years old)

Figure 15. Any past 30-day alcohol use among all adults (18+ years old) by Hawai‘i DOH-defined race/ethnicity, Hawai‘i BRFSS 2020-2022

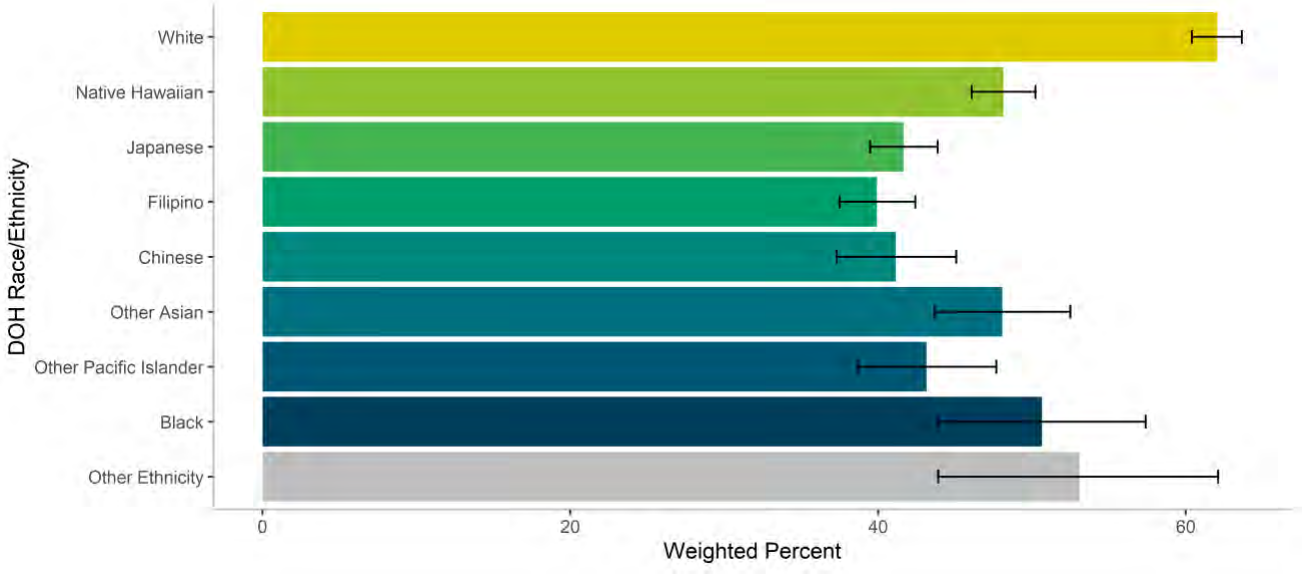


Figure 16. Any past 30-day binge drinking among <u>all adults (18+ years old)</u> by Hawai‘i DOH-defined race/ethnicity, Hawai‘i BRFSS 2020-2022

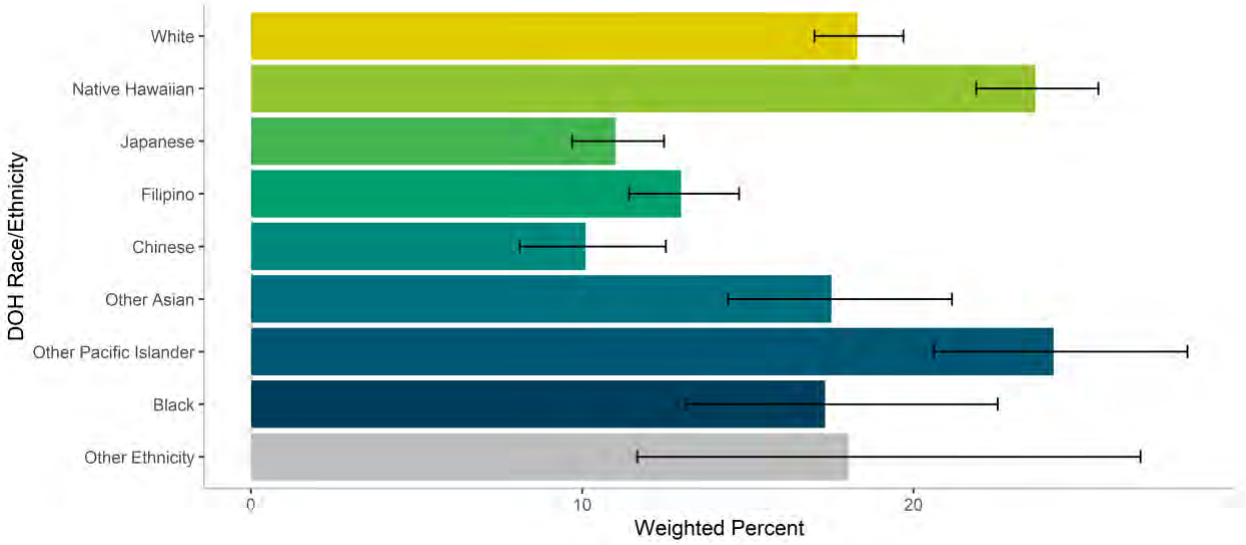
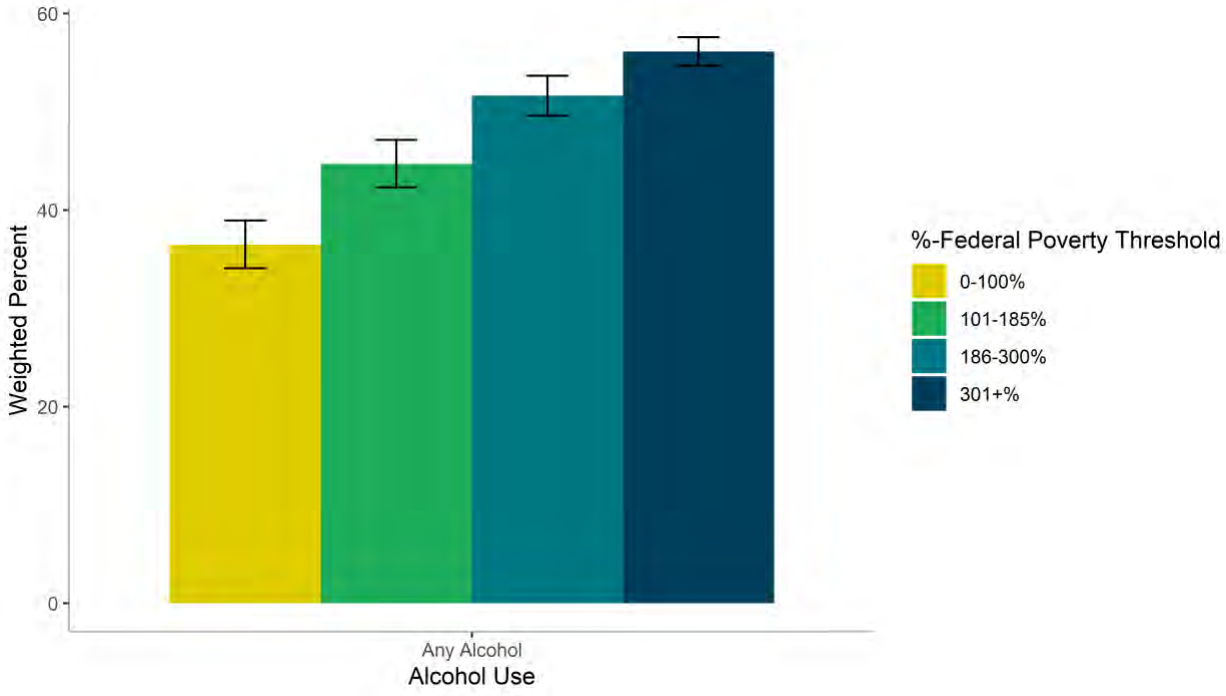


Figure 17. Past 30-day alcohol use by percent federal poverty threshold among <u>all adults (18+ years old)</u>, Hawai‘i BRFSS 2020-2022



Summary of Figures 12-17

Displayed in Figure 12, among emerging adults (aged 18-29 years) in Hawai‘i, any current alcohol use was most prevalent among White residents (**62.4%**, 95% CI: 56.7-67.7%), followed by NH (**54.2%**, 95% CI: 49.5-58.8%), Other Asian (**53.6%**, 95% CI: 44.2-62.8%), and Japanese (**53.2%**, 95% CI: 45.2-61.1%) residents. However, binge drinking was most prevalent among NH (**30.0%**, 95% CI: 25.6-34.8%) and OPI (**28.9%**, 95% CI: 22.1-36.7%) emerging adults (Figure 13), with similar patterns observed for both heavy drinking and daily drinking (not shown). Emerging adults that identified with a SGM group had a higher prevalence of alcohol use, binge drinking, heavy drinking, and daily drinking relative to those that did not (Figure 14). However, only the prevalence

of binge drinking (**35.3%**, 95% CI: 28.1-43.4%) among SGM individuals was significantly higher than emerging adults who did not identify with a SGM group (**22.8%**, 95% CI: 20.7-25.1%).

Alcohol use trends among all adults (aged 18+ years) were similar to those of emerging adults with regard to race and ethnicity (Figure 15). Current alcohol use was most prevalent among White residents (**62.0%**, 95% CI: 60.4-63.6%) and least prevalent among Filipino residents (**39.9%**, 95% CI: 37.5-42.4%). Binge drinking was most prevalent among OPI (**24.2%**, 95% CI: 20.6-28.3%) and NH (**23.7%**, 95% CI: 21.9-25.6%) adults, and least prevalent among Chinese (**10.1%**, 95% CI: 8.1-12.5%) and Japanese (**11.0%**, 95% CI: 9.7-12.5%) adults (Figure 16). Percent federal poverty threshold was negatively related to current alcohol use among adult residents, with less impoverished residents having a higher prevalence of past 30-day alcohol use relative to those closer to the poverty threshold (Figure 17).

Mental Health and Other Key Factors

Youth (<18 years old)

Figure 18. Past 30-day alcohol use among middle school students who reported ever feeling sad, empty, hopeless, angry, or anxious by survey year, Hawai‘i YRBS 2019, 2021, and 2023

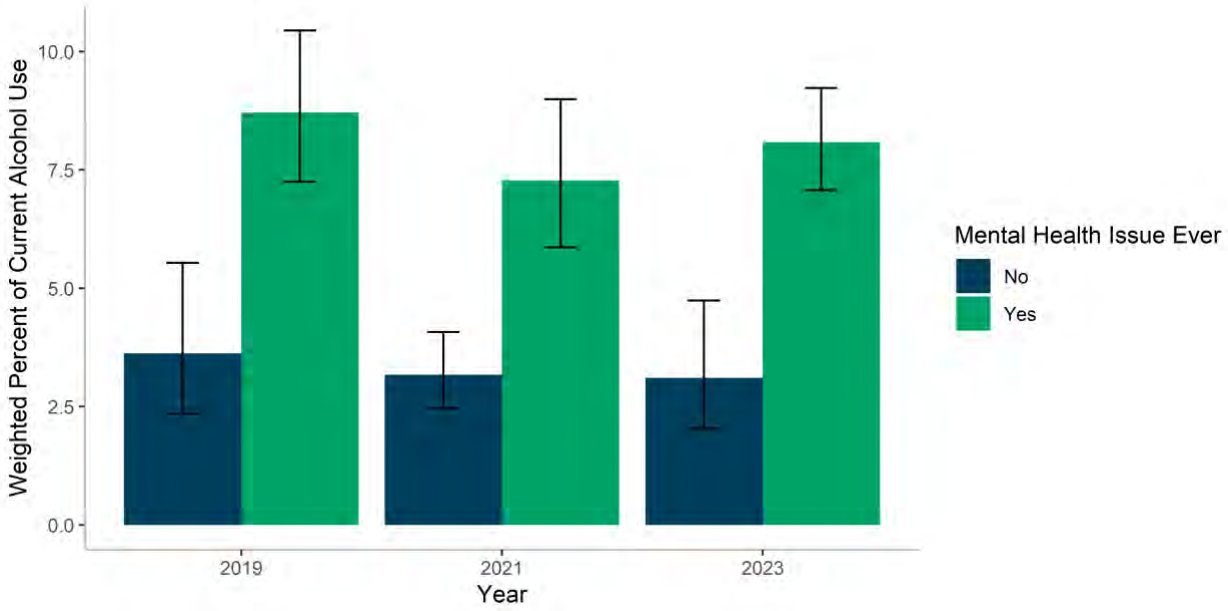


Figure 19. Past 30-day alcohol use among middle school students who reported ever feeling sad or hopeless almost every day for two or more weeks in a row by survey year, Hawai‘i YRBS 2019, 2021, and 2023

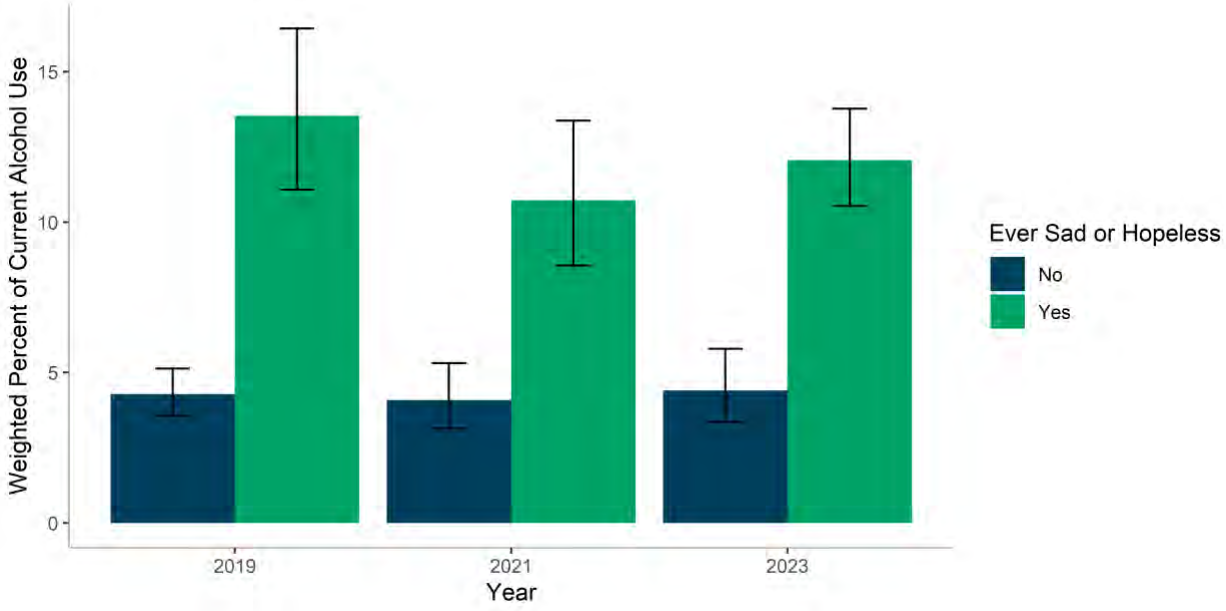
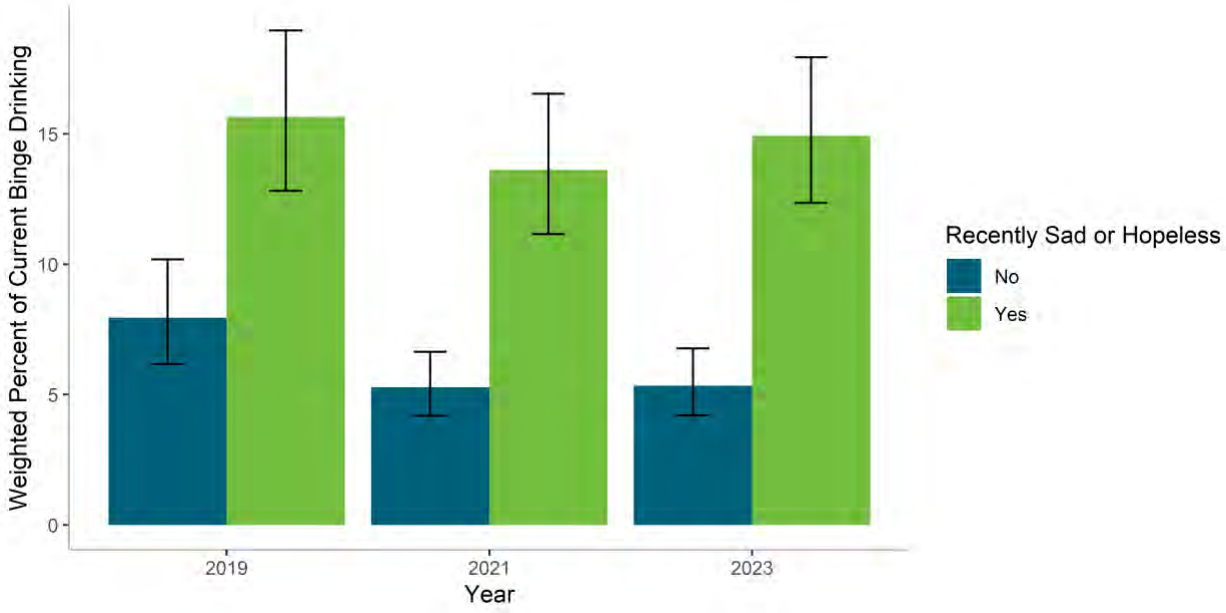


Figure 20. Past 30-day binge drinking among high school students who reported depression in the past 12 months by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 18-20

Shown in Figure 18, in 2019, 2021, and 2023, current alcohol use was significantly higher among MS students who reported ever feeling sad, empty, hopeless, angry, or anxious relative to those not reporting these feelings (in 2019, **8.7%** [95% CI: 7.2-10.4%] compared to **3.6%** [95% CI: 2.4-5.5%]; in 2021, **7.3%** [95% CI: 5.9-9.0%] compared to **3.2%** [95% CI: 2.5-4.0%]; in 2023, **8.1%** [95% CI: 7.1-9.2%] compared to **3.1%** [95% CI: 2.0-4.7%]).

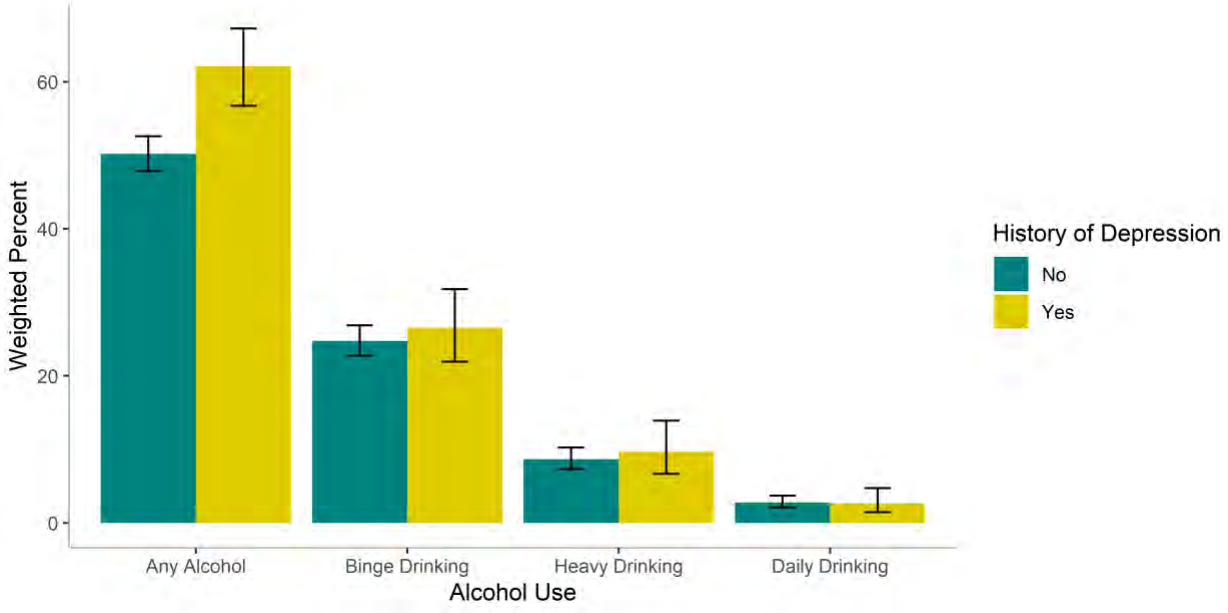
Similar trends were observed in the prevalence of current alcohol use among MS students who reported ever feeling depressed (i.e., feeling sad or hopeless almost every day for two or more weeks in a row) compared to

those who did not (Figure 19). They had significantly more prevalent current alcohol use (in 2019, **13.5%** [95% CI: 11.1-16.4%] compared to **4.3%** [95% CI: 3.6-5.1%]; in 2021, **10.7%** [95% CI: 8.6-13.4%] compared to **4.1%** [95% CI: 3.1-5.3%]; in 2023, **12.1%** [95% CI: 10.5-13.8%] compared to **4.4%** [95% CI:3.3-5.8%]). As with mental health issues, alcohol use among MS students who reported feeling depressed was highest in 2019 and lowest in 2021, but the difference in prevalence between years was not significant.

Over the same period, binge drinking was significantly higher for HS students who reported feeling depressed in the last year relative to those who did not (Figure 20). In 2019, the prevalence was **15.6%** (95% CI: 12.8-19.0%) compared to **7.9%** (95% CI: 6.2-10.2%); in 2021, it was **13.6%** (95% CI: 11.2-16.5%) compared to **5.3%** (95% CI: 4.2-6.6%); and in 2023, it was **14.9%** (95% CI: 12.4-17.9%) compared to **5.3%** (95% CI: 4.2-6.8%).

Emerging Adults (18-29 years old)

Figure 21. Past 30-day alcohol use and patterns of use among emerging adults (18-29 years) by history of a depressive disorder in Hawai‘i, BRFSS 2020-2023



All Adults (18+ years old)

Figure 22. Past 30-day alcohol use and patterns of use among all adults (18+ years old) by the number of days in the past 30 days where the respondents' mental health was not good in Hawai'i, BRFSS 2020-2023

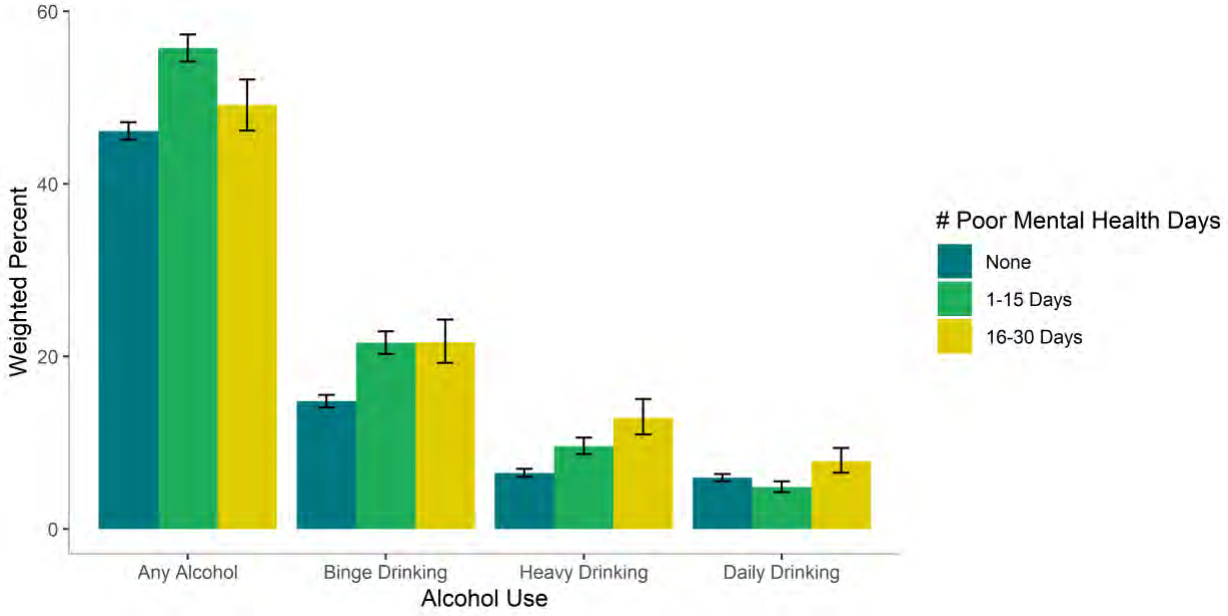
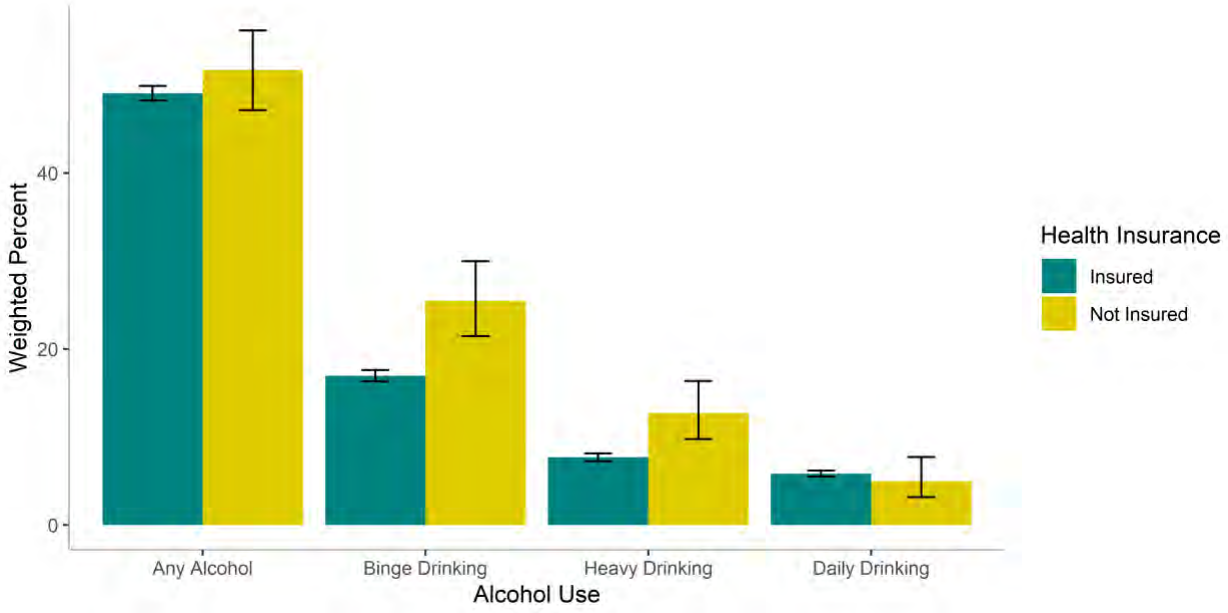


Figure 23. Past 30-day alcohol use and patterns of use among all adults (18+ years old) by health insurance status in Hawai'i, BRFSS 2020-2023



Summary of Figures 21-23

As seen in Figure 21, emerging adults (18-29 years old) who self-reported a history of depressive disorder had a significantly higher prevalence of any alcohol use (**62.1%**, 95% CI: 56.7-67.2%) compared to those who did not (**50.2%**, 95% CI: 47.9-52.6%) between 2020 and 2023; however, binge drinking, heavy drinking, and daily drinking prevalences did not significantly differ by history of depression.

Adults (aged 18+) reporting one or more poor mental health days in the past 30 days had a significantly higher prevalence of deleterious drinking patterns, with **21.7%** (95% CI: 19.2-24.3%) of those with 16 or more poor mental health days reporting binge drinking versus **14.8%** (95% CI: 14.1-15.5%) with no poor mental health days (Figure 22). Similarly, the prevalence of heavy drinking was significantly higher among those reporting 16 or more poor mental health days (**12.9%**, 95% CI: 11.0-15.1%) compared to those reporting 1-15 days (**9.6%**, 95% CI: 8.7-10.6%) or none (**6.5%**, 95% CI: 6.0-7.0%).

Shown in Figure 23, binge drinking (**25.5%**, 95% CI: 21.4-30.0%) and heavy drinking (**12.7%**, 95% CI: 9.8-16.4%) were significantly more prevalent among adults without health insurance than those with health insurance (**17.0%**, 95% CI: 16.3-17.6% and **7.7%**, 95% CI: 7.3-8.1%, respectively). However, the prevalence of any alcohol use and daily drinking did not differ significantly by health insurance status.

Nicotine Use in Hawai‘i

Introduction

Nicotine use encompasses a wide variety of tobacco and non-tobacco products, including combustible cigarettes, chewing tobacco, cigars, hookah, e-cigarettes (aka ENDS vaping), and nicotine pouches (not assessed currently in the BRFSS or YRBS). Both tobacco products and non-tobacco nicotine (NTN) products contain nicotine, a highly addictive chemical, and confer various health consequences. Tobacco smoking in particular—the leading cause of preventable death in the U.S. (CDC, 2024i)—costs $225 billion in annual medical expenses nationally and $611 million in Hawai‘i (HHDW, 2022b; Campaign for Tobacco Free Kids, 2024). Hundreds of the 7,000 chemicals in tobacco smoke are carcinogenic or toxic (Drope et al., 2017), and most e-liquids contain toxic chemicals (Winickoff, Evins, & Levy 2024). Risk factors for nicotine use include anxiety, depression, and low socioeconomic status (American Lung Association, 2024). For this profile, unless specifically referring to tobacco, we group both tobacco and NTN under the umbrella of nicotine products regardless of whether it was derived from tobacco or synthesized in a laboratory.

Youth (<18 years old)

Adolescence is a sensitive developmental period during which time individuals are disposed to impulsivity, peer-influenced decision making, and increased health risk behaviors, including nicotine use (Graham & Kahn, 2020). Given the ongoing neurobiological development that occurs during adolescence, as brain regions for reward processing, learning, and executive function mature, adolescents are uniquely vulnerable to the effects of nicotine: they become dependent more quickly, find nicotine more rewarding, underestimate the risks of nicotine use, and are more influenced by peer use (Goriounova & Mansvelder, 2012). Further, the wide availability of nicotine products for purchase—many appealing to youth with flavors such as candy and citrus—can lend to early initiation of nicotine use. Youth nicotine use is in turn associated with multiple nicotine product use and nicotine dependence (Simon et al., 2023).

Nicotine use during adolescence can increase the long-term risk for psychiatric disorders and cognitive impairments (Goriounova & Mansvelder, 2012). Further, nicotine use is associated with inadequate sleep (Singh, Wanjari, & Sinha, 2023); lack of adequate sleep during adolescence can have particularly harmful consequences, given that sleep is integral to brain development during these years (Galván, 2020). These can include diminished mental health, impaired academic performance, behavioral issues, and chronic conditions such as obesity and diabetes (CDC, 2024h). E-cigarette use presents specific physical, psychological, and social risks for youth. E-cigarette use among youth has been associated with depression, suicidality, ADHD symptoms (Becker & Rice, 2022), increased risk of contracting COVID-19 (Gaiha, Cheng, & Halpern-Felsher, 2020), delinquency and other substance use (Staff et al., 2020).

Emerging Adults (18-29 years old)

Given ongoing brain development until the mid-to-late twenties, emerging adults experience many of the same risks of tobacco/nicotine use as youths. Cigarette smoking among young adults is associated with cognitive impairments (Fried, Watkinson, & Gray, 2006) and mental health problems, such as anxiety and depression (Pedersen & Von Soest, 2009). A bidirectional relationship may exist between mental health problems and nicotine use, where depression predicates nicotine use and vice versa (Lechner et al., 2017). Emerging adults who

use nicotine products also have an increased prevalence of using other substances, including cannabis and alcohol (Wade et al., 2022).

All Adults (18+ years old)

Tobacco smoking (e.g., cigars and combustible cigarettes) in adulthood is significantly and independently associated with chronic conditions such as diabetes, cancer, cardiovascular disease, gum disease, and lung disease. An estimated 16 million adults in the U.S. have a smoking-related disease (CDC, 2024d). Cigarette smoking is also associated with depression and anxiety in a bidirectional relationship (Fluharty et al., 2017). Nicotine use degrades the quality and duration of sleep across age groups (Singh, Wanjari, & Sinha, 2023), which can lead to impaired cognitive functioning and chronic diseases in turn (CDC, 2024h). The long-term effects of e-cigarette use, which can expose the user to carcinogenic chemicals and heavy metals, are unclear. However, electronic forms of nicotine delivery have been associated with lipoid pneumonia, spontaneous pneumothorax, popcorn lung (Broderick, 2024), seizures, and oral health problems (Becker & Rice, 2022).

Indicators and Definitions

This section focuses on nicotine use in the state of Hawai‘i by differing groups across different age spans based on the following indicators:

- *Current Nicotine*:
    - **BRFSS** (only): Adults who self-reported use of a nicotine product (combustible cigarettes, e-cigarettes, or chewing tobacco) every day or some days.
- *Current e-Cigarettes*:
    - **YRBS Middle & High School**: Students who self-reported using electronic vapor products (e-cigarettes, e-cigars, e-pipes, vape pens, e-hookahs, and hookah pens such as blu, NJOY, or StarBuzz) on one or more of the past 30 days.
    - **BRFSS**: Adults who self-reported the use of e-cigarettes or other electronic vaping products every day or some days.
- *Current Cigarettes*:
    - **YRBS Middle & High School:** Students who self-reported smoking cigarettes on one or more of the past 30 days.
    - **BRFSS:** Adults who self-reported the use of combustible cigarettes every day or some days.
- *Current Chewing Tobacco*:
    - **BRFSS** (only): Adults who self-reported the use of chewing tobacco, snuff, or snus every day or some days.
- *Poly-Product Nicotine Use*:
    - **BRFSS** (only): Adults who self-reported the use of two or more nicotine products (e-cigarettes, cigarettes, and/or chewing tobacco) every day or some days.

Prevalence and Trends

Youth (<18 years old)

Figure 24. Current e-cigarette use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

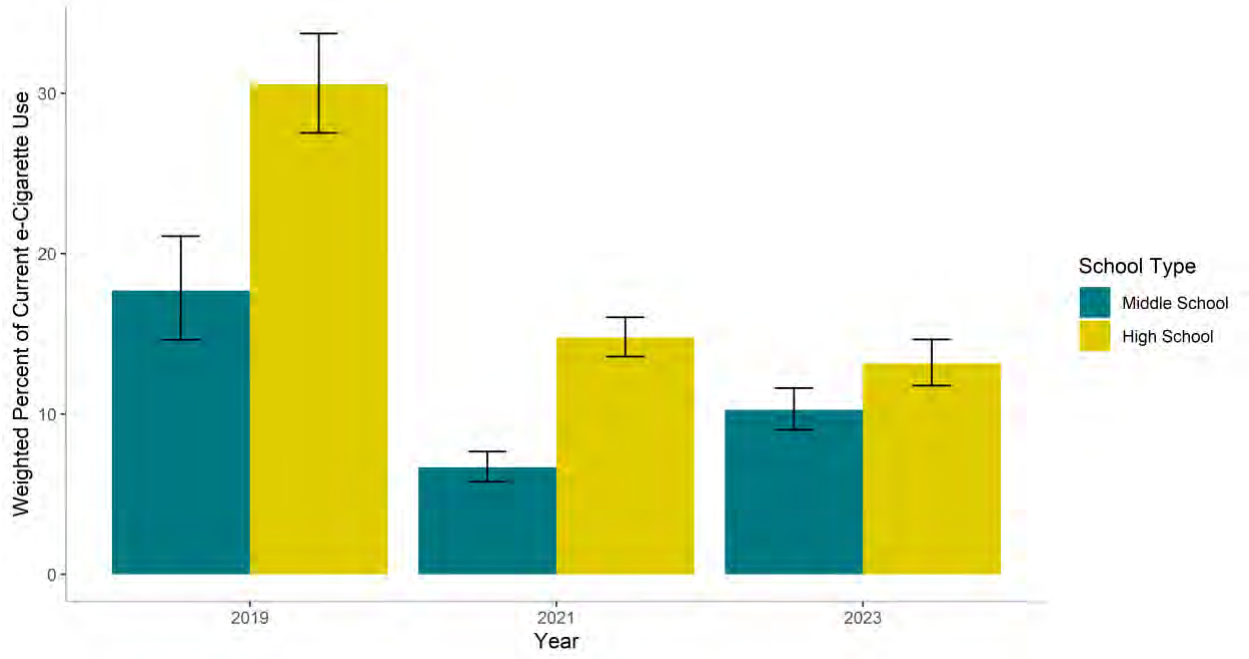
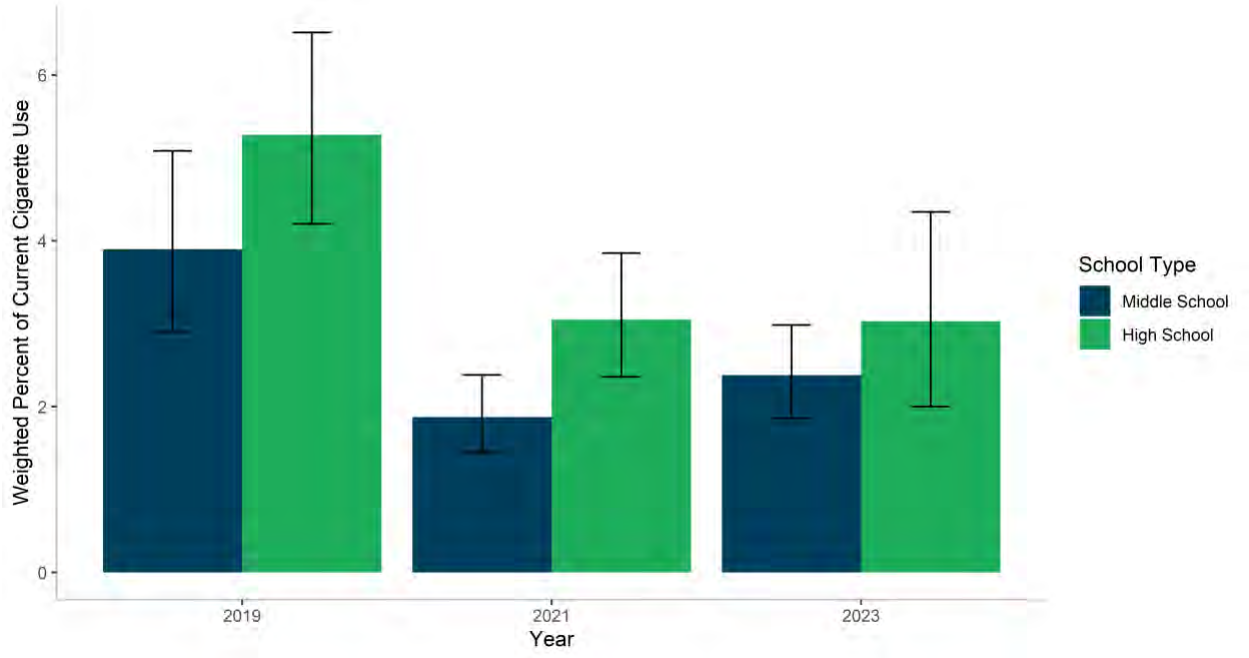


Figure 25. Current cigarette use among middle and high school students by survey years, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 24-25

Shown in Figure 24, e-cigarette use was significantly more prevalent among high school (HS) students than middle school (MS) students for all years (i.e., 2019, 2021, and 2023); however, the difference in prevalence between middle and high school has been narrowing. In 2019, the prevalence of e-cigarette use was **30.6%** (95% CI: 27.5-33.7%) among HS students compared to **17.7%** (95% CI: 14.6-21.1%) among MS students; in 2021, it was **14.8%** (95% CI: 13.6-16.0%) for HS compared to **6.7%** (95% CI: 5.8-7.7%) for MS; and in 2023, it was **13.2%**

(95% CI: 11.8-14.6%) for HS compared to **10.2%** (95% CI: 9.0-11.6%) for MS. For both MS and HS students, e-cigarette use was significantly lower in 2021 and 2023 than in 2019. Among MS students, e-cigarette use was the highest for 2019 and was significantly lower for 2021 and 2023; however, for 2023 there was some rebound and the prevalence was significantly higher in 2023 compared to 2021. Among HS students, e-cigarette use was significantly lower in 2021 and 2023 compared to 2019. There was no significant difference between 2021 and 2023 for HS e-cigarette use.

Cigarette use was less prevalent than e-cigarette use among both MS and HS students (Figure 25). Cigarette use was higher among HS students than MS students, although the differences were not significant and should be interpreted carefully (**5.3%** [95% CI: 4.2-6.5%] compared to **3.9%** [95% CI: 2.9-5.1%] in 2019; **3.0%** [95% CI: 2.4-3.9%] compared to **1.9%** [95% CI: 1.4-2.4%] in 2021; and **3.0%** [95% CI: 2.0-4.3%] compared to **2.4%** [95% CI: 1.9-3.0%] in 2023). Like e-cigarette use, cigarette use was significantly lower among both groups in 2021 compared to 2019.

Emerging Adults (18-29 years old)

Figure 26. Nicotine use and patterns of use among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2023

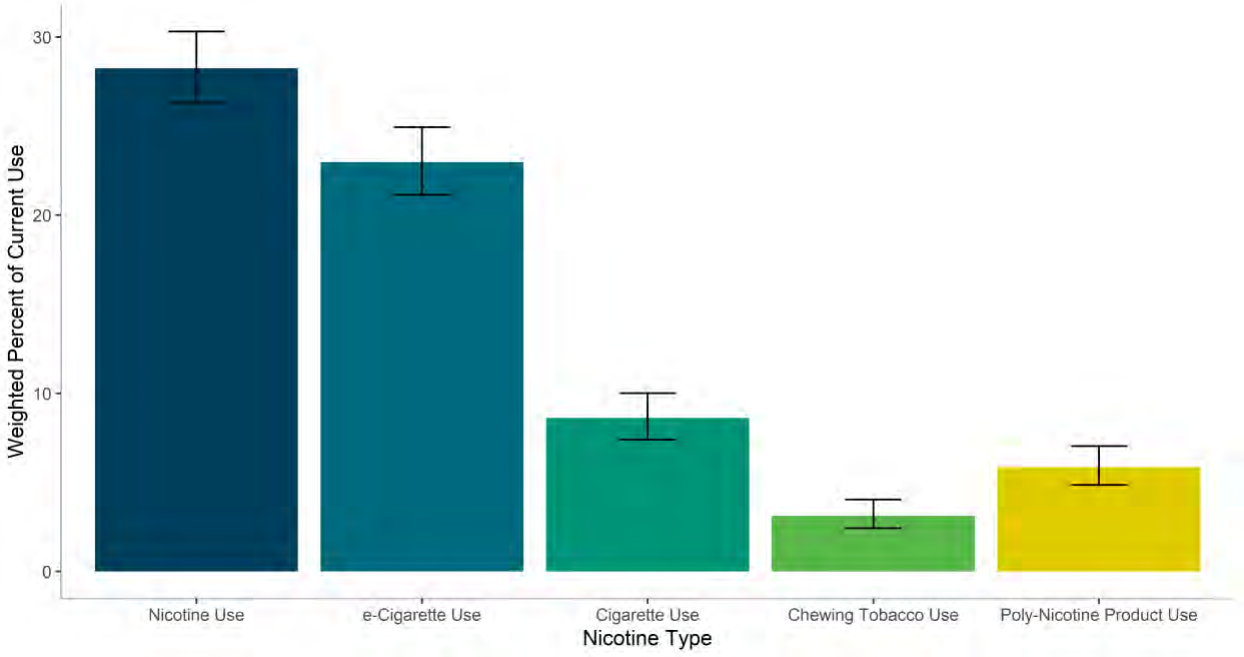


Figure 27. Current cigarette use by BRFSS year among emerging adults (18-29 years old) in Hawai‘i, 2018-2023

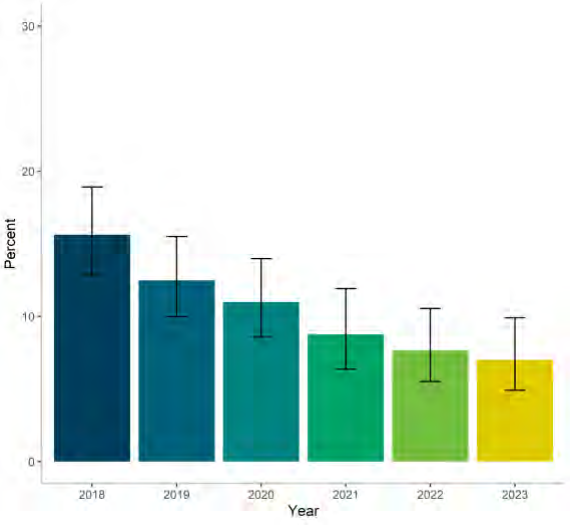
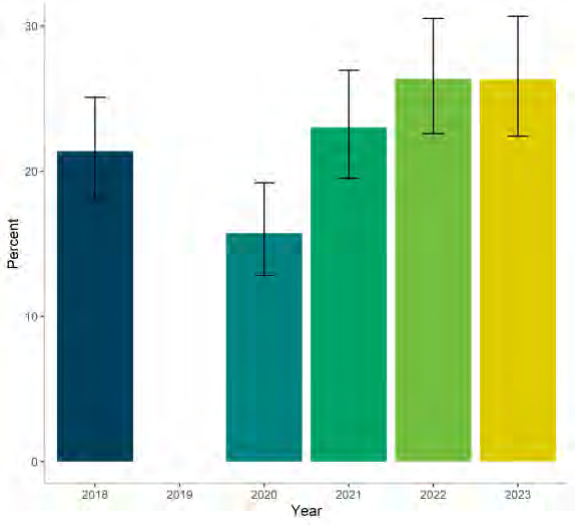


Figure 28. Current e-cigarette use by BRFSS year* among emerging adults (18-29 years old) in Hawai‘i, 2018-2023



**note:* BRFSS did not include e-cigarette question in 2019

All Adults (18+ years old)

Figure 29. Current nicotine use, e-cigarette use, and combustible cigarette use by age group in Hawai‘i, BRFSS 2020-2023

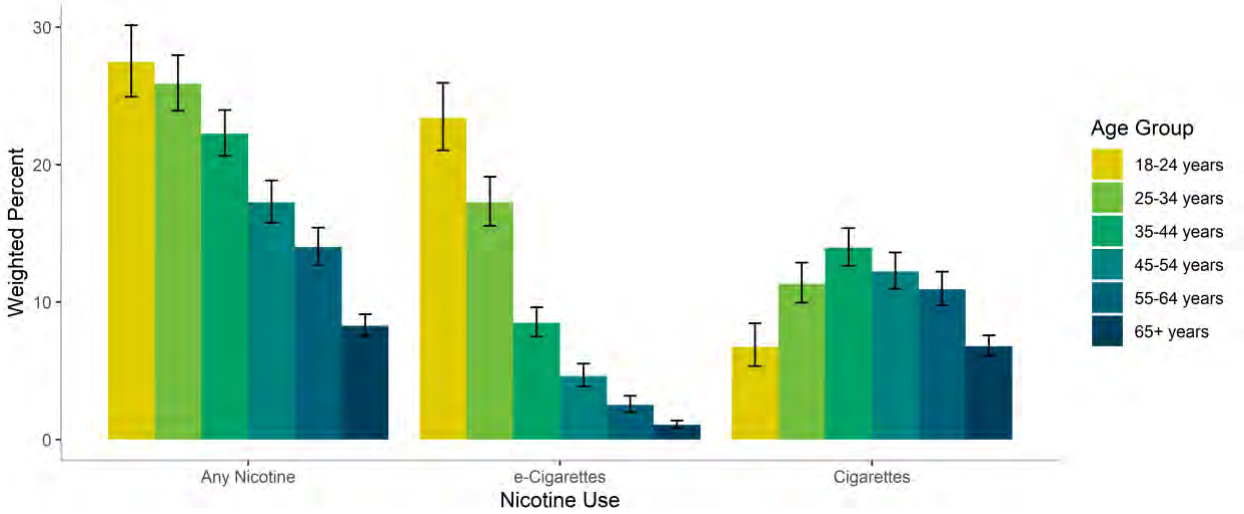
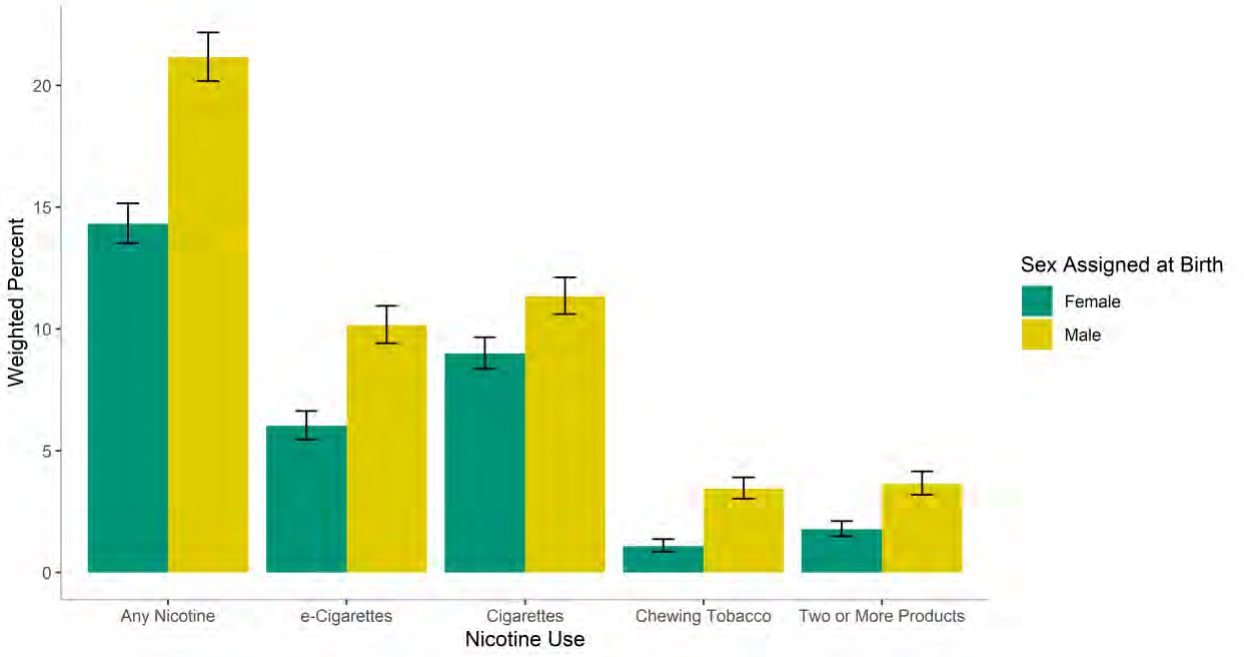


Figure 30. Current nicotine use and patterns of use among all adults (18+ years old) by sex assigned at birth in Hawai‘i, BRFSS 2020-2023



Summary of Figures 26-30

Displayed in Figure 26, **28.2%** (95% CI: 26.3-30.3%) of emerging adults (aged 18-29 years) in Hawai‘i reported using some form of nicotine some days or every day, with **23.0%** (95% CI: 21.1-24.9%) of this age group using e-cigarettes, **8.6%** (95% CI: 7.4-10.0%) using combustible cigarettes, and **3.1%** (95% CI: 2.4-4.0%) using chewing tobacco. Additionally, **5.9%** (95% CI: 4.9-7.0%) of emerging adults reported currently using 2 or more nicotine products. From 2018-2023, the prevalence of current combustible cigarette use appeared to be trending downwards among Hawai‘i’s emerging adults (Figure 27), with a prevalence of **15.6%** (95% CI: 12.8-18.9) in 2018 compared to **7.0%** (95% CI: 4.9-9.9%) in 2023; however, the prevalence of e-cigarette use appeared to follow the

opposite trajectory (Figure 28), such that the prevalence in 2023 (**26.3%**, 95% CI: 22.4-30.7%) was marginally higher compared to the pre-COVID-19 prevalence in 2018 (**21.4%**, 95% CI: 18.1-25.1%).

Among adult residents (aged 18+ years), the prevalence and patterns of nicotine use significantly differed by age group, where **27.5%** (95% CI: 23.9-30.1%) of adults aged 18-24 years currently use some form of nicotine, compared to **8.3%** (95% CI: 7.5-9.1%) of adults aged 65+ years (Figure 29). Similar to the trends by year observed among emerging adults, current e-cigarette use was significantly more prevalent during young adulthood (**23.4%** [95% CI: 21.0-25.9%] among 18-24 year olds) compared to every other age group (e.g., **1.1%** [95% CI: 0.8-1.4%] among adults aged 65+ years), while current cigarette use appeared to be most prevalent in middle age (e.g., **14.0%** [95% CI: 12.6-15.4%] among 35-44 year olds) and significantly less prevalent in both older adulthood (**6.8%**, 95% CI: 6.1-7.6% for ages 65+ years) and young adulthood (**6.7%**, 95% CI: 5.4-8.5% for ages 18-24 years).

Shown in Figure 30, male respondents were significantly more likely than female respondents to use all types of nicotine products: any nicotine (**21.2%** [95% CI: 20.2-22.2%] compared to **14.3%** [95% CI: 13.5-15.2%]), e-cigarettes (**10.2%** [95% CI: 9.4-11.0%] compared to **6.0%** [95% CI: 5.5-6.6%]), cigarettes (**11.3%** [95% CI: 10.6-12.1%] compared to **9.0%** [95% CI: 8.4-9.7%], chewing tobacco (**3.4%** [95% CI: 3.0-3.9%] compared to **1.1%** [95% CI: 0.9-1.4%], and two or more nicotine products (**3.6%** [95% CI: 3.2-4.2%] compared to **1.8%** [95% CI: 1.5-2.1%]).

Priority Populations

Youth (<18 years old)

Figure 31. Current e-cigarette use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

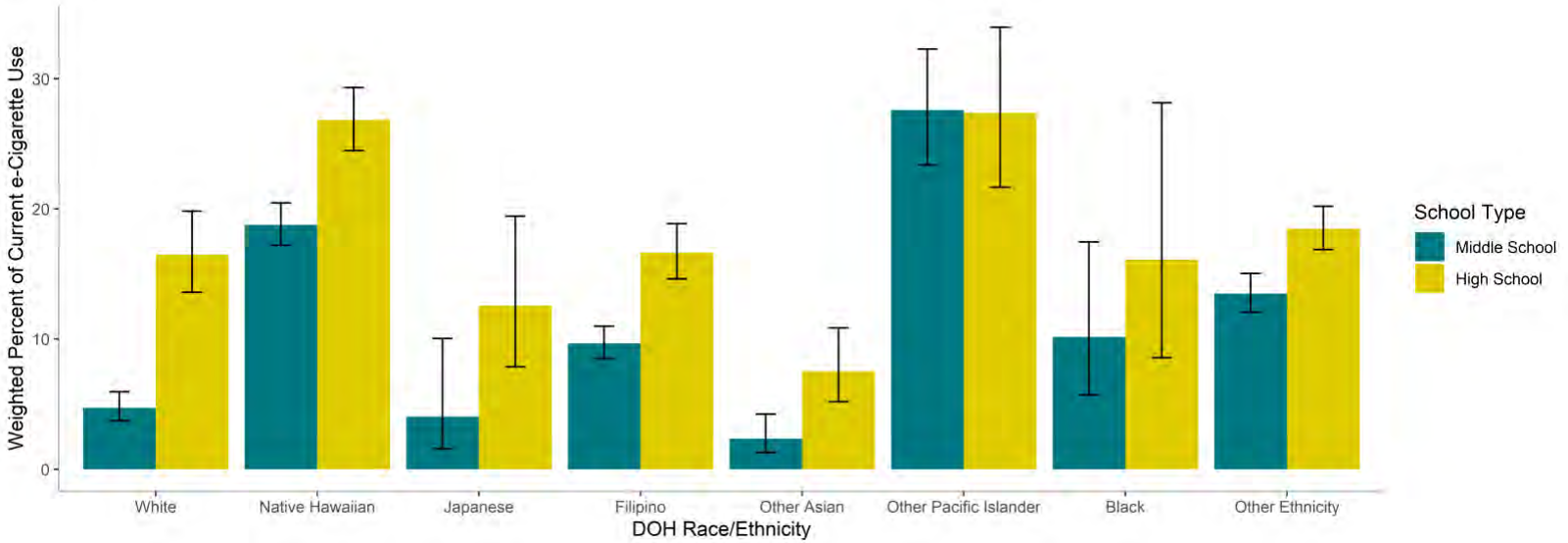


Figure 32. Current cigarette use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

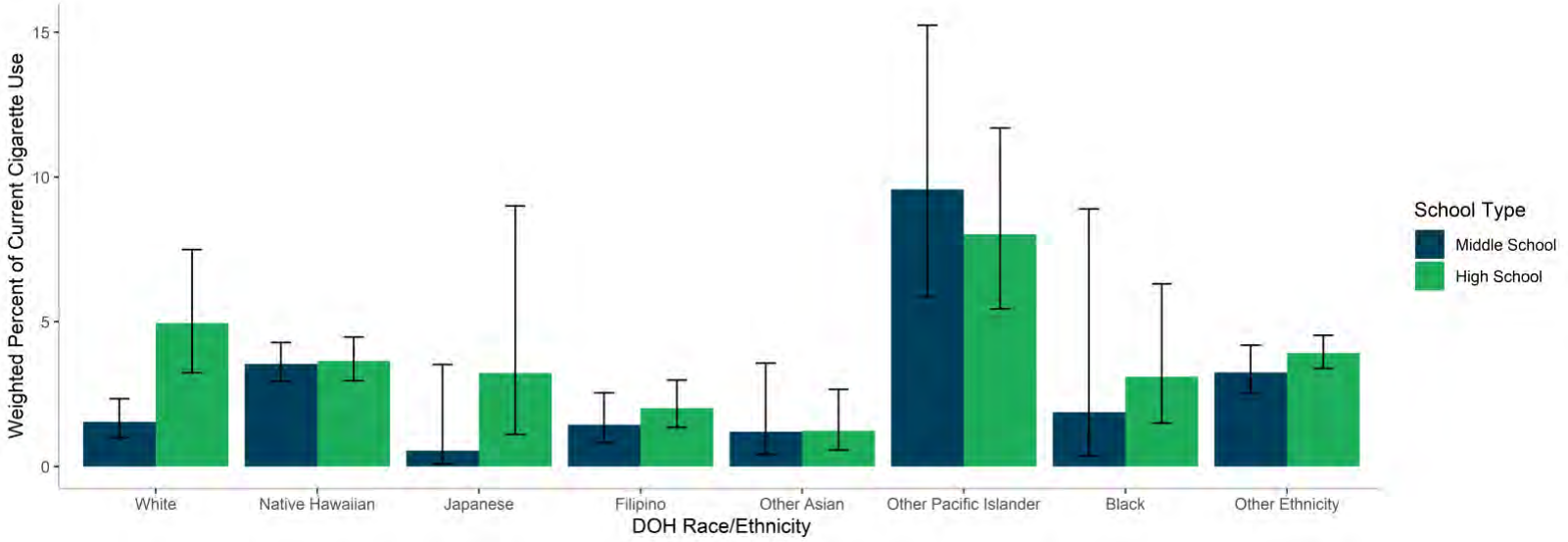


Figure 33. Current e-cigarette use among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

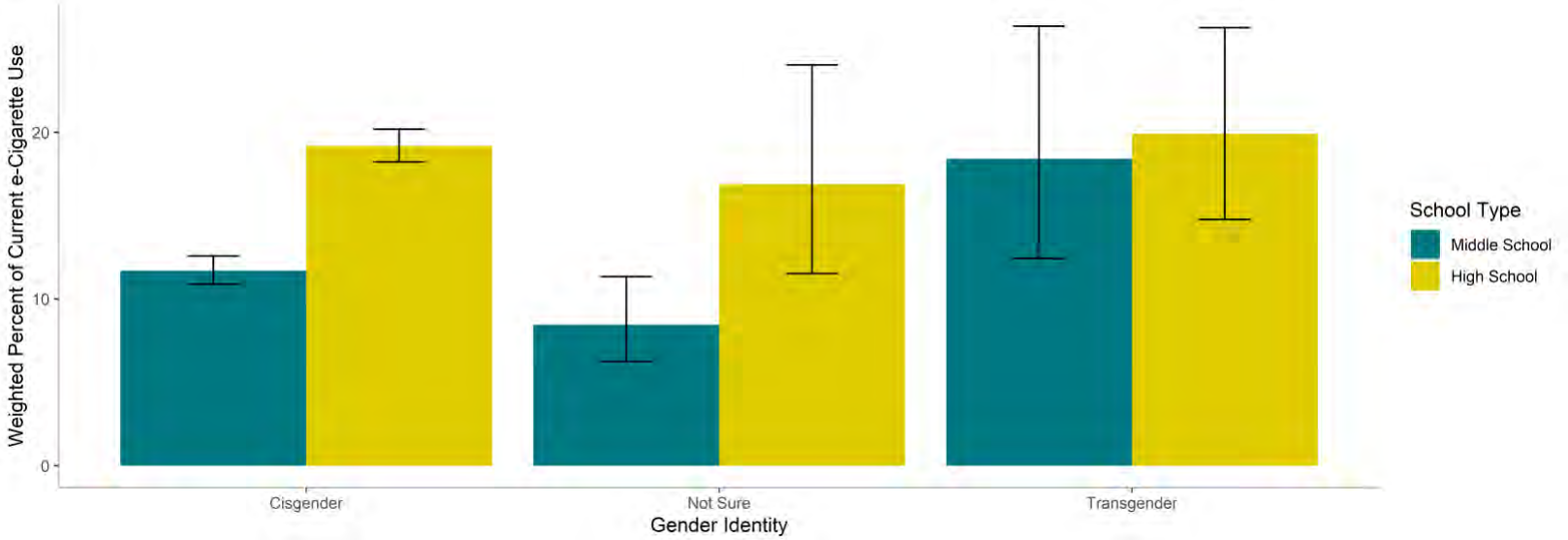


Figure 34. Current cigarette use among middle and high school student by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

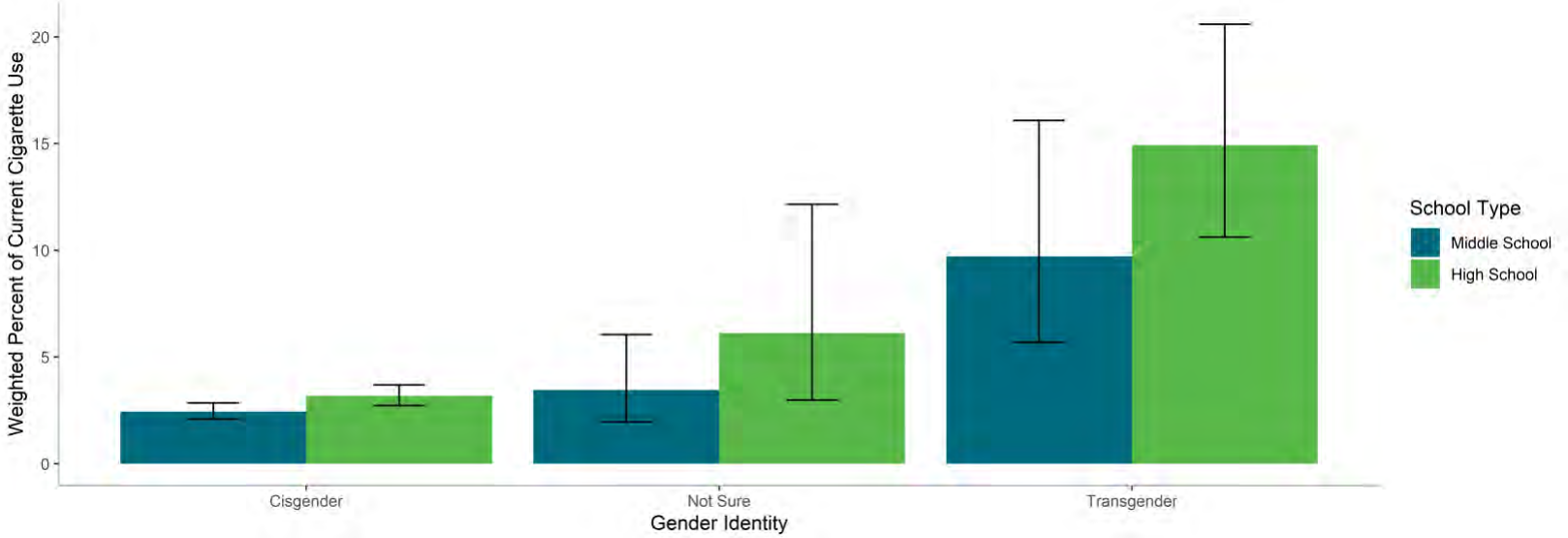


Figure 35. Current e-cigarette use among middle and high school student by sexual and gender minority status, combined Hawai‘i YRBS 2021 and 2023

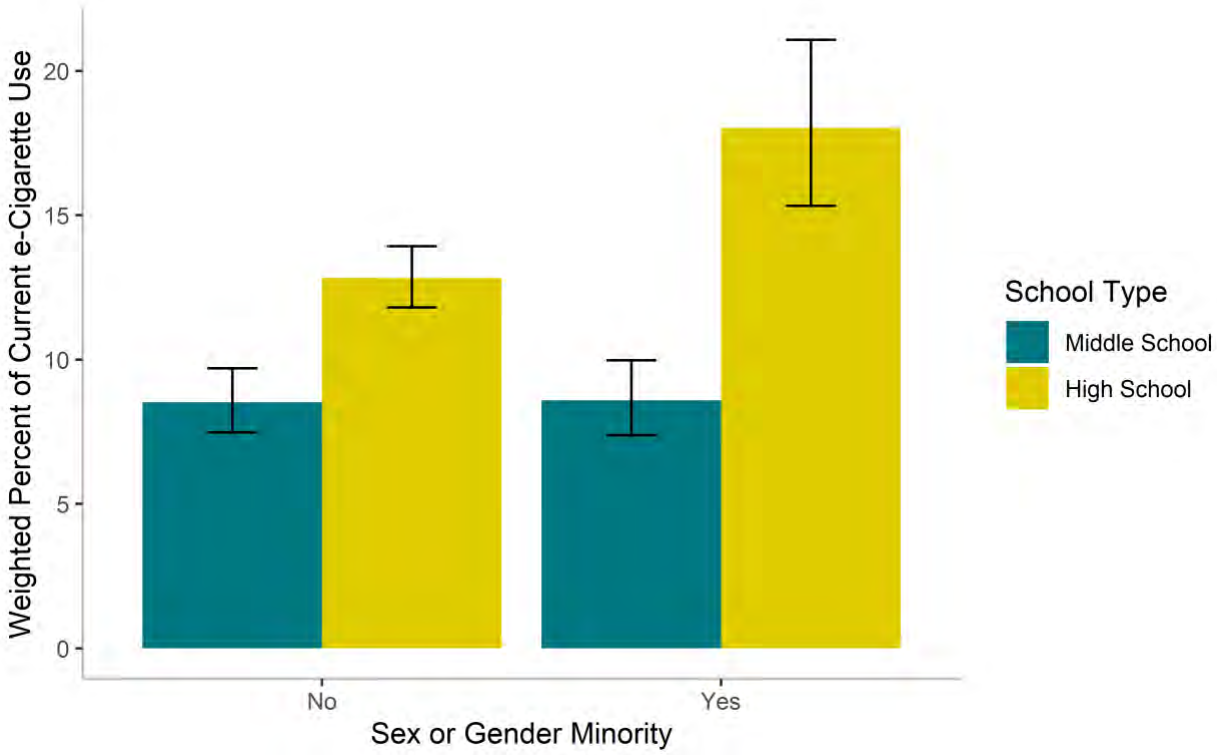


Table 3. Current e-cigarette use percentage and 95% confidence intervals among middle and high school student by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	5.6% (3.4%, 9.3%)	3.3% (1.9%, 5.8%)	5.2% (3.2%, 8.3%)	4.7% (3.7%, 6.0%)
Native Hawaiian	27.5% (24.4%, 30.9%)	11.7% (9.6%, 14.1%)	15.5% (13.1%, 18.2%)	18.8% (17.2%, 20.4%)
Japanese	5.7% (1.7%, 17.2%)	0.5% (0.1%, 2.5%)	0.6% (0.2%, 2.8%)	4.0% (1.6%, 10.0%)
Filipino	17.5% (14.3%, 21.3%)	3.3% (1.9%, 5.7%)	7.6% (5.9%, 9.7%)	9.7% (8.5%, 11.0%)
Other Asian	3.6% (1.5%, 8.2%)	0.8% (0.2%, 3.7%)	1.8% (0.4%, 7.6%)	2.3% (1.3%, 4.2%)
Other Pacific Islander	35.0% (28.6%, 42.0%)	15.4% (11.5%, 20.3%)	24.9% (18.0%, 33.3%)	27.6% (23.4%, 32.3%)
Black	6.6% (2.7%, 15.1%)	9.7% (5.9%, 15.6%)	12.4% (4.5%, 29.8%)	10.2% (5.8%, 17.3%)
Other Ethnicity	21.8% (19.3%, 24.5%)	9.9% (7.5%, 12.9%)	12.5% (10.9%, 14.4%)	13.5% (12.1%, 15.0%)
Cisgender	17.3% (14.5%, 20.6%)	6.8% (5.8%, 7.9%)	10.3% (8.9%, 11.9%)	11.7% (10.9%, 12.6%)
Unsure Gender	14.2% (7.2%, 26.0%)	4.6% (3.1%, 7.0%)	10.3% (6.5%, 15.9%)	8.5% (6.3%, 11.3%)
Transgender	31.2% (21.1%, 43.6%)	14.2% (6.4%, 28.4%)	15.0% (7.7%, 27.2%)	18.4% (12.5%, 26.3%)
High School				
White	23.7% (18.0%, 30.6%)	15.8% (11.2%, 21.9%)	11.4% (7.9%, 16.2%)	16.5% (13.6%, 19.8%)
Native Hawaiian	42.0% (37.7%, 46.4%)	21.3% (18.8%, 24.0%)	16.9% (14.6%, 19.4%)	26.8% (24.5%, 29.3%)
Japanese	19.8% (12.8%, 29.4%)	3.0% (1.6%, 5.8%)	3.9% (1.3%, 11.1%)	12.6% (7.9%, 19.4%)
Filipino	29.1% (24.4%, 34.2%)	10.7% (8.7%, 13.1%)	10.6% (8.0%, 14.0%)	16.6% (14.6%, 18.9%)
Other Asian	13.3% (7.3%, 23.1%)	2.5% (1.1%, 5.9%)	2.3% (0.7%, 7.2%)	7.5% (5.2%, 10.8%)
Other Pacific Islander	31.0% (21.2%, 43.0%)	19.0% (12.4%, 27.9%)	26.7% (18.5%, 36.9%)	27.4% (21.7%, 34.0%)
Black	36.0% (19.5%, 56.7%)	15.3% (6.5%, 32.1%)	11.2% (3.1%, 33.0%)	16.1% (8.7%, 27.9%)
Other Ethnicity	34.8% (32.1%, 37.7%)	14.3% (12.1%, 16.8%)	15.1% (12.8%, 17.7%)	18.5% (16.9%, 20.2%)
Cisgender	30.9% (27.8%, 34.1%)	14.6% (13.4%, 15.9%)	12.8% (11.5%, 14.2%)	19.2% (18.2%, 20.2%)
Unsure Gender	14.9% (5.7%, 33.5%)	14.4% (8.1%, 24.3%)	22.5% (13.3%, 35.4%)	16.9% (11.6%, 24.0%)
Transgender	21.7% (11.1%, 38.1%)	25.8% (14.6%, 41.2%)	13.8% (8.0%, 22.8%)	19.9% (14.8%, 26.3%)

Table 4. Current cigarette use percentage and 95% confidence intervals among middle and high school student by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	0.7% (0.3%, 1.8%)	1.6% (0.9%, 2.7%)	2.2% (1.1%, 4.4%)	1.5% (1.0%, 2.3%)
Native Hawaiian	4.7% (3.5%, 6.4%)	2.2% (1.6%, 3.1%)	3.4% (2.5%, 4.8%)	3.5% (2.9%, 4.3%)
Japanese	0.8% (0.1%, 4.8%)	0.0% (0.0%, 0.0%)	0.0% (0.0%, 0.0%)	0.5% (0.1%, 3.5%)
Filipino	2.2% (1.1%, 4.6%)	1.1% (0.5%, 2.5%)	0.9% (0.4%, 1.7%)	1.4% (0.8%, 2.5%)
Other Asian	1.9% (0.4%, 7.8%)	0.2% (0.0%, 1.8%)	1.0% (0.2%, 4.8%)	1.2% (0.4%, 3.5%)
Other Pacific Islander	15.4% (9.7%, 23.5%)	5.6% (3.0%, 10.3%)	1.9% (1.0%, 3.4%)	9.6% (5.9%, 15.2%)
Black	3.6% (1.3%, 9.9%)	2.4% (0.3%, 17.8%)	0.4% (0.1%, 3.0%)	1.9% (0.4%, 8.6%)
Other Ethnicity	3.5% (2.7%, 4.7%)	2.8% (1.6%, 4.6%)	3.6% (2.5%, 5.1%)	3.2% (2.5%, 4.2%)
Cisgender	3.3% (2.6%, 4.3%)	1.9% (1.4%, 2.5%)	2.0% (1.5%, 2.7%)	2.4% (2.1%, 2.9%)
Unsure Gender	6.9% (2.3%, 18.7%)	0.6% (0.3%, 1.6%)	5.3% (2.6%, 10.5%)	3.5% (2.0%, 6.0%)
Transgender	20.3% (9.3%, 39.0%)	3.9% (1.5%, 10.0%)	9.4% (4.1%, 20.2%)	9.7% (5.7%, 16.0%)
High School				
White	4.7% (3.2%, 6.9%)	5.7% (3.7%, 8.7%)	4.4% (1.4%, 13.1%)	4.9% (3.2%, 7.5%)
Native Hawaiian	6.4% (5.2%, 7.8%)	2.3% (1.4%, 3.6%)	2.2% (1.5%, 3.5%)	3.6% (3.0%, 4.5%)
Japanese	4.2% (1.0%, 16.4%)	1.2% (0.4%, 3.8%)	2.9% (0.8%, 9.7%)	3.2% (1.1%, 9.0%)
Filipino	2.2% (1.0%, 4.9%)	1.7% (0.8%, 3.6%)	2.1% (1.2%, 3.9%)	2.0% (1.4%, 3.0%)
Other Asian	1.6% (0.8%, 3.2%)	1.7% (0.5%, 6.0%)	0.0% (0.0%, 0.0%)	1.2% (0.6%, 2.7%)
Other Pacific Islander	9.0% (5.3%, 14.9%)	4.0% (1.5%, 9.9%)	9.9% (5.3%, 17.7%)	8.0% (5.5%, 11.7%)
Black	12.2% (5.8%, 24.1%)	1.8% (0.5%, 6.1%)	1.6% (0.2%, 10.5%)	3.1% (1.5%, 6.2%)
Other Ethnicity	5.8% (4.6%, 7.3%)	3.5% (2.6%, 4.7%)	3.4% (2.5%, 4.8%)	3.9% (3.4%, 4.5%)
Cisgender	4.5% (3.6%, 5.7%)	2.7% (2.1%, 3.5%)	2.4% (1.6%, 3.4%)	3.2% (2.7%, 3.7%)
Unsure Gender	9.4% (2.5%, 29.9%)	1.8% (0.6%, 5.8%)	8.3% (3.9%, 16.5%)	6.1% (3.0%, 12.1%)
Transgender	17.0% (8.6%, 30.8%)	14.4% (7.5%, 25.7%)	14.1% (7.7%, 24.3%)	14.9% (10.6%, 20.6%)

Summary of Figures 31-35 & Tables 3-4

In 2019, 2021, and 2023, the prevalence of e-cigarette use between MS and HS students followed similar trends by race and ethnicity (Figure 31). For both groups, e-cigarette use was highest among Other Pacific Islander (OPI) individuals (**27.6%** [95% CI: 23.4-32.3%] for MS and **27.4%** [95% CI: 21.7-34.0%] for HS) followed by Native Hawaiian (NH; **18.8%** [95% CI: 17.2-20.4%] for MS and **26.8%** [95% CI: 24.5-29.3%] for HS) and Other Ethnicity (**13.5%** [95% CI: 12.1-15.0%] for MS and **18.5%** [95% CI: 16.9-20.2%] for HS). Among both MS and HS students, the prevalence of e-cigarette use was lowest among Other Asian individuals (**2.3%** [95% CI: 1.3-4.2%] for MS and **7.5%** [95% CI: 5.2-10.8%] for HS), Japanese (**4.0%** [95% CI: 1.6-10.0%] for MS and **12.6%** [95% CI: 7.9-19.4%] for HS), and White (**4.7%** [95% CI: 3.7-6.0%] for MS and **16.5%** [95% CI: 13.6-19.8%] for HS). See Table 3 for a year-by-year breakdown and combined years.

As seen in Figure 32, cigarette use was also highest among OPI MS and HS students (**9.6%** [95% CI: 5.9-15.3%] and **8.0%** [95% CI: 5.4-11.7%], respectively). This was followed by NH for MS, and followed by White for HS. For MS students, cigarette use was lowest among Japanese individuals (**0.5%** [95% CI: 0.1-3.5%]), while for HS students, the prevalence was lowest among Other Asian individuals (**1.2%** [95% CI: 0.6-2.7%]). OPI was the only racial and ethnic group where MS students' e-cigarette and cigarette use were more prevalent than HS students' use. Year-by-year breakdowns and combined years are shown in Table 4.

Displayed in Figure 33, e-cigarette use in 2019, 2021, and 2023 did not vary significantly by gender identity among HS students, whereas MS students who were transgender had significantly more prevalent e-cigarette use than those who reported being unsure about their gender identity (**18.4%** [95% CI: 12.4-26.4%] compared to **8.5%** [95% CI: 6.3-11.3%]). Shown in Figure 34, transgender HS students had significantly more prevalent cigarette use than cisgender HS students during the same years (**14.9%** [95% CI: 10.6-20.6%] compared to **3.2%** [95% CI: 2.7-3.7%]). It is worth noting the similar prevalence for transgender MS (**18.4%**, 12.5-26.3%) and HS students (**19.9%**, 14.8-26.3%). Table 3 has a year-by-year breakdown for a yearly comparison between MS and HS students. Similarly, cigarette use prevalence among transgender MS students (**9.7%**, 95% CI: 5.7-16.1%) was significantly higher than that among cisgender MS students (**2.4%**, 95% CI: 2.1-2.8%). Tables 3 and 4 display further yearly breakdowns for e-cigarette and cigarette use based on gender identity.

In 2021 and 2023, when sexual and gender minority (SGM) status were able to be examined (Figure 35), current e-cigarette use was significantly more prevalent among HS students who identified with a SGM group (**18.0%**, 95% CI: 15.3-21.1%) compared to those who did not (**12.8%**, 95% CI: 11.8-13.9%), while there was no significant difference among MS students.

Emerging Adults (18-29 years old)

Figure 36. Current nicotine, e-cigarettes, and combustible cigarettes prevalence by Hawai‘i DOH-defined race/ethnicity among emerging adults (18-29 years old), Hawai‘i BRFSS 2020-2022

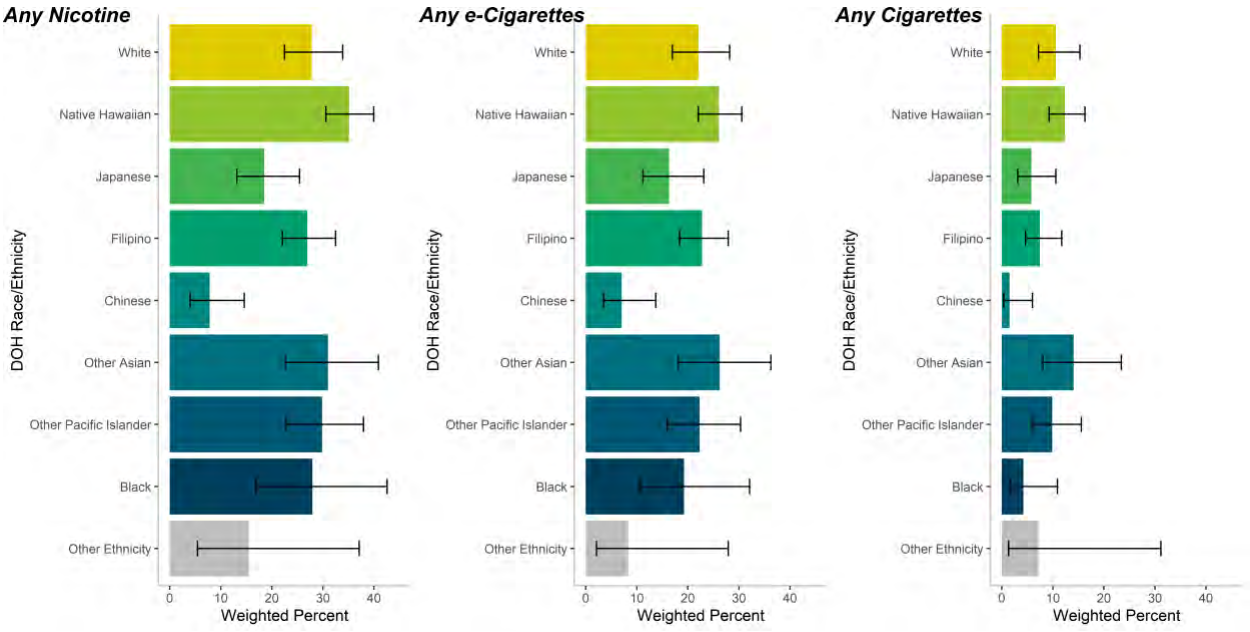
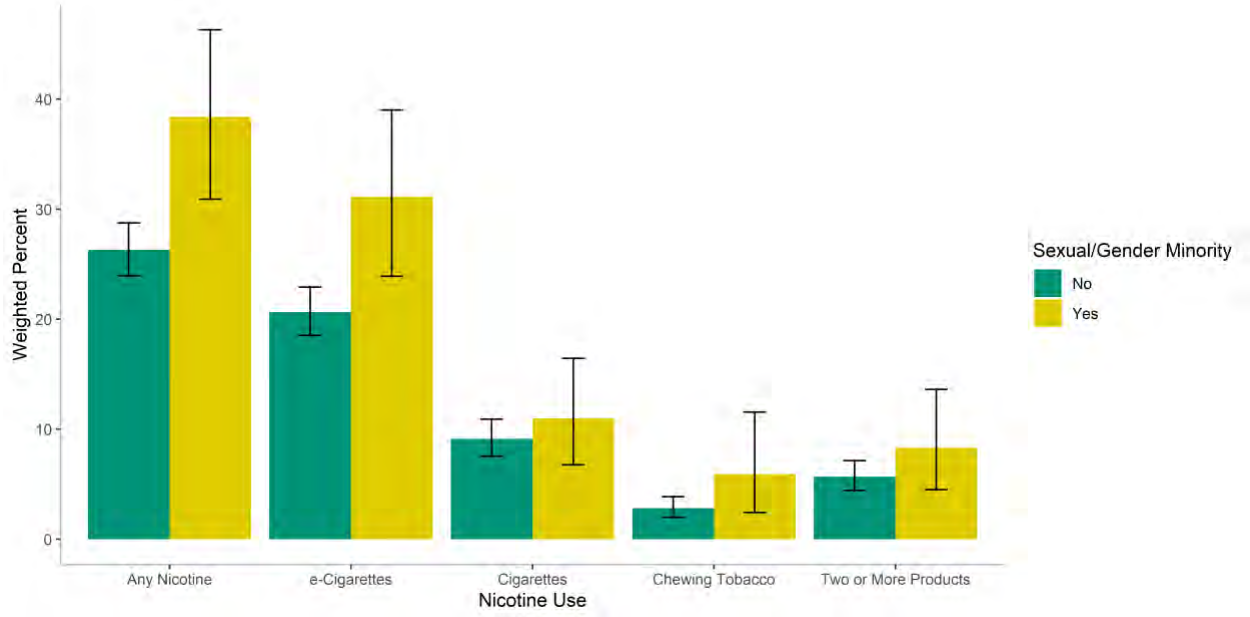


Figure 37. Nicotine use and patterns of use by sex/gender minority status among emerging adults (18-29 years old), Hawai‘i BRFSS 2020-2022



All Adults (18+ years old)

Figure 38. Any current nicotine use prevalence by Hawai‘i DOH-defined race/ethnicity among all adults (18+ years old), Hawai‘i BRFSS 2020-2022

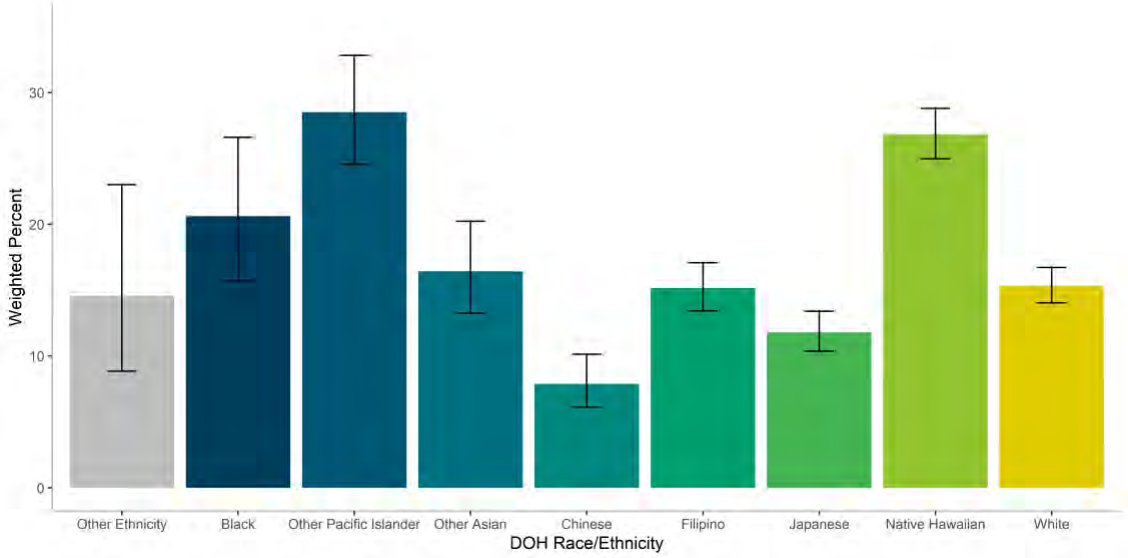


Figure 39. Current chewing tobacco use and poly-nicotine product use by Hawai‘i DOH-defined race/ethnicity among all adults (18+ years old), Hawai‘i BRFSS 2020-2022

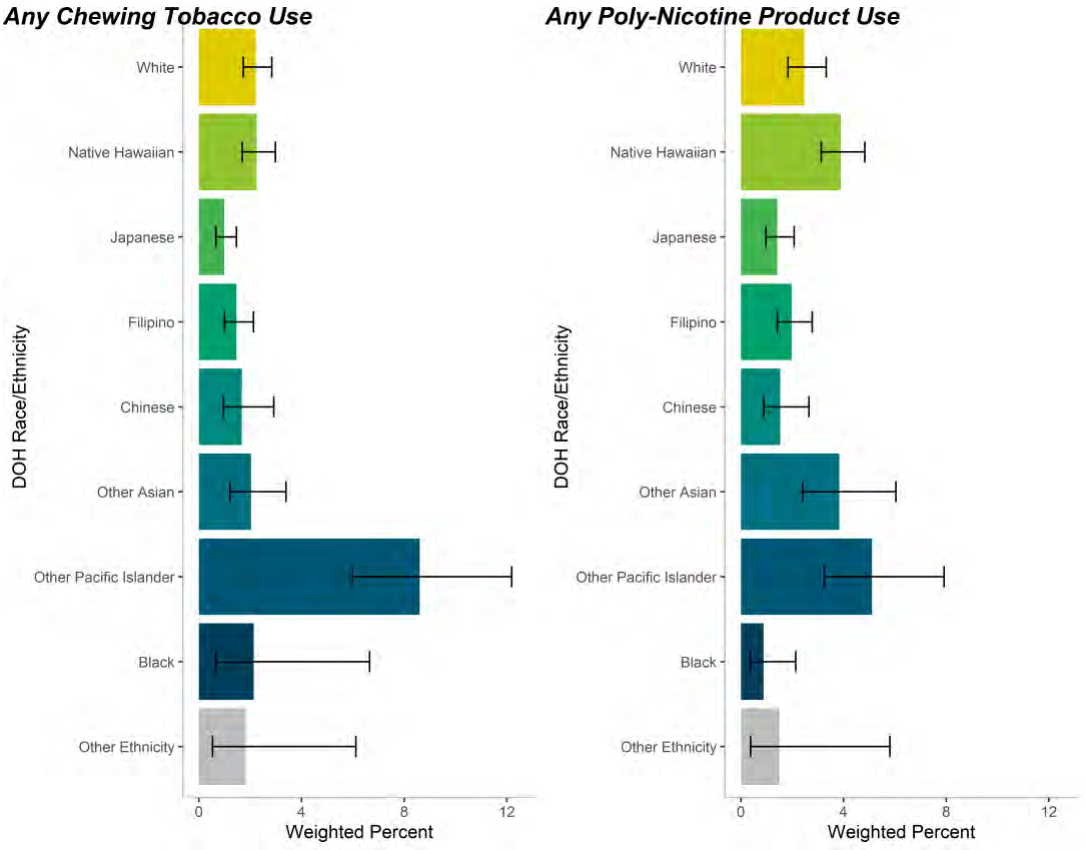
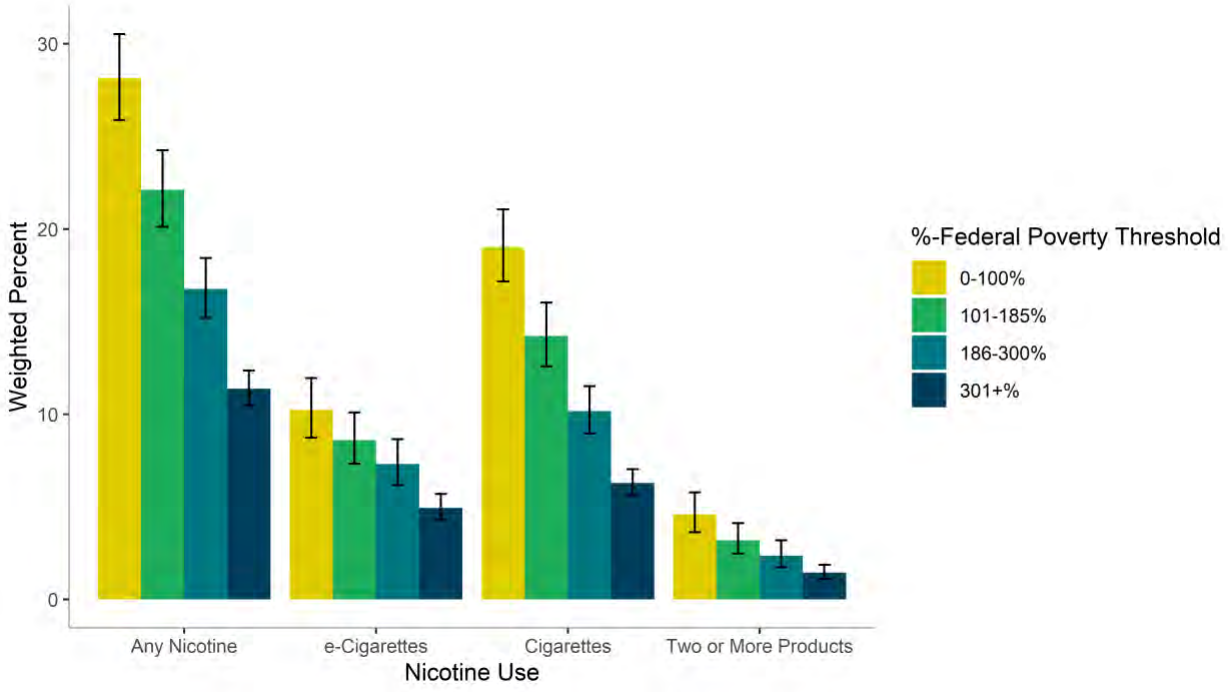


Figure 40. Nicotine use and patterns of use by percent federal poverty threshold among all adults (18+ years old), Hawai‘i BRFSS 2020-2022



Summary of Figures 36-40

Shown in Figure 36, among emerging adults (aged 18-29 years), any current nicotine use was most prevalent among NH individuals (**35.1%**, 95% CI: 30.6-40.0%), while Chinese had the lowest prevalence of any nicotine use (**7.8%**, 95% CI: 4.0-14.6%), current cigarette use (**1.5%**, 95% CI: 0.4-6.0%), and current e-cigarette use (**7.0%**, 95% CI: 3.5-13.7%). Other Asian ethnicities (other than Japanese, Chinese, and Filipino) had the second highest prevalence of any nicotine use (**31.0%**, 95% CI: 22.6-40.9%), and the highest prevalence of both current cigarette (**14.1%**, 95% CI: 8.1-23.4%) and current e-cigarette use (**26.2%**, 95% CI: 18.2-36.3%).

Shown in Figure 37, emerging adults who identified with a SGM group had a significantly higher prevalence of any nicotine use (**38.4%**, 95% CI: 31.0-46.4%) compared to those who did not (**26.3%**, 95% CI: 24.0-28.8%). The main distinction for the any nicotine difference could be observed based on the similar trend for current e-cigarette use, with SGM individuals having a significantly higher prevalence (**31.1%**, 95% CI: 24.1-39.2%) compared to heterosexual/cisgender individuals (**20.7%**, 95% CI: 18.5-22.9%). However, prevalence for cigarette, chewing tobacco, or poly-nicotine product use did not significantly differ by SGM status among emerging adults.

Displayed in Figure 38, OPI (**28.5%**, 95% CI: 24.5-32.8%) and NH (**26.8%**, 95% CI: 25.0-28.8%) adults had the highest prevalence of use. Similar to emerging adults, Chinese adults had the lowest prevalence (**7.9%**, 95% CI: 6.1-10.1%) of any current nicotine use. Chewing tobacco use prevalence was significantly higher among OPI adults (**8.6%**, 95% CI: 6.0-12.2%) compared to nearly all other racial and ethnic groups, and the use of two or more nicotine products was highest among OPI (**5.1%**, 95% CI: 3.3-7.9%) as well (Figure 39). Residents reporting higher poverty (Figure 40) had a higher prevalence of current nicotine use, e-cigarette use, cigarette use, and poly-nicotine product use. For example, those within the 0-100% federal poverty level (**28.2%**, 95% CI: 25.9-30.5%) had nearly two and a half times the prevalence of any current nicotine use compared to those within the 301+% federal poverty level (**11.4%**, 95% CI: 10.5-12.4%).

Mental Health and Other Key Factors

Youth (<18 years old)

Figure 41. Current e-cigarette use among middle school students who ever felt so sad or hopeless almost every day for two weeks or more in a row by survey year, Hawai‘i YRBS 2019, 2021, and 2023

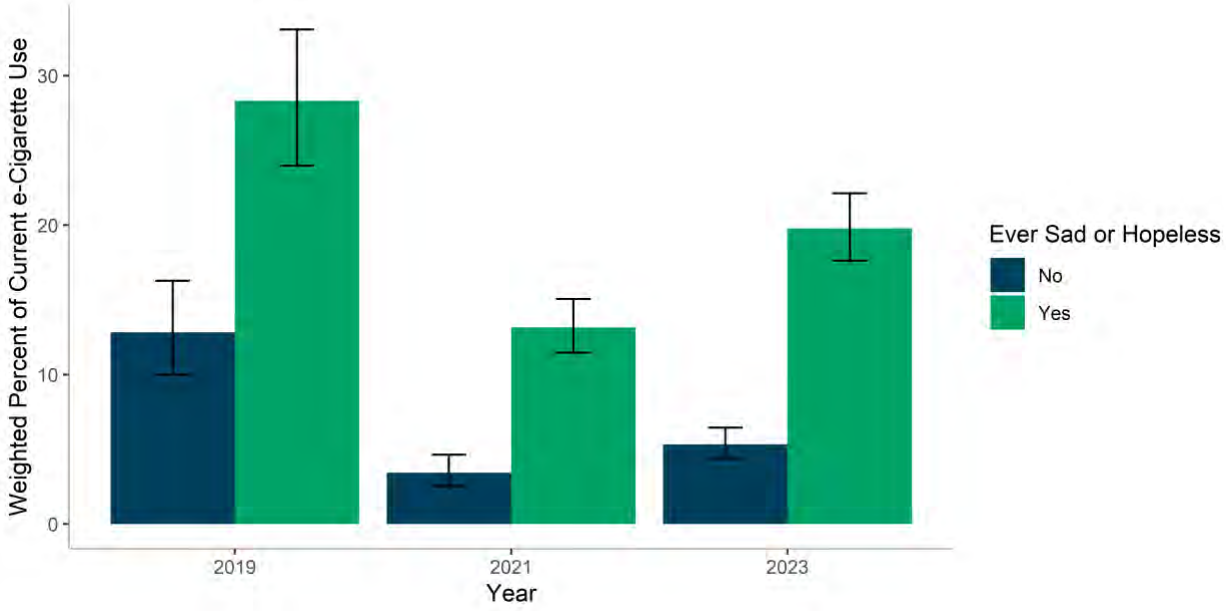


Figure 42. Current cigarette use among middle school students who ever felt so sad or hopeless almost every day for two weeks or more in a row by survey year, Hawai‘i YRBS 2019, 2021, and 2023

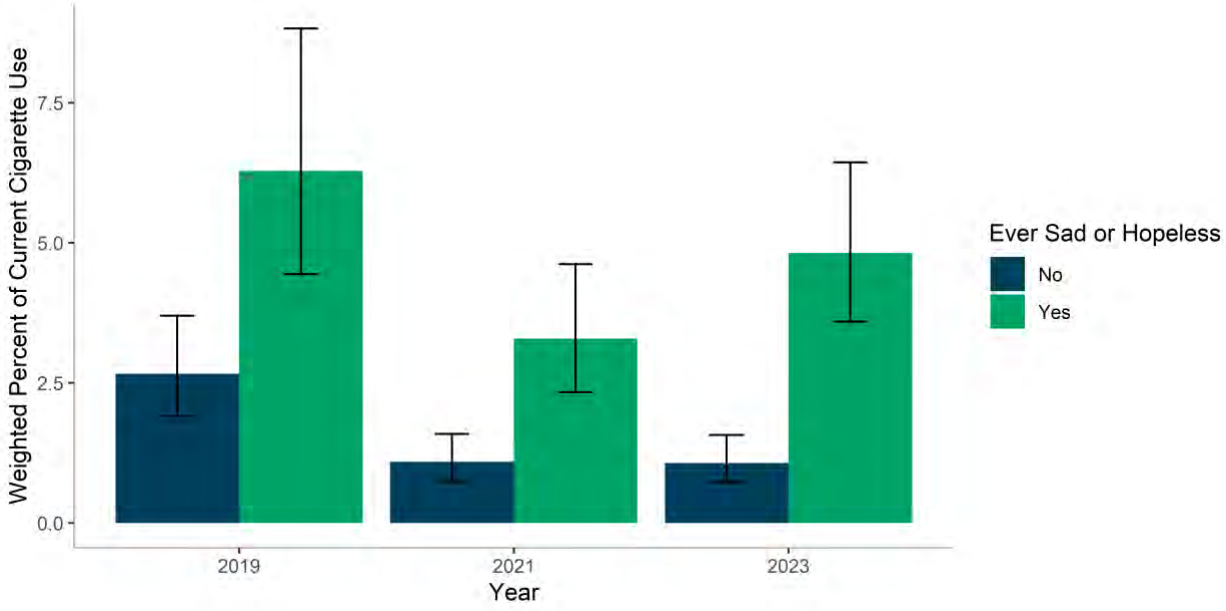


Figure 43. Current e-cigarette use among high school students who reported ever feeling sad, empty, hopeless, angry, or anxious by survey year, Hawai‘i YRBS 2019, 2021, and 2023

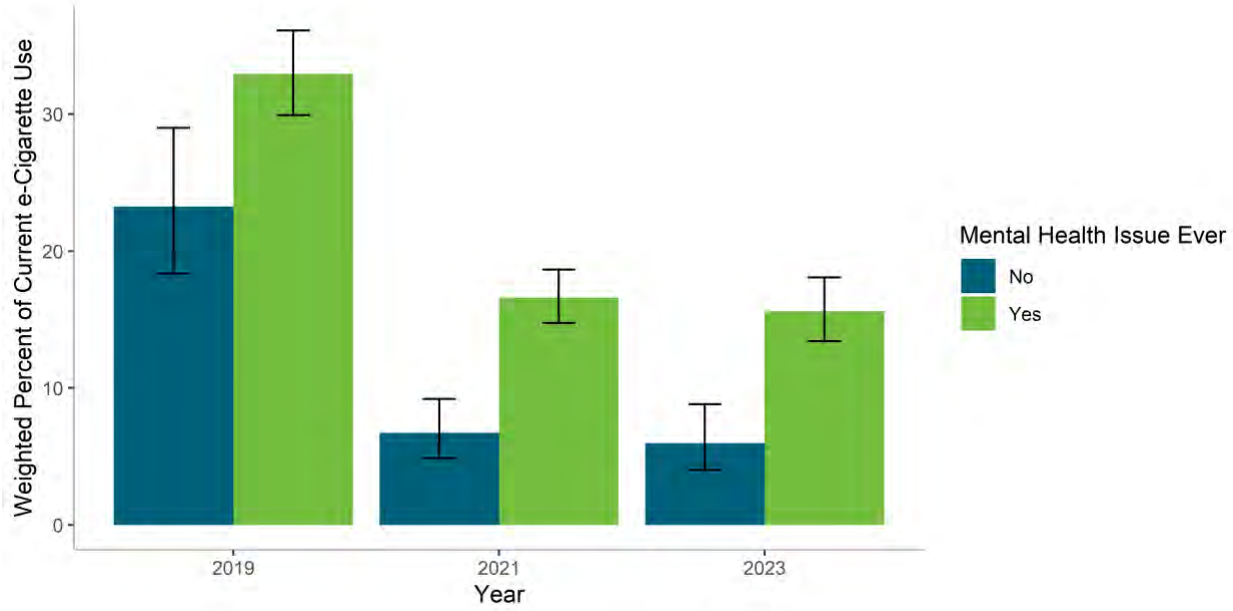
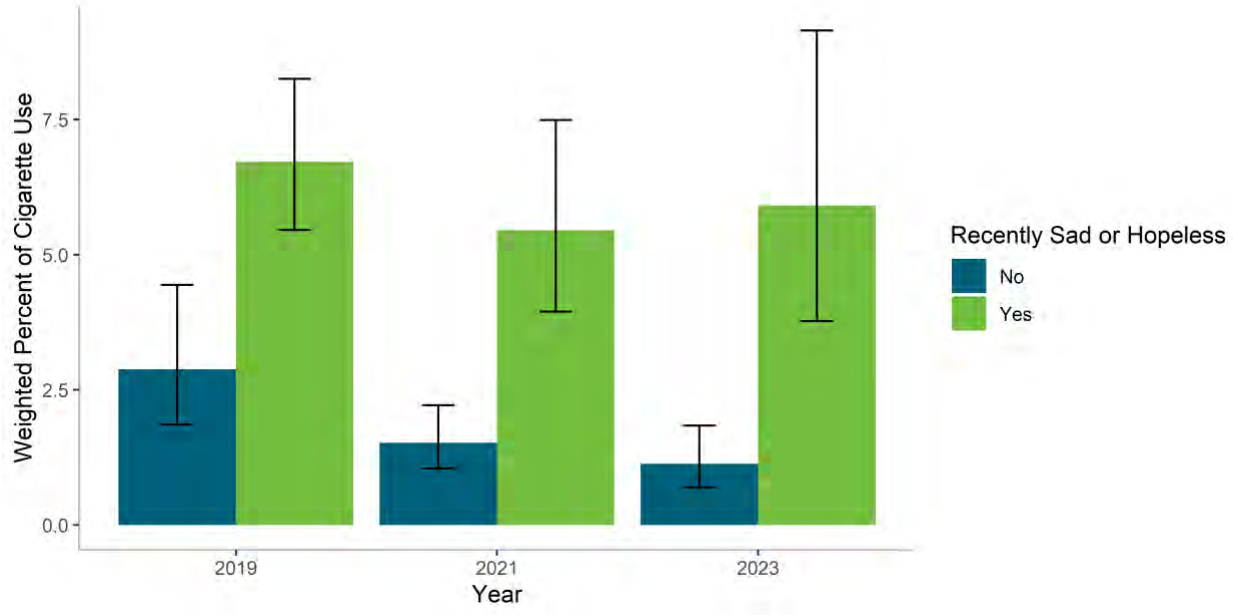


Figure 44. Current cigarette use among high school students who felt sad or hopeless almost every day for two or more weeks in a row in the past 12 months by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 41-44

In 2019, 2021, and 2023, current e-cigarette and cigarette use were significantly more prevalent among MS and HS students who reported negative feelings, e.g., being sad, hopeless, empty, angry, or anxious, compared to those who did not (Figures 41-44). For example, the prevalence of e-cigarette use in 2023 was **19.7%** (95% CI: 17.6-22.1%) for MS students who reported ever feeling sad or hopeless almost every day for two weeks or more, compared to **5.3%** (95% CI: 4.4-6.4%) for those who did not; the same year, the prevalence of cigarette use was **4.8%** (95% CI: 3.6-6.4%) among those reporting ever feeling sad or hopeless compared to **1.1%** (95% CI: 0.7-1.6%).

Similarly, current e-cigarette use prevalence was significantly higher among HS students who reported ever feeling sad, empty, hopeless, angry, or anxious during 2019, 2021, and 2023 (Figure 43). For instance, in 2023, the

prevalence of e-cigarette use was **15.6%** (95% CI: 13.4-18.1%) for those reporting ever having mental health issues compared to **6.0%** (95% CI: 4.0-8.8%) for those reporting none. Additionally, HS students who reported being sad or hopeless in the last year had significantly more prevalent cigarette use (Figure 44). In 2023, the prevalence of current cigarette use was **5.9%** (95% CI: 3.8-9.1%) for those feeling sad or hopeless persisting for two or more weeks in the past year compared to **1.1%** (95% CI: 0.7-1.8) for those not reporting these feelings.

Emerging Adults (18-29 years old)

Figure 45. Current nicotine use and patterns of use among emerging adults (18-29 years old) by history of a depressive disorder in Hawai‘i, BRFSS 2020-2023

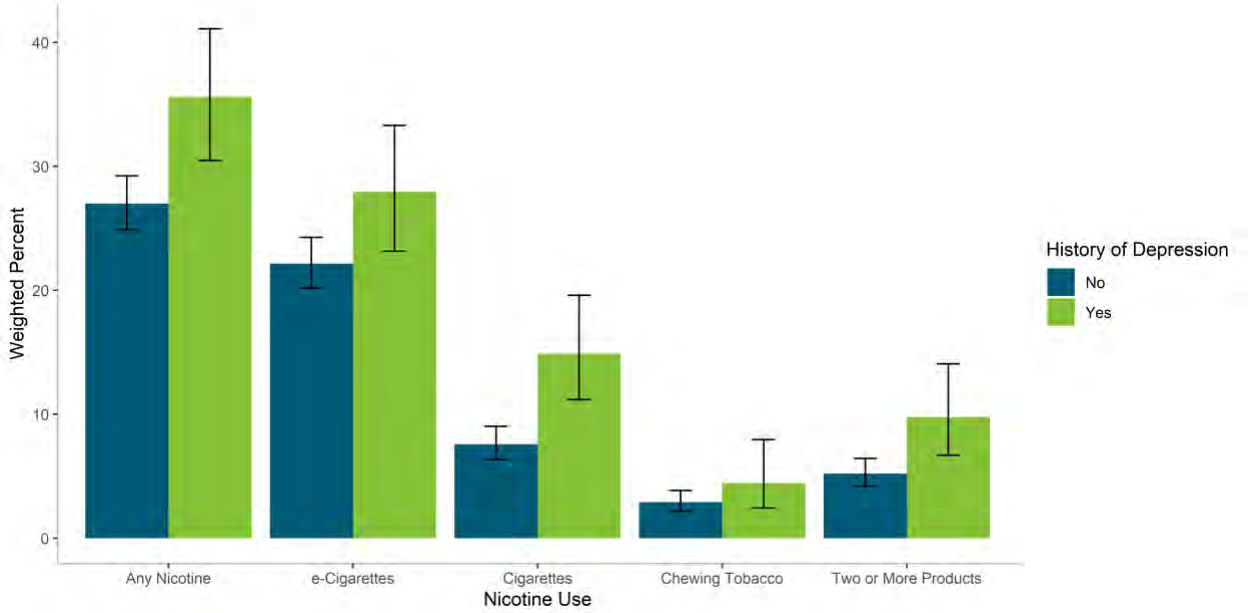
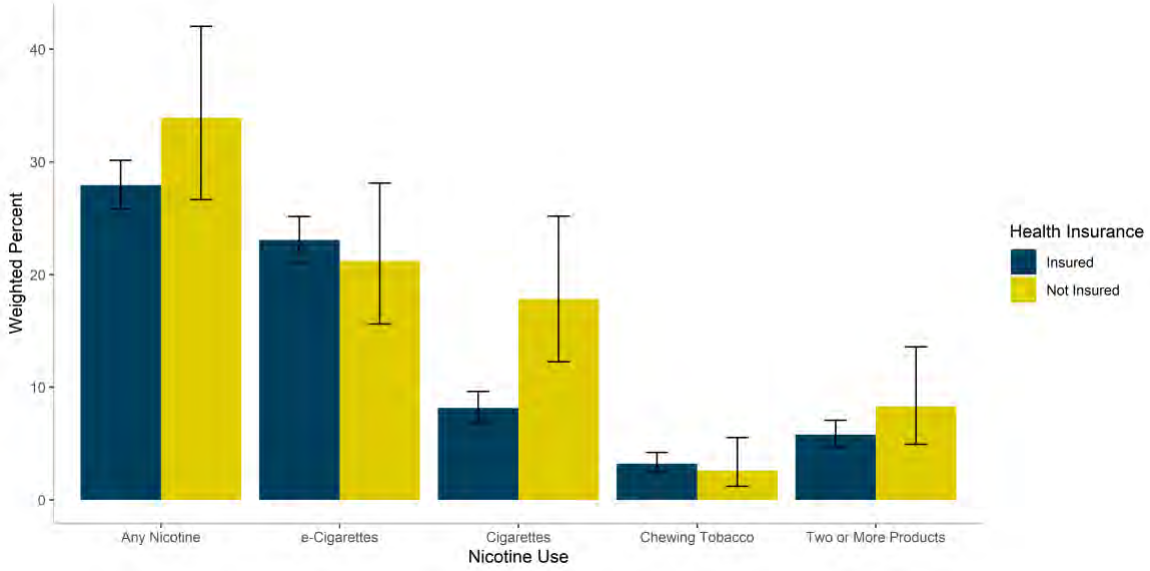


Figure 46. Current nicotine use and patterns of use among emerging adults (18-29 years old) by whether or not they have health insurance coverage in Hawai‘i, BRFSS 2020-2023



All Adults (18+ years old)

Figure 47. Current nicotine use and patterns of use by the number of poor mental health days in the past 30 days among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2023

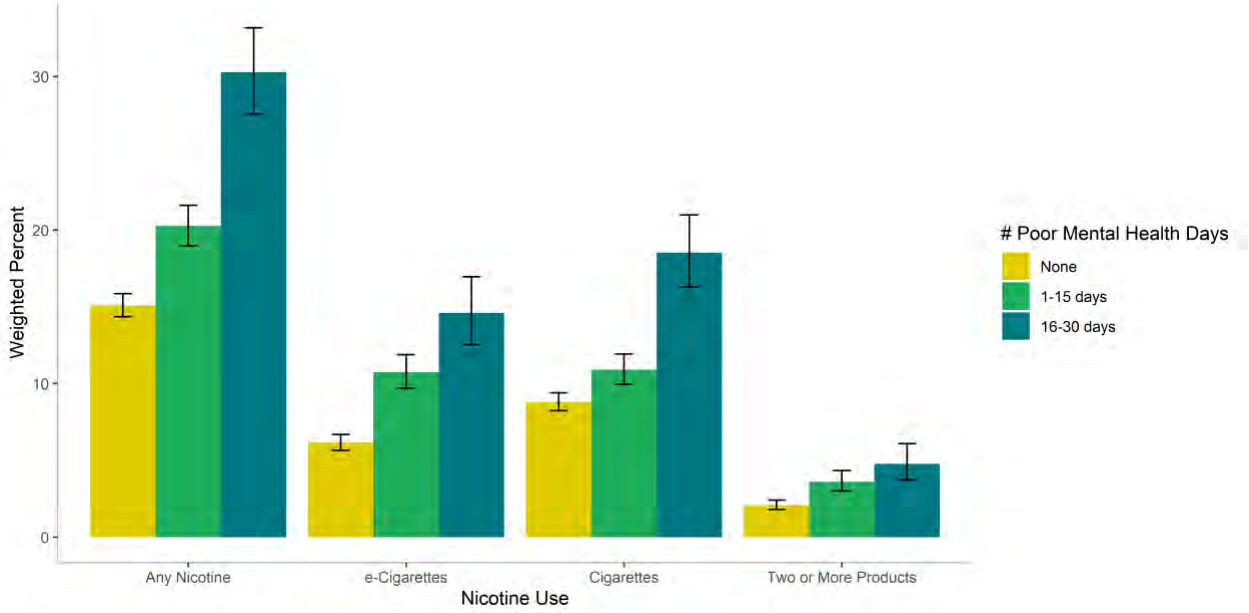
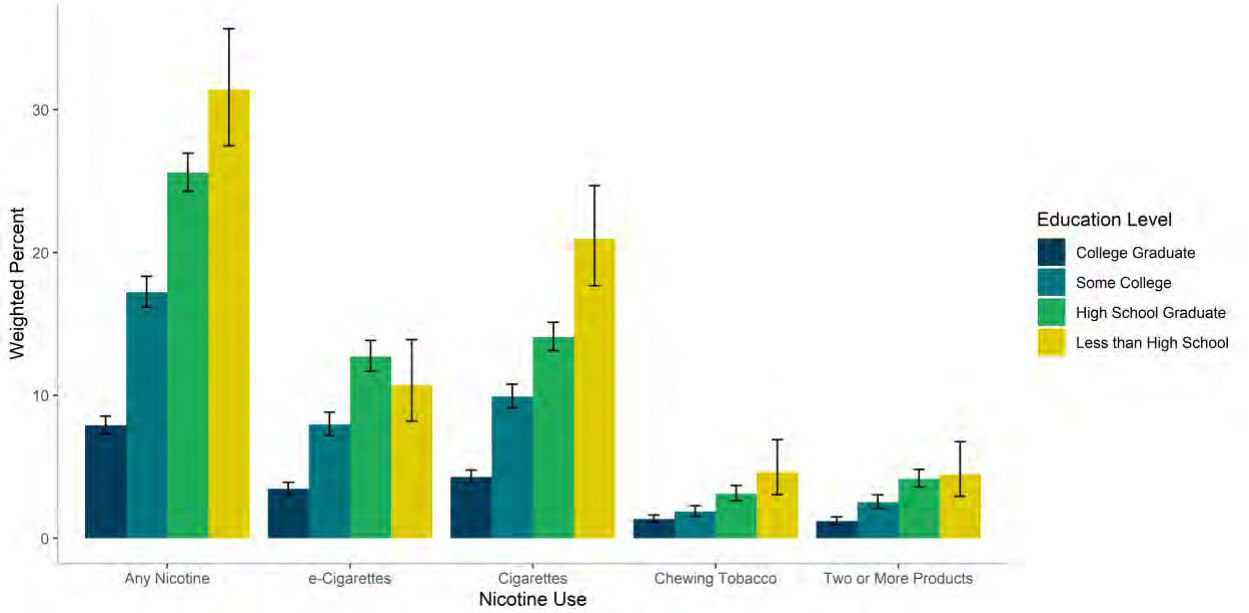


Figure 48. Current nicotine use and patterns of use by education level among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2023



Summary of Figures 45-48

Shown in Figure 45, among emerging adults (18-29 years old) in Hawai‘i, those reporting a history of depressive disorder had a significantly higher prevalence of any nicotine use (**35.6%**, 95% CI: 30.5-41.1%) compared to those that did not (**27.0%**, 95% CI: 24.9-29.2%). Current cigarette use (**14.9%**, 95% CI: 11.2-19.6%) and poly-nicotine product use (**9.8%**, 95% CI: 6.7-14.1%) were also more significantly prevalent among those with a history of depressive disorder compared to those without (**7.6%**, 95% CI: 6.3-9.0% and **5.2%**, 95% CI: 4.2-6.4%,

respectively). The prevalence of current e-cigarette and current chew use did not differ significantly by history of depression.

The prevalence of current cigarette use (Figure 46) was significantly higher among emerging adults without health insurance (**17.8%**, 95% CI: 12.3-25.2%) compared to those with health insurance (**8.2%**, 95% CI: 6.9-9.6%). Meanwhile, the prevalence of any nicotine use, current e-cigarette use, current chew use, and poly-nicotine product use did not vary significantly by health insurance status.

As seen in Figure 47, adults (18+ years old) reporting 1-15 (**20.3%**, 95% CI: 19.0%-21.6%) and 16-30 poor mental health days (**30.3%**, 95% CI: 27.5-33.2%) had significantly higher prevalence of any nicotine use compared to those with no poor mental health days (**15.1%**, 95% CI: 14.4-15.9%). Similarly, current e-cigarette use, current cigarette use, and poly-nicotine product use were significantly more prevalent among adults reporting either 1-15 or 16 or more poor mental health days than those reporting none. With the exception of poly-nicotine product use, where the difference in prevalence between 1-15 and 16-30 poor mental health days was not significant, higher numbers of poor mental health days (i.e., 16 or more) were related to higher prevalence of nicotine use (any nicotine, e-cigarette, and cigarette use).

Among all adults, lower education level was associated with higher prevalence of any current nicotine use (Figure 48). Those with an education level of less than high school (**31.4%**, 95% CI: 27.5-35.7%) had significantly more prevalent any current nicotine use than those with high school (**25.6%**, 95% CI: 24.3-26.9%), those with some college (**17.2%**, 95% CI: 16.2-18.3%), and those with a college degree (**7.9%**, 95% CI: 7.3-8.5%). When examining nicotine use in greater depth based on each product type, the most significantly noticeable distinction between each education level was for cigarette use, with those with less than a high school education having the highest prevalence at **21%** (95% CI: 17.7-24.7%) to **14.1%** (95% CI: 13.1-15.1%) for those with a HS degree to **9.9%** (95% CI: 9.13-10.8%) for those with some college to **4.3%** (95% CI: 3.86-4.77%) for those with a college degree.

Those with less than a high school education had significantly more prevalent current e-cigarette use than those with college degree (**10.7%** [95% CI: 8.2-13.9%] compared to **3.4%** [95% CI: 3.0-3.9%]); more prevalent current cigarette use (**21.0%** [95% CI: 17.7-24.7%] compared to **4.3%** [95% CI: 3.9-4.8%]); more prevalent chew use (**4.6%** [95% CI: 3.1-6.9%] compared to **1.3%** [95% CI: 1.1-1.6%]); and more prevalent poly-nicotine product use (**4.5%** [95% CI: 2.9-6.8%] compared to **1.2%** [95% CI: 1.0-1.5%]).

Cannabis Use in Hawai‘i

Introduction

Amidst the changing legal landscape in the United States, where various states have decriminalized and legalized recreational cannabis use, attitudes towards cannabis have been shifting nationally (Carliner et al., 2017). Meanwhile, recent years have brought increases in the kinds of chemical compounds extracted from cannabis—among the most commonly known tetrahydrocannabinol (THC) and cannabidiol (CBD)—as well as a variety of cannabis products, such as cartridges, dabs, tinctures, edibles, and beverages. It is the most widely used federally illegal drug in the United States, with 61.8 million Americans aged 12 years and older reporting past-year cannabis use in 2023 (21.8% of this age group; SAMHSA, 2024). In the same year, national use was highest among those aged 18–25, American Indian and Alaska Native, and multiracial individuals (SAMHSA, 2024). Cannabis use can have negative effects on brain, lung, heart, and mental health (CDC, 2024c). Additionally, social and legal consequences can result from cannabis use without a medical allowance in Hawai‘i or from driving under the influence of cannabis.

Youth (<18 years old)

Early age initiation of cannabis use is significantly associated with increased risk for the development of cannabis use disorder (CUD; Winters & Lee, 2008) and use of other illicit substances (Hall, 2015). Regular cannabis use among youth has been associated with harmful effects on cognitive functioning, educational attainment, and mental health, including depression, anxiety, psychosis, impulse-control disorders, and suicidality (Lorenzetti, Hoch, & Hall, 2020), as well as psychoses and cognitive impairment in adulthood (Hall, 2015). Among youth, psychiatric disorders and negative social circumstances (including family dysfunction and bullying) may be risk factors for cannabis use and problematic use (Hill et al., 2017).

Emerging Adults (18-29 years old)

Cannabis use during emerging adulthood has been associated with poorer employment and academic outcomes (Chan et al., 2024) and deteriorated psychomotor performance and cognitive functioning, including short-term memory and reaction time. For example, driving while impaired from recent cannabis use is associated with a twofold increase in motor vehicle crashes, including fatal car crashes, and can have serious legal consequences (Brooks-Russell et al., 2024). Some environmental conditions have been shown to predicate cannabis use in young adulthood (e.g., non-college attending emerging adults are more likely than college students to use cannabis), as well as those who perceive their parents to have positive attitudes toward cannabis (Ramer, Read, & Colder, 2021). Childhood trauma has also been reported as a risk factor for emerging adults' use and problematic use of cannabis as a coping method (Conn et al., 2024).

All Adults (18+ years old)

Among all adults, cannabis consumption can have various negative effects on both physical and mental health. Physical effects include elevated heart rate, elevated blood pressure, increased risk of stroke, cognitive impairment that leads to injuries, lung tissue damage, and exposure to toxins and harmful chemicals (Subramaniam et al., 2019). Although cannabis smoking likely contributes to respiratory cancer, its effects remain unclear because many

cannabis smokers also smoke or have previously smoked tobacco in one of its various forms (Hall, 2015). Mental health consequences resulting from cannabis use can include depressive episodes, chronic anxiety, panic disorder, and aggravation of underlying psychosis or mental health conditions (Subramaniam et al., 2019). At the same time, depression may lead to or increase cannabis use, such that a bidirectional relationship exists between them (Pacek, Martins, & Crum, 2013).

Indicators and Definitions

This section focuses on cannabis use in the state of Hawai‘i by differing groups across different age spans based on the following indicators:

- *Current Cannabis*:
    - **YRBS Middle & High School**: Students who self-reported using cannabis one or more times in the past 30 days.
    - **BRFSS**: Adults who used any cannabis in the past month; specifically, those that self-reported using cannabis at least one day out of the past 30 days. *data on cannabis use are only available in the Hawaii BRFSS from 2020-2022.
- *Near-daily Cannabis:*
    - **BRFSS** (only): Adults who self-reported cannabis use 25 or more days in the past 30 days.
- *Lifetime Cannabis*:
    - **YRBS Middle & High School** (only): Students who self-reported ever using cannabis in their lifetime. *Data on lifetime cannabis use was not collected for high school students in 2023.*
- *Method of Use*:
    - **BRFSS** (only): Adults using cannabis through smoking, consuming, vaping, or some other method among those who endorsed current cannabis use.
- *Reasons for Use*:
    - **BRFSS** (only): Adults using cannabis for medical, non-medical, or both medical and non-medical purposes among those who endorsed current cannabis use.
- *Early Cannabis Initiation*:
    - **YRBS Middle & High School** (only): Students who self-reported trying cannabis for the first time before the age of 13 years. *Data on early cannabis initiation was not collected for high school students in 2023.*

Prevalence and Trends

Youth (<18 years old)

Figure 49. Past 30-day cannabis use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

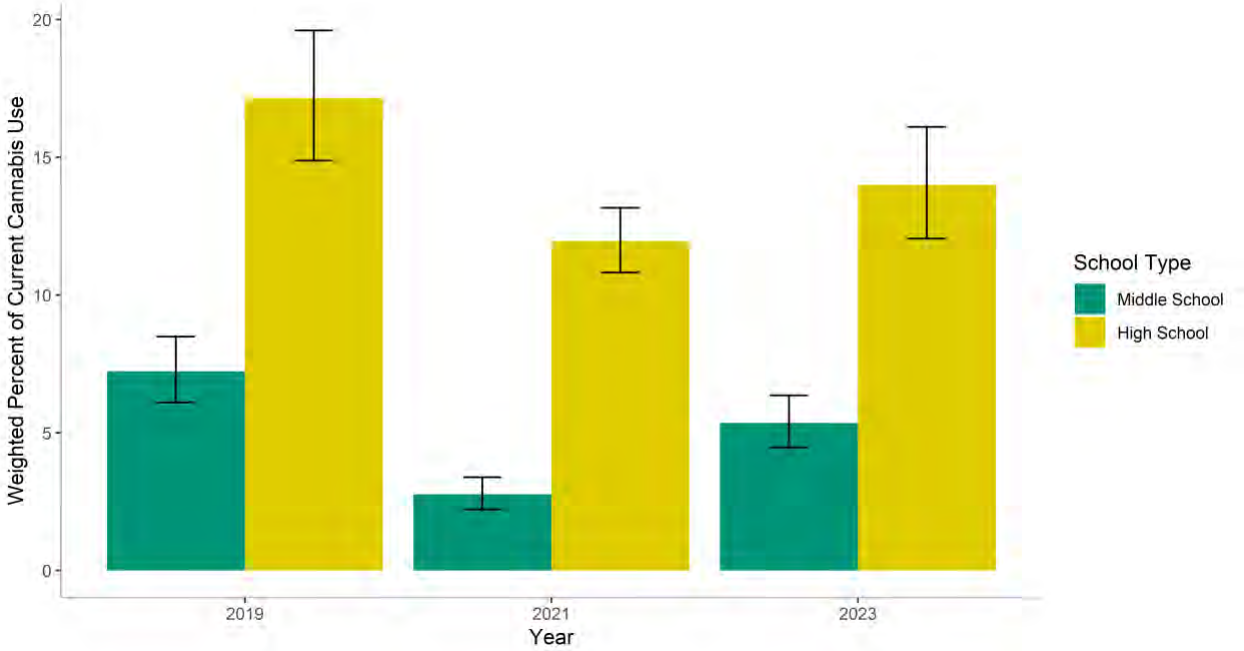
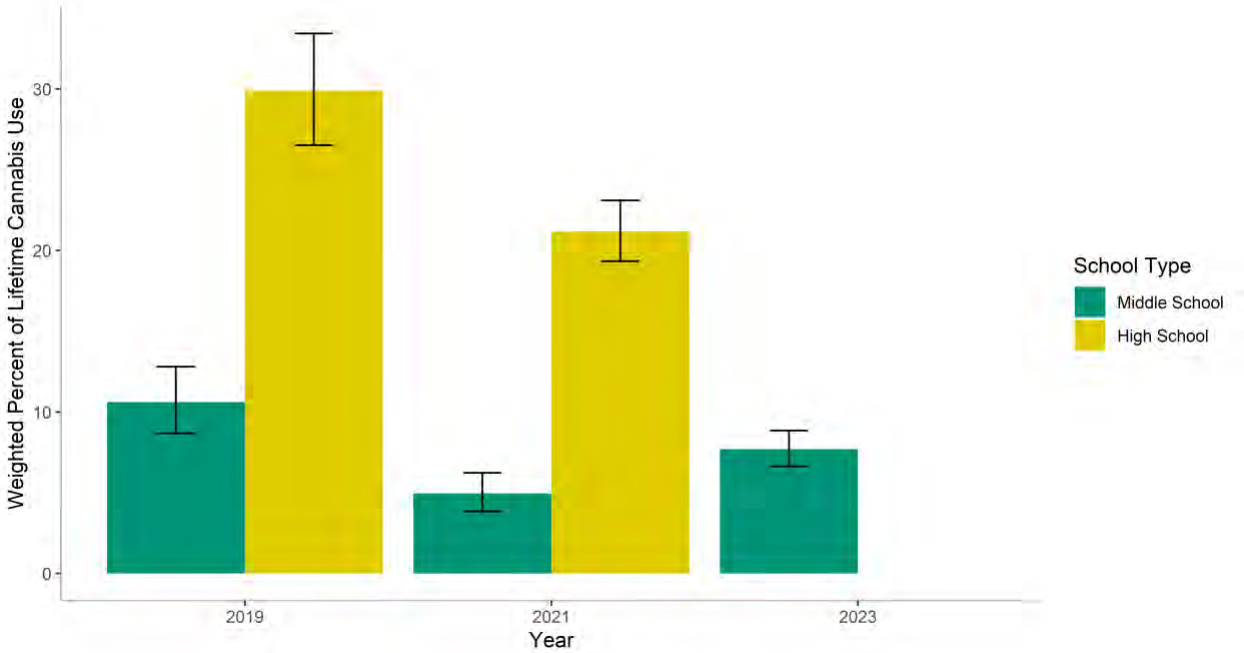


Figure 50. Lifetime cannabis use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 49-50

Current cannabis use was significantly higher among high school (HS) students than middle school (MS) students in 2019, 2021, and 2023 (Figure 49). Among both HS and MS students, cannabis use was significantly less prevalent in 2021 (**12.0%** [95% CI: 10.8-13.2%] for HS and **2.8%** [95% CI: 2.2-3.4%] for MS) than in 2019 (**17.2%** [95% CI: 14.9-19.6%] and **7.2%** [95% CI: 6.1-8.5%], respectively). In 2023, cannabis use was more prevalent relative to 2021 (**14.0%** [95% CI: 12.1-16.1%] for HS), but not significantly so. However, it was significantly higher at **5.4%** [95% CI: 4.5-6.4%] for MS students compared to 2021, although not as high as in 2019.

Similarly, lifetime cannabis use was higher among HS students than MS students in 2019 and 2021 (Figure 50). As with current cannabis use, the prevalence of lifetime cannabis use was significantly lower in 2021 (**21.2%** [95% CI: 19.3-23.1%] for HS students and **5.0%** [95% CI: 3.9-6.2%] for MS students) than in 2019 (**29.9%** [95% CI: 26.5-33.4%] and **10.6%** [95% CI: 8.7-12.8%]), while the 2023 prevalence for MS students was significantly higher than 2021 (although not as high as the 2019 prevalence). It is worth noting, lifetime cannabis use data was not available for high school students in 2023.

Emerging Adults (18-29 years old)

Figure 51. Past 30-day cannabis use among emerging adults (18-29 years old) by year in Hawai‘i, BRFSS 2020-2022

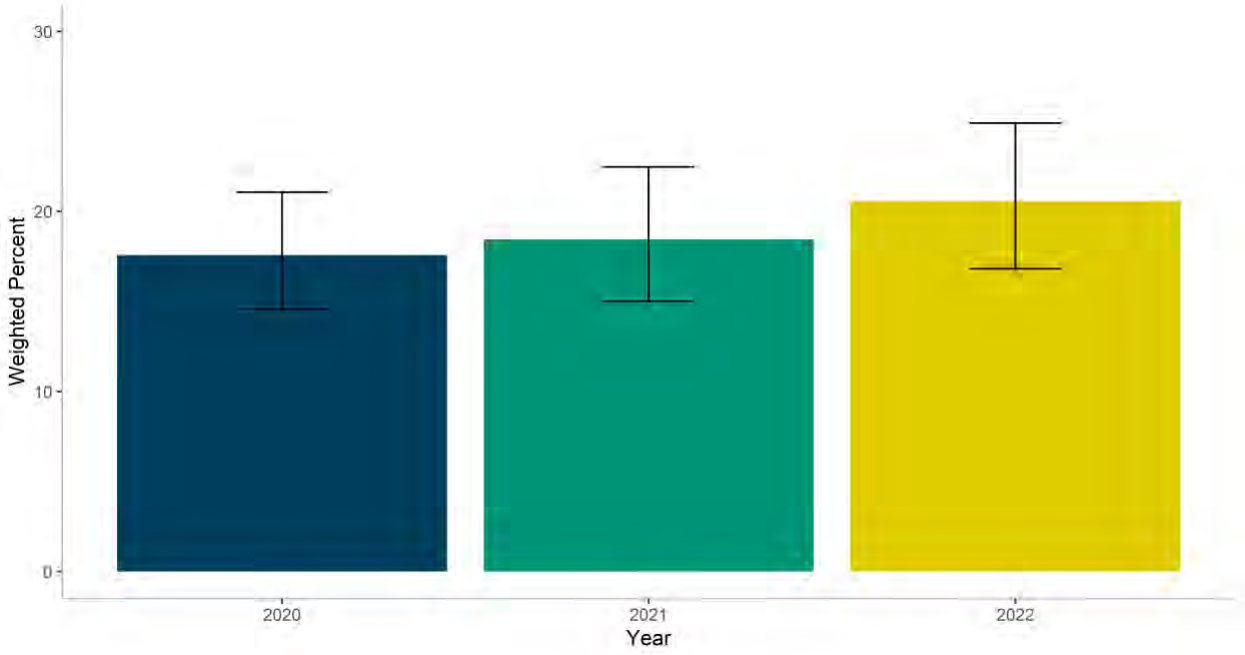
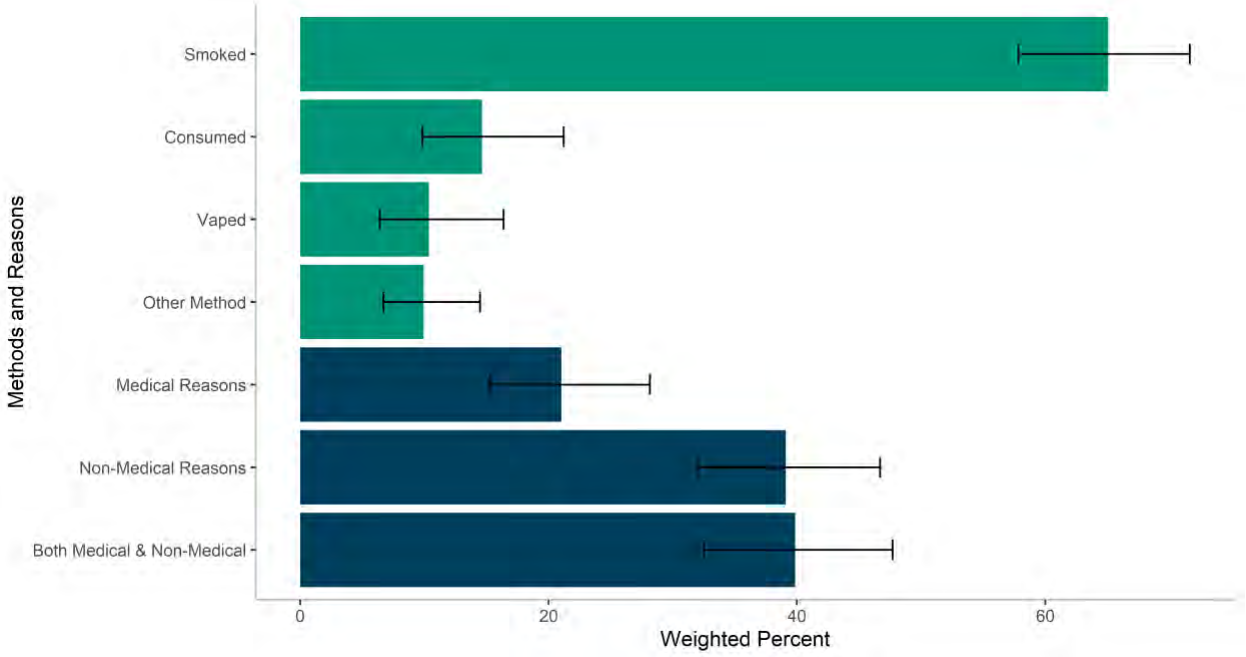


Figure 52. Methods and reasons for cannabis use among emerging adults (18-29 years old) that used cannabis in the past 30 days in Hawai‘i, BRFSS 2020-2022



All Adults (18+ years old)

Figure 53. Any past 30-day cannabis use and near-daily use by sex assigned at birth among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022

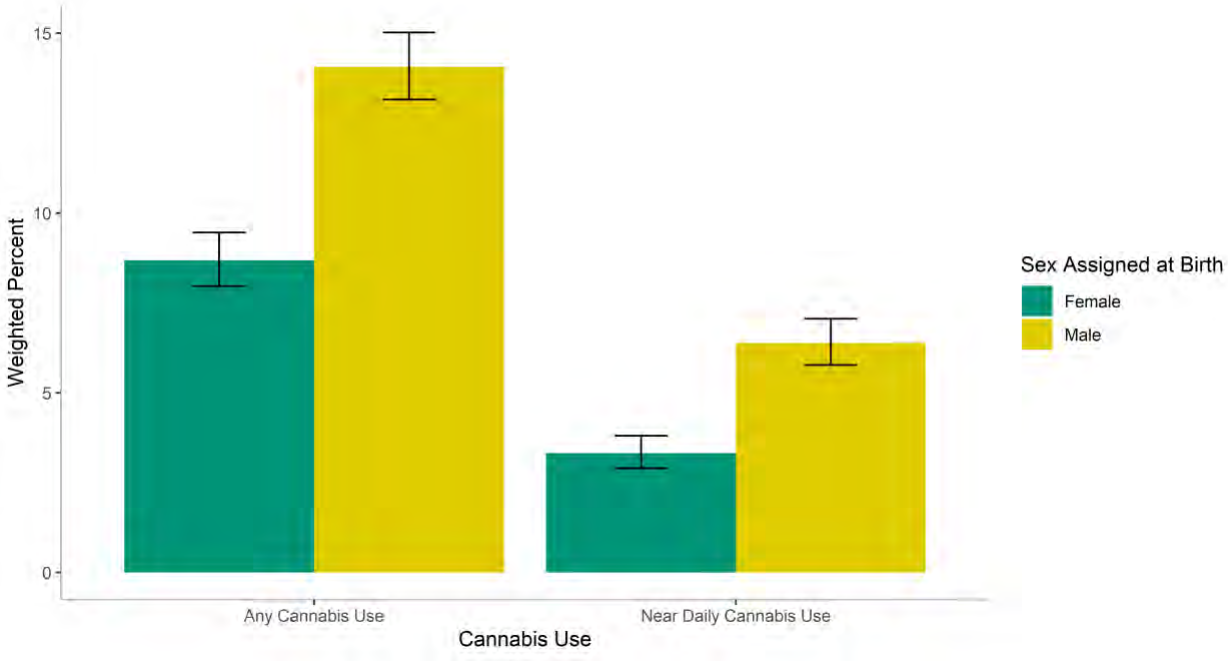
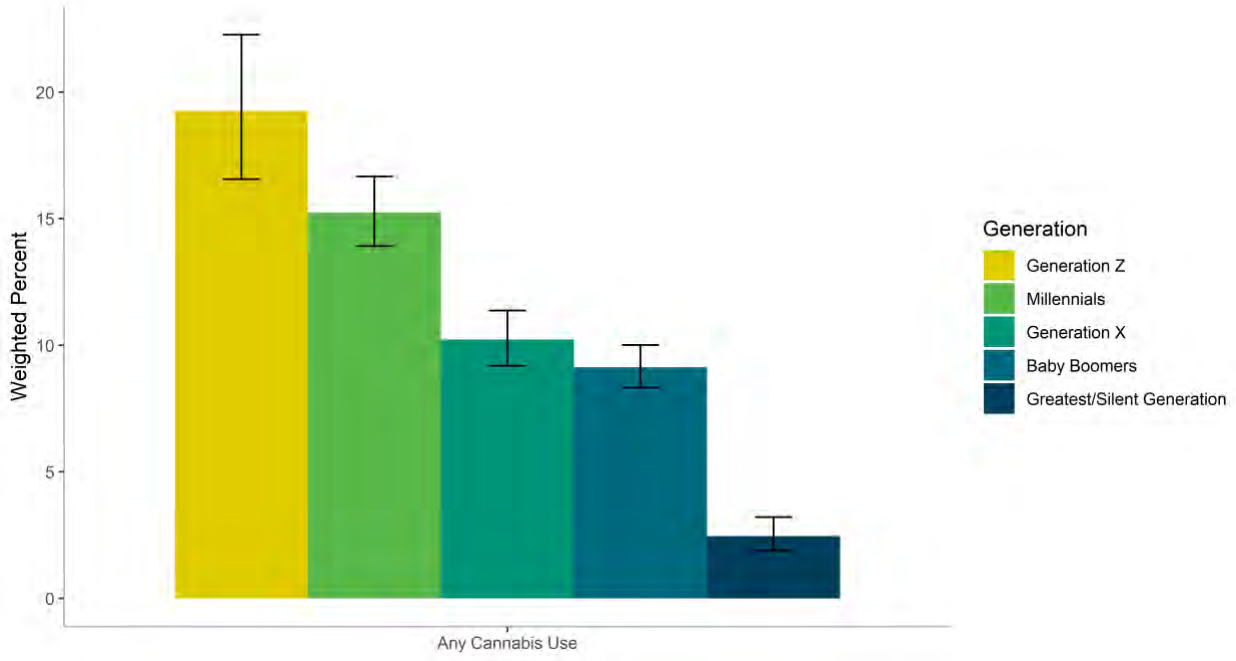


Figure 54. Past 30-day cannabis use by birth generation among all adults (18+ years old), Hawai‘i BRFSS 2020-2022



Summary of Figures 51-54

Shown in Figure 51, close to 1 in 5 emerging adults used cannabis in the past 30 days in 2022 (**20.6%**, 95% CI: 16.8-24.9%), 2021 (**18.4%**, 95% CI: 15.0-22.5%), and 2020 (**17.6%**, 95% CI: 14.6-21.1%). Among emerging adults who reported past 30 day cannabis use, **65.1%** (95% CI: 57.9-71.6%) smoked cannabis as their primary method of use, while **19.1%** (95% CI: 13.8-25.8%) consumed it, **8.7%** (95% CI: 5.1-14.3%) vaped it, and **7.2%** (95% CI: 4.4-11.5%) utilized some other method (Figure 52). Most emerging adults that currently use cannabis cited either non-medical reasons (**39.1%**, 95% CI: 32.0-46.7%) or both medical and non-medical reasons (**39.9%**, 95% CI: 32.5-47.7%) for use, compared to **21.0%** (95% CI: 15.3-28.1%) reporting medical reasons exclusively (*data on reasons for cannabis use are limited to 2020-2021*).

Among all adults, **11.3%** (95% CI: 10.8-11.9%) reported using cannabis in the past month, with **4.8%** (95% CI: 4.5-5.2%) using cannabis nearly daily (Appendices, Table S12. Current Cannabis Use & Patterns of Use among All Adults [age 18+ years], 2020-2022 BRFSS). Shown in Figure 53, males had a significantly higher prevalence of current cannabis use (**14.1%**, 95% CI: 13.2-15.0%) and near-daily cannabis use (**6.4%**, 95% CI: 5.8-7.1%) compared to females (**8.7%**, 95% CI: 8.0-9.5%, and **3.3%**, 95% CI: 2.9-3.8%, respectively). Current cannabis use also varied by generation (Figure 54). Adult residents that belong to Generation Z (born 1997-2013) had the highest prevalence of current cannabis use (**19.3%**, 95% CI: 16.6-22.3%), followed by Millennials (born 1981-1996, **15.2%**, 95% CI: 13.9-16.7%), Generation X (born 1965-1980, **10.2%**, 95% CI: 9.2-11.4%), Baby Boomers (born 1946-1964, **9.1%**, 95% CI: 8.3-10.0%), and Greatest/Silent Generation (born 1945 or earlier, **2.5%**, 95% CI: 1.9-3.2%).

Priority Populations

Youth (<18 years old)

Figure 55. Past 30-day cannabis use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 20

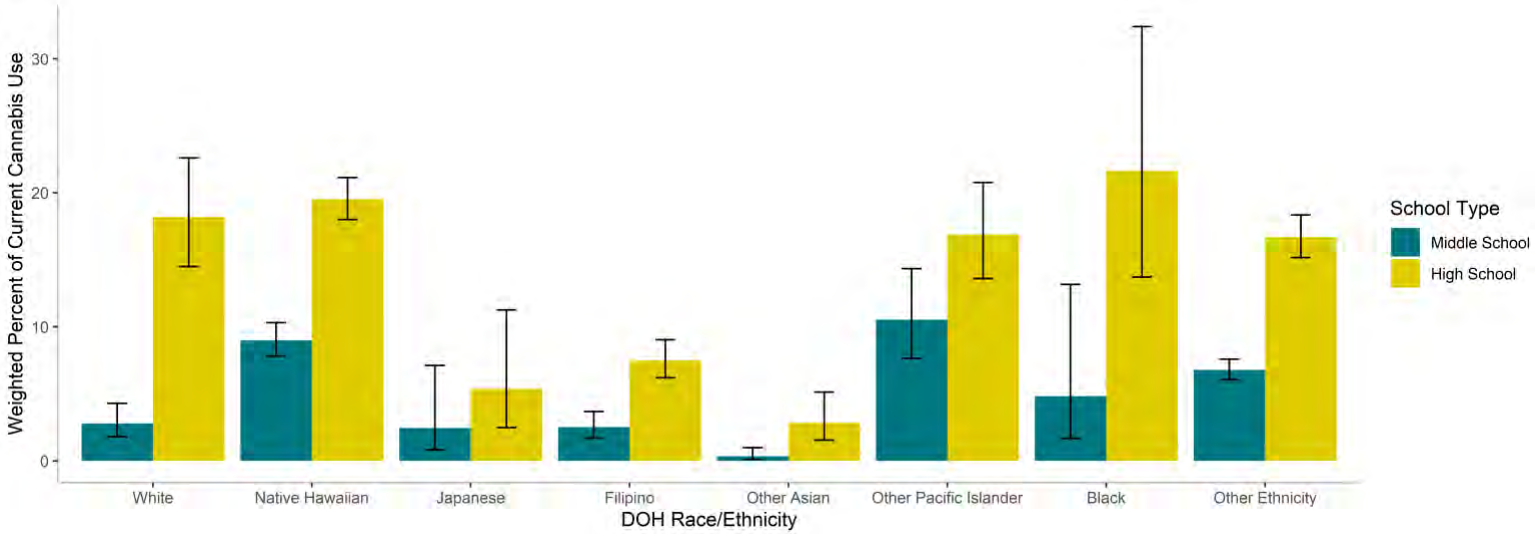


Figure 56. Early cannabis initiation among middle school students by DOH-defined race/ethnicity, combined middle school Hawai‘i YRBS 2019, 2021, and 2023

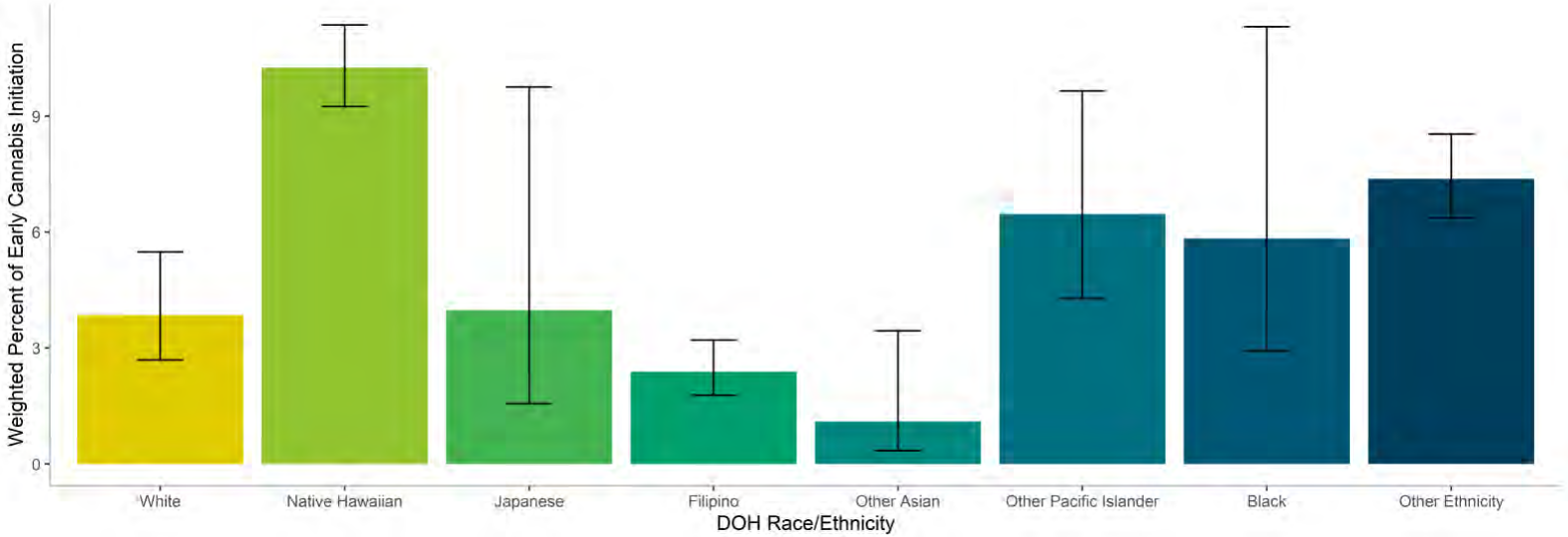


Figure 57. Past 30-day cannabis use among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

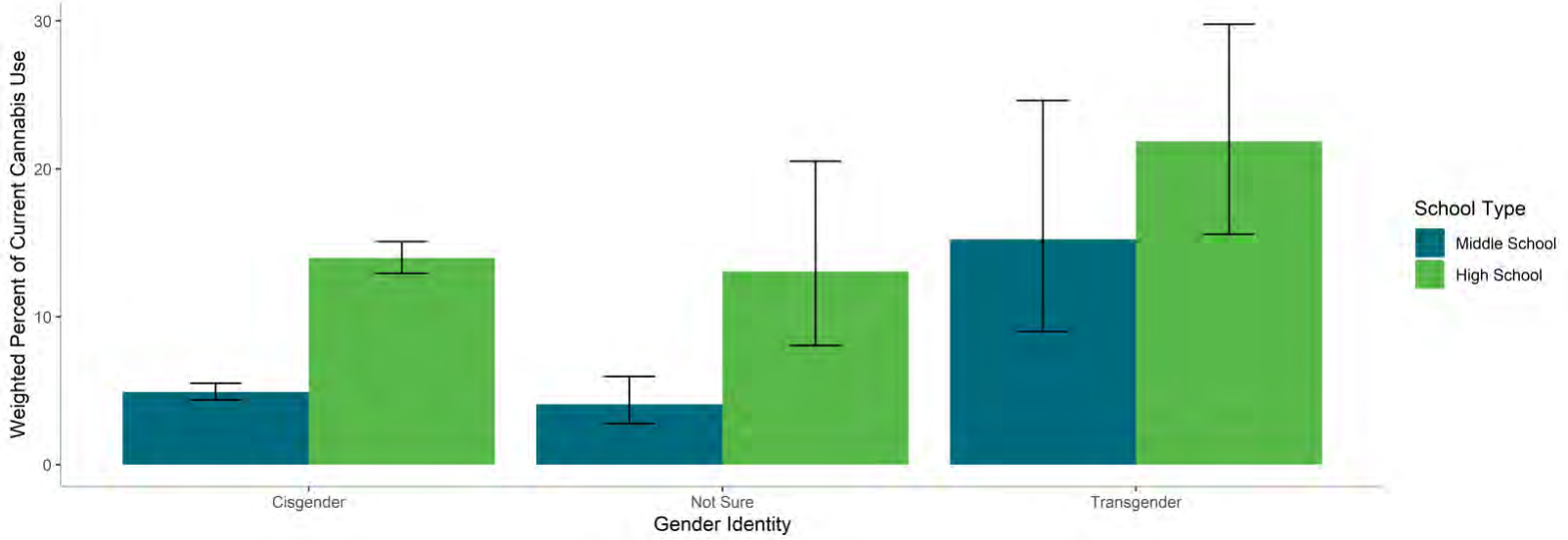


Figure 58. Early cannabis initiation among middle school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

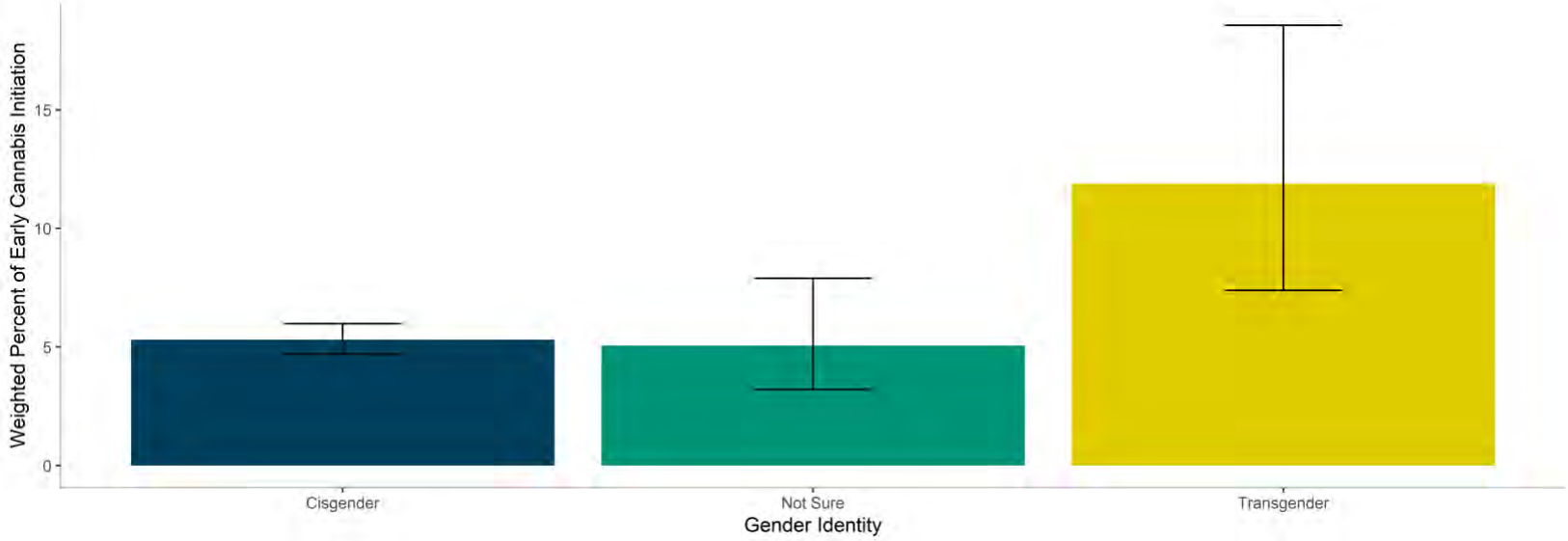


Figure 59. Past 30-day cannabis use among middle and high school student by sexual and gender minority status, combined Hawai‘i YRBS 2021 and 2023

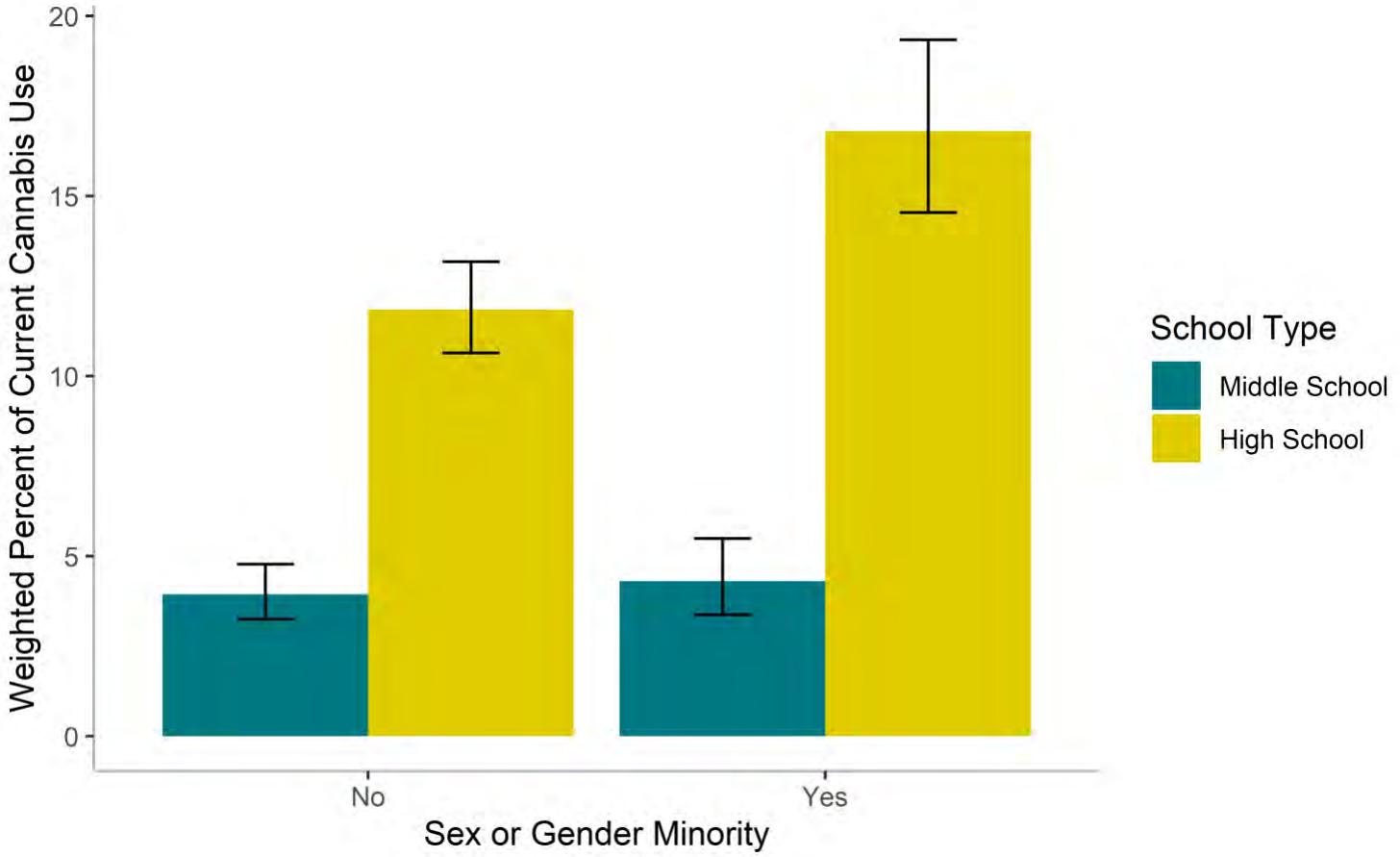


Table 5. Past 30-day cannabis use percentage and 95% confidence intervals among middle and high school student by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	3.1% (1.8%, 5.4%)	1.9% (0.9%, 4.1%)	3.3% (1.8%, 6.2%)	2.8% (1.8%, 4.3%)
Native Hawaiian	11.8% (9.9%, 13.9%)	5.3% (4.0%, 7.1%)	9.2% (7.6%, 11.0%)	9.0% (7.8%, 10.3%)
Japanese	2.8% (0.7%, 10.2%)	1.6% (0.6%, 3.9%)	1.7% (0.4%, 7.6%)	2.4% (0.8%, 7.1%)
Filipino	4.0% (2.7%, 5.8%)	0.6% (0.1%, 2.5%)	2.8% (1.7%, 4.5%)	2.5% (1.7%, 3.7%)
Other Asian	0.1% (0.0%, 0.9%)	1.0% (0.3%, 3.7%)	0.0% (0.0%, 0.0%)	0.3% (0.1%, 1.0%)
Other Pacific Islander	15.1% (10.6%, 21.0%)	3.1% (1.6%, 6.2%)	8.3% (5.9%, 11.6%)	10.5% (7.6%, 14.3%)
Black	11.0% (6.2%, 18.6%)	2.4% (0.3%, 18.1%)	5.7% (1.5%, 20.0%)	4.8% (1.7%, 12.9%)
Other Ethnicity	10.8% (9.2%, 12.7%)	4.1% (2.9%, 5.7%)	7.2% (6.2%, 8.3%)	6.8% (6.1%, 7.6%)
Cisgender	6.6% (5.5%, 7.8%)	2.5% (1.9%, 3.2%)	5.4% (4.4%, 6.5%)	4.9% (4.4%, 5.5%)
Unsure Gender	8.7% (4.4%, 16.6%)	2.2% (1.1%, 4.3%)	3.8% (1.8%, 8.2%)	4.1% (2.8%, 6.0%)
Transgender	30.2% (18.1%, 46.0%)	11.3% (4.1%, 27.4%)	9.1% (4.0%, 19.6%)	15.2% (9.0%, 24.6%)
High School				
White	17.1% (14.2%, 20.4%)	16.4% (11.9%, 22.2%)	20.8% (14.1%, 29.6%)	18.2% (14.5%, 22.6%)
Native Hawaiian	25.7% (22.7%, 29.0%)	17.1% (15.4%, 18.9%)	15.8% (13.4%, 18.4%)	19.5% (18.0%, 21.1%)
Japanese	4.4% (1.1%, 15.9%)	6.4% (1.7%, 21.3%)	6.7% (3.0%, 14.4%)	5.4% (2.5%, 11.2%)
Filipino	11.4% (8.7%, 14.8%)	4.2% (3.0%, 6.0%)	7.0% (4.9%, 10.1%)	7.5% (6.2%, 9.0%)
Other Asian	3.4% (1.3%, 9.1%)	3.6% (1.8%, 7.4%)	0.6% (0.2%, 2.1%)	2.8% (1.6%, 5.1%)
Other Pacific Islander	17.6% (11.8%, 25.2%)	11.8% (7.0%, 19.1%)	20.3% (14.2%, 28.2%)	16.9% (13.6%, 20.8%)
Black	41.6% (21.2%, 65.3%)	14.5% (5.6%, 32.7%)	22.5% (9.1%, 45.8%)	21.6% (13.8%, 32.2%)
Other Ethnicity	23.0% (20.5%, 25.8%)	13.6% (11.7%, 15.8%)	16.8% (14.7%, 19.1%)	16.7% (15.2%, 18.3%)
Cisgender	17.2% (15.0%, 19.6%)	11.7% (10.6%, 13.0%)	13.2% (11.2%, 15.7%)	14.0% (12.9%, 15.1%)
Unsure Gender	10.8% (3.8%, 27.1%)	9.4% (3.9%, 21.0%)	19.8% (11.5%, 31.8%)	13.1% (8.1%, 20.5%)
Transgender	14.3% (7.8%, 24.9%)	21.8% (13.5%, 33.1%)	26.2% (15.6%, 40.4%)	21.9% (15.6%, 29.8%)

Summary of Figures 55-59 & Table 5

Current cannabis use among MS and HS students varied by race and ethnicity in 2019, 2021, and 2023 (Figure 55). Like MS students' cigarette and e-cigarette use prevalence, cannabis use was highest among Other Pacific Islander (OPI) MS students (**10.5%**, 95% CI: 7.6-14.3%). This was followed by Native Hawaiian (NH; **9.0%**, 95% CI: 7.8-10.3%) and Other Ethnicity (**6.8%**, 95% CI: 6.0-7.6%). Among HS students, current cannabis use was highest among Black students (**21.6%**, 95% CI: 13.7-32.4%), followed by NH (**19.5%**, 95% CI: 18.0-21.1%) and White (**18.2%**, 95% CI: 14.5-22.6%). Other Asian MS and HS students had the lowest prevalence of current cannabis use (**0.3%** [95% CI: 0.1-1.0%] and **2.8%** [95% CI: 1.5-5.1%], respectively), followed by Japanese and Filipino. Table 5 displays a further breakdown for race and ethnicity year-by-year along with combined years.

Among MS students, the same three racial and ethnic groups with the highest prevalence of current cannabis use had the most prevalent early cannabis initiation (Figure 56). NH MS students had the highest prevalence of early cannabis initiation (**10.3%**, 95% CI: 9.3-11.4%), followed by Other Ethnicity (**7.4%**, 95% CI: 6.4-8.5%) and OPI (**6.5%**, 95% CI: 4.3-9.6%). NH and Other Ethnicity MS students had significantly more prevalent early cannabis initiation than White, Filipino, and Other Asian. As with current cannabis use, Other Asian MS students had the lowest prevalence of early cannabis initiation (**1.1%**, 95% CI: 0.3-3.4%).

Shown in Figure 57, current cannabis use was significantly higher among MS students who were transgender (**15.2%**, 95% CI: 9.0-24.6%) than those who were unsure about their gender identity (**4.1%**, 95% CI: 2.8-6.0%) or cisgender (**4.9%**, 95% CI: 4.4-5.5%). While examining the combined years for transgender HS students, there was a significantly higher prevalence for current cannabis use compared to cisgender HS students. See Table 5 for a year-by-year breakdown of current cannabis use based on gender identity. Over the same years, MS students who were transgender (Figure 58) had significantly higher prevalence for early cannabis initiation than cisgender MS students (**11.9%** [95% CI: 7.4-18.6%] compared to **5.3%** [95% CI: 4.7-6.0%]).

Current cannabis use also varied by sexual and gender minority (SGM) status among MS and HS students (Figure 59). In 2021 and 2023, HS students who identified with a SGM group (**16.8%**, 95% CI: 15.4-19.3%) had significantly higher prevalence for current cannabis use than those who did not (**11.9%**, 95% CI: 10.6-13.2%), mirroring trends of high school e-cigarette and alcohol use by SGM status. For MS students, the difference was not significant.

Emerging Adults (18-29 years old)

Figure 60. Past 30-day cannabis use prevalence by Hawai'i DOH-defined race/ethnicity among emerging adults, Hawai'i BRFSS 2020-2022

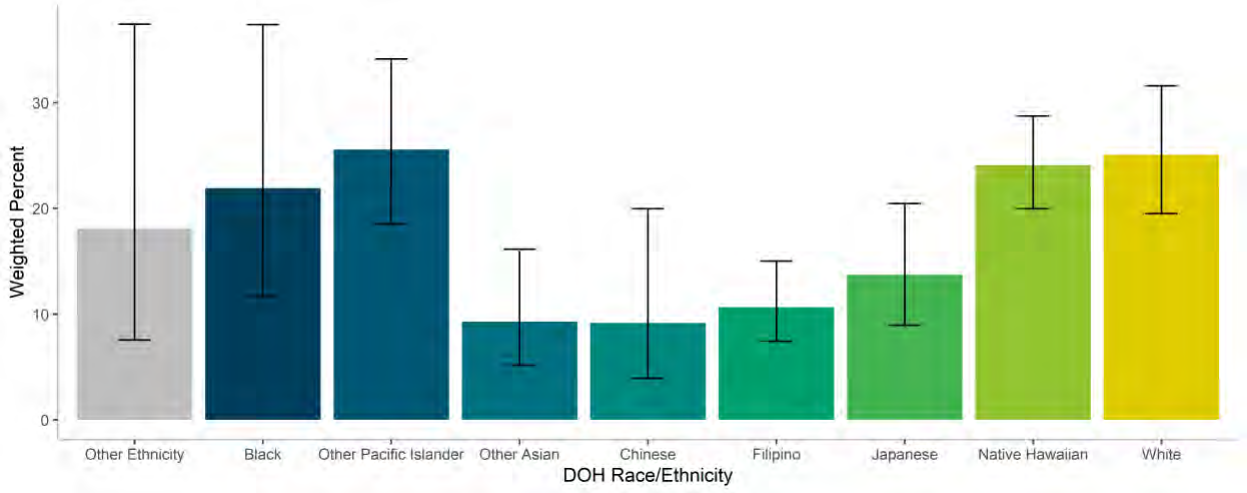
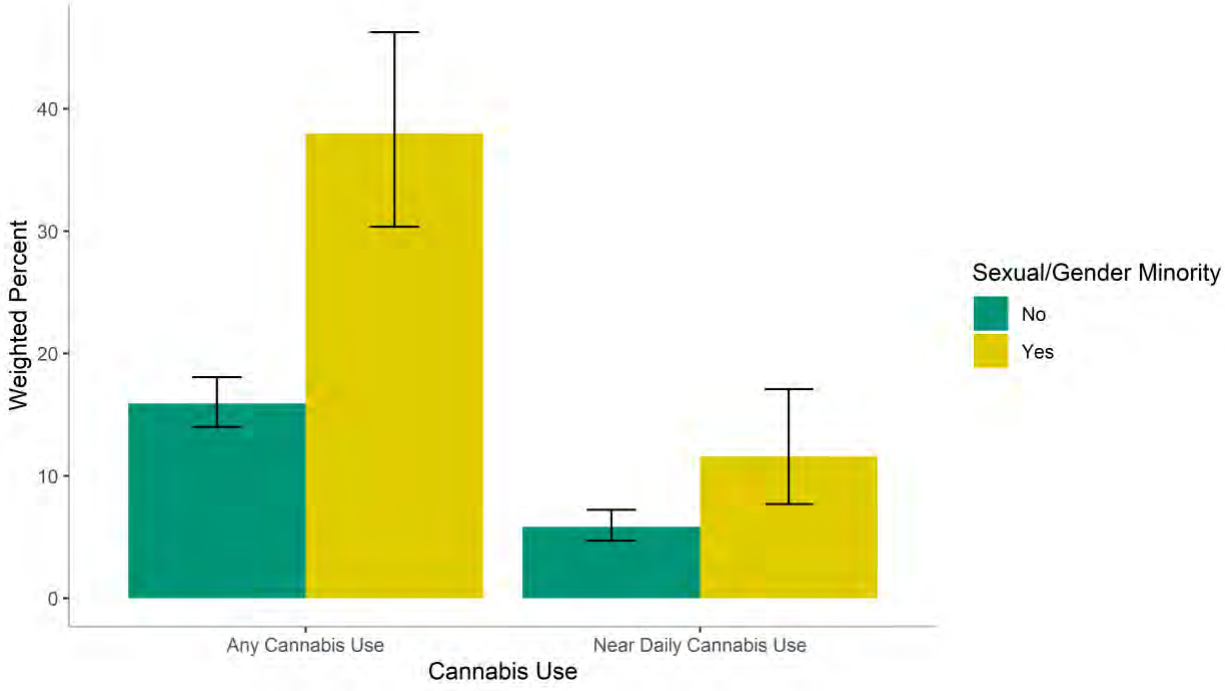


Figure 61. Any past 30-day cannabis use and near-daily use prevalence by sex/gender minority status among emerging adults, Hawai‘i BRFSS 2020-2022



All Adults (18+ years old)

Figure 62. Near-daily cannabis use prevalence in past 30 days by Hawai‘i DOH-defined race/ethnicity among all adults (18+ years old), Hawai‘i BRFSS 2020-2022

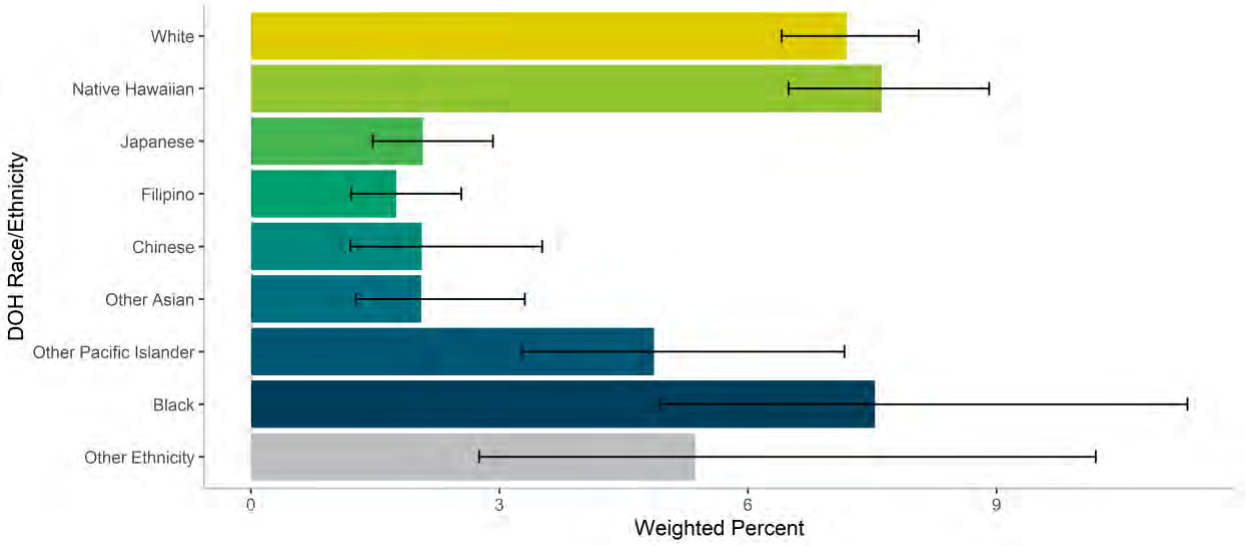
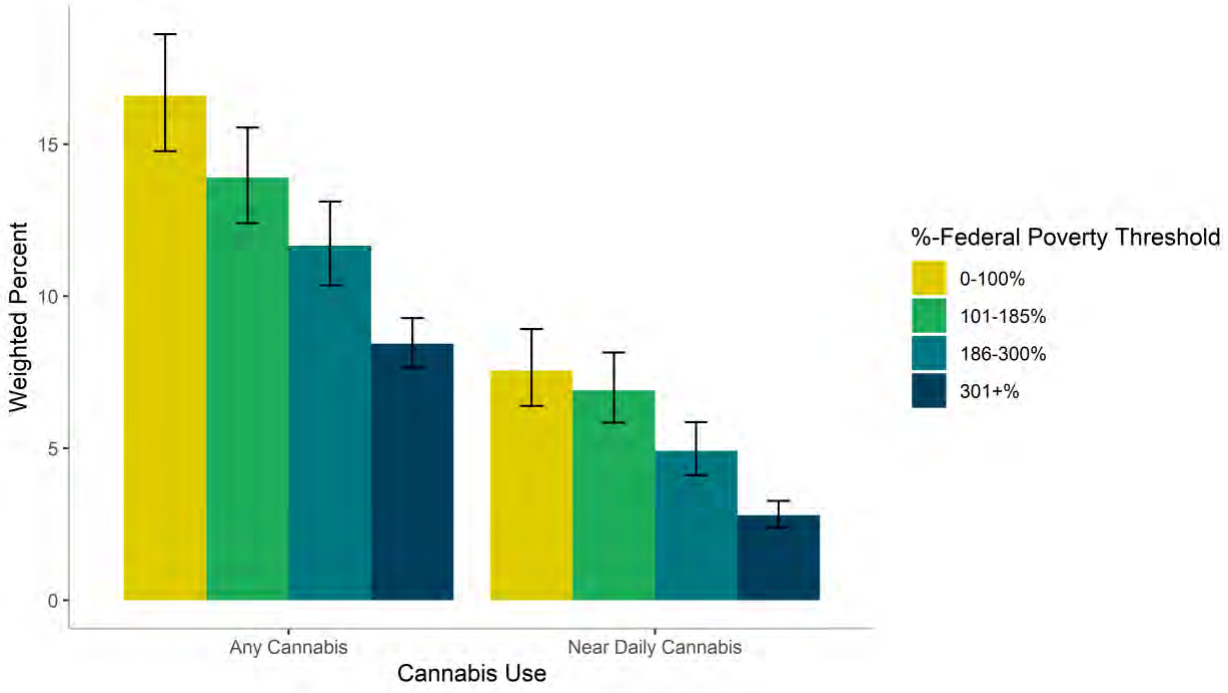


Figure 63. Past 30-day cannabis use by percent federal poverty threshold among all adults (18+ years old), Hawai'i BRFSS 2020-2022



Summary of Figures 60-63

Among emerging adults (Figure 60), any current cannabis use was most prevalent among OPI (**25.6%**, 95% CI: 18.5-34.1%), followed closely by White (**25.1%**, 95% CI: 19.5-31.6%) and NH (**24.1%**, 95% CI: 20.0-28.7%). Chinese (**9.2%**, 95% CI: 3.9-20.0%) and Other Asian (**9.3%**, 95% CI: 5.2-16.1%) emerging adults had the lowest prevalence of current cannabis use. Shown in Figure 61, current cannabis use and near-daily cannabis use were significantly more prevalent among emerging adults who identified with a SGM group (**38.0%**, 95% CI: 30.4-46.2% for current cannabis use and **11.6%**, 95% CI: 7.7-17.1% for near-daily cannabis use) relative to those who did not (**15.9%**, 95% CI: 14.0-18.1% and **5.8%**, 95% CI: 4.7-7.2%, respectively), which was nearly double for both.

Near-daily cannabis use also varied by race and ethnicity among all adults (Figure 62). NH (**7.6%**, 95% CI: 6.5-8.9%), Black (**7.5%**, 95% CI: 4.9-11.3%) and White (**7.2%**, 95% CI: 6.4-8.1%) adults had the highest prevalence of near-daily cannabis use, while all Asian racial and ethnic groups, including Filipino (**1.8%**, 95% CI: 1.2-2.5%), had a significantly lower prevalence.

Higher poverty among all adults was associated with more prevalent cannabis use and near-daily cannabis use (Figure 63). Those within the 0-100% federal poverty level group (**7.6%**, 95% CI: 6.4-8.9%) had significantly more prevalent near-daily cannabis use compared to those within the 301+% federal poverty level group (**2.8%**, 95% CI: 2.4-3.3%), and significantly more prevalent any cannabis use (**16.6%** [95% CI: 14.8-18.6%] compared to **8.4%** [95% CI: 7.7-9.3%]).

Mental Health and Other Key Factors

Youth (<18 years old)

Figure 64. Past 30-day cannabis use among middle school students who reported ever feeling sad, empty, hopeless, angry, or anxious by survey year, Hawai‘i YRBS 2019, 2021, and 2023

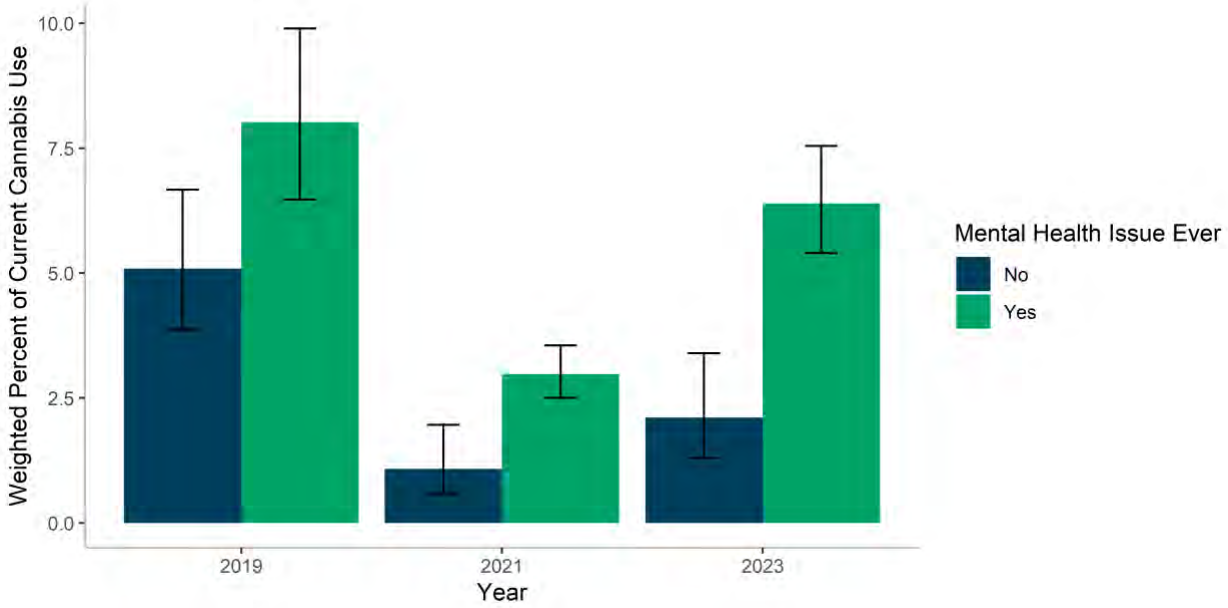


Figure 65. Early cannabis initiation among middle school student who ever felt sad or hopeless almost every day for two weeks or more in a row by survey year, Hawai‘i YRBS 2019, 2021, and 2023

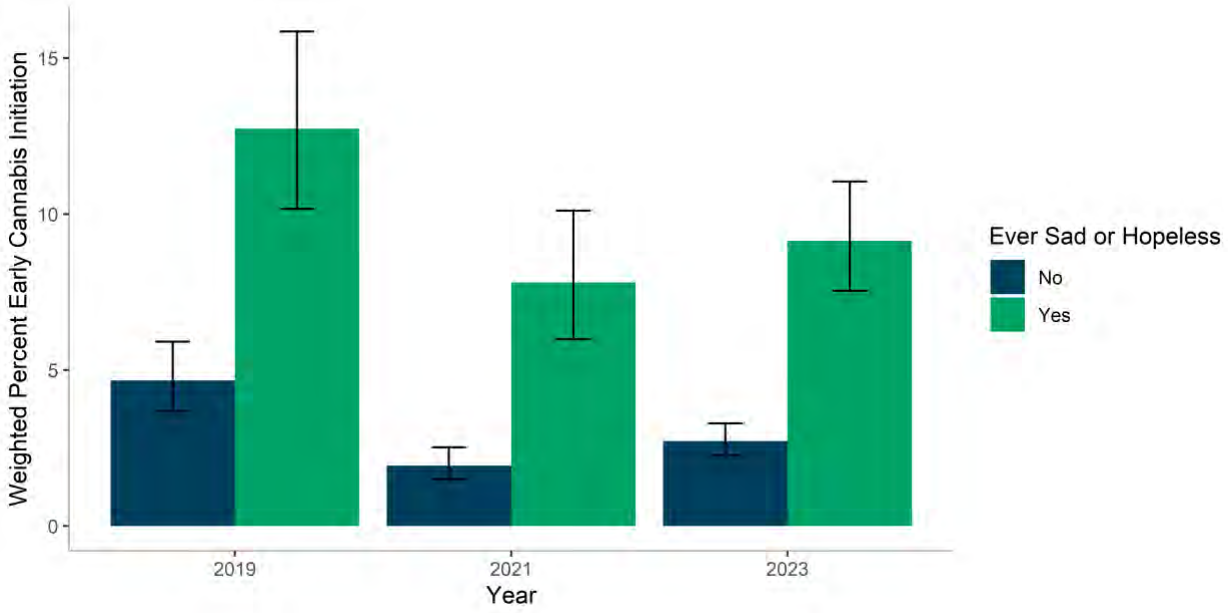
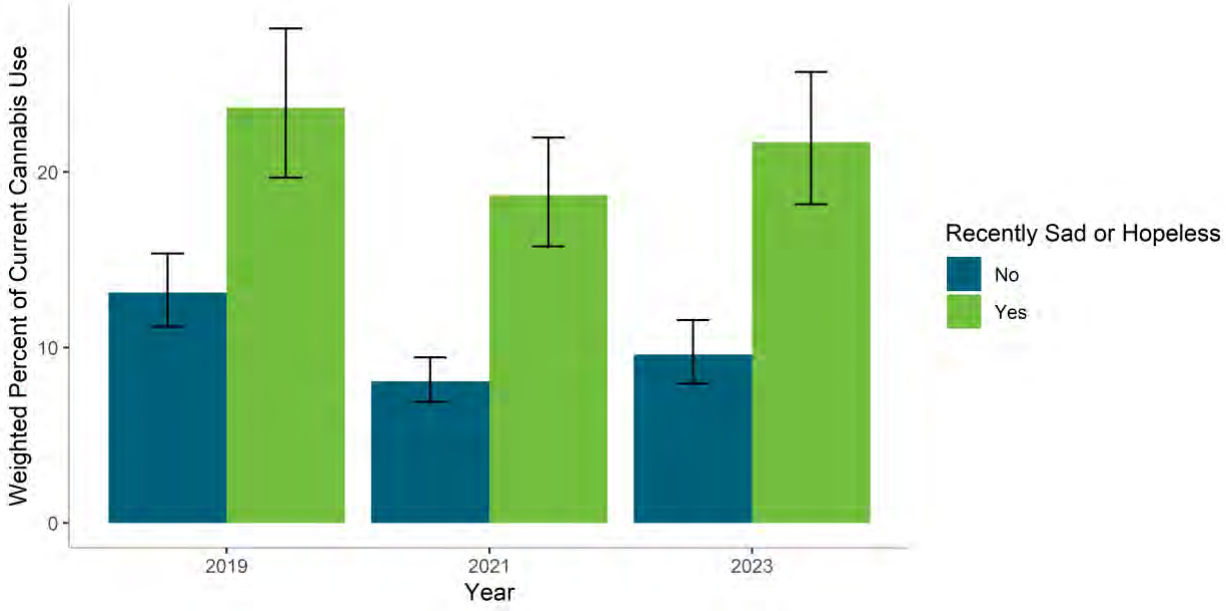


Figure 66. Past 30-day cannabis use among high school students who felt sad or hopeless almost every day for two or more weeks in a row in the past 12 months by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 64-66

Current cannabis use was more prevalent among MS students who reported ever feeling sad, empty, hopeless, angry, or anxious compared to those who did not (Figure 64). The difference was significant in 2021 (**3.0%** [95% CI: 2.5-3.6%] compared to **1.1%** [95% CI: 0.6-2.0%]) and 2023 (**6.4%** [95% CI: 5.4-7.5%] compared to **2.1%** [95% CI: 1.3-3.4%]).

Early cannabis initiation was significantly more prevalent among MS students who reported ever feeling sad or hopeless almost every day for two weeks or more in a row (Figure 65). In 2019, the prevalence of early cannabis initiation for MS students who had been sad or hopeless for at least two weeks in the past year was **12.7%** (95% CI: 10.2-15.8%) compared to **4.7%** (95% CI: 3.7-5.9%); in 2021, it was **7.8%** (95% CI: 6.0-10.1%) compared to **1.9%** (95% CI: 1.5-2.5%); and in 2023, it was **9.1%** (95% CI: 7.5-11.0%) compared to **2.7%** (95% CI: 2.2-3.3%).

Similarly, current cannabis use was significantly more prevalent among HS students who reported feeling sad or hopeless almost every day for two or more weeks in a row in the last year (Figure 66). In 2019, the prevalence of current cannabis use among HS students who had been sad or hopeless for at least two weeks in the past year was **23.7%** (95% CI: 19.7-28.2%) compared to **13.1%** (95% CI:11.2-15.4%); in 2021, it was **18.7%** (95% CI: 15.8-22.0%) compared to **8.1%** (95% CI: 6.9-9.4%); and in 2023, it was **21.7%** (95% CI: 18.2-25.7%) compared to **9.6%** (95% CI: 8.0-11.6%).

Emerging Adults (18-29 years old)

Figure 67. Past 30-day cannabis use and near-daily use by the number of poor mental health days in the past 30 days among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2022

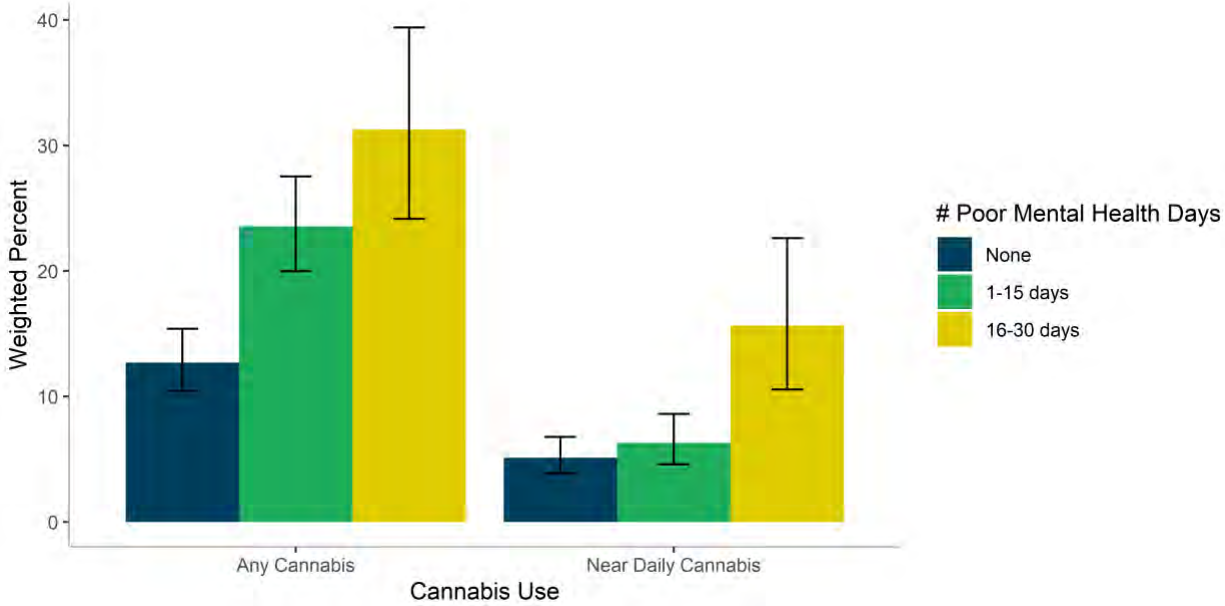
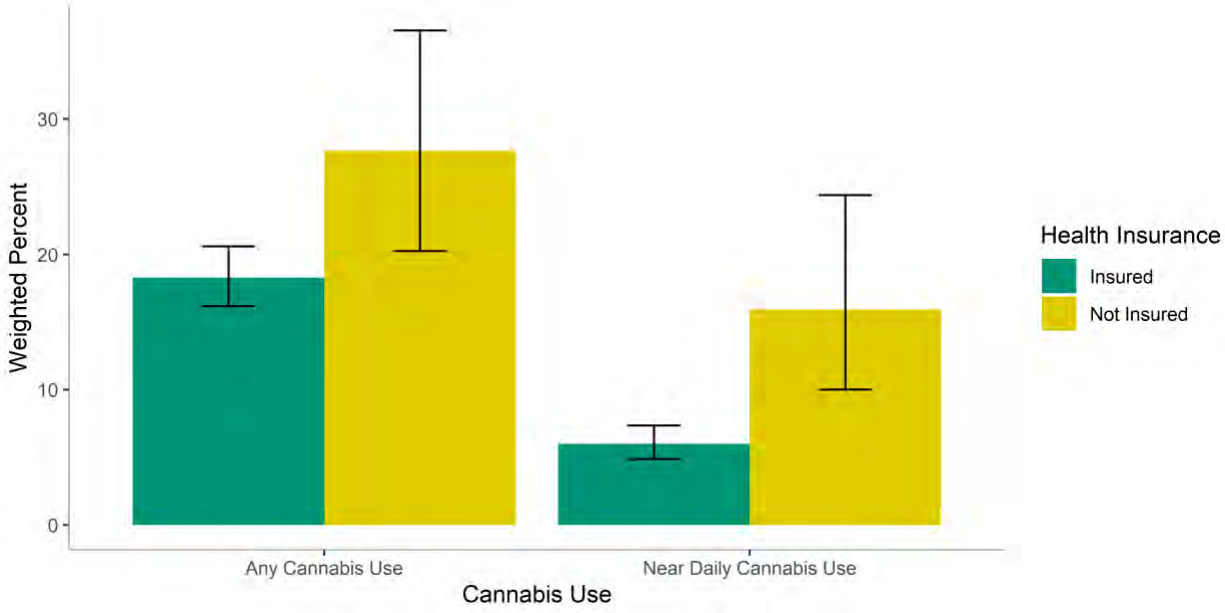


Figure 68. Past 30-day cannabis use and near-daily use by health insurance status among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2022



All Adults (18+ years old)

Figure 69. Past 30-day cannabis use and near-daily use by self-reported history of depressive disorder among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022

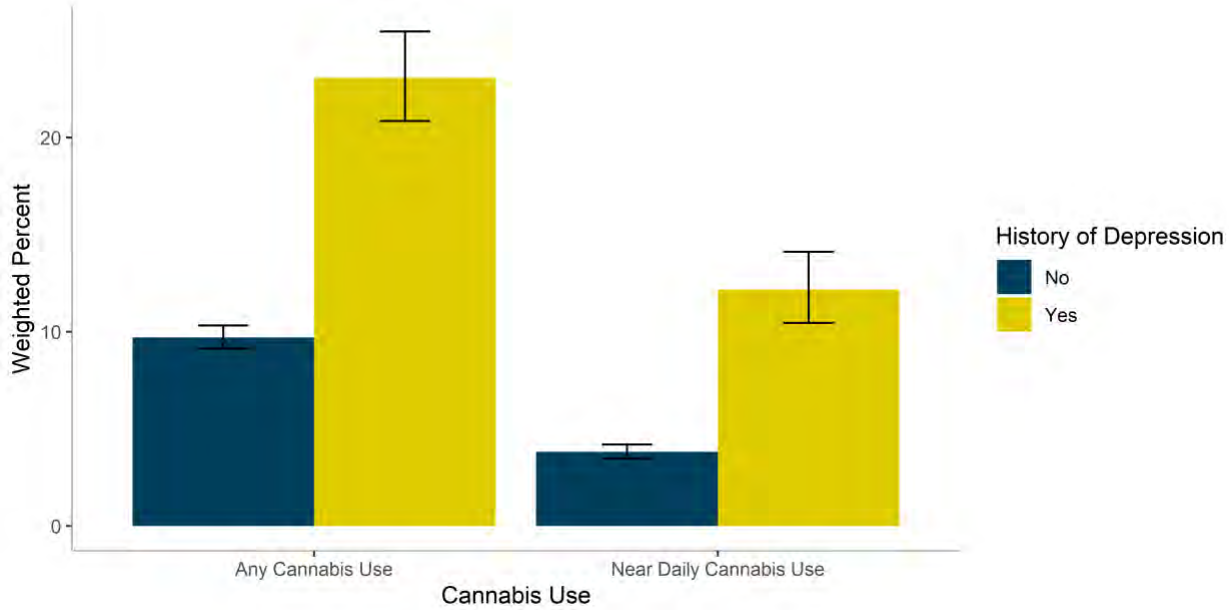
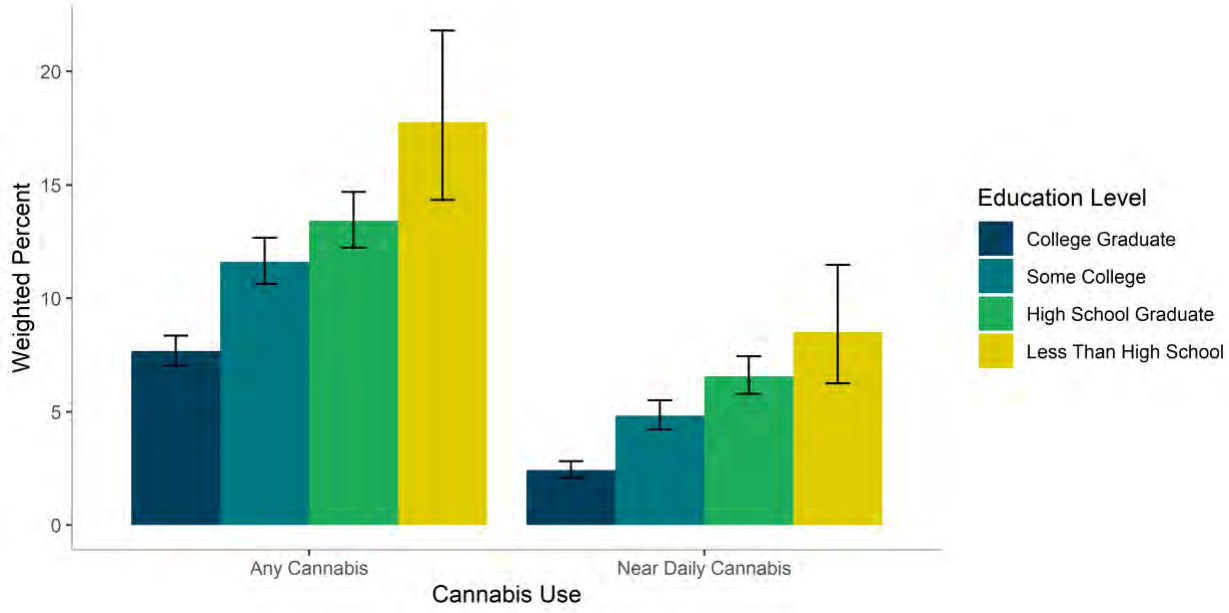


Figure 70. Past 30-day cannabis use and near-daily use by education level among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022



Summary of Figures 67-70

Shown in Figure 67, emerging adults (18-29 years old) reporting 16-30 poor mental health days in the last month had significantly more prevalent current cannabis use (**31.3%**, 95% CI: 24.1-39.4%) and near-daily cannabis use (**15.7%**, 95% CI: 10.6-22.6%) relative to those reporting no poor mental health days (**12.7%**, 95% CI: 10.4-15.4% and **5.1%**, 95% CI: 3.9-6.8%, respectively). Those reporting 1-15 poor mental days had more prevalent any cannabis use (**23.6%**, 95% CI: 20.0-27.5%) than those with none (**12.7%**, 95% CI: 10.4-15.4%), although the difference in prevalence of near-daily cannabis use between those reporting 1-15 poor mental health days and those reporting none was not significant. Noticeably, there was also a significant prevalence difference for those reporting

1-15 poor mental days (**6.6%**, 95% CI: 5.79-7.54%) compared to a higher prevalence for those reporting 16-30 poor mental health days in the past month (**13.9%,** 95% CI: 11.4-16.7%).

Emerging adults who reported not having health insurance had significantly more prevalent near-daily cannabis use (**15.9%**, 95% CI: 10.0-24.4%) than those with health insurance (**6.0%**, 95% CI: 4.9-7.4%), shown in Figure 68. Meanwhile, the prevalence of any cannabis use in the last 30 days did not differ significantly by health insurance status.

Displayed in Figure 69, all adults (aged 18+ years) who reported a history of depressive disorder had significantly more prevalent any cannabis use (**23.1%**, 95% CI: 20.8-25.4%) and near-daily cannabis use (**12.2%**, 95% CI: 10.5-14.1%) compared to those without a history of depression (**9.7%**, 95% CI: 9.1-10.3% and **3.8%**, 95% CI: 3.5-4.2%, respectively).

As seen in Figure 70, adults with less than a high school level education had significantly more prevalent current cannabis use (**17.8%**, 95% CI: 14.3-21.8%) than those with some college (**11.6%**, 95% CI: 10.6-12.7%) or a college degree (**7.7%**, 95% CI: 7.0-8.4%). Those with less than high school also had more significantly prevalent near-daily cannabis use (**8.5%**, 95% CI: 6.2-11.5%) than those with some college (**4.8%**, 95% CI: 4.21-5.50%) or a college degree (**2.4%**, 95% CI: 2.1-2.8%). The difference in prevalence between some college and college completion was significant for both any cannabis and near-daily cannabis; however, the difference between less than high school and high school completion was insignificant for both.

Co- and Poly-Substance Use in Hawai‘i

Background

The use of one substance (cannabis, nicotine, or alcohol) increases the likelihood of using others as well. For example, individuals found to use alcohol are more likely to use nicotine (Drobes, 2002) and those who use nicotine are more likely to use cannabis (Reboussin et al., 2021). Co- and poly-substance use can refer to concurrent use (i.e., use of more than one substance, but not on the same occasion), coadministration (i.e., use of more than one substance at the same time in the same delivery device), and sequential use (i.e., use of one substance after another on the same occasion). Co- and poly-substance use patterns and outcomes are increasingly pertinent as attitudes toward cannabis shift nationally (Carliner et al., 2017) and as the increased diversification of cannabis and nicotine products—such as vapes and edibles—generate more ways to use cannabis, nicotine, and alcohol in combination. Mounting evidence indicates that co- and poly-substance use presents uniquely harmful risks, including heavier use, more prevalent substance use disorders, negative social and behavioral outcomes, and diminished physical and mental health.

Youth (<18 years old)

Substance co-use and poly-use among youth is associated with negative long-term health and social consequences. The risks of **cannabis and nicotine** co-use during adolescence include greater nicotine and cannabis dependence (Rubinstein, Rate, & Prochaska, 2014; Schauer & Peters, 2018), greater risk of heavy alcohol use (Schauer & Peters, 2018), and diminished mental health, such as depressive symptoms (Moustafa et al., 2022). Inversely, teens with depressive symptoms are at higher risk for multiple-substance use (Conway et al., 2013). **Alcohol and cannabis** co-use among adolescents has been associated with long-term substance dependence, involvement in the criminal justice system, and poorer academic outcomes (Green et al., 2016; Brière et al., 2011). Initiation of co- and poly-use during adolescence affects the trajectory of co-/poly-use, and related outcomes, later in life, e.g., **cannabis and nicotine** co-use in adolescence increases the likelihood of co-use in young adulthood (Dunbar et al., 2020).

Emerging Adults (18-29 years old)

The prevalence of **alcohol and cannabis** use peak during young adulthood (Patrick et al., 2023). Young adults who use both cannabis and alcohol experience higher risk of alcohol use disorder (Midanik et al., 2007), more prevalent mental health problems, including psychosis and ADHD, and long term risk of more substance use (Thompson et al., 2021). The disordered use of both cannabis and alcohol is associated with heavier use of both than the disordered use of one alone (Hayaki et al., 2016). Meanwhile, emerging adults who co-use **cannabis and nicotine** are at risk of heavier alcohol use (Reboussin et al., 2021), higher likelihood of using other substances (Seaman et al., 2019; Reboussin et al., 2021), higher likelihood of driving after using cannabis (Tucker et al., 2019a), poorer academic achievement (Hernández-Serrano, Gras, & Font-Mayolas, 2018), and depression (Seaman et al. 2019).

All Adults (18+ years old)

The use of any one of the three substances (alcohol, cannabis, or nicotine) is associated with co-using one of the others, while use of two increases the likelihood of poly-using with a third (Roche et al., 2019). The co-use of **alcohol and cannabis** is associated with more severe

consequences than the use of one alone or non-use. Co-use is associated with heavier alcohol consumption and greater alcohol-related consequences, including higher likelihood of arrest and depressive symptoms (Pacek et al., 2012), more likely impaired driving (Subbaraman & Kerr, 2015), and more risky sexual behavior (Metrik et al., 2016). **Nicotine and cannabis** co-dependence among adults is associated with psychiatric and social consequences, such as narcissistic personality disorder, bipolar disorder, anxiety, antisocial behavior, increased likelihood of impaired driving, and more prevalent involvement in intimate partner violence (Peters et al., 2014). **Alcohol and nicotine**—both readily and legally available—are commonly co-used, leading to multiplicative risks of cancer and lower rates of successful smoking cessation (National Cancer Institute, 2023).

Indicators and Definitions

This section focuses on co- and poly-substance use in the state of Hawai‘i by differing groups across different age spans based on the following indicators:

- *Poly-Substance Use**:
    - **YRBS Middle & High School:** Students who consumed any alcohol in the past month (Current Alcohol), self-reported using electronic vapor products (Current e-Cigarettes) or smoking cigarettes (Current Cigarettes) on one or more of the past 30 days, *and* self-report for using cannabis one or more times in the past 30 days (Current Cannabis).
    - **BRFSS:** Adults who self-reported the use of a nicotine product every day or some days (Current Nicotine), the consumption of any alcohol in the past 30 days (Current Alcohol), *and* the use of any cannabis in the past 30 days (Current Cannabis).

      **For the purposes of the current report, poly-substance use refers to the use of nicotine, alcohol, and cannabis, and does not include other illicit substances unless otherwise indicated.*
- *Nicotine-Cannabis Co-Use*:
    - **YRBS Middle & High School:** Students who self-reported using electronic vapor products (Current e-Cigarettes) or smoking cigarettes (Current Cigarettes) on one or more of the past 30 days *and* self-reported using cannabis one or more times in the past 30 days (Current Cannabis).
    - **BRFSS**: Adults who self-reported the use of a nicotine product every day or some days (Current Nicotine) and the use of any cannabis in the past 30 days (Current Cannabis).
- *Nicotine-Alcohol Co-Use*:
    - **YRBS Middle & High School:** Students who consumed any alcohol in the past month (Current Alcohol) *and* self-reported using electronic vapor products (Current e-Cigarettes) or smoking cigarettes (Current Cigarettes) on one or more of the past 30 days.
    - **BRFSS**: Adults who self-reported the use of a nicotine product every day or some days (Current Nicotine) and the consumption of any alcohol in the past 30 days (Current Alcohol).
- *Cannabis-Alcohol Co-Use*:

- **YRBS Middle & High School:** Students who consumed any alcohol in the past month (Current Alcohol) *and* self-reported using cannabis one or more times in the past 30 days (Current Cannabis).
- **BRFSS**: Adults who self-reported the use of any cannabis in the past 30 days (Current Cannabis) and the consumption of any alcohol in the past 30 days (Current Alcohol).

Prevalence and Trends

Youth (<18 years old)

Figure 71. Current poly-substance use of alcohol, nicotine, and cannabis among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

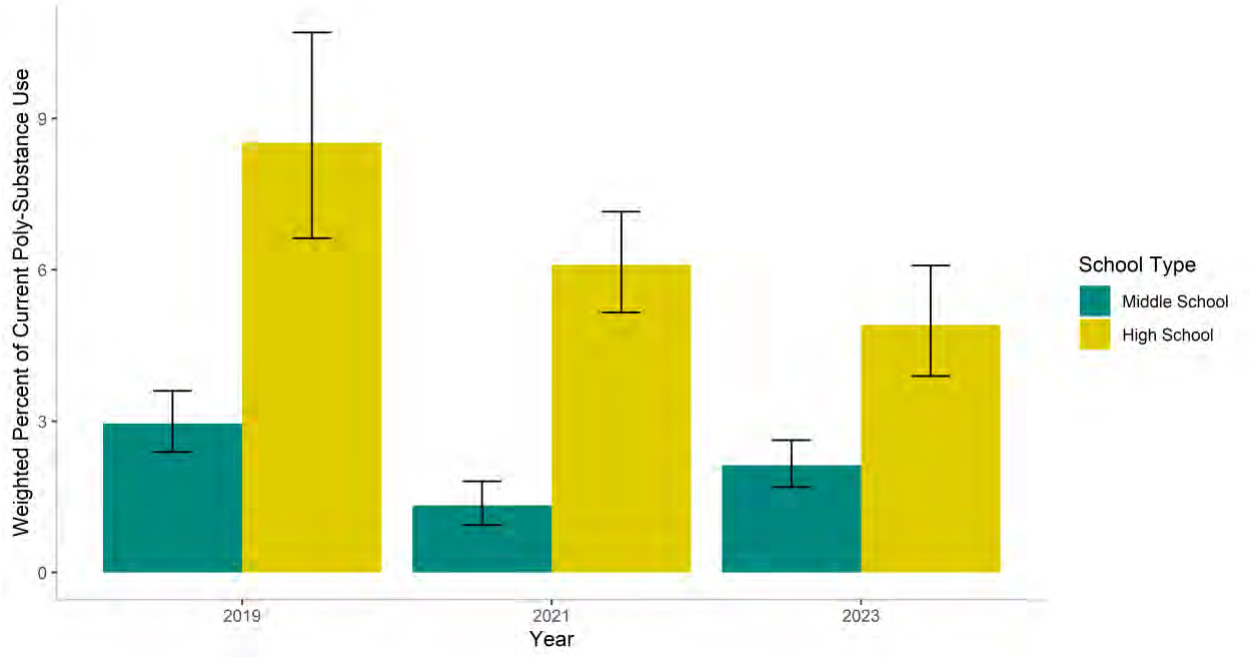


Figure 72. Current cannabis-alcohol co-use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

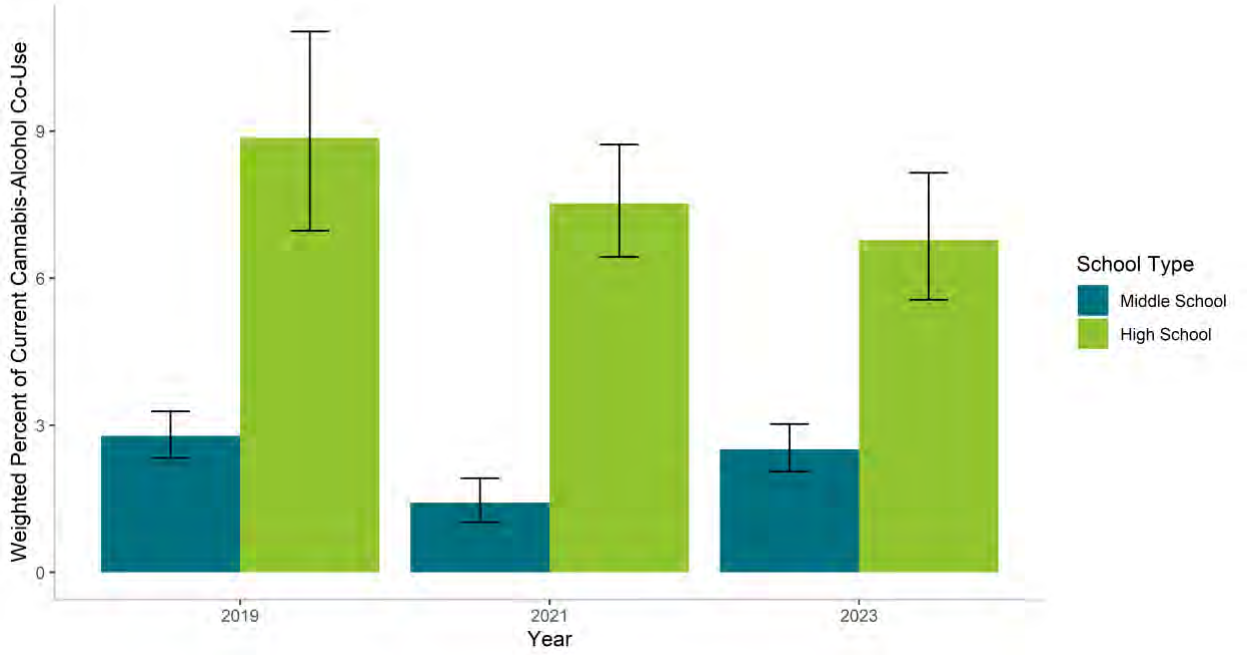


Figure 73. Current nicotine-alcohol co-use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023

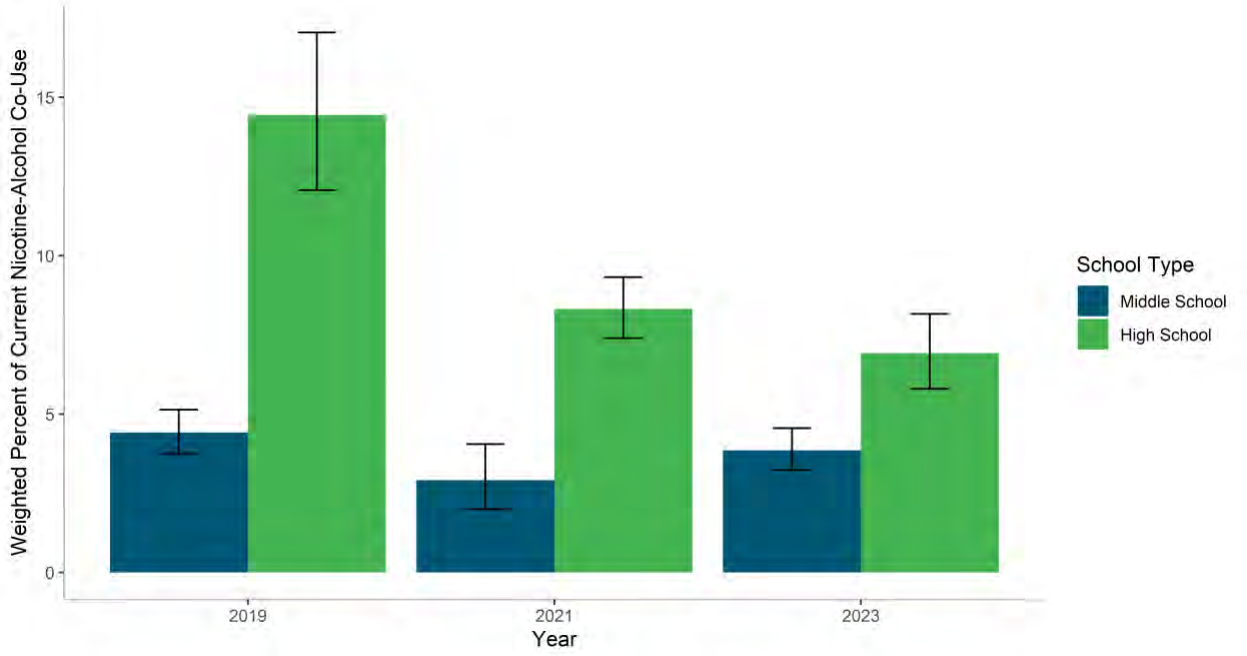
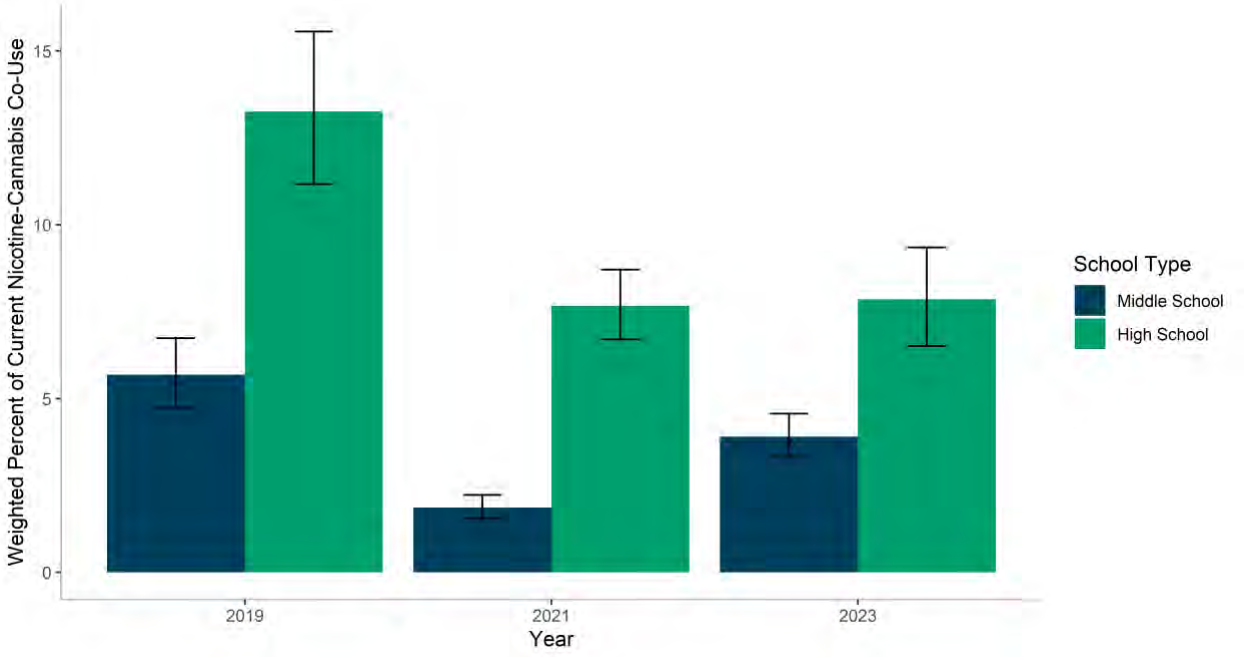


Figure 74. Current nicotine-cannabis co-use among middle and high school students by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 71-74

In 2019, 2021, and 2023, current poly-substance use of alcohol, nicotine, and cannabis and all co-use combinations (alcohol-nicotine, alcohol-cannabis, and cannabis-nicotine) were all significantly more prevalent among high school (HS) students than middle school (MS) students (Figure 71-74). Among HS students, poly-substance use was significantly lower in 2023 (**4.9%**, 95% CI: 3.9-6.1%) compared to 2019 (**8.5%**, 95% CI: 6.6-10.7%).

Cannabis-alcohol co-use was less prevalent in 2021 compared to 2019 for both MS and HS students; in 2023, it was less prevalent among HS students but more prevalent among MS students relative to 2021. In 2019, the prevalence was **8.9%** (95% CI: 7.0-11.0%) for HS and **2.8%** (95% CI: 2.3-3.3%) for MS; in 2021, it was **7.5%** (95% CI: 6.4-8.7%) for HS and **1.4%** (95% CI: 1.0-1.9%) for MS; and in 2023, it was **6.8%** (95% CI: 5.6-8.2%) for HS and **2.5%** (95% CI: 2.1-3.0%) for MS.

Current nicotine-alcohol co-use among MS and HS students followed the same trends (Figure 73). Like cannabis-alcohol co-use, nicotine-alcohol co-use was less prevalent in 2021 compared to 2019 for both MS and HS students; in 2023, it was less prevalent among HS students but more prevalent among MS students relative to 2021. In 2019, **14.4%** (95% CI: 12.1-17.0%) for HS and **4.4%** [95% CI: 3.8-5.1%] for MS; **8.3%** (95% CI: 7.4-9.3%) for HS and **2.9%** (95% CI: 2.0-4.1%) for MS in 2021; and **6.9%** [95% CI: 5.8-8.2%] for HS and **3.9%** [95% CI: 3.2-4.6%] for MS in 2023.

Shown in Figure 74, the prevalence was significantly lower for both MS and HS students in 2021 (**7.7%** [95% CI: 6.7-8.7%] and **1.9%** [95% CI: 1.5-2.2%], respectively) compared to 2019 (**13.3%** [95% CI: 11.2-15.6%] and **5.7%** [95% CI: 4.7-6.7%], respectively); for MS students, it was significantly higher in 2023 (**3.9%** [95% CI: 3.3-4.6%]) compared to 2021 (**1.9%** [95% CI: 1.5-2.2%]).

Emerging Adults (18-29 years old)

Figure 75. Weighted percent of current alcohol, nicotine, and cannabis single, co-, and poly-use among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2022

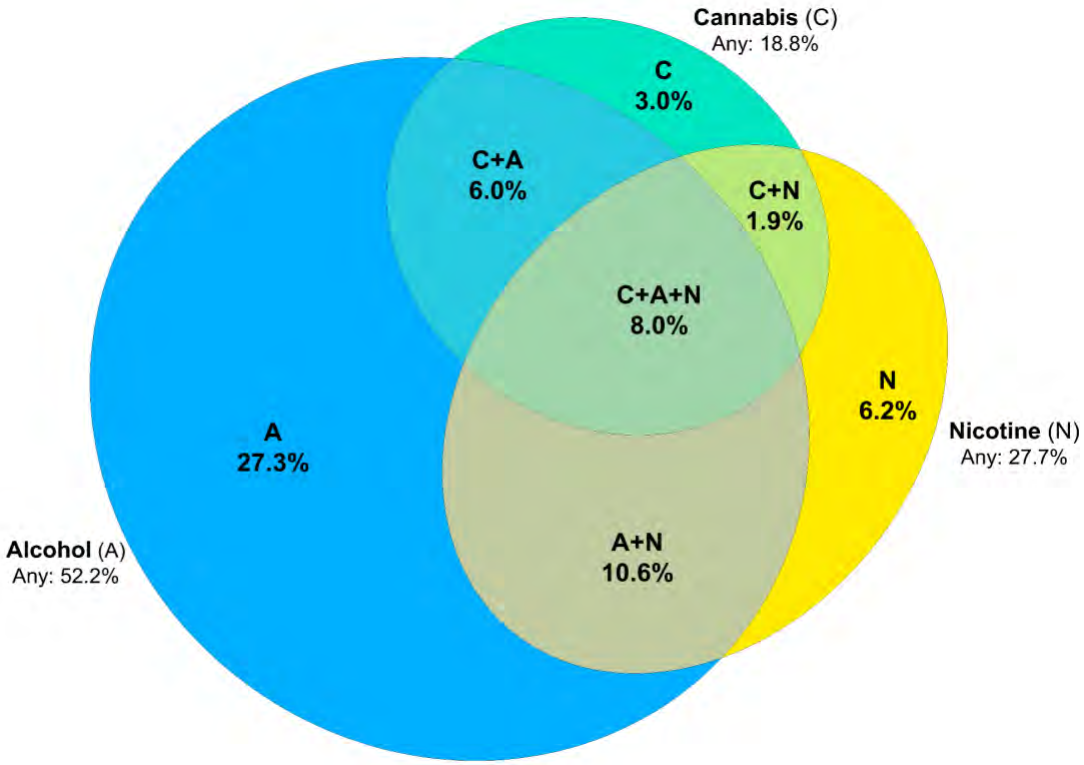
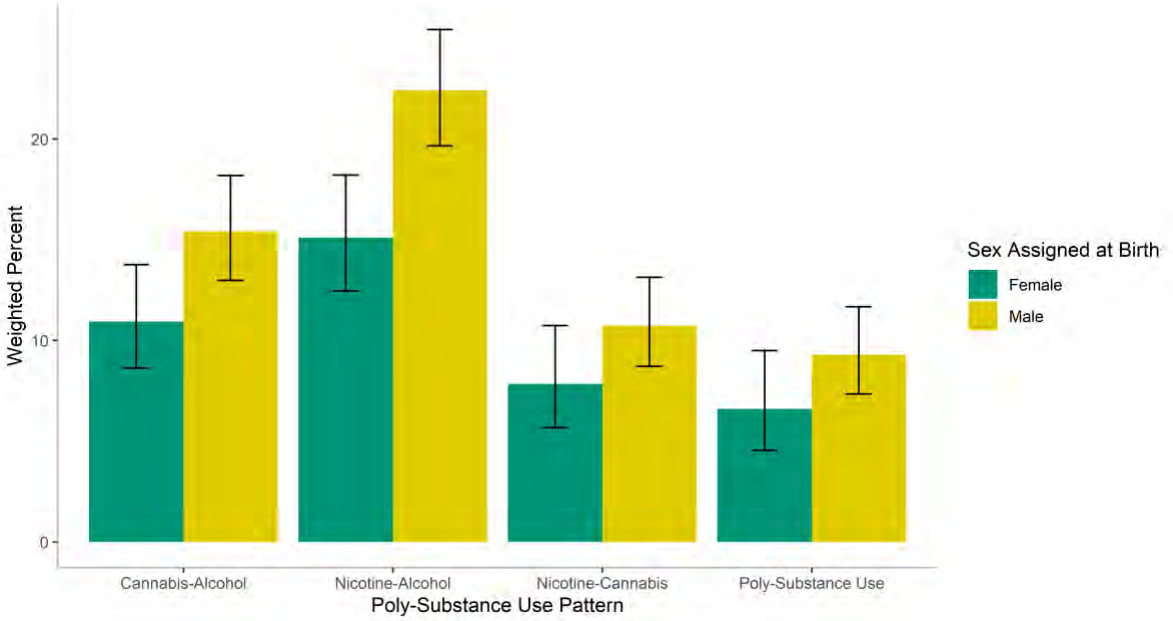


Figure 76. Current poly-substance use pattern by sex assigned at birth among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2022



All Adults (18+ years old)

Figure 77. Current use of alcohol, nicotine, and cannabis prevalence patterns among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022

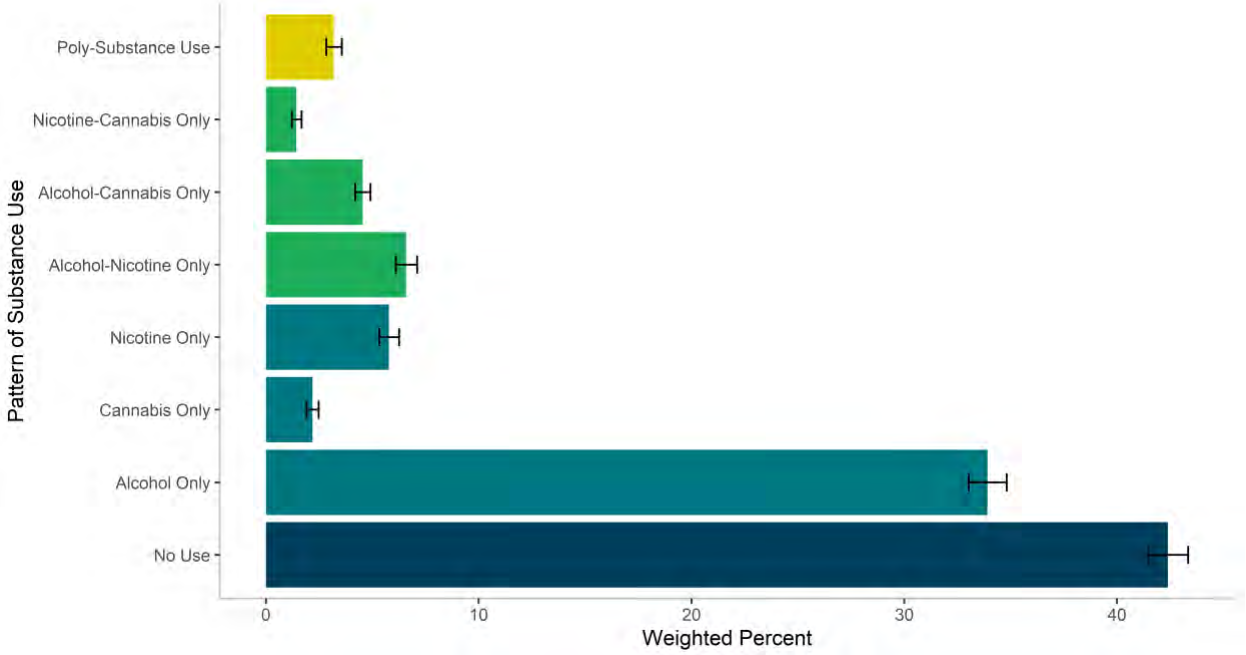


Figure 78. Poly-substance use of alcohol, nicotine, and cannabis by survey year among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022

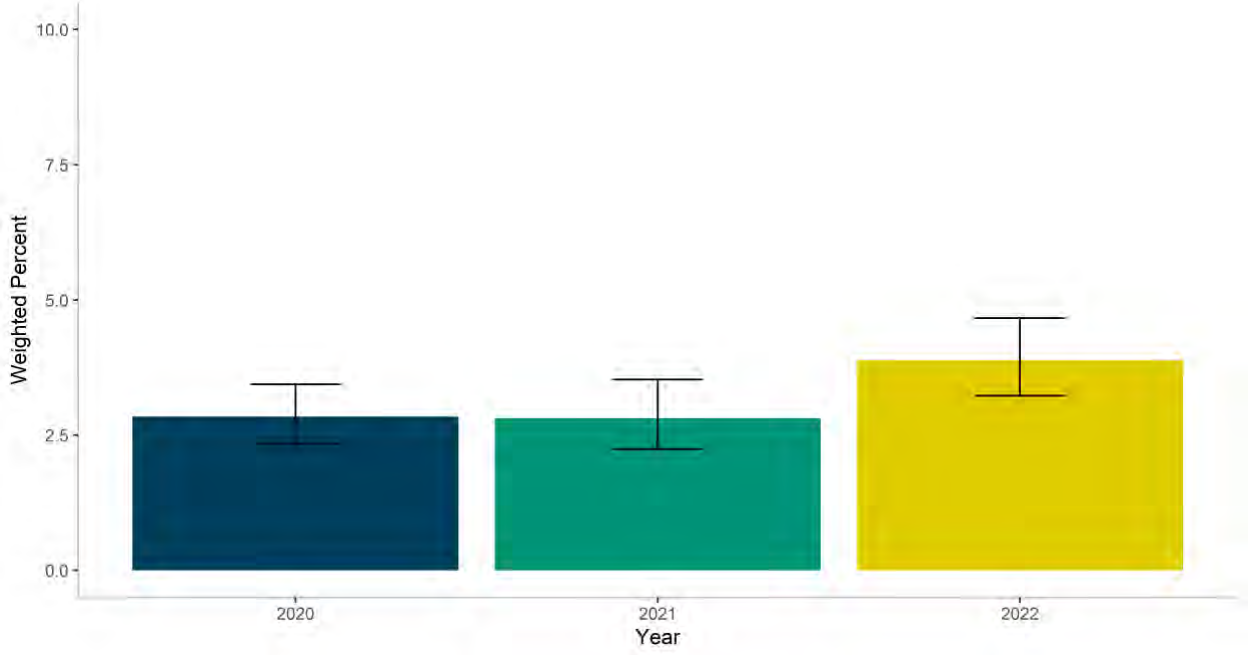
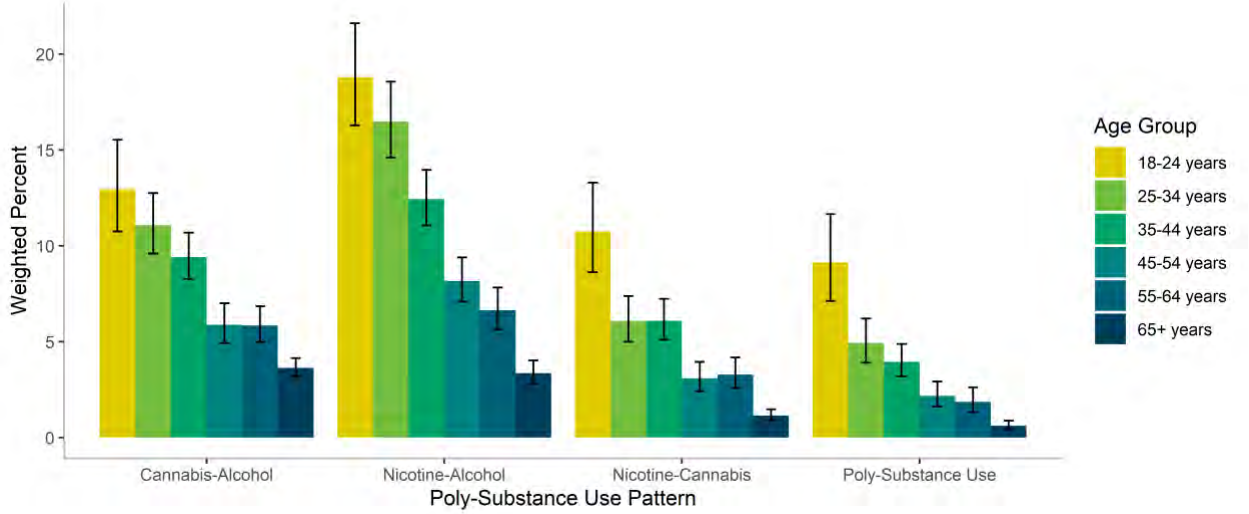


Figure 79. Patterns of co- and poly-substance use of alcohol, nicotine, and cannabis by age group among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022



Summary of Figures 75-79

Shown in Figure 75, the majority of those who used alcohol used it alone; the majority who used nicotine used alcohol as well; and the majority who used cannabis also used nicotine and alcohol (see Appendix Table S17. Current Patterns of Poly-Substance Use of Alcohol, Nicotine, & Cannabis among Emerging Adults [age 18-29 years], 2020-2022 BRFSS) for a full breakdown. Males had a significantly higher prevalence of nicotine-alcohol co-use (**22.4%**, 95% CI: 19.7-25.4%) than females (**15.1%**, 95% CI: 12.5-18.2%); however, the prevalence of cannabis-alcohol co-use, nicotine-cannabis co-use, and poly-substance use did not vary significantly by sex for emerging adults (Figure 76).

Among all adults (aged 18+ years) from 2020-2022, the most prevalent pattern of substance use was no current use (**42.4%**, 95% CI: 41-4-43.4%), followed by alcohol alone (**33.9%**, 95% CI: 33.0-34.8%), alcohol and nicotine (**6.6%**, 95% CI: 6.1-7.1%), nicotine alone (**5.8%**, 95% CI: 5.3-6.3%), alcohol and cannabis (**4.5**, 95% CI: 4.2-4.9%), poly-substance use (**3.2%**, 95% CI: 2.8-3.6%), cannabis alone (**2.2%**, 95% CI: 1.9-2.5%), and nicotine and cannabis (**1.4%**, 95% CI: 1.2-1.7%), displayed in Figure 77. During these years, the prevalence of poly-substance use of alcohol, nicotine, and cannabis among all adults did not vary significantly by survey year (Figure 78). Shown in Figure 79, adults aged 18-24 had the highest prevalence for all co- and poly-substance use patterns: cannabis-alcohol co-use (**13.0%**, 95% CI: 10.8-15.5%), nicotine-alcohol co-use (**18.8%**, 95% CI: 16.3-21.6%), nicotine-cannabis co-use (**10.7%**, 95% CI: 8.6-13.3%), and poly-substance use (**9.1%**, 95% CI: 7.1-11.7%). Across all co-and poly-substance use groups, those aged 18-24 had significantly more prevalent use than those aged 35 years and older.

Priority Populations

Youth (<18 years old)

Figure 80. Current poly-substance use of alcohol, nicotine, and cannabis among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

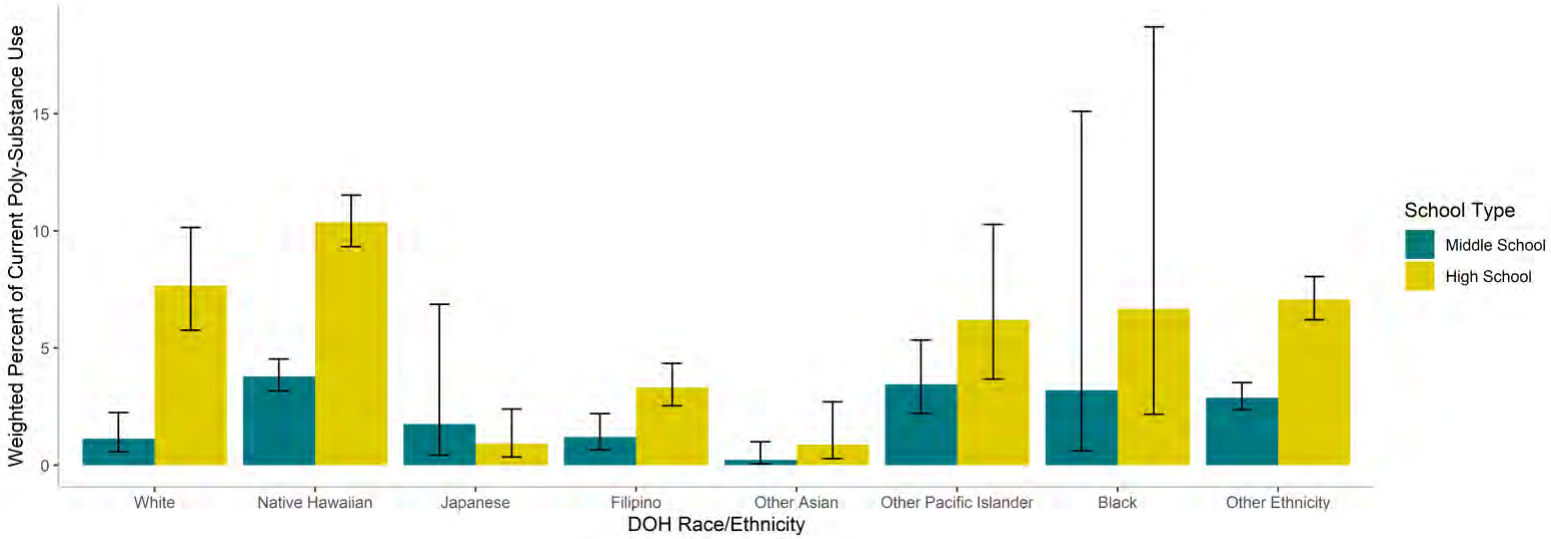


Figure 81. Current cannabis-alcohol co-use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

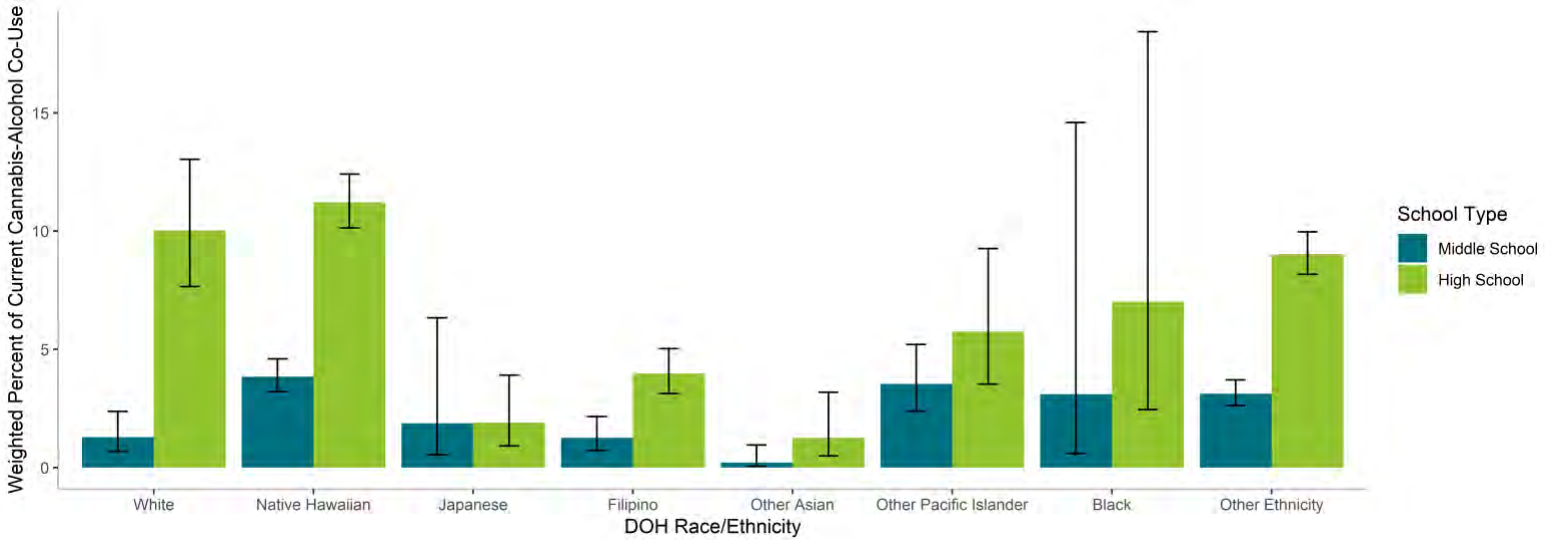


Figure 82. Current nicotine-alcohol co-use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

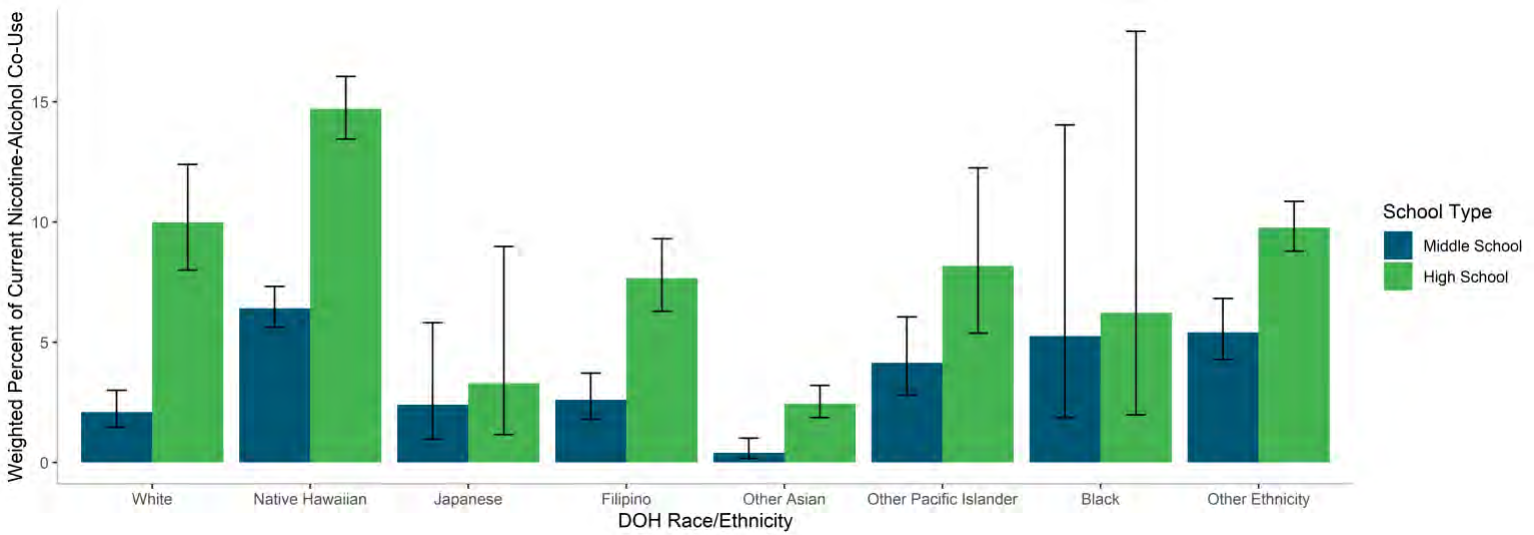


Figure 83. Current nicotine-cannabis co-use among middle and high school students by DOH-defined race/ethnicity, combined Hawai‘i YRBS 2019, 2021, and 2023

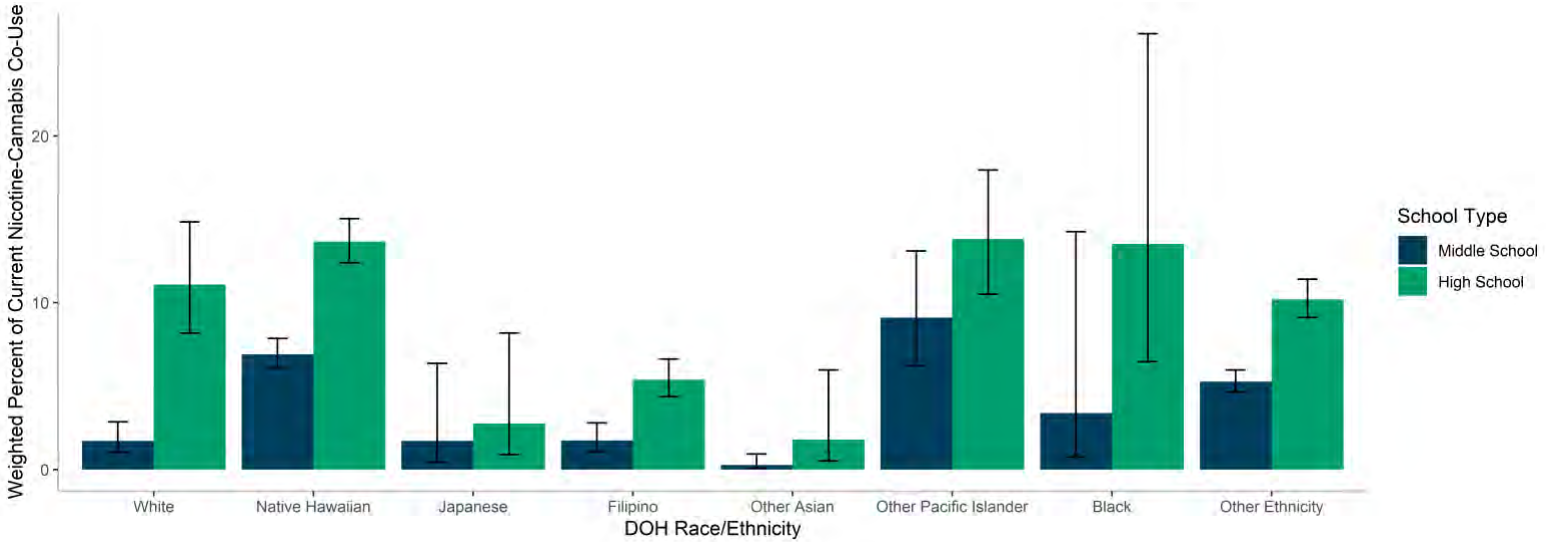


Figure 84. Current poly-substance use of nicotine, alcohol, and cannabis among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

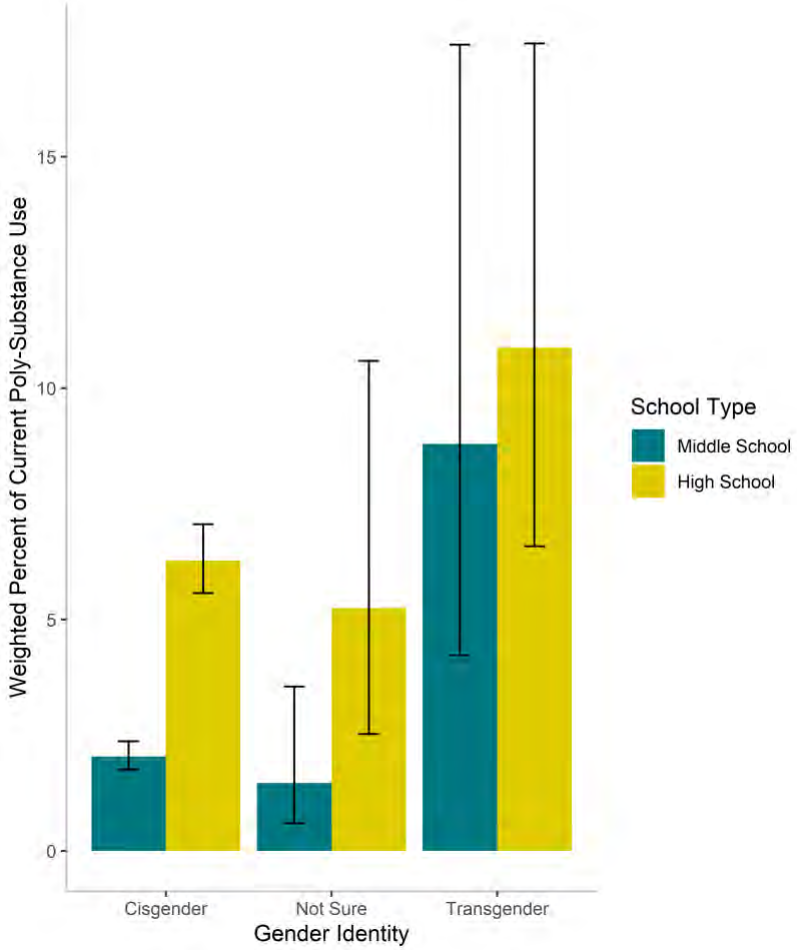


Figure 85. Current cannabis-alcohol co-use among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

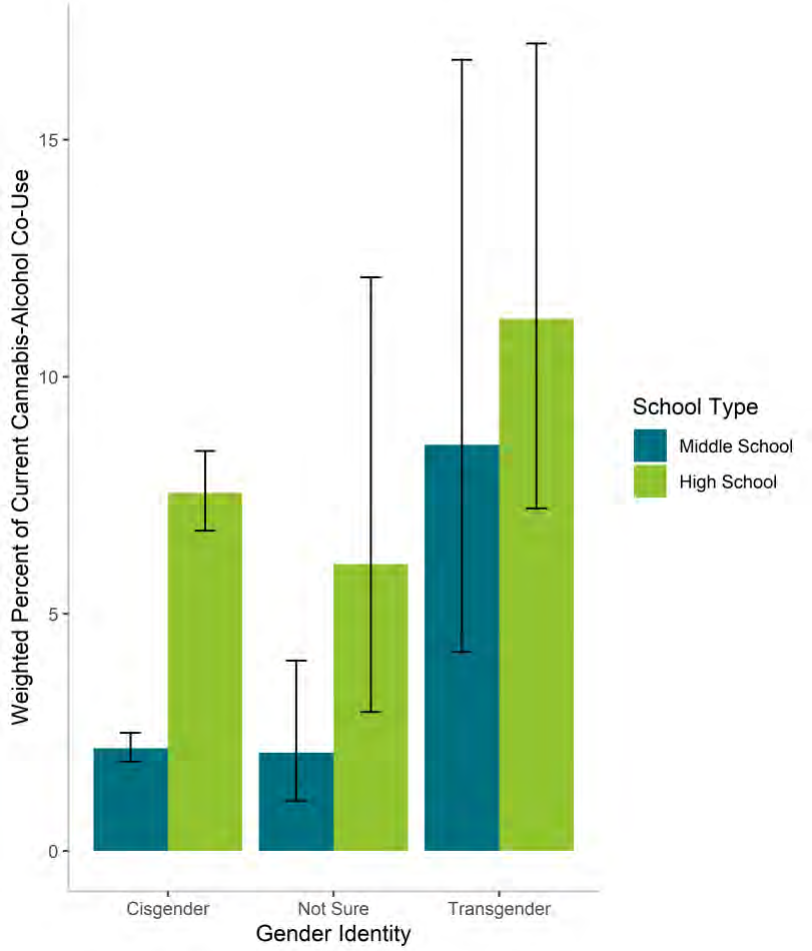


Figure 86. Current nicotine-alcohol co-use among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

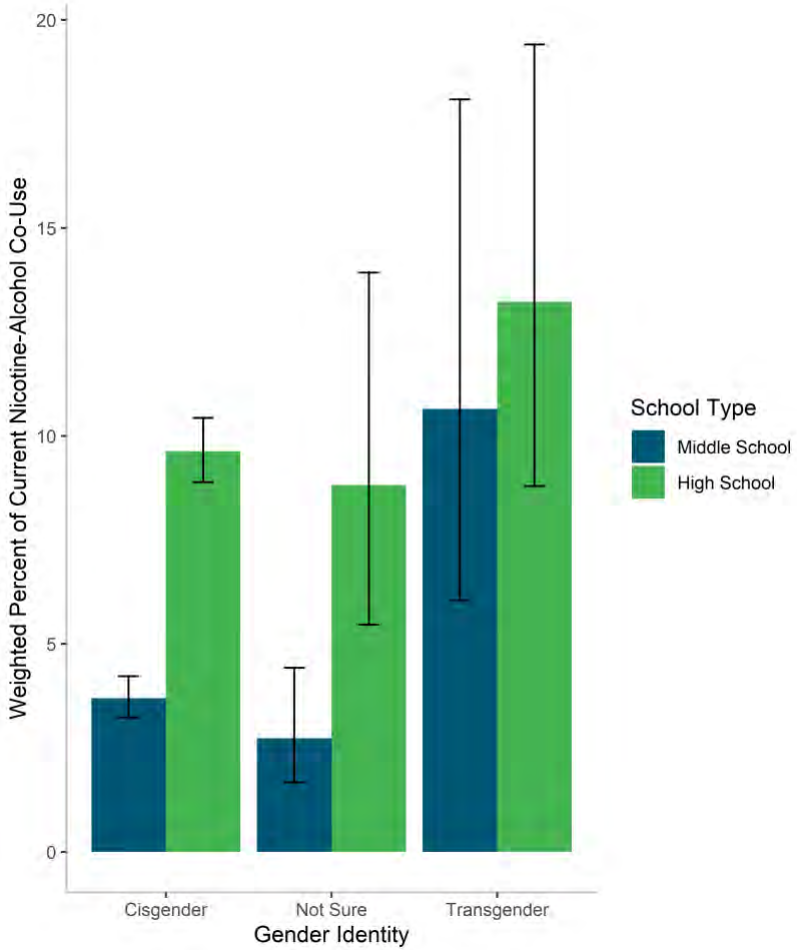


Figure 87. Current nicotine-cannabis co-use among middle and high school students by gender identity, combined Hawai‘i YRBS 2019, 2021, and 2023

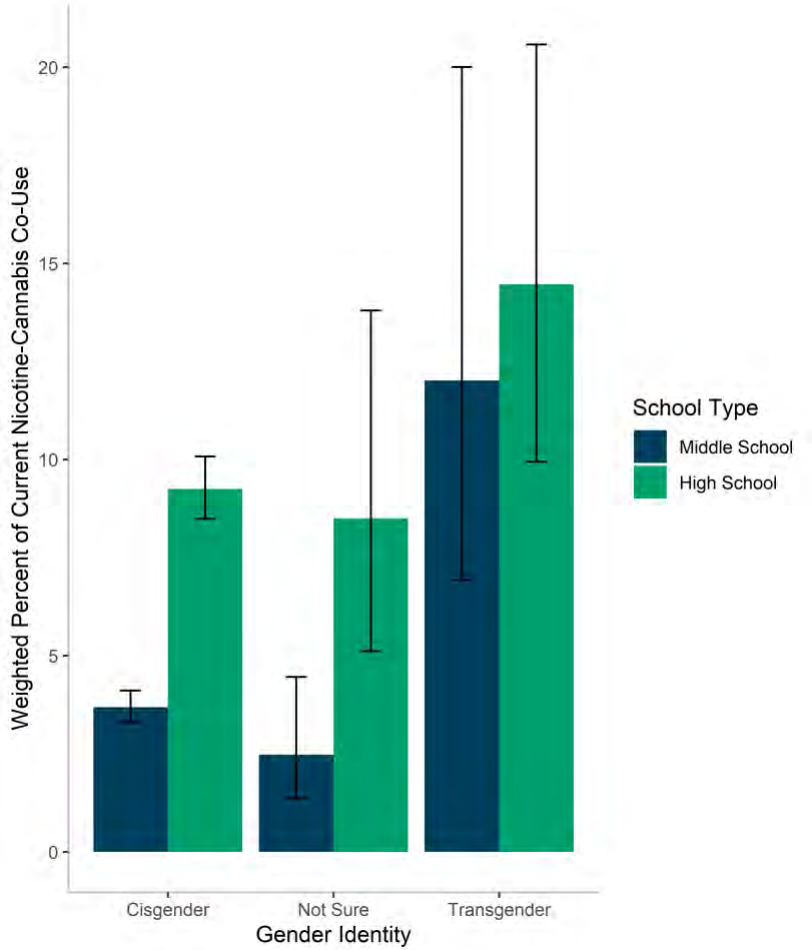


Table 6. Current poly-substance use of alcohol, nicotine, and cannabis percentage and 95% confidence intervals among middle and high school students by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	1.0% (0.5%, 2.3%)	1.3% (0.4%, 4.2%)	1.0% (0.4%, 2.4%)	1.1% (0.6%, 2.2%)
Native Hawaiian	5.1% (4.0%, 6.4%)	2.2% (1.5%, 3.3%)	4.0% (3.0%, 5.3%)	3.8% (3.2%, 4.5%)
Japanese	2.6% (0.6%, 10.3%)	0.3% (0.0%, 2.2%)	0.0% (0.0%, 0.0%)	1.7% (0.4%, 6.8%)
Filipino	2.3% (1.2%, 4.4%)	0.5% (0.1%, 2.7%)	0.8% (0.3%, 2.0%)	1.2% (0.7%, 2.2%)
Other Asian	0.0% (0.0%, 0.0%)	0.8% (0.2%, 3.7%)	0.0% (0.0%, 0.0%)	0.2% (0.1%, 1.0%)
Other Pacific Islander	4.5% (2.6%, 7.6%)	0.8% (0.3%, 2.4%)	4.1% (2.3%, 7.1%)	3.4% (2.2%, 5.3%)
Black	2.9% (0.5%, 14.3%)	2.4% (0.3%, 18.4%)	4.5% (0.8%, 21.8%)	3.2% (0.6%, 14.7%)
Other Ethnicity	4.9% (3.9%, 6.1%)	2.1% (1.4%, 3.1%)	2.7% (1.9%, 3.8%)	2.9% (2.4%, 3.5%)
Cisgender	2.9% (2.2%, 3.6%)	1.2% (0.8%, 1.6%)	2.1% (1.6%, 2.6%)	2.0% (1.8%, 2.4%)
Unsure Gender	3.8% (0.9%, 15.1%)	0.7% (0.2%, 2.8%)	1.2% (0.3%, 4.7%)	1.5% (0.6%, 3.5%)
Transgender	6.9% (3.3%, 14.0%)	9.9% (3.2%, 27.1%)	8.3% (3.4%, 19.1%)	8.8% (4.2%, 17.4%)
High School				
White	6.8% (4.1%, 11.1%)	10.1% (7.0%, 14.3%)	6.1% (3.3%, 10.9%)	7.7% (5.8%, 10.1%)
Native Hawaiian	15.5% (13.2%, 18.2%)	9.4% (7.7%, 11.4%)	6.3% (4.6%, 8.6%)	10.4% (9.3%, 11.5%)
Japanese	0.4% (0.1%, 1.3%)	1.0% (0.3%, 3.6%)	2.2% (0.5%, 8.7%)	0.9% (0.3%, 2.4%)
Filipino	4.8% (3.4%, 6.7%)	2.3% (1.4%, 3.8%)	2.9% (1.5%, 5.8%)	3.3% (2.5%, 4.3%)
Other Asian	0.7% (0.2%, 2.1%)	1.9% (0.6%, 6.2%)	0.0% (0.0%, 0.0%)	0.9% (0.3%, 2.7%)
Other Pacific Islander	7.6% (3.8%, 14.5%)	3.2% (1.3%, 7.4%)	5.6% (2.0%, 15.1%)	6.2% (3.7%, 10.3%)
Black	16.2% (6.2%, 36.2%)	4.1% (1.2%, 13.2%)	6.4% (0.9%, 34.7%)	6.7% (2.2%, 18.4%)
Other Ethnicity	12.2% (10.3%, 14.4%)	5.8% (4.6%, 7.3%)	6.0% (4.8%, 7.4%)	7.1% (6.2%, 8.1%)
Cisgender	8.5% (6.7%, 10.6%)	5.8% (4.8%, 7.0%)	4.7% (3.6%, 6.1%)	6.3% (5.6%, 7.1%)
Unsure Gender	4.3% (1.2%, 14.9%)	5.5% (1.7%, 16.1%)	5.8% (2.4%, 13.6%)	5.2% (2.5%, 10.6%)
Transgender	6.1% (2.6%, 13.3%)	14.4% (6.6%, 28.7%)	10.7% (5.0%, 21.4%)	10.9% (6.6%, 17.4%)

Table 7. Current cannabis-alcohol co-use percentage and 95% confidence intervals among middle and high school students by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	1.2% (0.6%, 2.5%)	1.3% (0.4%, 4.1%)	1.3% (0.6%, 2.9%)	1.3% (0.7%, 2.4%)
Native Hawaiian	4.5% (3.6%, 5.6%)	2.5% (1.7%, 3.7%)	4.4% (3.4%, 5.7%)	3.8% (3.2%, 4.6%)
Japanese	2.3% (0.5%, 9.4%)	0.5% (0.1%, 2.4%)	1.4% (0.2%, 8.3%)	1.9% (0.5%, 6.3%)
Filipino	2.0% (1.0%, 3.7%)	0.5% (0.1%, 2.6%)	1.2% (0.5%, 2.6%)	1.2% (0.7%, 2.2%)
Other Asian	0.0% (0.0%, 0.0%)	0.8% (0.2%, 3.6%)	0.0% (0.0%, 0.0%)	0.2% (0.1%, 0.9%)
Other Pacific Islander	4.4% (3.6%, 5.6%)	0.8% (0.2%, 2.3%)	4.3% (2.7%, 6.9%)	3.5% (2.4%, 5.2%)
Black	2.7% (0.5%, 13.9%)	2.4% (0.3%, 18.1%)	4.3% (0.8%, 21.1%)	3.1% (0.6%, 14.2%)
Other Ethnicity	4.8% (3.9%, 5.9%)	2.3% (1.6%, 3.3%)	3.0% (2.3%, 4.0%)	3.1% (2.6%, 3.7%)
Cisgender	2.7% (2.2%, 3.3%)	1.3% (0.9%, 1.7%)	2.5% (2.0%, 3.0%)	2.2% (1.9%, 2.5%)
Unsure Gender	4.3% (1.3%, 13.5%)	0.9% (0.3%, 3.0%)	2.3% (0.8%, 6.3%)	2.1% (1.1%, 4.0%)
Transgender	6.5% (3.2%, 12.9%)	9.9% (3.2%, 27.0%)	8.2% (3.4%, 18.9%)	8.6% (4.2%, 16.6%)
High School				
White	8.5% (5.2%, 13.8%)	12.7% (8.7%, 18.3%)	8.5% (5.1%, 14.0%)	10.0% (7.7%, 13.0%)
Native Hawaiian	14.8% (12.7%, 17.2%)	10.2% (8.6%, 12.0%)	8.7% (6.8%, 11.1%)	11.2% (10.1%, 12.4%)
Japanese	0.4% (0.1%, 1.2%)	2.4% (1.0%, 5.8%)	5.2% (2.1%, 12.7%)	1.9% (0.9%, 3.9%)
Filipino	5.1% (3.6%, 7.0%)	2.9% (1.9%, 4.6%)	4.0% (2.4%, 6.5%)	4.0% (3.1%, 5.0%)
Other Asian	0.6% (0.2%, 2.0%)	3.1% (1.2%, 7.6%)	0.2% (0.0%, 1.5%)	1.3% (0.5%, 3.2%)
Other Pacific Islander	6.7% (3.4%, 12.6%)	3.8% (1.9%, 7.4%)	5.3% (2.0%, 13.5%)	5.8% (3.5%, 9.3%)
Black	18.3% (7.5%, 38.3%)	3.8% (1.1%, 12.4%)	6.9% (1.1%, 32.3%)	7.0% (2.5%, 18.2%)
Other Ethnicity	12.6% (10.7%, 14.8%)	8.1% (6.8%, 9.7%)	8.3% (7.1%, 9.7%)	9.0% (8.2%, 10.0%)
Cisgender	8.8% (7.0%, 11.0%)	7.4% (6.2%, 8.7%)	6.5% (5.2%, 8.2%)	7.6% (6.8%, 8.4%)
Unsure Gender	5.1% (1.3%, 17.9%)	5.9% (2.1%, 15.6%)	7.2% (3.2%, 15.3%)	6.1% (2.9%, 12.1%)
Transgender	6.0% (2.8%, 12.4%)	12.9% (6.4%, 24.2%)	12.9% (6.7%, 23.6%)	11.2% (7.2%, 17.0%)

Table 8. Current nicotine-alcohol co-use percentage and 95% confidence intervals among middle and high school students by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	1.5% (0.8%, 3.2%)	2.1% (1.0%, 4.4%)	2.6% (1.4%, 4.8%)	2.1% (1.5%, 3.0%)
Native Hawaiian	7.1% (5.8%, 8.8%)	5.5% (4.0%, 7.6%)	6.4% (5.2%, 7.9%)	6.4% (5.6%, 7.3%)
Japanese	3.4% (1.2%, 9.1%)	0.3% (0.0%, 2.2%)	0.4% (0.1%, 2.7%)	2.4% (1.0%, 5.8%)
Filipino	4.3% (3.2%, 5.8%)	1.2% (0.6%, 2.7%)	2.2% (1.1%, 4.2%)	2.6% (1.8%, 3.7%)
Other Asian	0.2% (0.1%, 0.8%)	0.8% (0.2%, 3.7%)	0.3% (0.1%, 1.2%)	0.4% (0.2%, 1.0%)
Other Pacific Islander	5.0% (4.1%, 6.2%)	2.0% (1.0%, 4.2%)	4.5% (2.4%, 8.2%)	4.1% (2.8%, 6.1%)
Black	2.7% (0.5%, 14.2%)	4.8% (1.8%, 12.6%)	6.9% (1.0%, 34.8%)	5.3% (1.9%, 13.8%)
Other Ethnicity	7.3% (6.3%, 8.5%)	4.7% (2.5%, 8.4%)	5.1% (4.0%, 6.6%)	5.4% (4.3%, 6.8%)
Cisgender	4.3% (3.7%, 5.1%)	2.9% (2.0%, 4.2%)	3.8% (3.1%, 4.6%)	3.7% (3.2%, 4.2%)
Unsure Gender	4.4% (1.3%, 13.5%)	1.8% (0.8%, 4.1%)	3.1% (1.4%, 6.6%)	2.7% (1.7%, 4.4%)
Transgender	9.7% (5.4%, 17.0%)	10.1% (3.3%, 26.8%)	12.0% (5.4%, 24.6%)	10.6% (6.1%, 18.0%)
High School				
White	13.7% (9.0%, 20.2%)	10.3% (7.4%, 14.3%)	6.7% (4.5%, 10.0%)	10.0% (8.0%, 12.4%)
Native Hawaiian	22.4% (19.8%, 25.4%)	11.7% (9.8%, 14.0%)	10.2% (8.4%, 12.2%)	14.7% (13.4%, 16.1%)
Japanese	4.7% (1.2%, 16.6%)	1.0% (0.3%, 3.4%)	2.0% (0.5%, 8.2%)	3.3% (1.2%, 8.9%)
Filipino	11.7% (9.2%, 14.8%)	6.2% (4.6%, 8.2%)	5.3% (3.4%, 8.1%)	7.7% (6.3%, 9.3%)
Other Asian	3.8% (2.7%, 5.5%)	2.2% (0.8%, 6.0%)	0.0% (0.0%, 0.0%)	2.4% (1.9%, 3.2%)
Other Pacific Islander	10.0% (5.4%, 17.7%)	4.9% (2.3%, 10.2%)	6.8% (3.0%, 14.7%)	8.2% (5.4%, 12.2%)
Black	15.8% (6.1%, 35.2%)	3.9% (1.1%, 12.5%)	5.9% (0.7%, 34.1%)	6.2% (2.0%, 17.6%)
Other Ethnicity	17.9% (15.8%, 20.3%)	8.3% (6.9%, 10.0%)	7.5% (6.1%, 9.2%)	9.8% (8.8%, 10.9%)
Cisgender	14.4% (12.1%, 17.1%)	8.1% (7.2%, 9.2%)	6.7% (5.5%, 8.1%)	9.6% (8.9%, 10.4%)
Unsure Gender	8.8% (4.5%, 16.6%)	9.9% (4.3%, 21.0%)	7.4% (3.6%, 14.6%)	8.8% (5.5%, 13.9%)
Transgender	14.4% (7.8%, 25.3%)	12.8% (5.9%, 25.5%)	12.8% (6.7%, 23.1%)	13.2% (8.8%, 19.4%)

Table 9. Current nicotine-cannabis co-use percentage and 95% confidence intervals among middle and high school students by DOH-defined race/ethnicity and gender identity for each survey year, Hawai‘i YRBS 2019, 2021, and 2023

	2019	2021	2023	Combined Years
Middle School				
White	1.8% (1.0%, 3.4%)	1.4% (0.4%, 4.0%)	1.9% (0.9%, 4.0%)	1.7% (1.0%, 2.9%)
Native Hawaiian	9.7% (8.1%, 11.5%)	3.3% (2.5%, 4.3%)	7.1% (5.9%, 8.5%)	6.9% (6.1%, 7.9%)
Japanese	2.4% (0.6%, 9.3%)	0.3% (0.0%, 2.2%)	0.3% (0.0%, 2.0%)	1.7% (0.5%, 6.3%)
Filipino	2.6% (1.6%, 4.3%)	0.6% (0.1%, 2.5%)	1.9% (1.2%, 2.9%)	1.7% (1.1%, 2.8%)
Other Asian	0.1% (0.0%, 0.9%)	0.8% (0.2%, 3.6%)	0.0% (0.0%, 0.0%)	0.3% (0.1%, 0.9%)
Other Pacific Islander	13.5% (8.7%, 20.4%)	2.5% (1.0%, 6.4%)	6.5% (4.7%, 8.9%)	9.1% (6.3%, 13.1%)
Black	3.7% (0.8%, 14.9%)	2.4% (0.3%, 17.8%)	4.8% (1.0%, 20.2%)	3.4% (0.8%, 13.9%)
Other Ethnicity	8.8% (7.4%, 10.3%)	3.1% (2.3%, 4.2%)	5.5% (4.5%, 6.7%)	5.3% (4.6%, 6.0%)
Cisgender	5.3% (4.3%, 6.4%)	1.7% (1.3%, 2.1%)	3.9% (3.2%, 4.7%)	3.7% (3.3%, 4.1%)
Unsure Gender	5.1% (1.8%, 13.7%)	1.5% (0.6%, 3.6%)	2.3% (0.8%, 6.1%)	2.5% (1.4%, 4.5%)
Transgender	17.4% (10.6%, 27.2%)	11.2% (4.1%, 27.3%)	9.1% (4.0%, 19.5%)	12.0% (7.0%, 20.0%)
High School				
White	11.7% (9.2%, 14.7%)	10.9% (8.0%, 14.7%)	10.8% (5.6%, 19.8%)	11.1% (8.2%, 14.8%)
Native Hawaiian	20.6% (18.0%, 23.6%)	11.6% (9.9%, 13.4%)	8.7% (7.3%, 10.4%)	13.7% (12.4%, 15.0%)
Japanese	3.4% (0.6%, 16.4%)	0.9% (0.3%, 3.5%)	3.0% (0.9%, 9.3%)	2.8% (0.9%, 8.1%)
Filipino	8.9% (6.8%, 11.7%)	2.8% (1.9%, 4.1%)	4.7% (2.9%, 7.5%)	5.4% (4.4%, 6.6%)
Other Asian	2.5% (0.5%, 12.3%)	1.8% (0.5%, 5.9%)	0.3% (0.0%, 1.9%)	1.8% (0.5%, 5.9%)
Other Pacific Islander	15.1% (9.2%, 23.8%)	8.3% (4.0%, 16.5%)	16.1% (10.2%, 24.5%)	13.8% (10.5%, 17.9%)
Black	37.6% (18.9%, 60.9%)	8.5% (2.3%, 27.0%)	11.6% (3.5%, 32.6%)	13.5% (6.6%, 25.9%)
Other Ethnicity	17.5% (15.5%, 19.7%)	7.9% (6.6%, 9.5%)	9.1% (7.4%, 11.1%)	10.2% (9.1%, 11.4%)
Cisgender	13.4% (11.4%, 15.7%)	7.4% (6.4%, 8.5%)	7.3% (6.1%, 8.7%)	9.3% (8.5%, 10.1%)
Unsure Gender	4.2% (1.2%, 13.3%)	6.8% (2.6%, 16.8%)	14.7% (7.8%, 25.9%)	8.5% (5.1%, 13.8%)
Transgender	10.8% (5.4%, 20.6%)	18.3% (10.7%, 29.6%)	13.4% (7.7%, 22.1%)	14.5% (10.0%, 20.5%)

Summary of Figures 80-87 & Tables 6-9

Current co-use and poly-substance use patterns of alcohol, nicotine, and cannabis among MS and HS students varied by race and ethnicity (Figure 80-83), but was the highest or close to the highest (cannabis-nicotine) for Native Hawaiian (NH) MS and HS students across all combinations. For both MS and HS students, poly-substance use was most prevalent among NH respondents (**3.8%** [95% CI: 3.2-4.5%], and **10.4%** [95% CI: 9.3-11.5%], respectively). This was followed by Other Pacific Islander (OPI) for MS students (**3.4%**, 95% CI: 2.2-5.3%) and White for HS students (**7.7%**, 95% CI: 5.8-10.1%). Poly-substance use prevalence was lowest among Other Asian MS students (**0.2%**, 95% CI: 0.0-1.0%) and HS students (**0.9%**, 95% CI: 0.3-2.7%). Table 6 has a further breakdown for each year along with the combined years.

Similarly, cannabis-alcohol co-use, shown in Figure 81, was most prevalent among NH MS and HS students (**3.8%** [95% CI: 3.2-4.6%] and **11.2%** [95% CI: 10.1-12.4%], respectively), followed by OPI for MS students (**3.5%**, 95% CI: 2.4-5.2%] and White for HS students (**10.1%**, 95% CI: 7.7-13.0%). As with poly-substance use, the prevalence of cannabis-alcohol co-use was lowest among Other Asian MS students (**0.2%**, 95% CI: 0.0-0.9%) and HS students (**1.3%**, 95% CI: 0.5-3.2%). See Table 7 for a year-by-year breakdown.

Following the same trends, the prevalence of nicotine-alcohol co-use was highest among NH MS and HS students (**6.4%** [95% CI: 5.6-7.3%] and **14.7%** [95% CI: 13.4-16.1%], respectively), displayed in Figure 82. This was followed by Other Ethnicity for MS students (**5.4%**, 95% CI: 4.3-6.8%) and by White for HS students (**10.0%**, 95% CI: 8.0-12.4%). Again, nicotine-alcohol co-use was least prevalent among Other Asian MS students (**0.4%**, 95% CI: 0.2-1.0%) and HS students (**2.4%**, 95% CI: 1.9-3.2%). See Table 8 for a year-by-year breakdown.

Finally, nicotine-cannabis co-use (shown in Figure 83) was most prevalent among OPI MS students (**9.1%**, 95% CI: 6.2-13.1%) and HS students (**13.8%**, 95% CI: 10.5-18.0%), followed by NH for both MS students (**6.9%**, 95% CI: 6.1-7.9%) and HS students (**13.7%**, 95% CI: 12.4-15.0%). Other Asian MS students (**0.3%**, 95% CI: 0.1-0.9%) and HS students (**1.8%**, 95% CI: 0.5-6.0%) had the lowest prevalence. See Table 9 for a year-by-year breakdown.

Current poly-substance use of nicotine, alcohol, and cannabis among MS and HS students also varied by gender identity (Figure 84). Poly-substance use was significantly more prevalent among transgender MS students (**8.8%**, 95% CI: 4.2-17.4%) compared to those who were cisgender (**2.0%**, 95% CI: 1.8-2.4%) or unsure (**1.5%**, 95% CI: 0.6-3.5%). While the prevalence was higher for transgender HS students, the differences were not significant. Refer to Table 6 for yearly breakdowns of poly-substance use based on gender identity.

Similarly, current cannabis-alcohol co-use was significantly more prevalent among transgender MS students (**8.6%**, 95% CI: 4.2-16.7%) relative to those who were cisgender (**2.2%**, 95% CI: 1.9-2.5%) or unsure (**2.1%**, 95% CI: 1.1-4.0%), while there was not a significant difference for HS students by gender identity (Figure 85). See Table 7 for yearly breakdowns of cannabis-alcohol co-use by gender identity. The same trends marked current nicotine-alcohol co-use and nicotine-cannabis co-use among MS and HS students (Figures 86-87). The prevalence of nicotine-alcohol co-use was significantly higher among transgender MS students (**10.6%**, 95% CI: 6.0-18.1%) compared to those who were cisgender (**3.7%**, 95% CI: 3.2-4.2%) or unsure (**2.7%**, 95% CI: 1.7-4.4%). While nicotine-alcohol co-use was most prevalent among transgender HS students, the differences were not significant. Similarly, nicotine-cannabis co-use was significantly more prevalent among transgender MS students (**12.0%**, 95% CI: 6.9-20.0%) relative to cisgender (**3.7%**, 95% CI: 3.3-4.1%) and unsure (**2.5%**, 95% CI: 1.4-4.5%); among HS students, the prevalence was higher among transgender individuals but not significantly so. See Tables 8-9 for yearly breakdowns of nicotine-alcohol and nicotine-cannabis co-use by gender identity.

Emerging Adults (18-29 years old)

Figure 88. Patterns of current co- and poly-substance use of alcohol, nicotine, and cannabis by sex/gender minority status among emerging adults (18-29 years old), Hawai‘i BRFSS 2020-2022

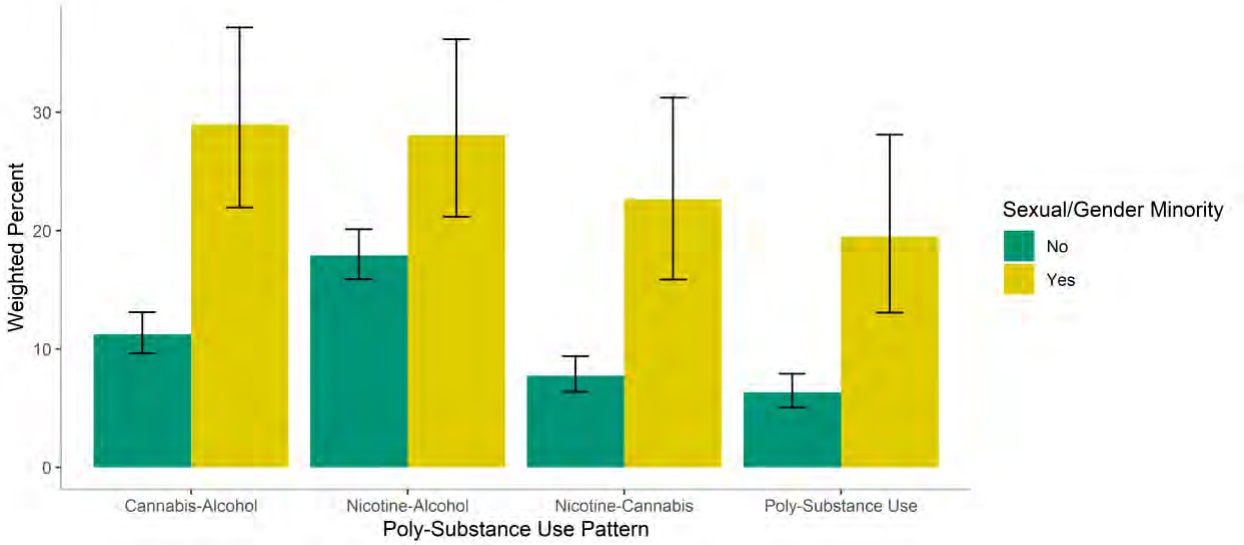
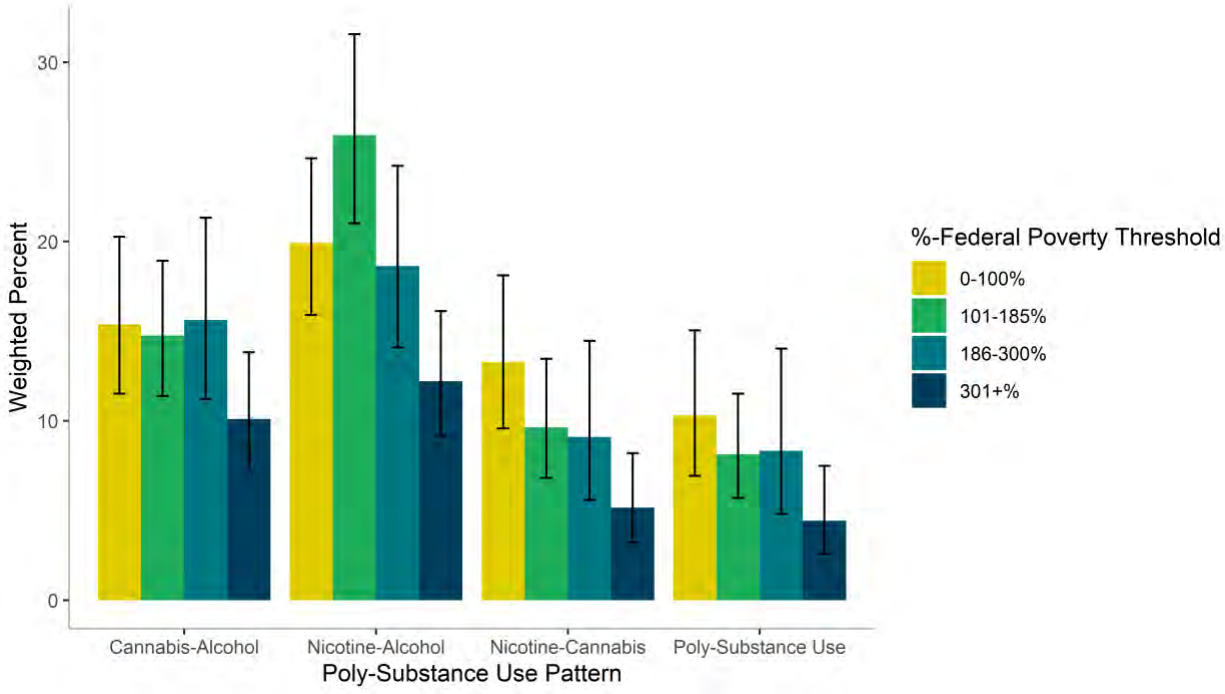


Figure 89. Patterns of current co- and poly-substance use of alcohol, nicotine, and cannabis by percent federal poverty threshold among emerging adults (18-29 years old), Hawai‘i BRFSS 2020-2022



All Adults (18+ years old)

Figure 90. Current cannabis-alcohol co-use prevalence by Hawai‘i DOH-defined race/ethnicity among all adults (18+ years old), Hawai‘i BRFSS 2020-2022

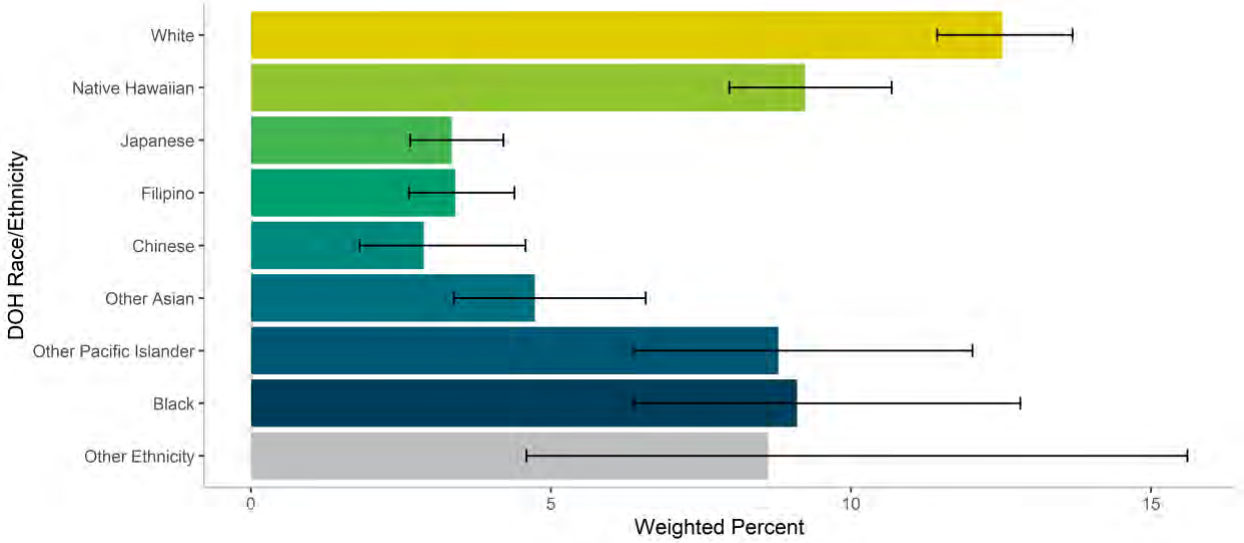


Figure 91. Current nicotine-alcohol co-use prevalence by Hawai‘i DOH-defined race/ethnicity among all adults (18+ years old), Hawai‘i BRFSS 2020-2022

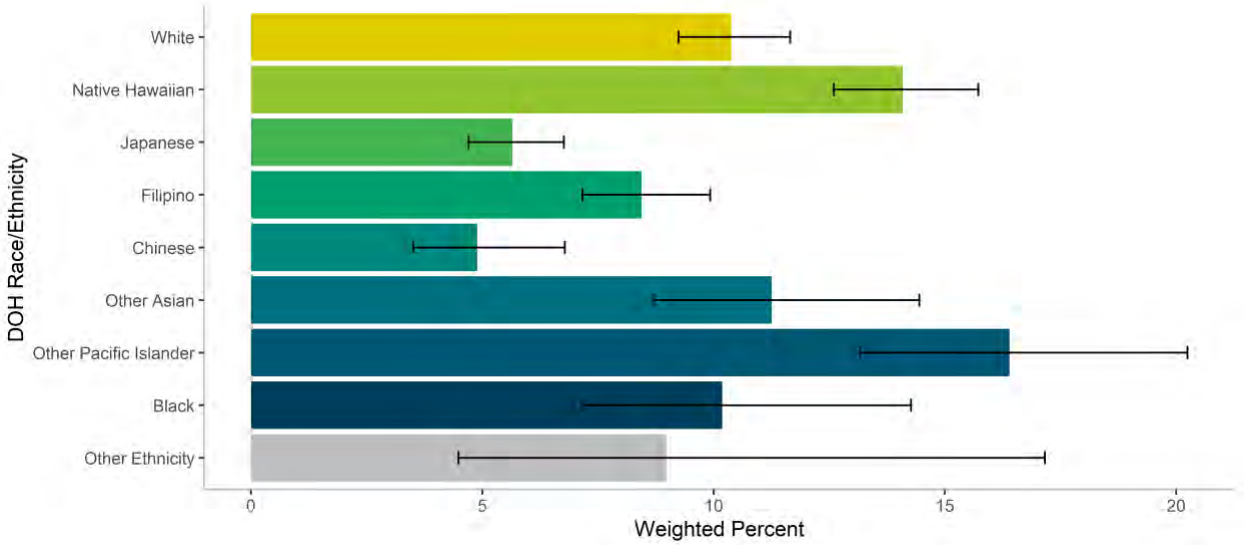
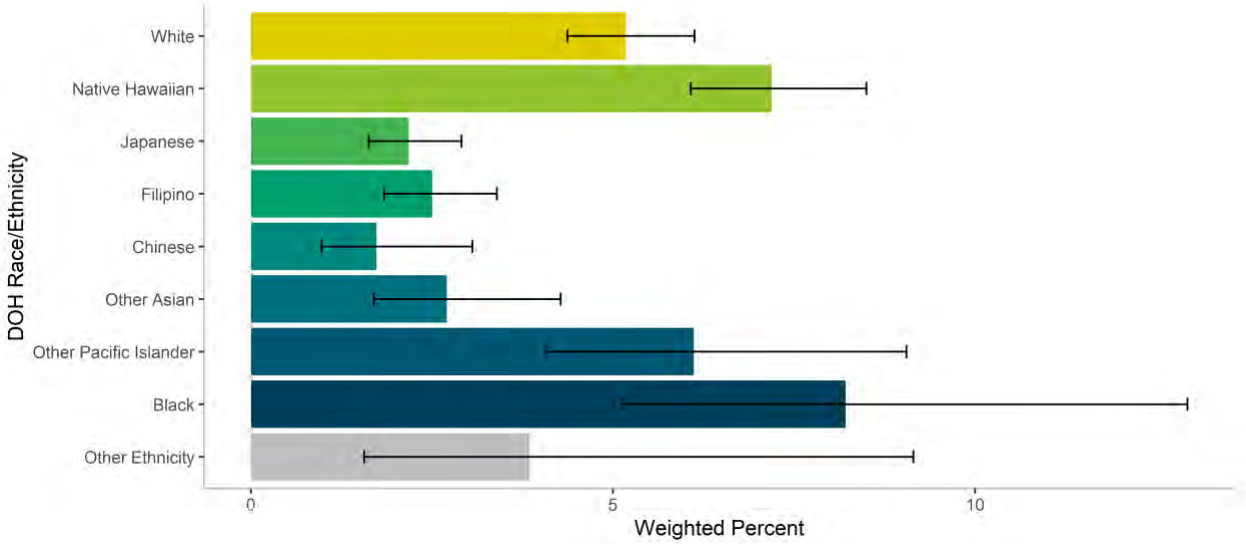


Figure 92. Current nicotine-cannabis co-use prevalence by Hawai‘i DOH-defined race/ethnicity among all adults (18+ years old), Hawai‘i BRFSS 2020-2022



Summary of Figures 88-92

Emerging adults (aged 18-29 years) who identified with a sexual and gender minority (SGM) group had significantly higher prevalence of co- and poly-substance use than those who did not (Figure 88). The prevalence of cannabis-alcohol co-use was **29.0%** (95% CI, 22.0-37.2%) among SGM individuals, compared with **11.3%** (95% CI, 9.6-13.1%) among non-SGM individuals. Similarly, nicotine-alcohol co-use was **28.1%** (95% CI, 21.2-36.2%) compared to **17.9%** (95% CI, 15.9-20.1%); nicotine-cannabis was **22.6%** (95% CI, 15.9-31.2%) compared to **7.7%** (95% CI, 6.4-9.4%); and poly-substance use was threefold at **19.5%** (95% CI, 13.1-28.1%) compared to **6.3%** (95% CI, 5.1-7.9%).

Shown in Figure 89, emerging adults within the 0-100% federal poverty level group (**13.3%**, 95% CI: 9.6-18.1%) had significantly higher prevalence of nicotine-cannabis co-use than those in the 301%+ poverty level group (**5.2%**, 95% CI: 3.2-8.2%), while nicotine-alcohol co-use was significantly more prevalent among those in the 101-185% poverty level group (**25.9%**, 95% CI: 21.0-31.6%) than those in the 301%+ group (**12.2%**, 95% CI: 9.1-16.1%). Prevalence of cannabis-alcohol co-use and poly-substance use did not differ significantly by income level.

Among all adults (aged 18+ years; Figure 90), cannabis-alcohol co-use was most prevalent among White respondents (**12.5%**, 95% CI: 11.4-13.7%) – significantly higher than NH (**9.2%**, 95% CI: 8.0-10.7%), Japanese (**3.3%**, 95% CI: 2.7-4.2%), Filipino (**3.4%**, 95% CI: 2.6-4.4%), Chinese (**2.9%**, 95% CI: 1.8-4.6%), and Other Asian respondents (**4.7%**, 95% CI: 3.4-6.6%), although not significantly higher than OPI, Black, or Other Ethnicity respondents.

Nicotine-alcohol co-use (Figure 91) was most prevalent among NH and OPI respondents (**14.1%** [95% CI: 12.6-15.7%] and **16.4%** [95% CI: 13.2-20.2%], respectively), significantly more prevalent than among White (**10.4%**, 95% CI: 9.2-11.7%), Japanese (**5.6%**, 95% CI: 4.7-6.8%), Filipino (**8.4%**, 95% CI: 7.2-9.9%), and Chinese respondents (**4.9%**, 95% CI: 3.5-6.8%).

Nicotine-cannabis co-use (Figure 92) was most prevalent among Black respondents (**8.2%**, 95% CI: 5.1-12.9%), followed by NH (**7.2%**, 95% CI: 6.1-8.5%), OPI (**6.1%**, 95% CI: 4.1-9.1%), White (**5.2%**, 95% CI: 4.4-6.1%), and Other Ethnicity respondents (**3.8%**, 95% CI: 1.6-9.1%). The prevalence of nicotine-cannabis co-use was significantly higher among Black, NH, OPI, and White respondents than Japanese (**2.2%**, 95% CI: 1.6-2.9%), Filipino (**2.5%**, 95% CI: 1.8-3.4%), and Chinese (**1.7%**, 95% CI: 1.0-3.1%).

Mental Health and Other Key Factors

Youth (<18 years old)

Figure 93. Current poly-substance use of alcohol, nicotine, and cannabis among middle school student who ever felt sad or hopeless almost every day for two weeks or more in a row by survey year, Hawai‘i YRBS 2019, 2021, and 2023

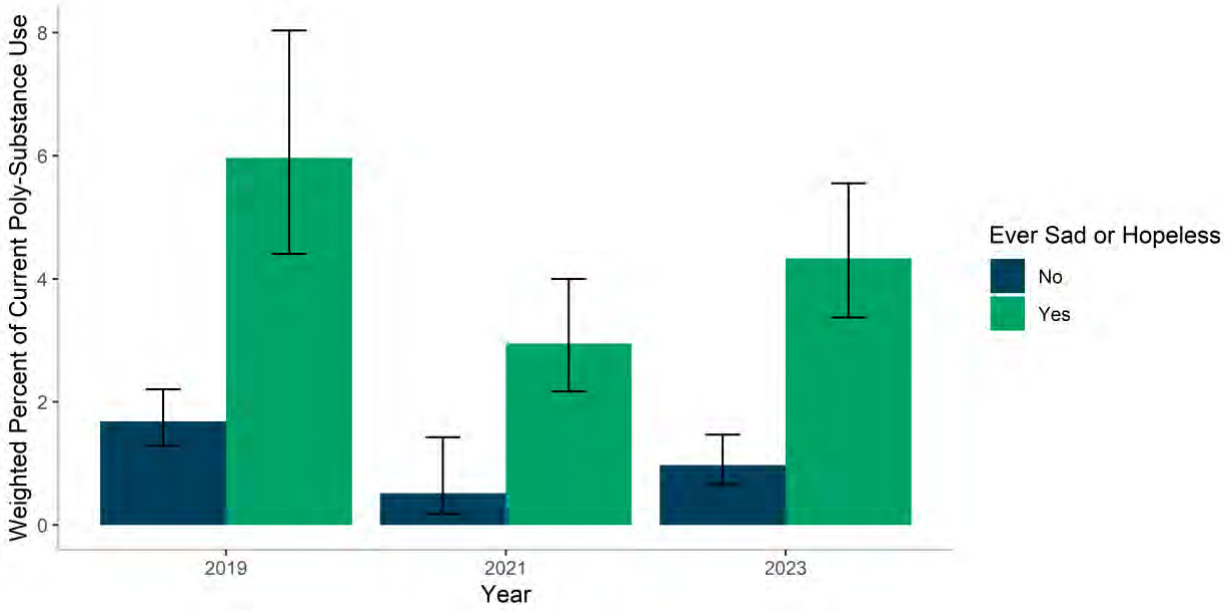


Figure 94. Current cannabis-nicotine co-use among middle school students who ever felt sad or hopeless almost every day for two weeks or more in a row by survey year, Hawai‘i YRBS 2019, 2021, and 2023

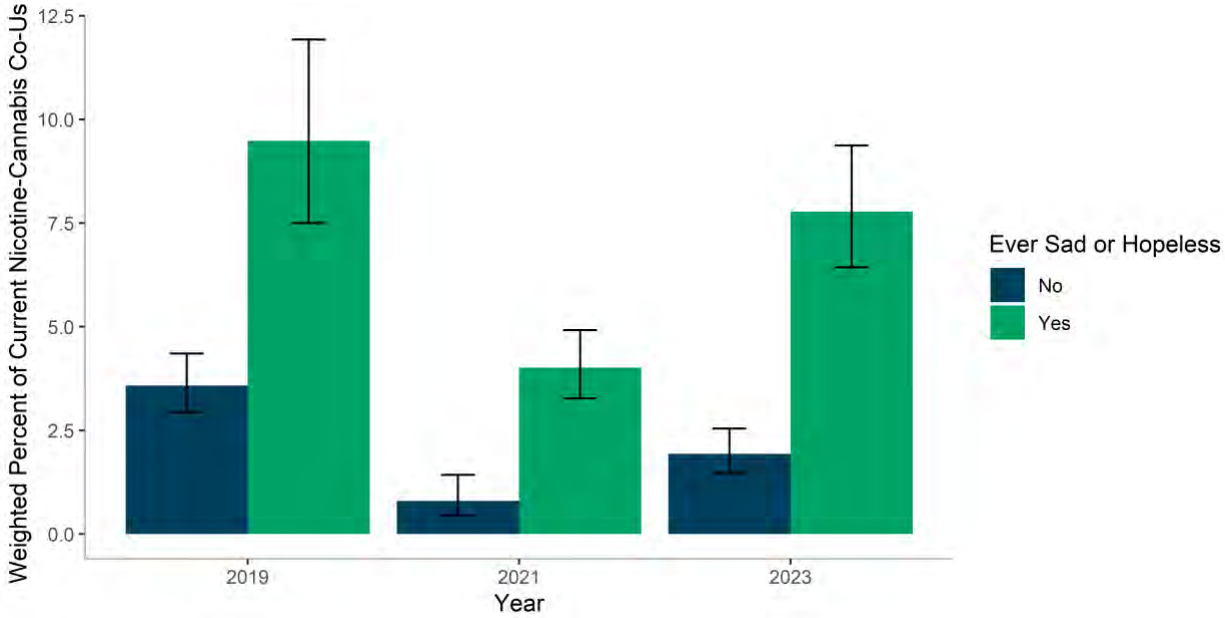
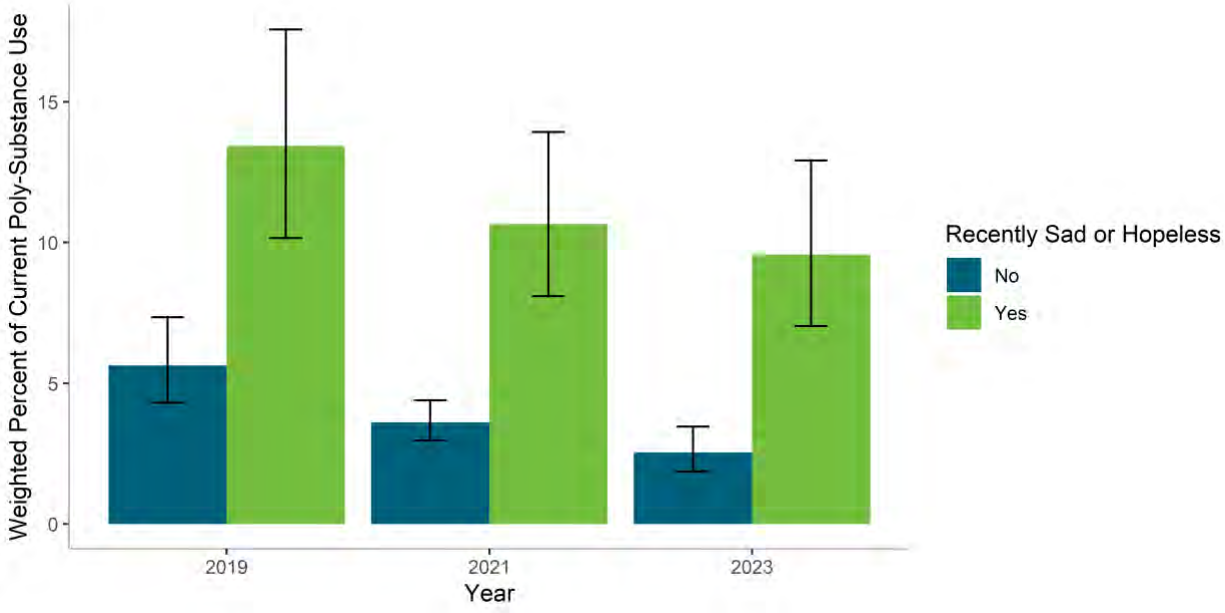


Figure 95. Current poly-substance use of alcohol, nicotine, and cannabis among high school students who felt sad or hopeless almost every day for two weeks or more in a row during the past 12 months by survey year, Hawai‘i YRBS 2019, 2021, and 2023



Summary of Figures 93-95

As seen in Figure 93, current poly-substance use of alcohol, nicotine, and cannabis was significantly more prevalent among MS students who reported ever feeling sad or hopeless almost every day for two weeks or more in 2019 (**6.0%** [95% CI: 4.4-8.0%] compared to **1.7%** [95% CI: 1.3-2.2%]), 2021 (**2.9%** [95% CI: 2.2-4.0%] compared to **0.5%** [95% CI: 0.2-1.4%]), and 2023 (**4.3%** [95% CI: 3.4-5.5%] compared to **1.0%** [95% CI: 0.6-1.5%]). Similarly, the prevalence of current cannabis-nicotine co-use was significantly higher among MS students who reported ever feeling sad or hopeless (Figure 94). In 2019, it was **9.5%** (95% CI: 7.5-11.9%) compared to **3.6%** (95% CI: 2.9-4.4%); in 2021, it was **4.0%** (95% CI: 3.3-4.9%) compared to **0.8%** (95% CI: 0.4-1.4%); and in 2023, it was **7.8%** (95% CI: 6.4-9.4%) compared to **1.9%** (95% CI: 1.5-2.5%).

Poly-substance use of alcohol, nicotine, and cannabis among HS students followed the same trends (Figure 95). The prevalence was significantly higher among HS students who reported feeling sad or hopeless in the last year in 2019 (**13.4%** [95% CI: 10.2-17.6%] compared to **5.6%** [95% CI: 4.3-7.3%]), 2021 (**10.7%** [95% CI: 8.1-13.9%] compared to **3.6%** [95% CI: 3.0-4.4%]), and 2023 (**9.6%** [95% CI: 7.0-12.9%] compared to **2.5%** [95% CI: 1.9-3.5%]).

Emerging Adults (18-29 years old)

Figure 96. Patterns of current co- and poly-substance use of alcohol, nicotine, and cannabis by self-reported history of depression among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2022

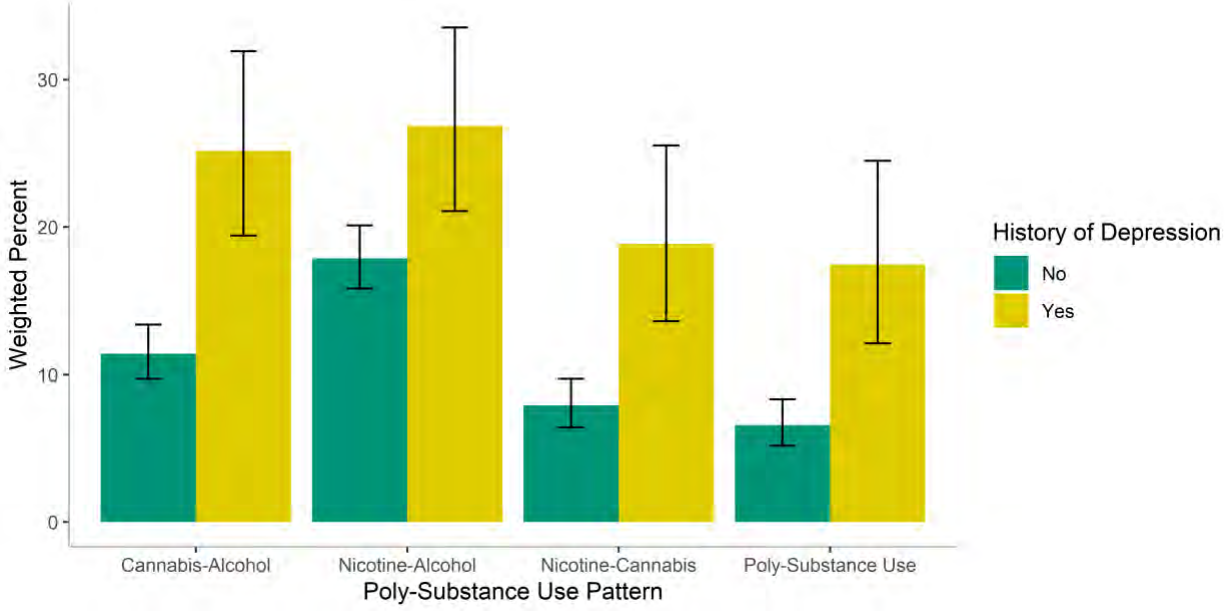
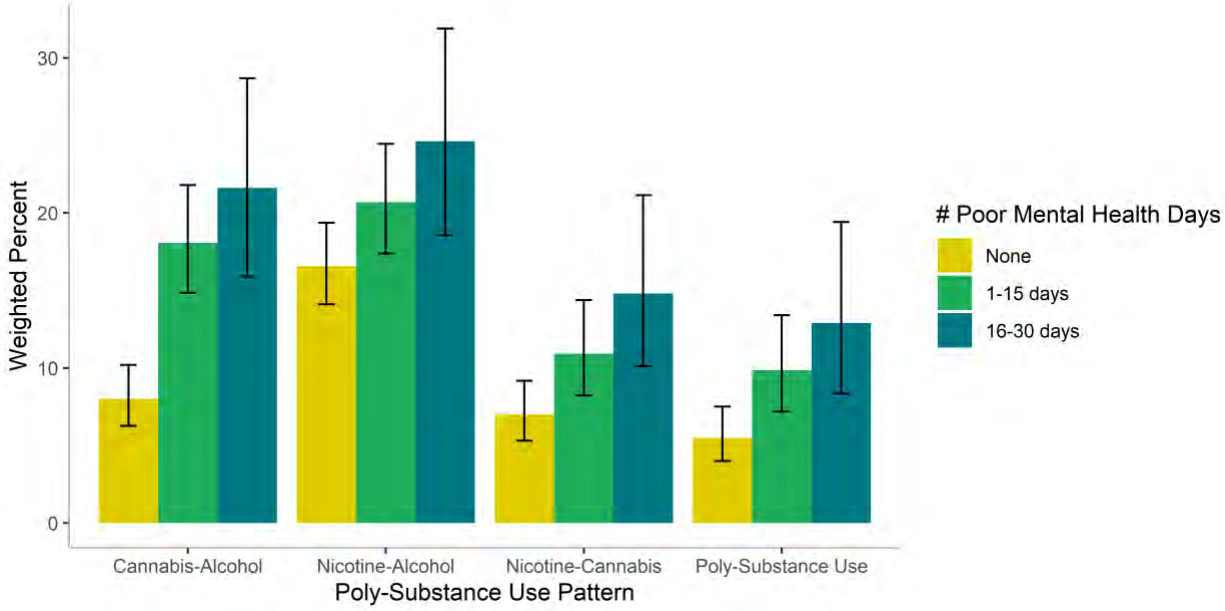


Figure 97. Patterns of current co- and poly-substance use of alcohol, nicotine, and cannabis by self-reported number of days where mental health was poor in the last 30 days among emerging adults (18-29 years old) in Hawai‘i, BRFSS 2020-2022



All Adults (18+ years old)

Figure 98. Patterns of current co- and poly-substance use of alcohol, nicotine, and cannabis by health insurance status among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022

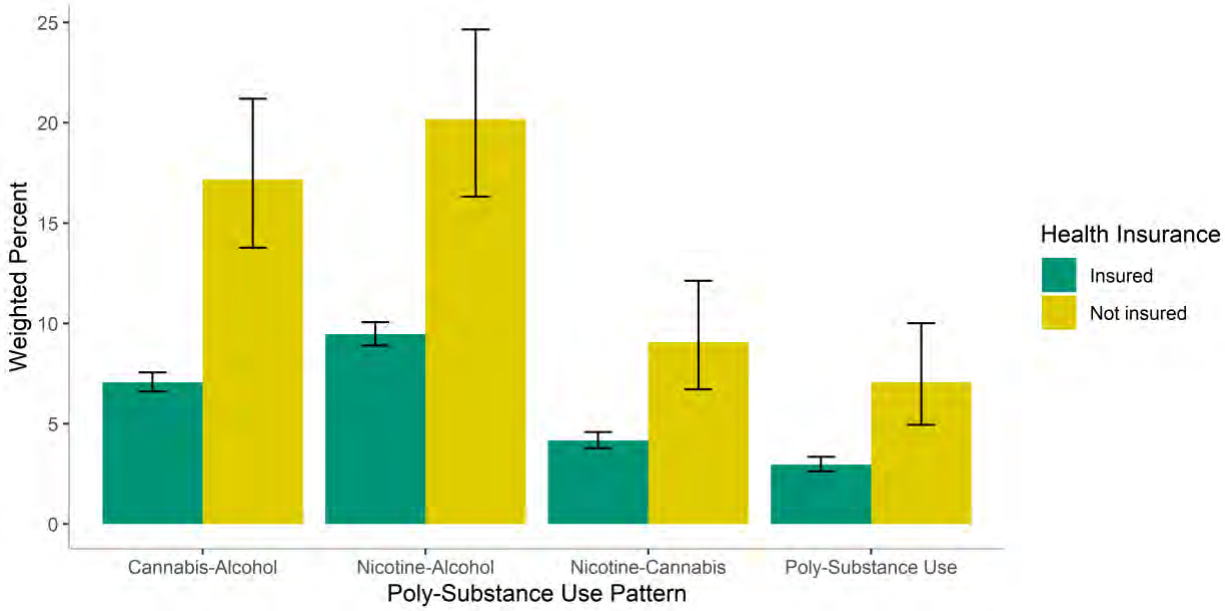
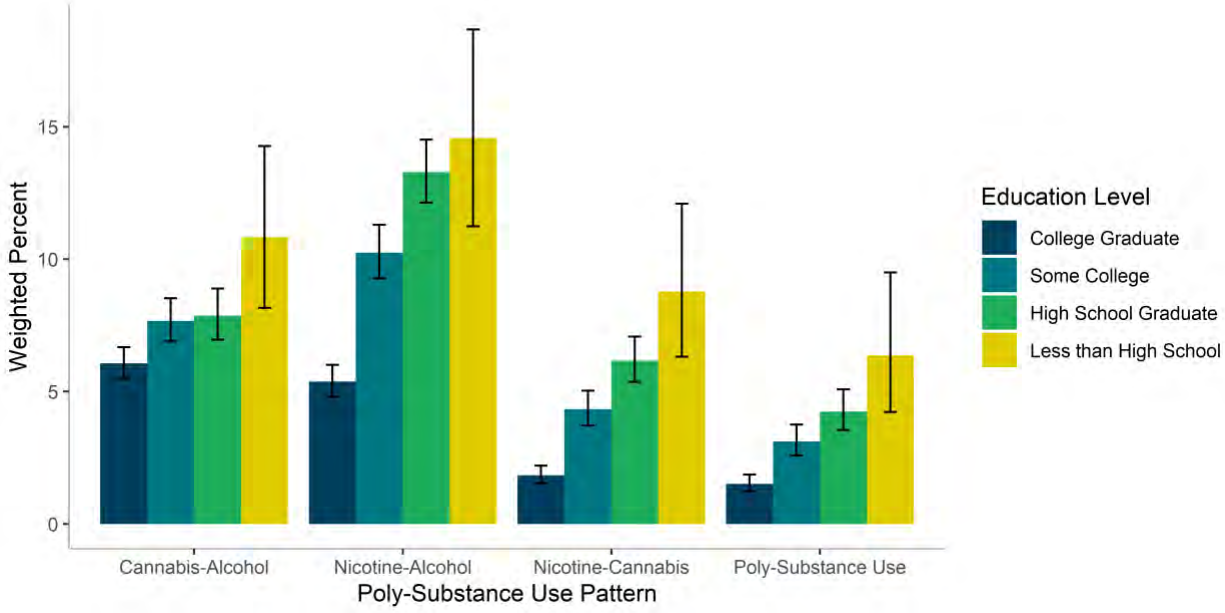


Figure 99. Patterns of current co- and poly-substance use of alcohol, nicotine, and cannabis by education level among all adults (18+ years old) in Hawai‘i, BRFSS 2020-2022



Summary of Figures 96-99

Emerging adults who reported a history of depressive disorder had significantly more prevalent co- and poly-substance than those without (Figure 96). The prevalence of cannabis-alcohol use among those with a history of depressive disorder was **25.2%** (95% CI: 19.4-31.9%) compared to **11.4%** (95% CI: 9.7-13.4%) of those without; the prevalence of nicotine-alcohol use **26.9%** (95% CI: 21.1-33.5%) compared to **17.9%** (95% CI: 15.8-20.1%); the

prevalence of nicotine-cannabis use was **18.9%** (95% CI: 13.6-25.5%) compared to **7.9%** (95% CI: 6.4-9.7%); and the prevalence of poly-substance use was **17.5%** (95% CI: 12.1-24.5%) compared to **6.6%** (95% CI: 5.2-8.3%).

Shown in Figure 97, the prevalence of cannabis-alcohol, nicotine-cannabis, and poly-substance use among emerging adults reporting 16-30 poor mental health days in the last 30 days were significantly higher than those reporting none. Cannabis-alcohol use among those reporting 16-30 poor mental health days (**21.6%**, 95% CI: 15.9-28.7%) was more prevalent than those with none (**8.0%**, 95% CI: 6.3-10.2%); similarly, nicotine-cannabis use was more prevalent (**14.8%**, 95% CI: 10.1-21.1% compared to **7.0%**, 95% CI: 5.3-9.2%); and poly-substance use was more prevalent (**12.9%**, 95% CI: 8.4-19.4% compared to **5.5%**, 95% CI: 4.0-7.5%). However, the difference in prevalence of nicotine-alcohol use between those with 16-30 poor mental health days and those with none was not significant. The difference in prevalence between 1-15 and 16-30 poor mental health days was not significant across all co- and poly-substance use groups. Reporting 1-15 poor mental health days was not significantly associated with more prevalent co- or poly-substance use than reporting none, except for cannabis-alcohol co-use (**18.1%**, 95% CI: 14.9-21.8% compared to **8.0%**, 95% CI: 6.3-10.2%).

Among all adults (aged 18+ years), those without health insurance reported significantly more prevalent co- and poly-substance compared to those with health insurance (Figure 98). The prevalence of cannabis-alcohol co-use was **17.2%** (95% CI: 13.8-21.2%) for those without health insurance, compared to **7.1%** (95% CI: 6.6-7.6) for those with insurance. Similarly, the prevalence of nicotine-alcohol co-use was **20.2%** (95% CI: 16.3-24.7%) compared to **9.5%** (95% CI: 8.9-10.1%); nicotine-cannabis was **9.1%** (95% CI: 6.7-12.1%) compared to **4.2%** (95% CI: 3.8-4.6%); and poly-substance use was **7.1%** (95% CI: 4.9-10.0%) compared to **3.0** (985%CI: 2.6-3.3%).

Adults with less than high school-level education were significantly more likely to report co-and poly-substance use, across all substance groupings, compared to those who had graduated college (Figure 99). The prevalence of cannabis-alcohol co-use was **10.8%** (95% CI: 8.2-14.3%) for those with less than high school, compared to **6.1%** (95% CI: 5.5-6.7%) for those with a college degree; similar trends were observed for nicotine-alcohol co-use (**14.6%** [95% CI: 11.2-18.7%] compared to **5.4%** [95% CI: 4.8-6.0%]), nicotine-cannabis co-use (**8.8%** [95% CI: 6.3-12.1%] compared to **1.8%** [95% CI: 1.5-2.2%]), and poly-substance use (**6.4%** [95% CI: 4.2-9.5%] compared to **1.5%** [95% CI: 1.2-1.9%]).

Geolocation and Substance Use in Hawai‘i

Background

The State of Hawai‘i comprises seven main inhabited islands—Hawai‘i, Maui, Lāna‘i, Moloka‘i, O‘ahu, Kaua‘i, and Ni‘ihau—with diverse sociodemographic makeups and substance use trends between communities. The following section analyzes substance use trends in 39 communities in the state based on high school complex areas (https://hhdw.org/wp-content/uploads/2022/05/Geography-Documentation_5.13.22.pdf).

In Hawai‘i, a school complex area refers to an administrative grouping of schools within the Hawai‘i DOE, which operates as a single, statewide public school district. Each complex area typically includes: 1) One high school and its associated feeder schools, though this may vary depending on the size of the schools, and 2) Geographic organization: complex areas are based on specific sections of an island, serving the communities within those regions. This structure facilitates streamlined management and coordination of resources within each community. Although the data do not originate from students, the school complex area is used as an organizational framework for HI-BRFSS data. In this profile, we refer to them as *communities* to reduce confusion, emphasizing that the data reflect adults residing within these geographic areas.

Geolocation, the analysis of health trends related to where people live, can play a crucial role in informing targeted substance use interventions in Hawai‘i: it illuminates the spatial distribution of substance use trends, particular areas differentially affected by substance use, and differing patterns for prevention and intervention efforts. Shown in the figures below, different communities display different patterns of substance use; the aim of this section is to offer perspective into these substance use patterns.

The geographic distribution of substance use data can be used to analyze substance use patterns and correlates between communities, which can vary depending on context-specific environmental and socioeconomic factors. For example, geolocation can help identify community-level factors such as socioeconomic status, access to healthcare, and cultural perspectives that may influence substance use trends. These data can then be used to inform and improve prevention programs, including by supporting targeted intervention programs, the allocation of resources to underserved areas, and the development of strategies to improve health outcomes for specific communities where substance use prevalence may be higher. By mapping substance use patterns by community, this section of the profile aims to support localized and effective prevention and intervention efforts. The following data include all adults (18+ years old) across multiple years in order to provide the needed numbers to conduct these community level analyses.

Current Alcohol, Nicotine, and Cannabis Use Prevalence and Trends by Location

All Adults (18+ years old)

Figure 100. Individual substance use prevalence quintiles by community for Kauaʻi County, Hawaiʻi BRFSS 2020-2022

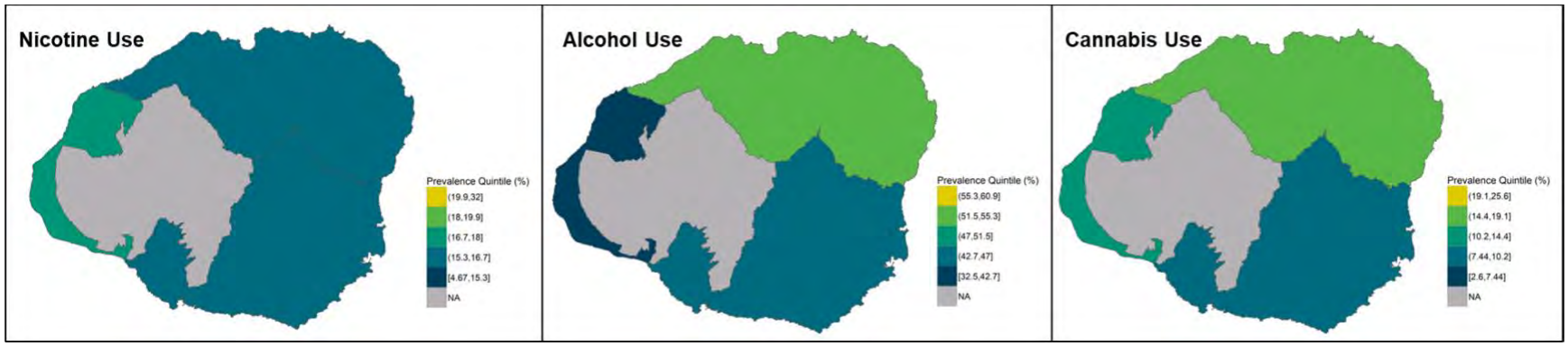
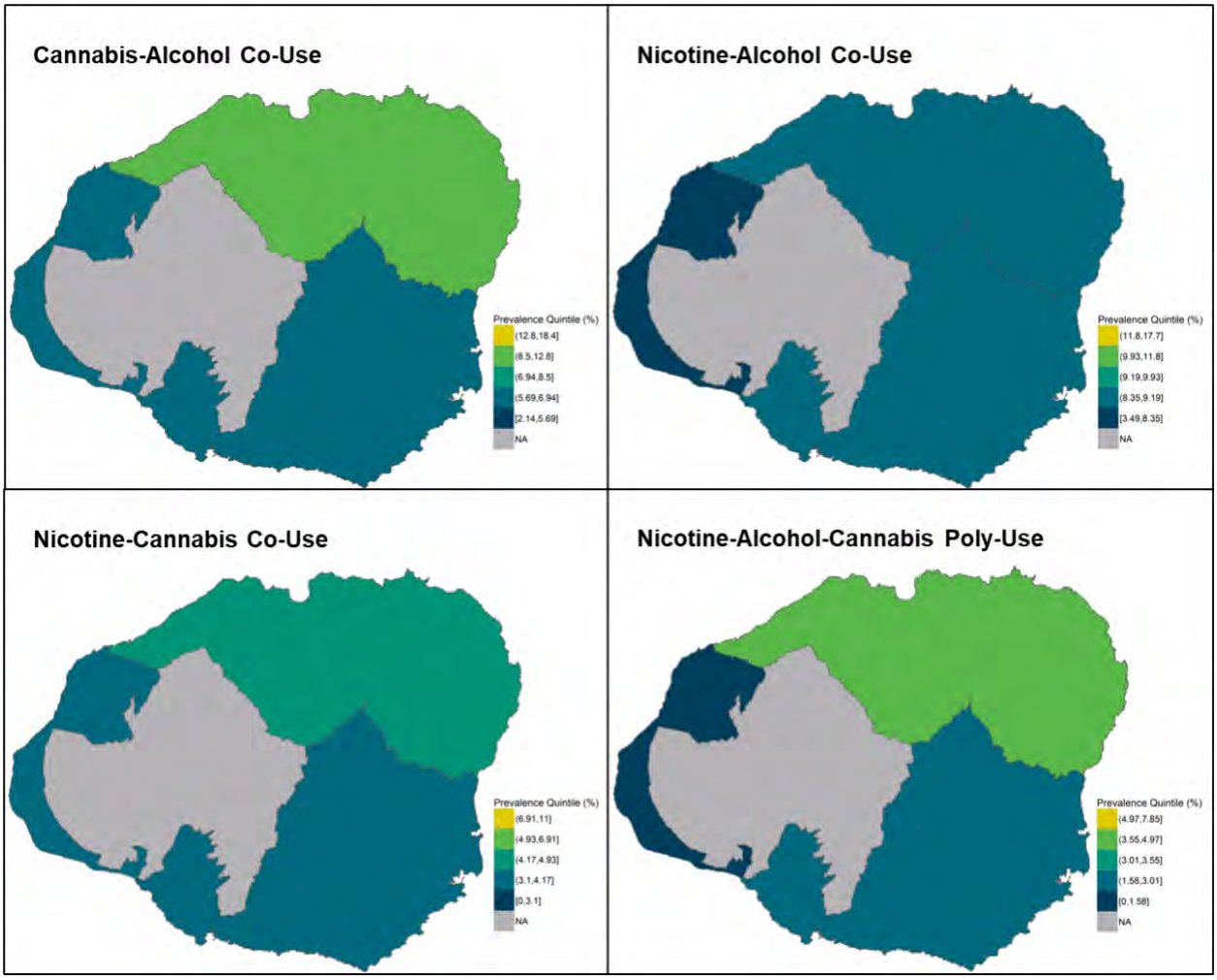


Figure 101. Prevalence quintiles for co- and poly-substance use patterns by community for Kauaʻi County, Hawaiʻi BRFSS 2020-2022



Summary of Figures 100-101

Among all adults in Kauaʻi County, the prevalence of nicotine use from 2020 to 2022 was 15.7% (95% CI: 13.8-17.7%); the prevalence of alcohol use was 49.1% (95% CI: 46.4-51.8%); and the prevalence of cannabis use was 12.6% (95% CI: 11.0-14.3%). This county had the lowest prevalence of nicotine use. By community, the prevalence of nicotine use was 17.0% (95% CI: 10.7-25.2%) in Waimea, 15.7% (95% CI: 12.8-19.1%) in Kapaʻa, and 15.4% (95% CI: 12.9-18.3%) in Kauaʻi. The prevalence of alcohol use was 36.5% (95% CI: 27.4-46.8%) in Waimea, 55.3% (95% CI: 51.2-59.5%) in Kapaʻa, and 45.8% (95% CI: 42.0, 49.6%) in Kauaʻi. Cannabis use prevalence was 12.3% (95% CI: 7.3-20.0%) in Waimea, 17.2% (95% CI: 14.5-20.4%) in Kapaʻa, and 8.7% (95% CI: 6.9-11.0%) in Kauaʻi. Kapaʻa had significantly more prevalent alcohol and cannabis use than Kauaʻi.

In Kauaʻi County, the overall prevalence of cannabis-alcohol co-use was **8.7%** (95% CI: 7.4-10.1%); nicotine-alcohol co-use was **8.5%** (95% CI: 7.1-10.0%); nicotine-cannabis co-use was **4.0%** (95% CI: 3.1-5.0%); and nicotine-alcohol-cannabis poly-use was **2.9%** (95% CI: 2.2-3.9%). Cannabis-alcohol co-use was highest in Kapaʻa (**12.4%**, 95% CI: 10.1-15.2%), as was nicotine-cannabis co-use (**4.9%**, 95% CI: 3.5-6.8%) and poly-use (**3.7%**, 95% CI: 2.4-5.5%). Meanwhile, nicotine-alcohol co-use was **8.5%** in Kapaʻa (95% CI: 6.5-11.1%) and **8.5%** in Kauaʻi (95% CI: 6.7-10.8%). Kauaʻi had the lowest prevalence of cannabis-alcohol co-use (**5.9%**, 95% CI: 4.5-7.6%), significantly less prevalent than Kapaʻa. It also had the lowest prevalence of nicotine-cannabis co-use (**3.2%**, 95% CI: 2.2-4.6%), although there were no significant differences between communities. Waimea had the lowest prevalence of nicotine-alcohol co-use (**7.4%**, 95% CI: 3.6-14.4%) and poly-use (**1.3%**, 95% CI: 0.3-5.1%), although there were no significant differences between communities for either.

Figure 102. Individual substance use prevalence quintiles by community for the City and County of Honolulu, Hawai‘i BRFSS 2020-2022

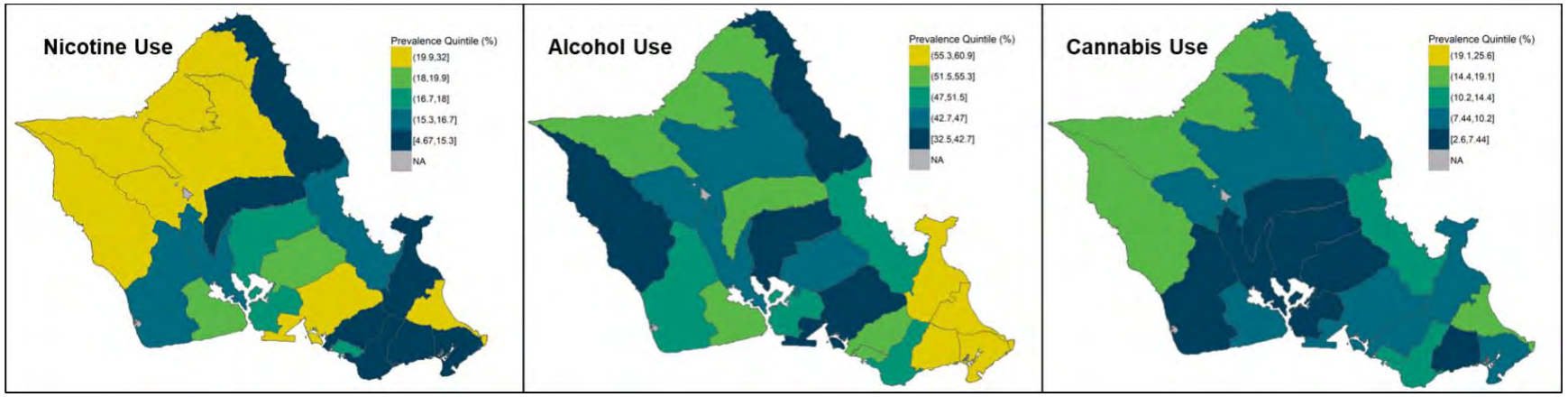
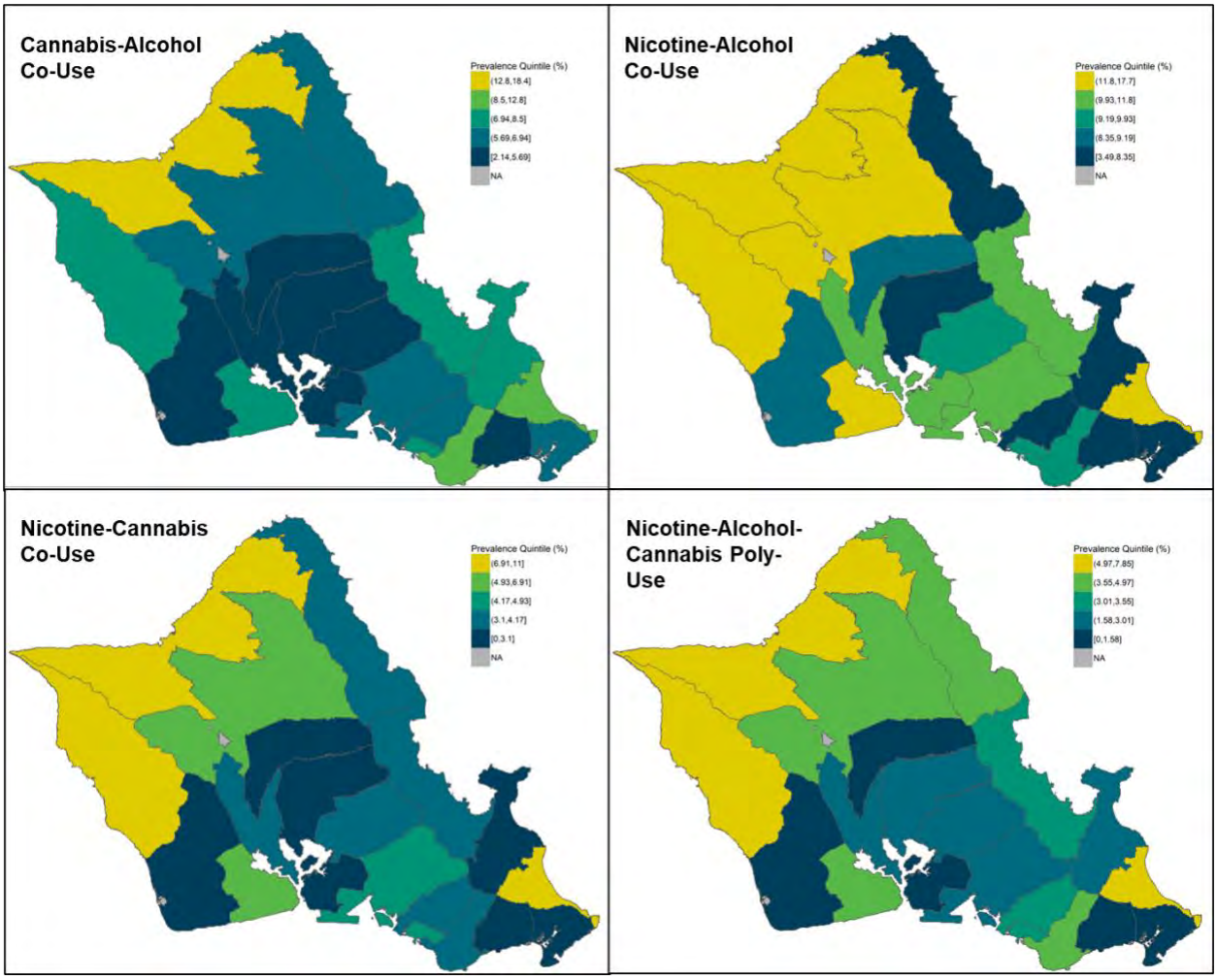


Figure 103. Prevalence quintiles for co- and poly-substance use patterns by community for the City and County of Honolulu, Hawai‘i BRFSS 2020-2022



Summary of Figures 102-103

Among adults in the City and County of Honolulu, nicotine use prevalence was 17.0% (95% CI: 16.0-18.0%); alcohol use was 48.5% (95% CI: 47.3-49.7%); and cannabis use was 8.9% (95% CI: 8.2-9.7%). The prevalence of alcohol and cannabis use were lowest in this county. The prevalence of nicotine was generally higher in Leeward Side/North Shore communities and generally lower in Windward Side/South Shore communities: it was highest in Leilehua (32.0%, 95% CI: 25.5-39.3%), Wai‘anae & Nānākuli (29.4%, 95% CI: 24.5-34.8%), and Waialua (22.2%, 95% CI: 14.2-32.9%), significantly more prevalent than in Kalani (4.7%, 95% CI: 2.5-8.4%), Kaiser (6.6%, 95% CI: 3.8-11.2%), and Kailua (10.2%, 95% CI: 7.5-13.8%). Conversely, the communities with the most prevalent alcohol use were more concentrated in the Windward Side/South Shore: the prevalence of alcohol use was 58.3% (95% CI: 53.2-63.1%) in Kailua, 57.5% (95% CI: 50.3-64.5%) in Kalani, and 56.6% (95% CI: 50.0-63.0) in Kaiser, significantly higher than the two communities with the least prevalent alcohol use – 32.5% (95% CI: 21.5-45.8%) in Kahuku and 36.4% (95% CI: 31.3-41.8%) in Wai‘anae & Nānākuli. Communities with less prevalent cannabis use were generally central: the prevalence was 4.6% (95% CI: 3.0-6.9%) in Mililani, 5.2% (95% CI: 2.9-9.1%) in Moanalua & Radford, and 5.7% (95% CI: 3.4-9.4) in Pearl City, compared with 17.8% (95% CI: 10.7-28.1%) in Waialua, 15.7% (95% CI: 8.4-27.5%) in Kalāheo, and 14.4% (95% CI: 10.9-18.9%) in Wai‘anae & Nānākuli.

In the City and County of Honolulu, the prevalence of cannabis-alcohol co-use was **6.1%** (95% CI: 5.5-6.7%); nicotine-alcohol co-use was **9.9%** (95% CI: 9.1-10.7%); nicotine-cannabis co-use was **3.9%** (95% CI: 3.4-4.5%); and nicotine-alcohol-cannabis poly-use was **2.9%** (95% CI: 2.5-3.4%). It had the lowest prevalence of

cannabis-alcohol and nicotine-cannabis co-use between all counties, along with the lowest prevalence of alcohol and cannabis use individually. The prevalence of cannabis-alcohol co-use was highest in Waialua (**14.5%**, 95% CI: 8.1-24.8%) and Kalāheo (**12.4%**, 95% CI: 5.8-24.6%), and lowest in Mililani (**2.1%**, 95% CI: 1.2-3.9%) and Kapolei (**3.4%**, 95% CI: 1.8-6.2%). Nicotine-alcohol co-use prevalence was highest in Leilehua (**17.7%**, 95% CI: 12.8-24.0%), followed by Kalāheo (**16.4%**, 95% CI: 8.7-28.7%) and Waialua (**15.0%**, 95% CI: 8.3-25.7%); it was lowest in Kalani (**3.5%**, 95% CI: 1.8-6.8%) and Kaiser (**4.7%**, 95% CI: 2.5-8.6%). Nicotine-cannabis co-use was most prevalent in Waialua (**9.4%**, 95% CI: 3.9-20.7%), Waiʻanae & Nānākuli (**8.1%**, 95% CI: 5.3-12.2%), and Kalāheo (**7.4%**, 95% CI: 2.5-20.4%), and least prevalent in Moanalua & Radford (**0.9%**, 95% CI: 0.3-2.7%) and Kalani (**1.0%**, 95% CI: 0.3-2.9%). Similarly, the prevalence of poly-use was highest in Waialua (**7.6%**, 95% CI: 2.7-19.9%), followed by Kalāheo (**7.0%**, 95% CI: 2.0-21.4%) and Waiʻanae & Nānākuli (**5.1%**, 95% CI: 3.0-8.5%), while it was lowest in Mililani (**0.9%**, 95% CI: 0.3-2.5%), Kapolei (**1.0%**, 95% CI: 0.4-2.6%), and Moanalua & Radford (**1.0%**, 95% CI: 0.3-2.9%).

Figure 104. Individual substance use prevalence quintiles by community for Maui and Kalawao County, Hawai‘i BRFSS 2020-2022

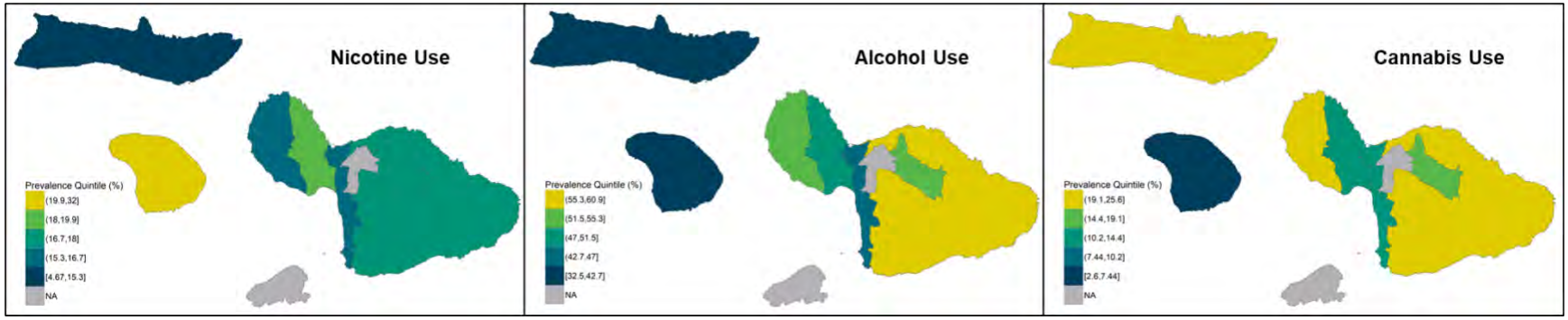
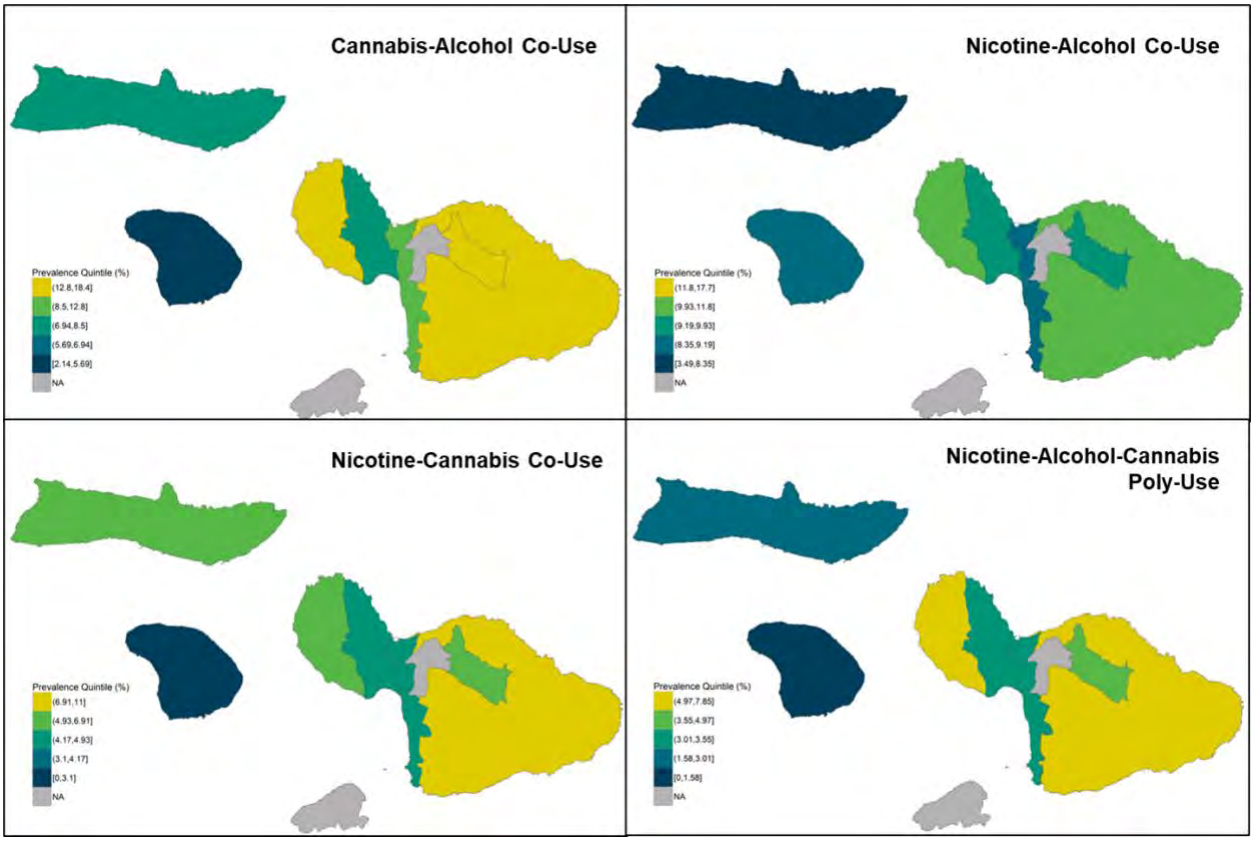


Figure 105. Prevalence quintiles for co- and poly-substance use patterns by community for Maui and Kalawao Counties, Hawai‘i BRFSS 2020-2022



Summary of Figures 104-105

For all adults in Maui and Kalawao Counties combined, nicotine use prevalence was **17.1%** (95% CI: 15.5-18.8%), alcohol use was **50.2%** (95% CI: 48.0-52.3%), and cannabis use was **16.7%** (95% CI: 15.0-18.5%). The prevalence of alcohol use was highest in these counties, with Hāna reporting the most prevalent alcohol use and cannabis use and Lāna‘i reporting the highest prevalence of nicotine use and the lowest prevalence of cannabis use. The prevalence of nicotine use was highest in Lāna‘i (**26.8%**, 95% CI: 14.9-43.4%) and lowest in Moloka‘i (**10.9%**, 95% CI: 6.6-17.6%), although there were not significant differences between communities. Alcohol use was most prevalent in Hāna (**56.2%**, 95% CI: 50.5-61.7%), significantly more prevalent than in Moloka‘i (**38.3%**, 95% CI: 29.2-48.4%), which had the least prevalent alcohol use. Cannabis use was most prevalent in Hāna (**24.4%**, 95% CI: 19.4-30.3%), Moloka‘i (**21.5%**, 95% CI: 13.3-32.7%), and Lahainaluna (**19.5%**, 95% CI: 14.9-25.1%), significantly more prevalent than in Lāna‘i (**2.6%**, 95% CI: 0.6-10.1%), the community with the lowest prevalence.

In Maui and Kalawao Counties, the prevalence of cannabis-alcohol co-use was **11.2%** (95% CI: 9.9-12.6%); nicotine-alcohol co-use was **9.4%** (95% CI: 8.3-10.7%); nicotine-cannabis co-use was **5.4%** (95% CI: 4.4-6.6%); and nicotine-alcohol-cannabis poly-use was **4.1%** (95% CI: 3.3-5.2%). These counties had the highest prevalence of poly-substance use in the state for all three substances, just slight higher than Hawai‘i County (**4.0%** [95% CI: 3.2-4.9%]). Cannabis-alcohol co-use prevalence was highest in Hāna (**15.8%**, 95% CI: 12.1-20.4%)—which also had the highest prevalence of alcohol and cannabis use individually—while it was lowest in Lāna‘i (**2.6%**, 95% CI: 0.6-9.9%). Similarly, nicotine-cannabis co-use was most prevalent in Hāna (**7.9%**, 95% CI: 4.8-12.7%) and least prevalent in Lāna‘i (**0.0%**), and poly-use was most prevalent in Hāna (**6.3%**, 95% CI: 3.6-11.0%) and least prevalent in Lāna‘i (**0.0%**). Nicotine-alcohol co-use was most prevalent in Hāna (**11.2%**, 95% CI: 7.9-15.8%) and least prevalent in Moloka‘i (**6.3%**, 95% CI: 3.1-12.3%)

Figure 106. Individual substance use prevalence quintiles by community for Hawai‘i County, Hawai‘i BRFSS 2020-2022

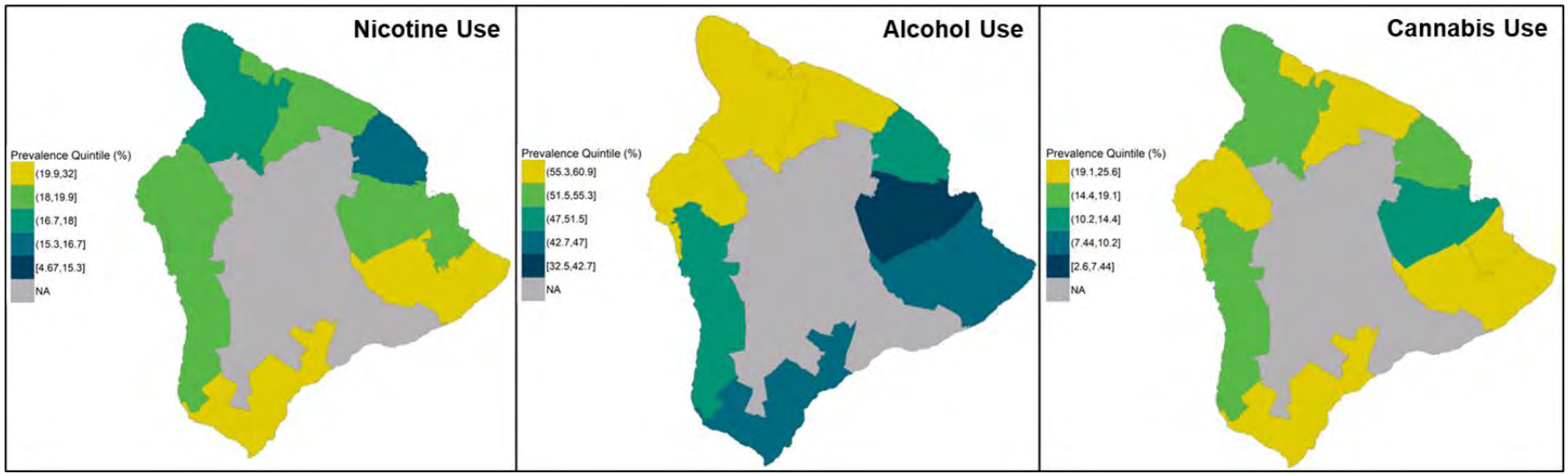
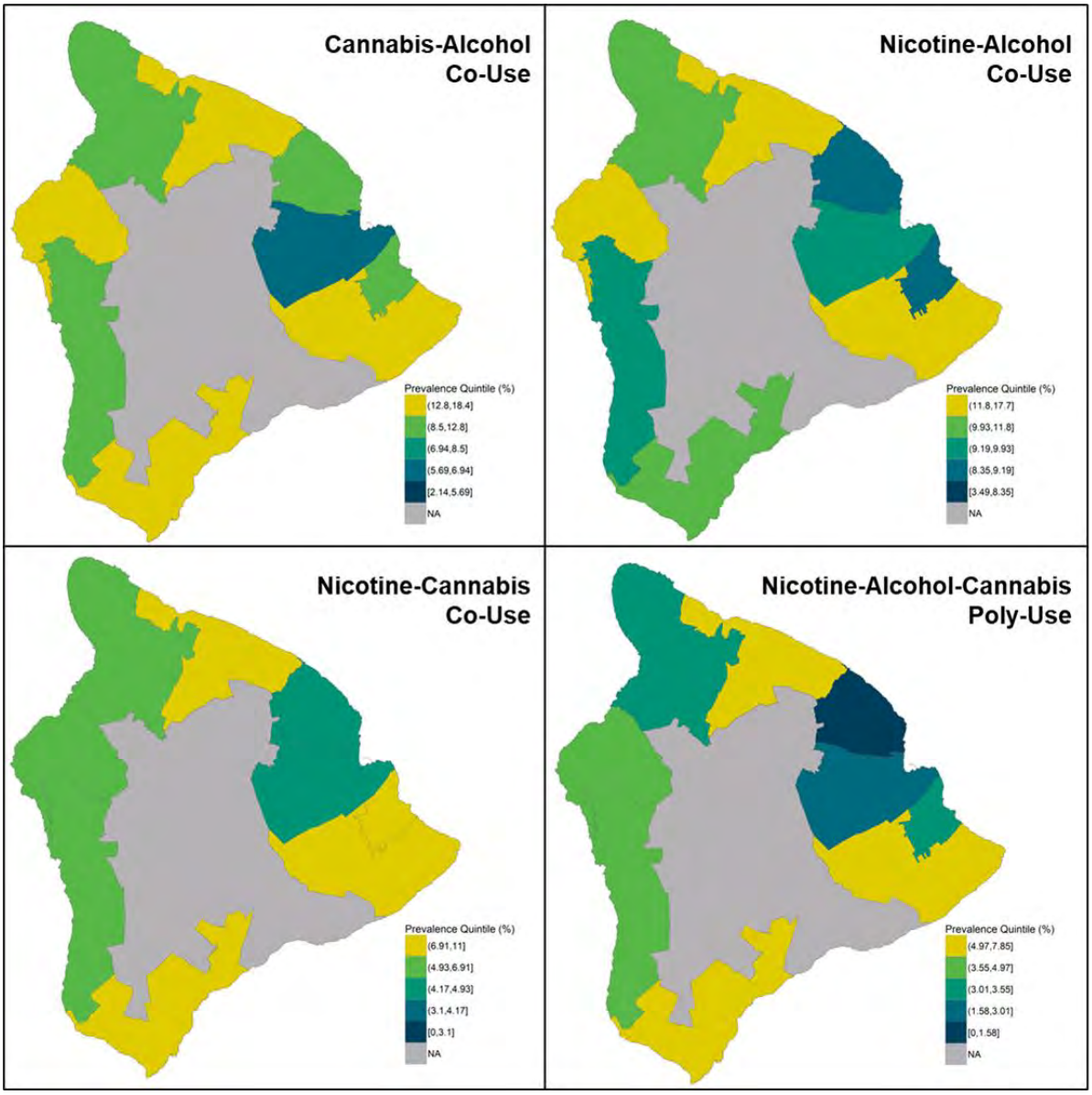


Figure 107. Co- and poly substance use patterns prevalence quintiles by community for Hawai‘i County, Hawai‘i BRFSS 2020-2022



Summary of Figures 106-107

In Hawai‘i County, overall nicotine use prevalence among all adults was 19.8% (95% CI: 18.2-21.5%); alcohol use prevalence was 49.3% (95% CI: 47.3-51.3%); and cannabis use prevalence was 18.1% (95% CI: 16.5-19.7%). Nicotine and cannabis use prevalence were the highest in this county, with Ka‘ū reporting both the highest prevalence of both nicotine and cannabis use (while Hilo & Waiākea had the lowest prevalence of alcohol and cannabis use). Nicotine use was most prevalent in Ka‘ū (28.2%, 95% CI: 20.6-37.2%) and Pāhoa (26.2%, 95% CI: 21.4-31.8%) and least prevalent in Laupāhoehoe (16.5%, 95% CI: 9.2-27.8%). Alcohol use was most prevalent in Kealakehe (60.9%, 95% CI: 56.1-65.5%), Honoka‘a (58.4%, 95% CI: 47.5-68.4%), and Kohala (55.5%, 95% CI: 49.8-61.0%), significantly more prevalent than in Hilo & Waiākea (42.7%, 95% CI: 38.9-46.6%). Cannabis use prevalence was highest in Ka‘ū (25.6%, 95% CI: 18.2-34.7%), Honoka‘a (24.5%, 95% CI: 15.7-36.0%), and Pāhoa (23.7%, 95% CI: 19.2-28.8%), and the lowest in Hilo & Waiākea (11.9%, 95% CI: 9.4-15.1%).

Among all adults in Hawai‘i County, the prevalence of cannabis-alcohol co-use was **11.4%** (95% CI: 10.2-12.8%); nicotine-alcohol co-use was **10.6%** (95% CI: 9.4-11.9%); nicotine-cannabis co-use was **6.5%** (95% CI:

5.5-7.6%); and nicotine-alcohol-cannabis poly-use was **4.0%** (95% CI: 3.2-4.9%). It had the highest prevalence of nicotine-cannabis co-use between all counties, along with the highest prevalence of nicotine and cannabis use individually. Kaʻū reported the highest prevalence of nicotine-cannabis co-use (**11.0%**, 95% CI:6.2-18.8%), as well as the highest prevalence of nicotine and cannabis use individually. Hawaiʻi County also had the highest prevalence of cannabis-alcohol co-use and nicotine-alcohol co-use in the state. Cannabis-alcohol co-use prevalence was highest in Honokaʻa (**18.4%**, 95% CI: 10.8-29.6%) and lowest in Hilo & Waiākea (**6.8%**, 95% CI: 5.0-9.2%; which also had the least prevalent alcohol and cannabis use individually). Nicotine-alcohol co-use was highest in Honokaʻa (**12.4%**, 95% CI: 5.9-24.2%) and Kealakehe (**12.4%**, 95% CI: 9.5-16.1%), while it was lowest in Keaʻau (**9.0%**, 95% CI: 6.4-12.4%).

References

7 USC Chapter 38, Subchapter VII: Hemp Production, §1639(o), 7 USC. Retrieved November 13, 2024, from https://uscode.house.gov/view.xhtml?path=/prelim@title7/chapter38/subchapter7&edition=prelim

21 USC Chapter 13, Subchapter I: Control and Enforcement, §802(16). https://uscode.house.gov/browse/prelim@title21/chapter13/subchapter1/partA&edition=prelim

21 USC Chapter 13, Subchapter I: Control and Enforcement, §812(b)(1). https://uscode.house.gov/view.xhtml?path=/prelim@title21/chapter13/subchapter1/partB&edition=prelim

2024 Race/Ethnicity Documentation (2024). Hawai‘i Health Data Warehouse (HHDW). https://hhdw.org/wp-content/uploads/2024/03/Race-Ethnicity-Documentation-3.04.24.pdf

Acosta-Deprez, V., Jou, J., London, M., Ai, M., Chu, C., Cermak, N., & Kozlovich, S. (2021). Tobacco control as an LGBTQ+ issue: Knowledge, attitudes, and recommendations from LGBTQ+ community leaders. *International Journal of Environmental Research and Public Health*, *18*(11), 5546. https://doi.org/10.3390/ijerph18115546

Addressing Excessive Alcohol Use: State Fact Sheets (2024a). Center for Disease Control and Prevention (CDC). https://www.cdc.gov/alcohol/fact-sheets/states/excessive-alcohol-use-united-states.html

African American Communities Experience a Health Burden From Commercial Tobacco (2024b).). Center for Disease Control and Prevention (CDC). https://www.cdc.gov/tobacco-health-equity/collection/african-american-health-burden.html

Alcohol (2022a). Hawai‘i Health Data Warehouse (HHDW). https://hhdw.org/health-topics/alcohol-2/

Alcohol Use in the United States: Age Groups and Demographic Characteristics (2024a). National Institute on Alcohol Abuse and Alcoholism (NIAAA). https://www.niaaa.nih.gov/alcohols-effects-health/alcohol-topics/alcohol-facts-and-statistics/alcohol-use-united-states-age-groups-and-demographic-characteristics

Becker, T. D., & Rice, T. R. (2022). Youth vaping: A review and update on global epidemiology, physical and behavioral health risks, and clinical considerations. *European Journal of Pediatrics*, *181*(2), 453–462. https://doi.org/10.1007/s00431-021-04220-x

Bersamira, C. S., Lin, Y. A., Park, K., & Marsh, J. C. (2017). Drug use among Asian Americans: Differentiating use by acculturation status and gender. *Journal of Substance Abuse Treatment*, *79*, 76-81.

Bridgeman, M. B., & Abazia, D. T. (2017). Medicinal cannabis: History, pharmacology, and implications for the acute care setting. *Pharmacy and Therapeutics*, *42*(3), 180.

Brière, F. N., Fallu, J.-S., Descheneaux, A., & Janosz, M. (2011). Predictors and consequences of simultaneous alcohol and cannabis use in adolescents. *Addictive Behaviors*, *36*(7), 785–788. https://doi.org/10.1016/j.addbeh.2011.02.012

Broderick, S. (2024, June 20). *What Does Vaping Do to Your Lungs?* Johns Hopkins Medicine. https://www.hopkinsmedicine.org/health/wellness-and-prevention/what-does-vaping-do-to-your-lungs

Brooks-Russell, A., Wrobel, J., Brown, T., Bidwell, L. C., Wang, G. S., Steinhart, B., Dooley, G., & Kosnett, M. J. (2024). Effects of acute cannabis inhalation on reaction time, decision-making, and memory using a tablet-based application. *Journal of Cannabis Research*, *6*(1), 3. https://doi.org/10.1186/s42238-024-00215-1

Buscemi, J., Acuff, S. F., Minhas, M., MacKillop, J., & Murphy, J. G. (2021). Identifying patterns of alcohol use and obesity-related factors among emerging adults: A behavioral economic analysis. *Alcoholism, Clinical and Experimental Research*, *45*(4), 828. https://doi.org/10.1111/acer.14569

Cannabis Health Effects (2024c). CDC. https://www.cdc.gov/cannabis/health-effects/index.html

Carliner, H., Brown, Q. L., Sarvet, A. L., & Hasin, D. S. (2017). Cannabis use, attitudes, and legal status in the U.S.: A review. *Preventive Medicine*, *104*, 13–23. https://doi.org/10.1016/j.ypmed.2017.07.008

Carroll, D. M., Soto, C., Baezconde-Garbanati, L., Huang, L.-L., Lienemann, B. A., Meissner, H. I., Rose, S. W., Unger, J. B., & Cruz, T. B. (2020). Tobacco industry marketing exposure and commercial tobacco product use disparities among American Indians and Alaska Natives. *Substance Use & Misuse*, *55*(2), 261–270. https://doi.org/10.1080/10826084.2019.1664589

Cerdá, M., Diez-Roux, A. V., Tchetgen, E. T., Gordon-Larsen, P., & Kiefe, C. (2010). The relationship between neighborhood poverty and alcohol use: Estimation by marginal structural models. *Epidemiology (Cambridge, Mass.)*, *21*(4), 482. https://doi.org/10.1097/EDE.0b013e3181e13539

Chan, O., Daudi, A., Ji, D., Wang, M., Steen, J. P., Parnian, P., Li, C., Xiong, A., Zhang, W., Lopes, L. C., MacKillop, J., Busse, J. W., & Wang, L. (2024). Cannabis use during adolescence and young adulthood and academic achievement: A systematic review and meta-analysis. *JAMA Pediatrics*. https://doi.org/10.1001/jamapediatrics.2024.3674

Chartier, K. G., Hesselbrock, M. N., & Hesselbrock, V. M. (2010). Development and vulnerability factors in adolescent alcohol use. *Child and Adolescent Psychiatric Clinics of North America*, *19*(3), 493. https://doi.org/10.1016/j.chc.2010.03.004

Choi, S., Hong, S., Gatanaga, O. S., Yum, A. J., Lim, S., Neighbors, C. J., & Stella, S. Y. (2024). Substance use and treatment disparities among Asian Americans, Native Hawaiians, and Pacific Islanders: A systematic review. *Drug and Alcohol Dependence*, *256*, 111088.

Cigarette Smoking (2024d). CDC. https://www.cdc.gov/tobacco/about/index.html

Collins, S. E. (2016). Associations between socioeconomic factors and alcohol outcomes. *Alcohol Research : Current Reviews*, *38*(1), 83.

Conn, B. M., Brammer, W. A., Choi, S., Fedorova, E. V., Ataiants, J., Lankenau, S. E., & Wong, C. F. (2024). Mental and physical health-related cannabis motives mediate the relationship between childhood trauma and problematic cannabis use over time among emerging adult cannabis users. *Substance Use & Misuse*, *59*(2), 193–207. https://doi.org/10.1080/10826084.2023.2267111

Conway, K. P., Vullo, G. C., Nichter, B., Wang, J., Compton, W. M., Iannotti, R. J., & Simons-Morton, B. (2013). Prevalence and patterns of polysubstance use in a nationally representative sample of 10th graders in the United States. *Journal of Adolescent Health*, *52*(6), 716–723. https://doi.org/10.1016/j.jadohealth.2012.12.006

Co-Use of Tobacco with Alcohol and Cannabis (2023). National Cancer Institute. https://cancercontrol.cancer.gov/brp/tcrb/co-use-tobacco-alcohol-cannabis

Daniels S-AP, Kauahikaua L, Kaio C, Casson-Fisher JN, & Ku T. (2022). *Conceptualizing a new system of care in Hawai'i for Native Hawaiians and substance use.* In Onoye J, Calistro YT, Seo JY, Helm S, Yurow J, & Valera J. (2022) *Intersections of Substance Use Among Public Sectors and Health Disparities Populations: Implications for a System of Care*. Hawai'i State Department of Health Alcohol and Drug Abuse Division State Plan. Sponsored by State of Hawai'i Department of Health, Alcohol and Drug Abuse Division (#MOA-SP-21-01). Honolulu, HI. https://health.hawaii.gov/substance-abuse/state-plan/ Retrieved June 2024.

Drinking Levels and Patterns Defined (2024b). National Institute on Alcohol Abuse and Alcoholism (NIAAA). https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking

Drobes, D. J. (2002). Concurrent alcohol and tobacco dependence. *Alcohol Research & Health*, *26*(2), 136–142.

Drope, J., Cahn, Z., Kennedy, R., Liber, A. C., Stoklosa, M., Henson, R., Douglas, C. E., & Drope, J. (2017). Key issues surrounding the health impacts of electronic nicotine delivery systems (ENDS) and other sources of nicotine. *CA: A Cancer Journal for Clinicians*, *67*(6), 449–471. https://doi.org/10.3322/caac.21413

Dunbar, M. S., Davis, J. P., Tucker, J. S., Seelam, R., Shih, R. A., & D'Amico, E. J. (2020). Developmental trajectories of tobacco/nicotine and cannabis use and patterns of product co-use in young adulthood. *Tobacco Use Insights*, *13*, 1179173X20949271. https://doi.org/10.1177/1179173X20949271

Dvorak, R. D., Sargent, E. M., Kilwein, T. M., Stevenson, B. L., Kuvaas, N. J., & Williams, T. J. (2014). Alcohol use and alcohol-related consequences: Associations with emotion regulation difficulties. *The American Journal of Drug and Alcohol Abuse*, *40*(2), 125–130. https://doi.org/10.3109/00952990.2013.877920

Dyar, C. (2022). A review of disparities in cannabis use and cannabis use disorder affecting sexual and gender minority populations and evidence for contributing factors. *Current Addiction Reports*, *9*(4), 589–597. https://doi.org/10.1007/s40429-022-00452-5

Emory, K., Buchting, F. O., Trinidad, D. R., Vera, L., & Emery, S. L. (2019). Lesbian, Gay, Bisexual, and Transgender (LGBT) View it differently than non-LGBT: Exposure to tobacco-related couponing, e-cigarette advertisements, and anti-tobacco messages on social and traditional media. *Nicotine & Tobacco Research*, *21*(4), 513–522. https://doi.org/10.1093/ntr/nty049

England, L. J., Bunnell, R. E., Pechacek, T. F., Tong, V. T., & McAfee, T. A. (2015). nicotine and the developing human: A neglected element in the electronic cigarette debate. *American Journal of Preventive Medicine*, *49*(2), 286–293. https://doi.org/10.1016/j.amepre.2015.01.015

Esser, M. B., Leung, G., Sherk, A., Bohm, M. K., Liu, Y., Lu, H., & Naimi, T. S. (2022). Estimated deaths attributable to excessive alcohol use among US adults aged 20 to 64 years, 2015 to 2019. *JAMA Network Open*, *5*(11), e2239485. https://doi.org/10.1001/jamanetworkopen.2022.39485

Esser, M. B., Sherk, A., Liu, Y., Henley, S. J., & Naimi, T. S. (2024). Reducing alcohol use to prevent cancer deaths: estimated effects among U.S. adults. *American Journal of Preventive Medicine*, *66*(4), 725–729. https://doi.org/10.1016/j.amepre.2023.12.003

Facts About U.S. Deaths from Excessive Alcohol Use (2024e). Center for Disease Control and Prevention (CDC). https://www.cdc.gov/alcohol/facts-stats/index.html

Fadus, M. C., Smith, T. T., & Squeglia, L. M. (2019). The rise of e-cigarettes, pod mod devices, and JUUL among youth: Factors influencing use, health implications, and downstream effects. *Drug and Alcohol Dependence*, *201*, 85–93. https://doi.org/10.1016/j.drugalcdep.2019.04.011

Fluharty, M., Taylor, A. E., Grabski, M., & Munafò, M. R. (2017). The association of cigarette smoking with depression and anxiety: A systematic review. *Nicotine & Tobacco Research*, *19*(1), 3–13. https://doi.org/10.1093/ntr/ntw140

Frie, J. A., Nolan, C. J., Murray, J. E., & Khokhar, J. Y. (2022). addiction-related outcomes of nicotine and alcohol co-use: New insights following the rise in vaping. *Nicotine & Tobacco Research*, *24*(8), 1141–1149. https://doi.org/10.1093/ntr/ntab231

Fried, P. A., Watkinson, B., & Gray, R. (2006). Neurocognitive consequences of cigarette smoking in young adults—A comparison with pre-drug performance. *Neurotoxicology and Teratology*, *28*(4), 517–525. https://doi.org/10.1016/j.ntt.2006.06.003

Gaiha, S. M., Cheng, J., & Halpern-Felsher, B. (2020). Association between youth smoking, electronic cigarette use, and COVID-19. *Journal of Adolescent Health*, *67*(4), 519–523. https://doi.org/10.1016/j.jadohealth.2020.07.002

Galván, A. (2020). The need for sleep in the adolescent brain. *Trends in Cognitive Sciences*, *24*(1), 79–89. https://doi.org/10.1016/j.tics.2019.11.002

Gameon, J. A., & Skewes, M. C. (2021). Historical trauma and substance use among American Indian people with current substance use problems. *Psychology of Addictive Behaviors*, *35*(3), 295–309. https://doi.org/10.1037/adb0000729

Goebert, D., & Nishimura, S. (2011). Comparison of substance abuse treatment utilization and preferences among Native Hawaiians, Asian Americans and Euro Americans. *Journal of Substance Use*, 16(2), 161-170.

Gonzales, G., Przedworski, J., & Henning-Smith, C. (2016). Comparison of health and health risk factors between lesbian, gay, and bisexual adults and heterosexual adults in the United States: Results from the National Health Interview Survey. *JAMA Internal Medicine*, *176*(9), 1344–1351. https://doi.org/10.1001/jamainternmed.2016.3432

Goriounova, N. A., & Mansvelder, H. D. (2012). Short- and long-term consequences of nicotine exposure during adolescence for prefrontal cortex neuronal network function. *Cold Spring Harbor Perspectives in Medicine*, *2*(12), a012120. https://doi.org/10.1101/cshperspect.a012120

Graham, R., & Kahn, N. F. (Eds.) (with Committee on Applying Lessons of Optimal Adolescent Health to Improve Behavioral Outcomes for Youth, Board on Children, Youth, and Families, Division of Behavioral and Social Sciences and Education, Health and Medicine Division, & National Academies of Sciences, Engineering, and Medicine). (2020). *Promoting Positive Adolescent Health Behaviors and Outcomes: Thriving in the 21st Century*. National Academies Press. https://doi.org/10.17226/25552

Green, K. M., Musci, R. J., Johnson, R. M., Matson, P. A., Reboussin, B. A., & Ialongo, N. S. (2016). Outcomes associated with adolescent marijuana and alcohol use among urban young adults: A prospective study. *Addictive Behaviors*, *53*, 155–160. https://doi.org/10.1016/j.addbeh.2015.10.014

Hall, W. (2015). What has research over the past two decades revealed about the adverse health effects of recreational cannabis use? *Addiction*, *110*(1), 19–35. https://doi.org/10.1111/add.12703

Hasin, D. S., Shmulewitz, D., & Sarvet, A. L. (2019). Time trends in US cannabis use and cannabis use disorders overall and by sociodemographic subgroups: A narrative review and new findings. *The American Journal of Drug and Alcohol Abuse*, *45*(6), 623–643. https://doi.org/10.1080/00952990.2019.1569668

Hawaii Added More Than 94,000 People Since 2010 (2021, August 25). U.S. Census Bureau. https://www.census.gov/library/stories/state-by-state/hawaii-population-change-between-census-decade.html

Hawaii becomes first U.S. state to raise smoking age to 21 (2015, June 19). Reuters. https://www.reuters.com/article/us-usa-hawaii-tobacco/hawaii-becomes-first-u-s-state-to-raise-smoking-age-to-21-idUSKBN0P006V20150620/?feedType=nl&feedName=healthNews

Hawaii Census Bureau Profile (n.d.[a]). U.S. Census Bureau. Retrieved October 7, 2024, from https://data.census.gov/profile/Hawaii?g=040XX00US15

Hammond, D., Goodman, S., Wadsworth, E., Freeman, T. P., Kilmer, B., Schauer, G., ... & Hall, W. (2022). Trends in the use of cannabis products in Canada and the USA, 2018–2020: Findings from the International Cannabis Policy Study. *International Journal of Drug Policy*, *105*, 103716.

Hayaki, J., Anderson, B. J., & Stein, M. D. (2016). Dual cannabis and alcohol use disorders in young adults: Problems magnified. *Substance Abuse*, *37*(4), 579–583. https://doi.org/10.1080/08897077.2016.1176613

Hernández-Serrano, O., Gras, M. E., & Font-Mayolas, S. (2018). Concurrent and simultaneous use of cannabis and tobacco and its relationship with academic achievement amongst university students. *Behavioral Sciences*, *8*(3), 31. https://doi.org/10.3390/bs8030031

Hill, D. S., Shanahan, D. L., Costello, D. E. J., & Copeland, D. W. (2017). Predicting persistent, limited, and delayed problematic cannabis use in early adulthood: Findings from a longitudinal study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *56*(11), 966. https://doi.org/10.1016/j.jaac.2017.08.012

Hiscock, R., Judge, K., & Bauld, L. (2011). Social inequalities in quitting smoking: What factors mediate the relationship between socioeconomic position and smoking cessation? *Journal of Public Health*, *33*(1), 39–47. https://doi.org/10.1093/pubmed/fdq097

Holmes, J., Ching, L., Tomika, K., Chosy, E., Pham, T., Bowie, A., Young, L., Ryan, J., & Starr, R. (2017). *Hawai'i Sexual and Gender Minority Health Report*. Hawaii Department of Health, Chronic Disease Prevention and Health Promotion Division. https://health.hawaii.gov/surveillance/files/2017/05/HawaiiSexualandGenderMinorityHealthReport.pdf

Hosseini, S., & Oremus, M. (2019). The effect of age of initiation of cannabis use on psychosis, depression, and anxiety among youth under 25 years. *The Canadian Journal of Psychiatry*, *64*(5), 304–312. https://doi.org/10.1177/0706743718809339

Hughto, J. M. W., Quinn, E. K., Dunbar, M. S., Rose, A. J., Shireman, T. I., & Jasuja, G. K. (2021). Prevalence and co-occurrence of alcohol, nicotine, and other substance use disorder diagnoses among us transgender and cisgender adults. *JAMA Network Open*, *4*(2), e2036512. https://doi.org/10.1001/jamanetworkopen.2020.36512

Hwahng, S. J., & Kaufman, M. R. (Eds.). (2024). *Global LGBTQ Health: Research, Policy, Practice, and Pathways*. Springer International Publishing. https://doi.org/10.1007/978-3-031-36204-0

Jeffers, A. M., Glantz, S., Byers, A., & Keyhani, S. (2021). Sociodemographic characteristics associated with and prevalence and frequency of cannabis use among adults in the US. *JAMA Network Open*, *4*(11), e2136571. https://doi.org/10.1001/jamanetworkopen.2021.36571

Jewett, A., Shults, R., Banerjee, T., & Bergen, G. (2015). *Alcohol-Impaired Driving Among Adults—United States, 2012*. Centers for Disease Control and Prevention (CDC). https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a2.htm

Karaye, I. M., Maleki, N., & Yunusa, I. (2023). Racial and ethnic disparities in alcohol-attributed deaths in the United States, 1999–2020. *International Journal of Environmental Research and Public Health*, *20*(8), 5587. https://doi.org/10.3390/ijerph20085587

Key Substance Use and Mental Health Indicators in the United States: Results from the 2023 National Survey on Drug Use and Health (HHS Publication No. PEP24-07-021, NSDUH Series H-59). (2024). Substance Abuse and Mental Health Services Administration (SAMHSA). https://www.samhsa.gov/data/report/2023-nsduh-annual-national-report

Keyes, K. M., Liu, X. C., & Cerda, M. (2012). The role of race/ethnicity in alcohol-attributable injury in the United States. *Epidemiologic Reviews*, *34*(1), 89–102. https://doi.org/10.1093/epirev/mxr018

Lauckner, C., Haney, K., Sesenu, F., & Kershaw, T. (2023). Interventions to reduce alcohol use and hiv risk among sexual and gender minority populations: A systematic review. *Current HIV/AIDS Reports*, *20*(4), 231–250. https://doi.org/10.1007/s11904-023-00660-2

Lechner, W. V., Janssen, T., Kahler, C. W., Audrain-McGovern, J., & Leventhal, A. M. (2017). Bi-directional associations of electronic and combustible cigarette use onset patterns with depressive symptoms in adolescents. *Preventive Medicine*, *96*, 73–78. https://doi.org/10.1016/j.ypmed.2016.12.034

Liddell, C. (2020). *Urban and Rural Areas in the State of Hawaii: 2020*. Research and Economic Analysis Division (READ) of the Department of Business, Economic Development & Tourism (DBEDT), State of Hawaii. https://files.hawaii.gov/dbedt/census/census_2020/data/reports/HI_Urban-Rural_2020.pdf

Lorenzetti, V., Hoch, E., & Hall, W. (2020). Adolescent cannabis use, cognition, brain health and educational outcomes: A review of the evidence. *European Neuropsychopharmacology*, *36*, 169–180. https://doi.org/10.1016/j.euroneuro.2020.03.012

Lozano, A., Liu, F., Lee, T. K., Prado, G., Schwartz, S. J., Leventhal, A. M., Kelleghan, A. R., Unger, J. B., & Barrington-Trimis, J. L. (2021). Bidirectional associations between e-cigarette use and alcohol use across adolescence. *Drug and Alcohol Dependence*, *220*, 108496. https://doi.org/10.1016/j.drugalcdep.2020.108496

Mattingly, D. T., Richardson, M. K., & Hart, J. L. (2024). Prevalence of and trends in current cannabis use among US youth and adults, 2013–2022. *Drug and Alcohol Dependence Reports*, *12*, 100253. https://doi.org/10.1016/j.dadr.2024.100253

McHugh, R. K., & Weiss, R. D. (2019). Alcohol use disorder and depressive disorders. *Alcohol Research : Current Reviews*, *40*(1), arcr.v40.1.01. https://doi.org/10.35946/arcr.v40.1.01

Mereish, E. H. (2019). Substance use and misuse among sexual and gender minority youth. *Current Opinion in Psychology*, *30*, 123–127. https://doi.org/10.1016/j.copsyc.2019.05.002

Metrik, J., Caswell, A. J., Magill, M., Monti, P. M., & Kahler, C. W. (2016). Sexual risk behavior and heavy drinking among weekly marijuana users. *Journal of Studies on Alcohol and Drugs*, *77*(1), 104–112. https://doi.org/10.15288/jsad.2016.77.104

Midanik, L. T., Tam, T. W., & Weisner, C. (2007). Concurrent and simultaneous drug and alcohol use: Results of the 2000 National Alcohol Survey. *Drug and Alcohol Dependence*, *90*(1), 72–80. https://doi.org/10.1016/j.drugalcdep.2007.02.024

Moreno, M. A., & Whitehill, J. M. (2014). Influence of social media on alcohol use in adolescents and young adults. *Alcohol Research : Current Reviews*, *36*(1), 91.

Moustafa, A. F., Rodriguez, D., Pianin, S. H., Testa, S. M., & Audrain-McGovern, J. E. (2022). Dual use of nicotine and cannabis through vaping among adolescents. *American Journal of Preventive Medicine*, *63*(1), 60–67. https://doi.org/10.1016/j.amepre.2021.11.022

National Academies of Sciences, Engineering, and Medicine. *The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research*. (2017). Washington, DC: The National Academies Press. https://doi.org/10.17226/24625

Niederdeppe, J., Avery, R. J., Tabor, E., Lee, N. W., Welch, B., & Skurka, C. (2021). Estimated televised alcohol advertising exposure in the past year and associations with past 30-day drinking behavior among American adults: Results from a secondary analysis of large-scale advertising and survey data. *Addiction*, *116*(2), 280–289. https://doi.org/10.1111/add.15088

Office of Hawaiian Affairs, Research, Demography. (2022). *Native Hawaiian Health Fact Sheet 2022. Volume IV: Native Hawaiian Health Status.* Honolulu, HI.
Pacek, L. R., Malcolm, R. J., & Martins, S. S. (2012). Race/ethnicity differences between alcohol, marijuana, and co-occurring alcohol and marijuana use disorders and their association with public health and social problems using a national sample. *The American Journal on Addictions*, *21*(5), 435–444. https://doi.org/10.1111/j.1521-0391.2012.00249.x
Pacek, L. R., Martins, S. S., & Crum, R. M. (2013). The bidirectional relationships between alcohol, cannabis, co-occurring alcohol and cannabis use disorders with major depressive disorder: Results from a national sample. *Journal of Affective Disorders*, *148*(0), 188–195. https://doi.org/10.1016/j.jad.2012.11.059
Padon, A. A., Rimal, R. N., DeJong, W., Siegel, M., & Jernigan, D. (2018). Assessing youth-appealing content in alcohol advertisements: Application of a content appealing to youth (CAY) index. *Health Communication*, *33*(2), 164–173. https://doi.org/10.1080/10410236.2016.1250331
Patrick, M. E., Schulenberg, J. E., Miech, R. A., Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2023). *Monitoring the Future Panel Study Annual Report: National Data on Substance Use among Adults Ages 19 to 60, 1976-2021*. Institute for Social Research. https://eric.ed.gov/?id=ED623992
Pedersen, W., & Von Soest, T. (2009). Smoking, nicotine dependence and mental health among young adults: A 13-year population-based longitudinal study. *Addiction*, *104*(1), 129–137. https://doi.org/10.1111/j.1360-0443.2008.02395.x
People With Low Socioeconomic Status Experience a Health Burden From Commercial Tobacco. (2024f). CDC. https://www.cdc.gov/tobacco-health-equity/collection/low-ses-health-burden.html
Peters, E. N., Schwartz, R. P., Wang, S., O'Grady, K. E., & Blanco, C. (2014). Psychiatric, psychosocial, and physical health correlates of co-occurring cannabis use disorders and nicotine dependence. *Drug and Alcohol Dependence*, *134*, 228–234. https://doi.org/10.1016/j.drugalcdep.2013.10.003
Pokhrel, P., & Herzog, T. A. (2014). Historical trauma and substance use among Native Hawaiian college students. *American Journal of Health Behavior*, *38*(3), 420-429.
Priority Populations (2022). Healthy Hawai'i Strategic Plan. https://hhsp.hawaii.gov/about/priority_populations
QuickFacts: Hawaii (n.d.[b]). U.S. Census Bureau. Retrieved October 21, 2024, from https://www.census.gov/quickfacts/fact/table/HI/PST045223
Quigley, J., Ryan, S. A., Camenga, D. R., Patrick, S. W., Plumb, J., & Walker-Harding, L. (2019). Alcohol use by youth. *Pediatrics*, *144*(1), e20191356. https://doi.org/10.1542/peds.2019-1356
Quint, J., Matagi, C., & Kaholokula, J. K. A. (2023). The Hawai'i NHPI data disaggregation imperative: Preventing data genocide through statewide race and ethnicity standards. *Hawai'i Journal of Health & Social Welfare*, *82*(10 Suppl 1), 67.
Ramer, N. E., Read, J. P., & Colder, C. R. (2021). Parents' cannabis-related attitudes and emerging adult offspring cannabis use: Testing the mediating effect of perceived parental approval. *Substance Use & Misuse*, *56*(2), 308. https://doi.org/10.1080/10826084.2020.1868004
Reboussin, B. A., Wagoner, K. G., Ross, J. C., Suerken, C. K., & Sutfin, E. L. (2021). Tobacco and marijuana co-use in a cohort of young adults: Patterns, correlates and reasons for co-use. *Drug and Alcohol Dependence*, *227*, 109000. https://doi.org/10.1016/j.drugalcdep.2021.109000
Regulation and Enforcement of Non-Tobacco Nicotine (NTN) Products. (2024, February 6). FDA; FDA. https://www.fda.gov/tobacco-products/products-ingredients-components/regulation-and-enforcement-non-tobacco-nicotine-ntn-products

Roche, D. J. O., Bujarski, S., Green, R., Hartwell, E. E., Leventhal, A. M., & Ray, L. A. (2019). Alcohol, tobacco, and marijuana consumption is associated with increased odds of same-day substance co- and tri-use. *Drug and Alcohol Dependence*, *200*, 40–49. https://doi.org/10.1016/j.drugalcdep.2019.02.035

Rose, S. W., Mayo, A., Ganz, O., Perreras, L., D'Silva, J., & Cohn, A. (2019). Perceived racial/ethnic discrimination, marketing, and substance use among young adults. *Journal of Ethnicity in Substance Abuse*, *18*(4), 558–577. https://doi.org/10.1080/15332640.2018.1425949

Rubinstein, M. L., Rait, M. A., & Prochaska, J. J. (2014). Frequent marijuana use is associated with greater nicotine addiction in adolescent smokers. *Drug and Alcohol Dependence*, *141*, 159–162. https://doi.org/10.1016/j.drugalcdep.2014.05.015

Schauer, G. L., & Peters, E. N. (2018). Correlates and trends in youth co-use of marijuana and tobacco in the United States, 2005–2014. *Drug and Alcohol Dependence*, *185*, 238–244. https://doi.org/10.1016/j.drugalcdep.2017.12.007

Seaman, E. L., Green, K. M., Wang, M. Q., Quinn, S. C., & Fryer, C. S. (2019). Examining prevalence and correlates of cigarette and marijuana co-use among young adults using ten years of NHANES data. *Addictive Behaviors*, *96*, 140–147. https://doi.org/10.1016/j.addbeh.2019.04.014

Sexual Risk Behaviors. (2024g). CDC. https://www.cdc.gov/healthyyouth/sexualbehaviors/index.htm

Sheehan, B. E., Grucza, R. A., & Plunk, A. D. (2021). Association of racial disparity of cannabis possession arrests among adults and youths with statewide cannabis decriminalization and legalization. *JAMA Health Forum*, *2*(10), e213435. https://doi.org/10.1001/jamahealthforum.2021.3435

Simon, P., Buta, E., Jackson, A., Camenga, D. R., Kong, G., Morean, M. E., Bold, K. W., Davis, D. R., Krishnan-Sarin, S., & Gueorguieva, R. (2023). The first nicotine product tried is associated with current multiple nicotine product use and nicotine dependence among a nationally representative sample of U.S. youths. *Preventive Medicine*, *169*, 107437. https://doi.org/10.1016/j.ypmed.2023.107437

Singh, N., Wanjari, A., & Sinha, A. H. (2023). Effects of nicotine on the central nervous system and sleep quality in relation to other stimulants: A narrative review. *Cureus*, *15*(11), e49162. https://doi.org/10.7759/cureus.49162

Sleep. (2024h). CDC. https://www.cdc.gov/cdi/indicator-definitions/sleep.html

Spindle, T. R., Bonn-Miller, M. O., & Vandrey, R. (2019). Changing landscape of cannabis: Novel products, formulations, and methods of administration. *Current Opinion in Psychology*, *30*, 98-102.

Staff, J., Maggs, J. L., Seto, C., Dillavou, J., & Vuolo, M. (2020). Electronic and combustible cigarette use in adolescence: links with adjustment, delinquency, and other substance use. *Journal of Adolescent Health*, *66*(1), 39–47. https://doi.org/10.1016/j.jadohealth.2019.08.030

Stein, M. D., & Friedmann, P. D. (2005). Disturbed sleep and its relationship to alcohol use. *Substance Abuse: Official Publication of the Association for Medical Education and Research in Substance Abuse*, *26*(1), 1. https://doi.org/10.1300/j465v26n01_01

Subbaraman, M. S., & Kerr, W. C. (2015). Simultaneous versus concurrent use of alcohol and cannabis in the National Alcohol Survey. *Alcoholism: Clinical and Experimental Research*, *39*(5), 872–879. https://doi.org/10.1111/acer.12698

Subica, A. M., Guerrero, E. G., Martin, T. K., Okamoto, S. K., Aitaoto, N., Moss, H. B., Morey, B. N., Wu, L. T., (2022). Native Hawaiian/Pacific Islander alcohol, tobacco and other drug use,

mental health and treatment need in the United States during COVID-19. *Drug and Alcohol Review*, 41 (7), 1653–1663.
Subramaniam, V. N., Menezes, A. R., DeSchutter, A., & Lavie, C. J. (2019). The cardiovascular effects of marijuana: Are the potential adverse effects worth the high? *Missouri Medicine*, *116*(2), 146.
The Healthcare Professional's Core Resource on Alcohol (2024c). National Institute on Alcohol Abuse and Alcoholism (NIAAA). https://www.niaaa.nih.gov/health-professionals-communities/core-resource-on-alcohol/medical-complications-common-alcohol-related-concerns#pub-toc0
The Toll of Tobacco in Hawaii (2024, September 11). Campaign for Tobacco-Free Kids. https://www.tobaccofreekids.org/problem/toll-us/hawaii
Thompson, K., Holley, M., Sturgess, C., & Leadbeater, B. (2021). Co-use of alcohol and cannabis: longitudinal associations with mental health outcomes in young adulthood. *International Journal of Environmental Research and Public Health*, *18*(7), Article 7. https://doi.org/10.3390/ijerph18073652
Tobacco (2022b). Hawai'i Health Data Warehouse (HHDW). https://hhdw.org/health-topics/tobacco-2/
Tobacco (2024i). Centers for Disease Control and Prevention (CDC). https://www.cdc.gov/cdi/indicator-definitions/tobacco.html
Top 10 Communities Disproportionately Affected by Cigarette Smoking and Tobacco Use. (n.d.). American Lung Association. Retrieved November 25, 2024, from https://www.lung.org/research/sotc/by-the-numbers/top-10-populations-affected
Tucker, J. S., Pedersen, E. R., Seelam, R., Dunbar, M. S., Shih, R. A., & D'Amico, E. J. (2019a). Types of cannabis and tobacco/nicotine co-use and associated outcomes in young adulthood. *Psychology of Addictive Behaviors : Journal of the Society of Psychologists in Addictive Behaviors*, *33*(4), 401–411. https://doi.org/10.1037/adb0000464
Tucker, J. S., Rodriguez, A., Dunbar, M. S., Pedersen, E. R., Davis, J. P., Shih, R. A., & D'Amico, E. J. (2019b). Cannabis and tobacco use and co-use: Trajectories and correlates from early adolescence to emerging adulthood. *Drug and Alcohol Dependence*, *204*, 107499. https://doi.org/10.1016/j.drugalcdep.2019.06.004
Urban and Rural. (n.d.[c]). U.S. Census Bureau. Retrieved January 20, 2025, from https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html
Understanding Binge Drinking (2024d). National Institute on Alcohol Abuse and Alcoholism (NIAAA). https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/binge-drinking
U.S. Centers for Disease Control and Prevention (2021). *Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products* 1 Feb 2021. Retrieved from https://archive.cdc.gov/#/details?url=https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html on January 2, 2025.
Wade, N. E., Courtney, K. E., Doran, N., Baca, R., Aguinaldo, L. D., Thompson, C., Finegan, J., & Jacobus, J. (2022). Young adult e-cigarette and combustible tobacco users attitudes, substance use behaviors, mental health, and neurocognitive performance. *Brain Sciences*, *12*(7), Article 7. https://doi.org/10.3390/brainsci12070889
Wells, B. E., Kelly, B. C., Golub, S. A., Grov, C., & Parsons, J. T. (2010). Patterns of alcohol consumption and sexual behavior among young adults in nightclubs. *The American Journal of Drug and Alcohol Abuse*, *36*(1), 39. https://doi.org/10.3109/00952990903544836

White, A., & Hingson, R. (2014). the burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research : Current Reviews*, *35*(2), 201.
White, T. J., Redner, R., Bunn, J. Y., & Higgins, S. T. (2016). Do socioeconomic risk factors for cigarette smoking extend to smokeless tobacco use? *Nicotine & Tobacco Research*, *18*(5), 869–873. https://doi.org/10.1093/ntr/ntv199
Whiteley, D., Rickards-Hill, D., Dimova, E., & Emslie, C. (2023). Performing solidarity? A scoping review of alcohol marketing to sexual and gender minorities. *Drugs: Education, Prevention and Policy*, *0*(0), 1–9. https://doi.org/10.1080/09687637.2023.2260550
Winickoff, J. P., Evins, A. E., & Levy, S. (2024). Vaping in youth. *JAMA*, *332*(9), 749–750. https://doi.org/10.1001/jama.2024.13403
Winters, K. C., & Lee, C.-Y. S. (2008). Likelihood of developing an alcohol and cannabis use disorder during youth: Association with recent use and age. *Drug and Alcohol Dependence*, *92*(1–3), 239–247. https://doi.org/10.1016/j.drugalcdep.2007.08.005
Yurasek, A. M., Aston, E. R., & Metrik, J. (2017). Co-use of alcohol and cannabis: A review. *Current Addiction Reports*, *4*(2), 184–193. https://doi.org/10.1007/s40429-017-0149-8

Appendix

Table S1. Current Alcohol Use and Patterns of Use among Middle School Students, 2019-2023 YRBS

	2019			2021			2023			Combined Years		
	Any Current Alcohol Use	Any Current Binge Drinking	Early Alcohol Initiation	Any Current Alcohol Use	Any Current Binge Drinking	Early Alcohol Initiation	Any Current Alcohol Use	Any Current Binge Drinking	Early Alcohol Initiation	Any Current Alcohol Use	Any Current Alcohol Use	Early Alcohol Initiation
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	7.0%, 95%CI: 6.22%, 7.93%	4.6%, 95%CI: 3.85%, 5.49%	18.2%, 95%CI: 16.5%, 20.1%	6.4%, 95%CI: 5.11%, 7.88%	2.1%, 95%CI: 1.70%, 2.68%	18.2%, 95%CI: 16.6%, 19.9%	7.1%, 95%CI: 6.14%, 8.26%	3.3%, 95%CI: 2.72%, 4.02%	19.2%, 95%CI: 18.1%, 20.4%	6.8%, 95%CI: 6.21%, 7.52%	3.4%, 95%CI: 3.04%, 3.77%	18.5%, 95%CI: 17.6%, 19.5%
County of School												
Honolulu County	5.5%, 95%CI: 4.51%, 6.82%	3.8%, 95%CI: 2.81%, 5.18%	15.4%, 95%CI: 13.1%, 18.1%	5.7%, 95%CI: 3.94%, 8.16%	1.6%, 95%CI: 1.06%, 2.37%	17.1%, 95%CI: 14.8%, 19.6%	5.8%, 95%CI: 4.55%, 7.39%	2.6%, 95%CI: 1.91%, 3.63%	17.9%, 95%CI: 16.5%, 19.4%	5.7%, 95%CI: 4.80%, 6.71%	2.7%, 95%CI: 2.27%, 3.27%	16.7%, 95%CI: 15.4%, 18.2%
Hawaii County	11.9%, 95%CI: 10.0%, 14.0%	6.9%, 95%CI: 5.64%, 8.38%	28.6%, 95%CI: 25.3%, 32.1%	9.2%, 95%CI: 7.48%, 11.2%	4.0%, 95%CI: 2.85%, 5.45%	23.2%, 95%CI: 20.4%, 26.1%	11.9%, 95%CI: 9.55%, 14.7%	5.5%, 95%CI: 4.04%, 7.42%	25.1%, 95%CI: 21.8%, 28.7%	10.9%, 95%CI: 9.61%, 12.4%	5.4%, 95%CI: 4.67%, 6.35%	25.7%, 95%CI: 23.8%, 27.7%
Maui County	8.1%, 95%CI: 6.52%, 9.90%	5.1%, 95%CI: 3.88%, 6.56%	18.9%, 95%CI: 16.7%, 21.4%	6.3%, 95%CI: 5.16%, 7.70%	2.5%, 95%CI: 1.72%, 3.52%	17.8%, 95%CI: 15.5%, 20.3%	8.3%, 95%CI: 6.51%, 10.6%	4.4%, 95%CI: 3.20%, 6.01%	18.8%, 95%CI: 16.6%, 21.3%	7.5%, 95%CI: 6.61%, 8.61%	4.0%, 95%CI: 3.37%, 4.72%	18.5%, 95%CI: 17.1%, 20.0%
Kauai County	9.4%, 95%CI: 7.60%, 11.5%	6.6%, 95%CI: 4.88%, 8.82%	22.9%, 95%CI: 20.2%, 25.9%	6.6%, 95%CI: 5.20%, 8.30%	2.7%, 95%CI: 1.86%, 3.97%	18.5%, 95%CI: 15.8%, 21.5%	6.6%, 95%CI: 4.68%, 9.16%	2.5%, 95%CI: 1.56%, 4.06%	18.5%, 95%CI: 15.2%, 22.3%	7.5%, 95%CI: 6.51%, 8.71%	4.1%, 95%CI: 3.27%, 5.02%	20.1%, 95%CI: 18.3%, 22.1%
Sex Assigned at Birth												
Male	5.5%, 95%CI: 4.24%, 7.14%	3.9%, 95%CI: 2.87%, 5.34%	17.5%, 95%CI: 15.8%, 19.4%	5.3%, 95%CI: 3.90%, 7.18%	1.5%, 95%CI: 1.06%, 2.17%	16.2%, 95%CI: 14.2%, 18.3%	5.7%, 95%CI: 4.63%, 7.11%	2.7%, 95%CI: 1.97%, 3.76%	17.8%, 95%CI: 16.7%, 18.9%	5.5%, 95%CI: 4.80%, 6.34%	2.8%, 95%CI: 2.23%, 3.41%	17.2%, 95%CI: 16.1%, 18.3%
Female	8.7%, 95%CI: 7.42%, 10.1%	5.3%, 95%CI: 4.34%, 6.36%	18.9%, 95%CI: 16.7%, 21.3%	7.5%, 95%CI: 6.15%, 9.13%	2.9%, 95%CI: 2.23%, 3.69%	20.2%, 95%CI: 18.3%, 22.2%	8.4%, 95%CI: 7.23%, 9.72%	4.0%, 95%CI: 3.39%, 4.71%	20.7%, 95%CI: 18.7%, 22.7%	8.2%, 95%CI: 7.46%, 8.98%	4.1%, 95%CI: 3.55%, 4.69%	19.9%, 95%CI: 18.7%, 21.1%
Grade Level												
6th Grade	4.8%, 95%CI: 3.45%, 6.64%	3.2%, 95%CI: 2.19%, 4.56%	14.0%, 95%CI: 11.0%, 17.7%	3.9%, 95%CI: 2.91%, 5.32%	1.2%, 95%CI: 0.70%, 2.13%	17.3%, 95%CI: 14.8%, 20.2%	5.4%, 95%CI: 3.69%, 7.90%	2.1%, 95%CI: 1.24%, 3.43%	18.3%, 95%CI: 16.0%, 20.9%	4.7%, 95%CI: 3.90%, 5.68%	2.2%, 95%CI: 1.59%, 2.90%	16.5%, 95%CI: 15.0%, 18.1%
7th Grade	5.3%, 95%CI: 4.31%, 6.58%	3.4%, 95%CI: 2.49%, 4.68%	19.6%, 95%CI: 17.1%, 22.3%	5.0%, 95%CI: 3.40%, 7.26%	1.5%, 95%CI: 0.98%, 2.39%	17.1%, 95%CI: 15.2%, 19.0%	6.8%, 95%CI: 5.74%, 8.07%	2.9%, 95%CI: 2.28%, 3.58%	19.8%, 95%CI: 17.5%, 22.2%	5.8%, 95%CI: 5.12%, 6.48%	2.7%, 95%CI: 2.30%, 3.13%	19.0%, 95%CI: 17.5%, 20.5%
8th Grade	10.2%, 95%CI: 8.64%, 12.0%	6.2%, 95%CI: 4.87%, 7.96%	18.9%, 95%CI: 16.7%, 21.2%	8.9%, 95%CI: 7.00%, 11.3%	3.2%, 95%CI: 2.27%, 4.41%	19.6%, 95%CI: 17.0%, 22.5%	8.6%, 95%CI: 6.87%, 10.7%	4.7%, 95%CI: 3.57%, 6.06%	19.2%, 95%CI: 16.9%, 21.8%	9.3%, 95%CI: 8.26%, 10.4%	4.7%, 95%CI: 3.92%, 5.58%	19.2%, 95%CI: 18.0%, 20.5%
DOH Race/Ethnicity												
White	6.9%, 95%CI: 4.85%, 9.83%	3.1%, 95%CI: 1.71%, 5.42%	18.8%, 95%CI: 14.1%, 24.5%	6.1%, 95%CI: 3.90%, 9.31%	0.9%, 95%CI: 0.39%, 2.27%	17.6%, 95%CI: 12.4%, 24.3%	5.8%, 95%CI: 4.18%, 8.08%	1.9%, 95%CI: 0.98%, 3.83%	17.1%, 95%CI: 12.9%, 22.4%	6.2%, 95%CI: 5.05%, 7.68%	2.0%, 95%CI: 1.38%, 2.80%	17.8%, 95%CI: 15.9%, 19.9%
Native Hawaiian	10.0%, 95%CI: 8.40%, 11.9%	6.9%, 95%CI: 5.52%, 8.55%	26.8%, 95%CI: 24.1%, 29.8%	10.2%, 95%CI: 8.49%, 12.3%	3.8%, 95%CI: 2.95%, 4.76%	22.4%, 95%CI: 19.3%, 25.9%	9.7%, 95%CI: 8.24%, 11.5%	5.4%, 95%CI: 3.93%, 7.28%	24.6%, 95%CI: 21.9%, 27.6%	10.0%, 95%CI: 9.05%, 11.0%	5.4%, 95%CI: 4.82%, 6.12%	24.8%, 95%CI: 23.1%, 26.6%
Japanese	3.7%, 95%CI: 1.31%, 9.77%	2.4%, 95%CI: 0.60%, 9.34%	10.5%, 95%CI: 5.05%, 20.5%	1.0%, 95%CI: 0.30%, 3.25%	0.5%, 95%CI: 0.11%, 2.36%	5.4%, 95%CI: 3.02%, 9.43%	1.8%, 95%CI: 0.42%, 7.51%	0.4%, 95%CI: 0.05%, 2.73%	13.0%, 95%CI: 6.71%, 23.7%	2.9%, 95%CI: 1.30%, 6.34%	1.8%, 95%CI: 0.50%, 6.30%	10.0%, 95%CI: 6.16%, 15.8%
Filipino	6.6%, 95%CI: 5.47%, 7.84%	4.1%, 95%CI: 2.37%, 6.84%	13.1%, 95%CI: 10.7%, 16.0%	4.0%, 95%CI: 2.28%, 6.94%	1.4%, 95%CI: 0.61%, 3.07%	13.1%, 95%CI: 10.3%, 16.6%	5.0%, 95%CI: 3.32%, 7.60%	2.2%, 95%CI: 1.27%, 3.74%	15.3%, 95%CI: 12.9%, 18.0%	5.2%, 95%CI: 4.05%, 6.68%	2.6%, 95%CI: 1.75%, 3.82%	13.8%, 95%CI: 12.4%, 15.3%
Other Asian	0.4%, 95%CI: 0.13%, 1.22%	0.2%, 95%CI: 0.03%, 0.68%	9.0%, 95%CI: 6.36%, 12.6%	3.9%, 95%CI: 1.49%, 9.68%	1.8%, 95%CI: 0.53%, 6.12%	14.2%, 95%CI: 8.52%, 22.8%	2.2%, 95%CI: 0.81%, 5.84%	1.1%, 95%CI: 0.25%, 5.03%	7.7%, 95%CI: 3.29%, 17.1%	1.9%, 95%CI: 0.80%, 4.25%	0.9%, 95%CI: 0.35%, 2.14%	10.1%, 95%CI: 7.59%, 13.2%
Other Pacific Islander	6.0%, 95%CI: 4.92%, 7.22%	5.0%, 95%CI: 4.02%, 6.15%	16.5%, 95%CI: 11.7%, 22.7%	3.8%, 95%CI: 2.09%, 6.85%	1.4%, 95%CI: 0.62%, 3.21%	13.0%, 95%CI: 7.41%, 21.9%	6.2%, 95%CI: 3.55%, 10.7%	2.8%, 95%CI: 0.77%, 9.56%	15.2%, 95%CI: 10.4%, 21.6%	5.5%, 95%CI: 3.99%, 7.53%	3.5%, 95%CI: 2.13%, 5.83%	15.4%, 95%CI: 12.3%, 19.1%
Black	2.9%, 95%CI: 0.53%, 14.3%	1.0%, 95%CI: 0.13%, 7.34%	23.8%, 95%CI: 15.4%, 34.8%	9.9%, 95%CI: 4.23%, 21.4%	4.9%, 95%CI: 1.75%, 12.8%	29.9%, 95%CI: 23.8%, 36.7%	11.9%, 95%CI: 3.80%, 31.6%	9.8%, 95%CI: 1.58%, 42.1%	32.8%, 95%CI: 22.1%, 45.7%	9.7%, 95%CI: 6.10%, 15.1%	6.0%, 95%CI: 1.97%, 17.1%	30.0%, 95%CI: 24.5%, 36.1%
AIAN	.	.	.	.	.	.	.	.	.	18.7%, 95%CI: 11.2%, 29.5%	3.0%, 95%CI: 0.72%, 11.8%	28.4%, 95%CI: 18.5%, 41.1%
Other Race/Ethnicity	11.5%, 95%CI: 10.1%, 13.0%	7.0%, 95%CI: 5.85%, 8.28%	24.0%, 95%CI: 21.9%, 26.3%	8.1%, 95%CI: 5.95%, 11.0%	3.3%, 95%CI: 2.29%, 4.77%	24.0%, 95%CI: 21.8%, 26.5%	9.4%, 95%CI: 7.58%, 11.6%	4.2%, 95%CI: 3.28%, 5.40%	23.6%, 95%CI: 20.7%, 26.7%	9.3%, 95%CI: 8.05%, 10.7%	4.5%, 95%CI: 3.83%, 5.18%	23.8%, 95%CI: 22.3%, 25.5%
Gender Identity												
Cisgender	6.9%, 95%CI: 6.14%, 7.79%	4.2%, 95%CI: 3.53%, 4.98%	18.3%, 95%CI: 16.5%, 20.2%	6.3%, 95%CI: 4.97%, 7.91%	2.1%, 95%CI: 1.74%, 2.64%	18.2%, 95%CI: 16.8%, 19.6%	7.0%, 95%CI: 5.88%, 8.24%	3.2%, 95%CI: 2.51%, 3.95%	18.9%, 95%CI: 17.8%, 20.0%	6.7%, 95%CI: 6.02%, 7.51%	3.2%, 95%CI: 2.86%, 3.61%	18.4%, 95%CI: 17.5%, 19.5%
Not Sure	6.9%, 95%CI: 3.04%, 15.1%	6.3%, 95%CI: 2.74%, 14.0%	16.0%, 95%CI: 8.92%, 27.0%	5.6%, 95%CI: 3.29%, 9.48%	2.8%, 95%CI: 1.26%, 6.07%	17.4%, 95%CI: 12.8%, 23.2%	6.8%, 95%CI: 3.91%, 11.5%	3.8%, 95%CI: 1.95%, 7.47%	24.7%, 95%CI: 16.1%, 36.1%	6.3%, 95%CI: 4.63%, 8.42%	3.9%, 95%CI: 2.61%, 5.71%	19.6%, 95%CI: 14.4%, 26.2%
Transgender	17.6%, 95%CI: 8.28%, 33.5%	14.2%, 95%CI: 5.55%, 31.8%	25.8%, 95%CI: 14.4%, 41.8%	16.9%, 95%CI: 5.16%, 43.2%	3.5%, 95%CI: 1.18%, 9.97%	30.0%, 95%CI: 16.8%, 47.7%	15.0%, 95%CI: 7.18%, 28.7%	8.5%, 95%CI: 3.54%, 19.2%	24.2%, 95%CI: 14.0%, 38.5%	16.4%, 95%CI: 8.29%, 29.9%	7.5%, 95%CI: 4.79%, 11.6%	27.1%, 95%CI: 18.0%, 38.5%
Mental Health Issue Ever												
No	3.6%, 95%CI: 2.36%, 5.54%	3.0%, 95%CI: 1.73%, 5.06%	13.1%, 95%CI: 11.0%, 15.6%	3.2%, 95%CI: 2.46%, 4.08%	1.0%, 95%CI: 0.46%, 2.28%	9.4%, 95%CI: 7.32%, 11.9%	3.1%, 95%CI: 2.03%, 4.74%	0.9%, 95%CI: 0.57%, 1.53%	11.5%, 95%CI: 9.41%, 14.0%	3.3%, 95%CI: 2.73%, 4.04%	1.8%, 95%CI: 1.22%, 2.58%	11.6%, 95%CI: 10.5%, 12.8%
Yes	8.7%, 95%CI: 7.25%, 10.4%	5.5%, 95%CI: 4.36%, 6.82%	20.7%, 95%CI: 18.3%, 23.4%	7.3%, 95%CI: 5.86%, 8.99%	2.5%, 95%CI: 1.97%, 3.12%	20.2%, 95%CI: 18.4%, 22.1%	8.1%, 95%CI: 7.07%, 9.23%	4.0%, 95%CI: 3.32%, 4.91%	21.7%, 95%CI: 20.0%, 23.4%	8.0%, 95%CI: 7.14%, 8.96%	4.0%, 95%CI: 3.50%, 4.55%	20.8%, 95%CI: 19.4%, 22.3%
Depressed Ever												
No	4.3%, 95%CI: 3.57%, 5.13%	2.7%, 95%CI: 2.24%, 3.24%	14.1%, 95%CI: 12.4%, 15.9%	4.1%, 95%CI: 3.14%, 5.31%	0.9%, 95%CI: 0.60%, 1.33%	12.1%, 95%CI: 10.5%, 14.0%	4.4%, 95%CI: 3.35%, 5.79%	1.7%, 95%CI: 1.21%, 2.40%	13.4%, 95%CI: 12.2%, 14.8%	4.3%, 95%CI: 3.80%, 4.78%	1.8%, 95%CI: 1.53%, 2.15%	13.3%, 95%CI: 12.3%, 14.3%
Yes	13.5%, 95%CI: 11.1%, 16.4%	8.3%, 95%CI: 6.54%, 10.4%	27.3%, 95%CI: 24.7%, 30.0%	10.7%, 95%CI: 8.55%, 13.4%	4.6%, 95%CI: 3.63%, 5.82%	29.8%, 95%CI: 25.5%, 34.5%	12.1%, 95%CI: 10.5%, 13.8%	6.3%, 95%CI: 5.07%, 7.85%	29.8%, 95%CI: 26.9%, 32.8%	12.0%, 95%CI: 10.7%, 13.5%	6.4%, 95%CI: 5.53%, 7.35%	28.9%, 95%CI: 26.9%, 31.0%
Ever Self-Harmed												
No	3.8%, 95%CI: 3.18%, 4.43%	2.3%, 95%CI: 1.80%, 2.99%	13.7%, 95%CI: 12.2%, 15.3%	4.0%, 95%CI: 3.17%, 5.00%	1.1%, 95%CI: 0.72%, 1.62%	12.5%, 95%CI: 11.2%, 13.9%	4.5%, 95%CI: 3.66%, 5.49%	1.9%, 95%CI: 1.31%, 2.63%	14.2%, 95%CI: 12.8%, 15.7%	4.1%, 95%CI: 3.57%, 4.63%	1.8%, 95%CI: 1.44%, 2.19%	13.5%, 95%CI: 12.6%, 14.4%
Yes	16.9%, 95%CI: 14.4%, 19.7%	10.4%, 95%CI: 8.33%, 13.0%	31.3%, 95%CI: 28.2%, 34.5%	13.3%, 95%CI: 10.4%, 16.8%	5.2%, 95%CI: 4.12%, 6.64%	33.7%, 95%CI: 29.6%, 38.1%	15.1%, 95%CI: 12.7%, 17.7%	7.7%, 95%CI: 6.14%, 9.49%	33.5%, 95%CI: 29.6%, 37.7%	15.1%, 95%CI: 13.5%, 16.8%	7.9%, 95%CI: 6.81%, 9.05%	32.8%, 95%CI: 30.5%, 35.1%

Table S2. Current Alcohol Use and Patterns of Use among High School Students, 2019-2023 YRBS

	2019			2021			2023			Combined Years		
	Any Current Alcohol Use	Any Current Binge Drinking	Early Alcohol Initiation	Any Current Alcohol Use	Any Current Binge Drinking	Early Alcohol Initiation	Any Current Alcohol Use	Any Current Binge Drinking	Early Alcohol Initiation	Any Current Alcohol Use	Any Current Alcohol Use	Early Alcohol Initiation
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	20.4%, 95%CI: 18.1%, 22.9%	10.9%, 95%CI: 9.16%, 12.9%	15.2%, 95%CI: 13.1%, 17.4%	16.6%, 95%CI: 15.2%, 18.1%	8.3%, 95%CI: 7.32%, 9.48%	13.9%, 95%CI: 12.6%, 15.5%	16.8%, 95%CI: 15.2%, 18.6%	8.6%, 95%CI: 7.59%, 9.71%	13.8%, 95%CI: 12.3%, 15.5%	17.9%, 95%CI: 16.7%, 19.2%	9.2%, 95%CI: 8.49%, 10.0%	14.3%, 95%CI: 13.3%, 15.3%
County of School												
Honolulu County	17.3%, 95%CI: 14.2%, 21.0%	8.9%, 95%CI: 6.56%, 11.9%	13.1%, 95%CI: 10.3%, 16.6%	15.1%, 95%CI: 13.2%, 17.3%	7.2%, 95%CI: 5.80%, 8.83%	12.5%, 95%CI: 10.8%, 14.5%	16.5%, 95%CI: 14.4%, 18.9%	7.8%, 95%CI: 6.50%, 9.31%	12.6%, 95%CI: 10.6%, 14.9%	16.3%, 95%CI: 14.6%, 18.1%	7.9%, 95%CI: 6.89%, 9.09%	12.7%, 95%CI: 11.4%, 14.2%
Hawaii County	27.9%, 95%CI: 24.8%, 31.1%	16.1%, 95%CI: 13.8%, 18.6%	22.0%, 95%CI: 19.2%, 25.0%	21.0%, 95%CI: 17.3%, 25.2%	11.6%, 95%CI: 9.25%, 14.4%	19.2%, 95%CI: 16.3%, 22.6%	19.5%, 95%CI: 16.3%, 23.1%	11.8%, 95%CI: 9.76%, 14.3%	17.3%, 95%CI: 14.4%, 20.6%	22.5%, 95%CI: 20.5%, 24.8%	13.0%, 95%CI: 11.7%, 14.5%	19.4%, 95%CI: 17.7%, 21.3%
Maui County	27.7%, 95%CI: 24.6%, 30.9%	14.8%, 95%CI: 12.7%, 17.2%	17.4%, 95%CI: 15.2%, 19.8%	18.0%, 95%CI: 15.3%, 21.0%	10.1%, 95%CI: 8.14%, 12.4%	14.8%, 95%CI: 12.7%, 17.2%	16.6%, 95%CI: 13.2%, 20.8%	9.1%, 95%CI: 7.07%, 11.8%	15.2%, 95%CI: 12.8%, 18.1%	20.6%, 95%CI: 18.6%, 22.6%	11.2%, 95%CI: 9.90%, 12.7%	15.8%, 95%CI: 14.4%, 17.2%
Kauai County	24.3%, 95%CI: 21.1%, 27.7%	14.1%, 95%CI: 11.7%, 16.8%	17.4%, 95%CI: 15.0%, 20.1%	19.5%, 95%CI: 16.2%, 23.3%	9.8%, 95%CI: 7.45%, 12.8%	14.5%, 95%CI: 11.8%, 17.8%	13.8%, 95%CI: 10.1%, 18.7%	8.0%, 95%CI: 5.19%, 12.1%	15.8%, 95%CI: 12.2%, 20.3%	19.2%, 95%CI: 16.9%, 21.7%	10.6%, 95%CI: 9.08%, 12.3%	15.9%, 95%CI: 14.2%, 17.7%
Sex Assigned at Birth												
Male	16.2%, 95%CI: 13.0%, 20.0%	8.1%, 95%CI: 6.30%, 10.5%	16.1%, 95%CI: 13.6%, 19.0%	14.3%, 95%CI: 11.7%, 17.4%	7.6%, 95%CI: 5.55%, 10.2%	13.5%, 95%CI: 11.8%, 15.3%	13.0%, 95%CI: 11.2%, 15.0%	6.9%, 95%CI: 5.72%, 8.34%	13.5%, 95%CI: 11.6%, 15.7%	14.5%, 95%CI: 12.9%, 16.2%	7.5%, 95%CI: 6.51%, 8.69%	14.3%, 95%CI: 13.3%, 15.5%
Female	24.1%, 95%CI: 21.6%, 26.9%	13.2%, 95%CI: 10.6%, 16.2%	13.3%, 95%CI: 11.2%, 15.8%	19.0%, 95%CI: 16.6%, 21.7%	9.2%, 95%CI: 7.17%, 11.6%	14.3%, 95%CI: 12.2%, 16.7%	21.0%, 95%CI: 18.2%, 24.1%	10.4%, 95%CI: 8.69%, 12.5%	14.1%, 95%CI: 11.9%, 16.7%	21.3%, 95%CI: 19.7%, 23.1%	10.9%, 95%CI: 9.76%, 12.1%	13.9%, 95%CI: 12.8%, 15.2%
Grade Level												
9th Grade	14.6%, 95%CI: 12.3%, 17.3%	7.8%, 95%CI: 5.86%, 10.2%	17.2%, 95%CI: 14.4%, 20.4%	11.7%, 95%CI: 9.66%, 14.2%	6.3%, 95%CI: 4.41%, 8.87%	19.4%, 95%CI: 15.9%, 23.4%	10.2%, 95%CI: 7.28%, 14.0%	5.8%, 95%CI: 4.01%, 8.40%	13.5%, 95%CI: 10.6%, 17.0%	12.1%, 95%CI: 10.6%, 13.8%	6.6%, 95%CI: 5.36%, 8.07%	16.7%, 95%CI: 14.7%, 18.9%
10th Grade	19.4%, 95%CI: 16.0%, 23.4%	11.1%, 95%CI: 8.46%, 14.5%	15.4%, 95%CI: 11.8%, 19.9%	14.2%, 95%CI: 11.9%, 16.8%	7.3%, 95%CI: 5.88%, 8.94%	13.2%, 95%CI: 11.7%, 14.8%	14.4%, 95%CI: 12.4%, 16.6%	6.3%, 95%CI: 4.43%, 8.96%	14.9%, 95%CI: 12.6%, 17.6%	15.9%, 95%CI: 14.4%, 17.6%	8.2%, 95%CI: 7.04%, 9.47%	14.5%, 95%CI: 12.9%, 16.2%
11th Grade	21.2%, 95%CI: 19.0%, 23.6%	11.9%, 95%CI: 9.35%, 15.1%	12.0%, 95%CI: 10.2%, 14.0%	20.0%, 95%CI: 16.9%, 23.5%	8.2%, 95%CI: 6.46%, 10.4%	11.4%, 95%CI: 9.09%, 14.1%	18.2%, 95%CI: 15.1%, 21.7%	8.6%, 95%CI: 6.81%, 10.8%	12.8%, 95%CI: 10.2%, 15.9%	19.8%, 95%CI: 17.9%, 21.8%	9.5%, 95%CI: 8.17%, 11.1%	12.0%, 95%CI: 10.8%, 13.4%
12th Grade	26.8%, 95%CI: 21.9%, 32.4%	12.1%, 95%CI: 8.76%, 16.4%	14.2%, 95%CI: 9.55%, 20.5%	22.5%, 95%CI: 19.3%, 26.1%	12.5%, 95%CI: 9.64%, 16.0%	9.6%, 95%CI: 7.47%, 12.2%	26.1%, 95%CI: 22.2%, 30.6%	14.1%, 95%CI: 11.2%, 17.7%	13.3%, 95%CI: 10.8%, 16.3%	25.2%, 95%CI: 22.4%, 28.2%	12.9%, 95%CI: 11.1%, 15.0%	12.4%, 95%CI: 10.5%, 14.5%
DOH Race/Ethnicity												
White	19.4%, 95%CI: 15.1%, 24.5%	9.4%, 95%CI: 6.38%, 13.7%	15.3%, 95%CI: 12.5%, 18.6%	19.9%, 95%CI: 14.8%, 26.3%	13.7%, 95%CI: 10.0%, 18.4%	10.8%, 95%CI: 7.66%, 14.9%	17.2%, 95%CI: 13.4%, 21.8%	7.7%, 95%CI: 5.10%, 11.4%	14.9%, 95%CI: 11.9%, 18.4%	18.8%, 95%CI: 15.6%, 22.4%	10.3%, 95%CI: 8.52%, 12.4%	13.6%, 95%CI: 11.6%, 15.8%
Native Hawaiian	29.9%, 95%CI: 26.7%, 33.4%	15.0%, 95%CI: 13.1%, 17.1%	19.8%, 95%CI: 17.0%, 23.0%	20.2%, 95%CI: 17.7%, 22.9%	10.5%, 95%CI: 8.44%, 12.9%	18.7%, 95%CI: 16.5%, 21.1%	20.7%, 95%CI: 18.5%, 23.1%	12.2%, 95%CI: 10.4%, 14.3%	16.3%, 95%CI: 13.5%, 19.5%	23.6%, 95%CI: 21.9%, 25.4%	12.5%, 95%CI: 11.4%, 13.7%	18.3%, 95%CI: 16.7%, 20.0%
Japanese	6.1%, 95%CI: 2.06%, 16.9%	0.3%, 95%CI: 0.11%, 0.96%	0.5%, 95%CI: 0.20%, 1.25%	8.3%, 95%CI: 5.16%, 13.2%	2.0%, 95%CI: 0.71%, 5.41%	9.0%, 95%CI: 4.55%, 16.9%	17.3%, 95%CI: 10.6%, 27.0%	8.6%, 95%CI: 3.40%, 20.0%	16.3%, 95%CI: 8.16%, 30.0%	8.9%, 95%CI: 5.27%, 14.7%	2.5%, 95%CI: 1.24%, 4.86%	5.8%, 95%CI: 2.34%, 13.4%
Filipino	17.1%, 95%CI: 14.3%, 20.3%	10.9%, 95%CI: 8.30%, 14.1%	12.6%, 95%CI: 9.50%, 16.4%	14.2%, 95%CI: 11.3%, 17.6%	5.4%, 95%CI: 4.09%, 7.05%	11.8%, 95%CI: 9.67%, 14.4%	15.2%, 95%CI: 11.5%, 19.9%	8.3%, 95%CI: 5.93%, 11.5%	10.4%, 95%CI: 7.80%, 13.7%	15.5%, 95%CI: 13.4%, 17.9%	8.1%, 95%CI: 6.85%, 9.65%	11.6%, 95%CI: 10.1%, 13.2%
Other Asian	11.4%, 95%CI: 7.99%, 15.9%	2.7%, 95%CI: 0.63%, 10.8%	6.7%, 95%CI: 3.76%, 11.7%	8.1%, 95%CI: 4.25%, 15.0%	3.1%, 95%CI: 1.24%, 7.33%	8.0%, 95%CI: 3.42%, 17.5%	8.8%, 95%CI: 2.84%, 24.0%	2.4%, 95%CI: 0.57%, 9.64%	7.8%, 95%CI: 3.43%, 16.6%	9.8%, 95%CI: 7.69%, 12.5%	2.7%, 95%CI: 1.37%, 5.35%	7.3%, 95%CI: 5.34%, 9.94%
Other Pacific Islander	11.5%, 95%CI: 5.99%, 20.9%	8.1%, 95%CI: 4.31%, 14.7%	15.2%, 95%CI: 10.4%, 21.6%	10.3%, 95%CI: 6.37%, 16.2%	4.3%, 95%CI: 2.29%, 7.84%	10.1%, 95%CI: 4.86%, 19.7%	11.0%, 95%CI: 5.67%, 20.3%	7.7%, 95%CI: 3.45%, 16.2%	6.0%, 95%CI: 3.29%, 10.8%	11.1%, 95%CI: 7.75%, 15.7%	7.1%, 95%CI: 4.57%, 11.0%	12.1%, 95%CI: 8.56%, 16.7%
Black	19.8%, 95%CI: 8.30%, 40.3%	14.5%, 95%CI: 4.40%, 38.5%	28.1%, 95%CI: 17.0%, 42.7%	9.1%, 95%CI: 2.95%, 24.7%	5.7%, 95%CI: 1.23%, 22.7%	17.0%, 95%CI: 6.87%, 36.4%	9.6%, 95%CI: 2.20%, 33.4%	1.7%, 95%CI: 0.37%, 7.17%	8.5%, 95%CI: 2.97%, 22.1%	10.6%, 95%CI: 4.45%, 23.2%	4.9%, 95%CI: 2.23%, 10.5%	14.7%, 95%CI: 9.20%, 22.5%
AIAN	.	.	.	.	.	.	.	.	.	.	.	.
Other Race/Ethnicity	25.4%, 95%CI: 22.8%, 28.1%	14.2%, 95%CI: 12.2%, 16.4%	20.0%, 95%CI: 18.2%, 22.0%	17.1%, 95%CI: 15.2%, 19.2%	8.0%, 95%CI: 6.48%, 9.85%	16.2%, 95%CI: 13.8%, 19.1%	17.1%, 95%CI: 14.5%, 20.1%	7.7%, 95%CI: 6.41%, 9.11%	16.3%, 95%CI: 13.6%, 19.5%	18.7%, 95%CI: 17.2%, 20.3%	9.0%, 95%CI: 8.09%, 10.0%	17.0%, 95%CI: 15.4%, 18.8%
Gender Identity												
Cisgender	20.4%, 95%CI: 18.1%, 22.8%	10.6%, 95%CI: 8.92%, 12.5%	14.1%, 95%CI: 12.0%, 16.4%	16.5%, 95%CI: 15.1%, 17.9%	8.3%, 95%CI: 7.19%, 9.48%	13.6%, 95%CI: 12.2%, 15.0%	16.7%, 95%CI: 15.0%, 18.5%	8.3%, 95%CI: 7.30%, 9.53%	13.3%, 95%CI: 11.9%, 14.9%	17.8%, 95%CI: 16.6%, 19.0%	9.0%, 95%CI: 8.29%, 9.84%	13.6%, 95%CI: 12.7%, 14.7%
Not Sure	15.0%, 95%CI: 7.39%, 28.0%	8.6%, 95%CI: 2.68%, 24.4%	33.8%, 95%CI: 18.9%, 52.7%	17.2%, 95%CI: 8.86%, 30.7%	8.3%, 95%CI: 3.49%, 18.3%	15.7%, 95%CI: 9.77%, 24.3%	14.7%, 95%CI: 7.51%, 26.8%	7.2%, 95%CI: 2.57%, 18.4%	23.7%, 95%CI: 13.8%, 37.7%	15.8%, 95%CI: 9.95%, 24.1%	8.0%, 95%CI: 4.34%, 14.4%	23.1%, 95%CI: 17.7%, 29.5%
Transgender	18.2%, 95%CI: 10.1%, 30.6%	11.4%, 95%CI: 5.94%, 20.7%	36.1%, 95%CI: 24.5%, 49.6%	20.2%, 95%CI: 11.0%, 34.0%	11.4%, 95%CI: 6.27%, 19.8%	33.8%, 95%CI: 20.7%, 49.8%	23.8%, 95%CI: 15.7%, 34.3%	14.7%, 95%CI: 8.08%, 25.4%	17.1%, 95%CI: 9.80%, 28.0%	21.2%, 95%CI: 15.9%, 27.6%	12.8%, 95%CI: 8.98%, 17.9%	27.3%, 95%CI: 21.4%, 34.2%
Mental Health Issue Ever												
No	14.3%, 95%CI: 11.3%, 17.9%	7.5%, 95%CI: 5.21%, 10.6%	11.3%, 95%CI: 8.41%, 14.9%	10.3%, 95%CI: 7.49%, 14.1%	5.0%, 95%CI: 3.01%, 8.29%	10.6%, 95%CI: 7.92%, 14.0%	8.6%, 95%CI: 6.48%, 11.3%	4.1%, 95%CI: 2.48%, 6.54%	8.3%, 95%CI: 6.42%, 10.6%	11.3%, 95%CI: 9.50%, 13.3%	5.6%, 95%CI: 4.46%, 7.06%	10.1%, 95%CI: 8.61%, 11.9%
Yes	22.5%, 95%CI: 19.8%, 25.4%	11.6%, 95%CI: 9.64%, 13.8%	15.1%, 95%CI: 13.6%, 16.7%	17.7%, 95%CI: 15.6%, 20.0%	8.8%, 95%CI: 7.74%, 10.0%	14.7%, 95%CI: 13.2%, 16.2%	19.8%, 95%CI: 17.6%, 22.1%	9.9%, 95%CI: 8.64%, 11.4%	15.5%, 95%CI: 13.5%, 17.7%	19.8%, 95%CI: 18.3%, 21.4%	10.0%, 95%CI: 9.14%, 10.9%	15.1%, 95%CI: 14.0%, 16.2%
Depressed in Past Year												
No	16.4%, 95%CI: 14.0%, 19.1%	7.9%, 95%CI: 6.17%, 10.2%	11.7%, 95%CI: 9.90%, 13.7%	11.2%, 95%CI: 9.79%, 12.7%	5.3%, 95%CI: 4.19%, 6.65%	10.0%, 95%CI: 8.27%, 12.1%	11.1%, 95%CI: 9.71%, 12.7%	5.3%, 95%CI: 4.20%, 6.77%	10.6%, 95%CI: 9.08%, 12.3%	12.8%, 95%CI: 11.6%, 14.1%	6.2%, 95%CI: 5.35%, 7.08%	10.7%, 95%CI: 9.76%, 11.8%
Yes	27.0%, 95%CI: 23.0%, 31.4%	15.6%, 95%CI: 12.8%, 19.0%	19.0%, 95%CI: 16.6%, 21.7%	26.4%, 95%CI: 23.4%, 29.7%	13.6%, 95%CI: 11.2%, 16.5%	20.8%, 95%CI: 17.8%, 24.1%	27.9%, 95%CI: 24.6%, 31.6%	14.9%, 95%CI: 12.4%, 17.9%	19.3%, 95%CI: 16.7%, 22.1%	27.1%, 95%CI: 25.0%, 29.3%	14.7%, 95%CI: 13.1%, 16.5%	19.7%, 95%CI: 18.3%, 21.2%
Self-Harmed in Past Year												
No	16.9%, 95%CI: 14.7%, 19.3%	8.5%, 95%CI: 6.73%, 10.7%	12.4%, 95%CI: 10.6%, 14.4%	12.2%, 95%CI: 10.9%, 13.5%	5.6%, 95%CI: 4.69%, 6.69%	10.3%, 95%CI: 8.87%, 12.0%	12.9%, 95%CI: 11.2%, 14.8%	6.2%, 95%CI: 5.27%, 7.36%	10.0%, 95%CI: 8.28%, 12.0%	14.0%, 95%CI: 12.8%, 15.3%	6.8%, 95%CI: 6.00%, 7.63%	10.9%, 95%CI: 9.93%, 11.9%
Yes	34.7%, 95%CI: 28.8%, 41.2%	20.3%, 95%CI: 16.9%, 24.2%	26.0%, 95%CI: 21.3%, 31.3%	32.1%, 95%CI: 28.2%, 36.4%	18.0%, 95%CI: 15.2%, 21.3%	26.2%, 95%CI: 23.0%, 29.7%	30.6%, 95%CI: 27.3%, 34.0%	17.4%, 95%CI: 14.7%, 20.5%	26.5%, 95%CI: 22.1%, 31.4%	32.4%, 95%CI: 29.7%, 35.2%	18.5%, 95%CI: 16.7%, 20.3%	26.2%, 95%CI: 24.1%, 28.5%

Table S3. Current Alcohol Use & Patterns of Use among Emerging Adults (age 18-29 years), HI-BRFSS

	Total col-%, 95%CI	Any Alcohol row-%, 95%CI	Any Binge Drinking row-%, 95%CI	Any Heavy Drinking row-%, 95%CI	Daily Drinking row-%, 95%CI
Total, HI-BRFSS 2020-2022†		52.2%, 95%CI: 49.8%, 54.6%	24.5%, 95%CI: 22.4%, 26.7%	8.6%, 95%CI: 7.20%, 10.2%	3.0%, 95%CI: 2.28%, 3.96%
Total, HI-BRFSS 2020-2023‡		51.9%, 95%CI: 49.8%, 54.1%	25.0%, 95%CI: 23.2%, 27.0%	8.8%, 95%CI: 7.55%, 10.3%	2.8%, 95%CI: 2.17%, 3.58%
Age Group‡					
25-34 Years	40.0%, 95%CI: 38.0%, 42.1%	62.6%, 95%CI: 59.4%, 65.8%	30.1%, 95%CI: 27.0%, 33.3%	10.9%, 95%CI: 8.78%, 13.5%	4.2%, 95%CI: 3.06%, 5.71%
18-24 Years	60.0%, 95%CI: 57.9%, 62.0%	44.9%, 95%CI: 42.1%, 47.7%	21.7%, 95%CI: 19.4%, 24.2%	7.4%, 95%CI: 5.96%, 9.25%	1.9%, 95%CI: 1.23%, 2.81%
Generation†					
Generation Z	58.5%, 95%CI: 56.2%, 60.8%	45.9%, 95%CI: 42.7%, 49.2%	22.1%, 95%CI: 19.5%, 25.0%	7.3%, 95%CI: 5.58%, 9.39%	1.6%, 95%CI: 1.00%, 2.61%
Millennial	41.5%, 95%CI: 39.2%, 43.8%	61.3%, 95%CI: 57.6%, 64.8%	27.9%, 95%CI: 24.6%, 31.4%	10.5%, 95%CI: 8.30%, 13.2%	5.0%, 95%CI: 3.56%, 6.97%
Sex Assigned at Birth‡					
Female	46.0%, 95%CI: 43.9%, 48.1%	48.9%, 95%CI: 45.7%, 52.0%	22.5%, 95%CI: 19.8%, 25.4%	8.9%, 95%CI: 6.95%, 11.2%	1.9%, 95%CI: 1.21%, 3.00%
Male	54.0%, 95%CI: 51.9%, 56.1%	54.6%, 95%CI: 51.6%, 57.5%	27.2%, 95%CI: 24.7%, 29.8%	8.8%, 95%CI: 7.18%, 10.7%	3.5%, 95%CI: 2.61%, 4.75%
Education Level‡					
College Graduate	16.9%, 95%CI: 15.6%, 18.3%	64.9%, 95%CI: 60.7%, 68.9%	26.1%, 95%CI: 22.6%, 30.0%	6.5%, 95%CI: 4.70%, 8.85%	2.8%, 95%CI: 1.58%, 4.78%
Some College	28.4%, 95%CI: 26.6%, 30.4%	54.7%, 95%CI: 50.7%, 58.6%	26.2%, 95%CI: 22.9%, 29.9%	8.2%, 95%CI: 6.20%, 10.8%	2.8%, 95%CI: 1.83%, 4.39%
HS Graduate	45.9%, 95%CI: 43.9%, 48.0%	45.5%, 95%CI: 42.5%, 48.6%	23.2%, 95%CI: 20.6%, 26.0%	8.6%, 95%CI: 6.84%, 10.8%	2.5%, 95%CI: 1.64%, 3.65%
Less than HS	8.7%, 95%CI: 7.22%, 10.5%	50.4%, 95%CI: 40.1%, 60.6%	27.8%, 95%CI: 19.2%, 38.4%	15.5%, 95%CI: 9.18%, 25.1%	4.4%, 95%CI: 1.98%, 9.53%
Marital Status‡					
Married	16.5%, 95%CI: 14.9%, 18.1%	53.6%, 95%CI: 48.0%, 59.1%	20.5%, 95%CI: 16.5%, 25.2%	5.3%, 95%CI: 3.28%, 8.56%	3.5%, 95%CI: 1.97%, 6.22%
Divorced/Sep	3.0%, 95%CI: 2.30%, 3.81%	59.3%, 95%CI: 45.4%, 71.8%	31.1%, 95%CI: 20.0%, 45.0%	12.7%, 95%CI: 6.37%, 23.9%	8.0%, 95%CI: 2.65%, 21.8%
Widowed	0.3%, 95%CI: 0.12%, 0.56%	.	.	.	.
Never/Unmarried	80.3%, 95%CI: 78.5%, 82.0%	51.1%, 95%CI: 48.7%, 53.5%	25.8%, 95%CI: 23.7%, 28.0%	9.4%, 95%CI: 7.92%, 11.1%	2.5%, 95%CI: 1.87%, 3.30%
Rent/Own Home‡					
Own	27.3%, 95%CI: 25.2%, 29.6%	52.0%, 95%CI: 46.8%, 57.2%	24.7%, 95%CI: 20.4%, 29.4%	9.9%, 95%CI: 6.94%, 14.0%	3.4%, 95%CI: 2.01%, 5.74%
Rent	41.6%, 95%CI: 39.7%, 43.6%	57.6%, 95%CI: 54.6%, 60.5%	29.0%, 95%CI: 26.4%, 31.8%	10.5%, 95%CI: 8.76%, 12.4%	2.6%, 95%CI: 1.86%, 3.61%
Other Arrangement	31.0%, 95%CI: 29.2%, 32.9%	45.2%, 95%CI: 41.7%, 48.7%	20.1%, 95%CI: 17.4%, 23.2%	5.5%, 95%CI: 3.97%, 7.55%	2.5%, 95%CI: 1.59%, 4.01%
DOH Race/Ethnicity†					
White	20.7%, 95%CI: 18.8%, 22.8%	62.4%, 95%CI: 56.7%, 67.7%	25.5%, 95%CI: 20.6%, 31.0%	10.1%, 95%CI: 6.37%, 15.6%	2.0%, 95%CI: 0.89%, 4.58%
Native Hawaiian	24.9%, 95%CI: 22.9%, 26.9%	54.2%, 95%CI: 49.5%, 58.8%	30.0%, 95%CI: 25.6%, 34.8%	11.5%, 95%CI: 8.67%, 15.2%	2.7%, 95%CI: 1.65%, 4.48%
Japanese	9.5%, 95%CI: 8.16%, 11.0%	53.2%, 95%CI: 45.2%, 61.1%	18.5%, 95%CI: 13.4%, 25.1%	5.5%, 95%CI: 2.75%, 10.7%	2.3%, 95%CI: 0.72%, 6.97%
Filipino	17.5%, 95%CI: 15.8%, 19.3%	47.7%, 95%CI: 42.2%, 53.3%	22.2%, 95%CI: 17.8%, 27.3%	6.2%, 95%CI: 4.01%, 9.43%	2.8%, 95%CI: 1.42%, 5.43%
Chinese	5.0%, 95%CI: 4.06%, 6.20%	42.7%, 95%CI: 32.6%, 53.5%	13.6%, 95%CI: 8.40%, 21.3%	4.2%, 95%CI: 1.80%, 9.67%	1.7%, 95%CI: 0.42%, 6.76%
OtherAsian	5.5%, 95%CI: 4.59%, 6.54%	53.6%, 95%CI: 44.3%, 62.7%	25.5%, 95%CI: 18.1%, 34.8%	5.5%, 95%CI: 2.30%, 12.6%	2.4%, 95%CI: 0.83%, 6.63%
Other Pacific Islander	8.9%, 95%CI: 7.66%, 10.3%	47.0%, 95%CI: 39.0%, 55.2%	28.9%, 95%CI: 22.1%, 36.7%	11.5%, 95%CI: 7.43%, 17.4%	3.5%, 95%CI: 1.70%, 7.25%
Black	4.7%, 95%CI: 3.65%, 6.02%	37.4%, 95%CI: 26.1%, 50.3%	15.5%, 95%CI: 8.76%, 25.9%	10.3%, 95%CI: 4.73%, 20.8%	5.3%, 95%CI: 1.78%, 14.5%
AIAN	1.4%, 95%CI: 0.95%, 2.06%	45.9%, 95%CI: 27.1%, 66.0%	20.2%, 95%CI: 8.40%, 41.1%	4.1%, 95%CI: 1.00%, 15.4%	6.3%, 95%CI: 1.92%, 18.6%
Other	2.0%, 95%CI: 1.37%, 2.83%	57.5%, 95%CI: 39.3%, 73.9%	26.9%, 95%CI: 13.0%, 47.4%	4.5%, 95%CI: 1.32%, 14.1%	14.4%, 95%CI: 4.60%, 37.1%
Sexual/Gender Minority†					
No	86.7%, 95%CI: 84.8%, 88.4%	50.7%, 95%CI: 48.1%, 53.4%	22.8%, 95%CI: 20.7%, 25.1%	7.5%, 95%CI: 6.21%, 9.11%	2.9%, 95%CI: 2.13%, 3.95%
Yes	13.3%, 95%CI: 11.6%, 15.2%	59.5%, 95%CI: 52.1%, 66.4%	35.3%, 95%CI: 28.1%, 43.3%	14.1%, 95%CI: 8.72%, 22.0%	3.8%, 95%CI: 1.88%, 7.66%
Federal Poverty Threshold†					
0-100%	27.7%, 95%CI: 25.4%, 30.1%	42.7%, 95%CI: 37.7%, 47.9%	25.0%, 95%CI: 20.5%, 30.0%	9.2%, 95%CI: 6.34%, 13.2%	2.9%, 95%CI: 1.65%, 4.99%
101-185%	22.9%, 95%CI: 20.7%, 25.2%	59.5%, 95%CI: 54.0%, 64.8%	30.6%, 95%CI: 25.5%, 36.1%	9.0%, 95%CI: 6.32%, 12.7%	2.4%, 95%CI: 1.30%, 4.36%
186-300%	23.6%, 95%CI: 21.4%, 26.0%	62.3%, 95%CI: 56.8%, 67.5%	25.8%, 95%CI: 20.9%, 31.4%	10.0%, 95%CI: 6.41%, 15.3%	4.2%, 95%CI: 2.32%, 7.54%
301+%	25.9%, 95%CI: 23.5%, 28.3%	53.9%, 95%CI: 48.2%, 59.4%	23.9%, 95%CI: 19.7%, 28.5%	8.5%, 95%CI: 5.96%, 12.0%	3.5%, 95%CI: 1.95%, 6.30%
Health Insurance‡					
Insured	92.6%, 95%CI: 91.3%, 93.6%	52.9%, 95%CI: 50.6%, 55.1%	24.9%, 95%CI: 23.0%, 27.0%	8.6%, 95%CI: 7.27%, 10.2%	2.8%, 95%CI: 2.12%, 3.59%
Not Insured	7.4%, 95%CI: 6.39%, 8.66%	51.5%, 95%CI: 43.2%, 59.8%	31.1%, 95%CI: 23.6%, 39.7%	11.5%, 95%CI: 7.13%, 18.1%	3.5%, 95%CI: 1.26%, 9.19%
Depressive Disorder‡					
No	85.6%, 95%CI: 84.1%, 86.9%	50.2%, 95%CI: 47.9%, 52.6%	24.8%, 95%CI: 22.7%, 26.9%	8.7%, 95%CI: 7.31%, 10.3%	2.8%, 95%CI: 2.13%, 3.70%
Yes	14.4%, 95%CI: 13.1%, 15.9%	62.1%, 95%CI: 56.7%, 67.2%	26.6%, 95%CI: 21.9%, 31.8%	9.7%, 95%CI: 6.69%, 13.9%	2.7%, 95%CI: 1.49%, 4.74%
Poor Mental Health Days in Past 30 Days‡					
None	50.5%, 95%CI: 48.4%, 52.6%	45.3%, 95%CI: 42.4%, 48.3%	20.4%, 95%CI: 18.0%, 22.9%	6.4%, 95%CI: 5.05%, 8.06%	2.6%, 95%CI: 1.74%, 3.75%
1-15 Days	39.2%, 95%CI: 37.1%, 41.2%	58.9%, 95%CI: 55.4%, 62.2%	29.7%, 95%CI: 26.5%, 33.0%	10.3%, 95%CI: 8.12%, 13.1%	2.2%, 95%CI: 1.48%, 3.36%
16-30 Days	10.3%, 95%CI: 9.07%, 11.7%	58.8%, 95%CI: 51.8%, 65.4%	30.8%, 95%CI: 24.8%, 37.6%	15.4%, 95%CI: 10.6%, 21.8%	6.2%, 95%CI: 3.58%, 10.5%
County of Residence†					
Honolulu County	74.8%, 95%CI: 73.5%, 76.0%	53.9%, 95%CI: 50.8%, 57.0%	25.1%, 95%CI: 22.5%, 27.9%	8.7%, 95%CI: 6.97%, 10.9%	2.6%, 95%CI: 1.76%, 3.71%
Hawaii County	11.3%, 95%CI: 10.4%, 12.3%	50.7%, 95%CI: 44.7%, 56.7%	27.0%, 95%CI: 22.0%, 32.7%	7.2%, 95%CI: 4.77%, 10.7%	6.0%, 95%CI: 3.43%, 10.2%
Maui County	10.2%, 95%CI: 9.46%, 11.0%	46.6%, 95%CI: 40.7%, 52.6%	21.2%, 95%CI: 16.5%, 26.8%	10.6%, 95%CI: 6.98%, 15.8%	3.1%, 95%CI: 1.47%, 6.28%
Kauai County	3.7%, 95%CI: 3.23%, 4.23%	46.9%, 95%CI: 38.3%, 55.6%	16.4%, 95%CI: 11.7%, 22.7%	7.5%, 95%CI: 4.42%, 12.4%	2.3%, 95%CI: 0.89%, 5.59%

†Data derives from the 2020-2022 HI BRFSS dataset
‡Data derives from the 2020-2023 HI BRFSS dataset

Table S4. Current Alcohol Use & Patterns of Use among All Adults (age 18+ years), HI-BRFSS

	Total col-%, 95%CI	Any Alcohol row-%, 95%CI	Any Binge Drinking row-%, 95%CI	Any Heavy Drinking row-%, 95%CI	Daily Drinking row-%, 95%CI
Total, HI-BRFSS 2020-2022†		48.6%, 95%CI: 47.7%, 49.6%	16.8%, 95%CI: 16.1%, 17.5%	7.6%, 95%CI: 7.15%, 8.13%	5.7%, 95%CI: 5.35%, 6.13%
Total, HI-BRFSS 2020-2023‡		49.0%, 95%CI: 48.1%, 49.8%	17.2%, 95%CI: 16.6%, 17.8%	7.9%, 95%CI: 7.44%, 8.31%	5.8%, 95%CI: 5.45%, 6.14%
Age Group‡					
65+ Years	25.2%, 95%CI: 24.5%, 26.0%	38.6%, 95%CI: 37.2%, 40.0%	6.8%, 95%CI: 6.16%, 7.61%	5.4%, 95%CI: 4.84%, 6.07%	9.3%, 95%CI: 8.52%, 10.1%
55-64 Years	15.6%, 95%CI: 15.0%, 16.2%	47.7%, 95%CI: 45.8%, 49.6%	12.9%, 95%CI: 11.7%, 14.2%	7.5%, 95%CI: 6.61%, 8.58%	6.9%, 95%CI: 6.01%, 7.84%
45-54 Years	14.9%, 95%CI: 14.3%, 15.5%	50.7%, 95%CI: 48.6%, 52.7%	18.1%, 95%CI: 16.6%, 19.7%	8.2%, 95%CI: 7.20%, 9.42%	4.8%, 95%CI: 4.05%, 5.64%
35-44 Years	16.7%, 95%CI: 16.0%, 17.4%	57.4%, 95%CI: 55.4%, 59.4%	24.0%, 95%CI: 22.3%, 25.7%	10.3%, 95%CI: 9.22%, 11.6%	4.9%, 95%CI: 4.12%, 5.80%
25-34 Years	17.0%, 95%CI: 16.3%, 17.7%	59.3%, 95%CI: 57.1%, 61.4%	27.3%, 95%CI: 25.3%, 29.3%	9.5%, 95%CI: 8.31%, 10.9%	3.6%, 95%CI: 2.86%, 4.45%
18-24 Years	10.6%, 95%CI: 9.99%, 11.2%	44.9%, 95%CI: 42.1%, 47.7%	21.7%, 95%CI: 19.4%, 24.2%	7.4%, 95%CI: 5.96%, 9.25%	1.9%, 95%CI: 1.23%, 2.81%
Generation†					
Generation Z	10.6%, 95%CI: 9.99%, 11.2%	45.9%, 95%CI: 42.7%, 49.2%	22.1%, 95%CI: 19.5%, 25.0%	7.3%, 95%CI: 5.58%, 9.39%	1.6%, 95%CI: 1.00%, 2.61%
Millennial	27.2%, 95%CI: 26.4%, 28.0%	57.6%, 95%CI: 55.7%, 59.5%	25.1%, 95%CI: 23.5%, 26.8%	9.5%, 95%CI: 8.44%, 10.6%	3.8%, 95%CI: 3.19%, 4.57%
Generation X	24.0%, 95%CI: 23.2%, 24.7%	51.9%, 95%CI: 50.1%, 53.8%	19.0%, 95%CI: 17.6%, 20.4%	8.3%, 95%CI: 7.37%, 9.29%	5.4%, 95%CI: 4.66%, 6.24%
Baby Boomer	28.9%, 95%CI: 28.1%, 29.7%	44.7%, 95%CI: 43.2%, 46.2%	10.0%, 95%CI: 9.09%, 10.9%	6.9%, 95%CI: 6.13%, 7.69%	8.5%, 95%CI: 7.69%, 9.29%
Greatest/Silent Generation	9.4%, 95%CI: 8.83%, 9.91%	31.6%, 95%CI: 28.9%, 34.4%	3.9%, 95%CI: 2.87%, 5.24%	3.9%, 95%CI: 2.91%, 5.25%	8.4%, 95%CI: 6.94%, 10.1%
Sex Assigned at Birth‡					
Female	50.3%, 95%CI: 49.4%, 51.2%	42.9%, 95%CI: 41.8%, 44.0%	12.5%, 95%CI: 11.8%, 13.3%	7.3%, 95%CI: 6.72%, 7.89%	3.9%, 95%CI: 3.58%, 4.35%
Male	49.7%, 95%CI: 48.8%, 50.6%	55.1%, 95%CI: 53.9%, 56.3%	21.9%, 95%CI: 21.0%, 22.9%	8.4%, 95%CI: 7.82%, 9.11%	7.6%, 95%CI: 7.09%, 8.24%
Education Level‡					
College Graduate	30.9%, 95%CI: 30.1%, 31.6%	56.6%, 95%CI: 55.4%, 57.8%	14.6%, 95%CI: 13.8%, 15.5%	6.7%, 95%CI: 6.17%, 7.29%	5.9%, 95%CI: 5.43%, 6.42%
Some College	32.5%, 95%CI: 31.7%, 33.4%	49.3%, 95%CI: 47.8%, 50.7%	17.2%, 95%CI: 16.2%, 18.4%	7.3%, 95%CI: 6.62%, 8.05%	5.9%, 95%CI: 5.26%, 6.51%
HS Graduate	28.7%, 95%CI: 27.9%, 29.6%	43.4%, 95%CI: 41.9%, 45.0%	20.1%, 95%CI: 18.9%, 21.4%	9.3%, 95%CI: 8.40%, 10.2%	5.5%, 95%CI: 4.91%, 6.25%
Less than HS	7.9%, 95%CI: 7.17%, 8.64%	36.7%, 95%CI: 32.5%, 41.1%	17.0%, 95%CI: 13.9%, 20.6%	9.5%, 95%CI: 7.31%, 12.3%	5.9%, 95%CI: 4.33%, 7.88%
Marital Status‡					
Married	52.1%, 95%CI: 51.2%, 53.0%	50.5%, 95%CI: 49.4%, 51.6%	14.3%, 95%CI: 13.6%, 15.1%	6.5%, 95%CI: 5.97%, 6.99%	6.4%, 95%CI: 5.88%, 6.87%
Divorced/Sep	11.1%, 95%CI: 10.6%, 11.6%	48.8%, 95%CI: 46.6%, 51.1%	16.5%, 95%CI: 14.8%, 18.4%	10.2%, 95%CI: 8.88%, 11.8%	8.0%, 95%CI: 6.85%, 9.22%
Widowed	6.4%, 95%CI: 5.98%, 6.89%	28.6%, 95%CI: 26.0%, 31.5%	6.4%, 95%CI: 5.11%, 7.90%	4.2%, 95%CI: 3.25%, 5.40%	6.2%, 95%CI: 5.05%, 7.63%
Never/Unmarried	30.4%, 95%CI: 29.6%, 31.2%	50.8%, 95%CI: 49.2%, 52.3%	24.8%, 95%CI: 23.5%, 26.2%	10.2%, 95%CI: 9.25%, 11.2%	4.0%, 95%CI: 3.43%, 4.57%
Rent/Own Home‡					
Own	64.9%, 95%CI: 64.0%, 65.7%	49.2%, 95%CI: 48.1%, 50.3%	14.7%, 95%CI: 13.9%, 15.5%	7.4%, 95%CI: 6.84%, 7.93%	6.8%, 95%CI: 6.30%, 7.25%
Rent	24.9%, 95%CI: 24.2%, 25.7%	51.2%, 95%CI: 49.8%, 52.7%	23.6%, 95%CI: 22.4%, 24.9%	9.8%, 95%CI: 8.94%, 10.6%	4.4%, 95%CI: 3.85%, 4.93%
Other Arrangement	10.2%, 95%CI: 9.69%, 10.7%	42.1%, 95%CI: 39.8%, 44.5%	18.1%, 95%CI: 16.2%, 20.2%	6.4%, 95%CI: 5.27%, 7.80%	3.0%, 95%CI: 2.33%, 3.98%
DOH Race/Ethnicity†					
White	25.7%, 95%CI: 25.0%, 26.5%	62.0%, 95%CI: 60.4%, 63.6%	18.3%, 95%CI: 17.0%, 19.7%	10.2%, 95%CI: 9.15%, 11.2%	9.1%, 95%CI: 8.31%, 9.98%
Native Hawaiian	19.0%, 95%CI: 18.3%, 19.7%	48.2%, 95%CI: 46.1%, 50.2%	23.7%, 95%CI: 21.9%, 25.6%	9.6%, 95%CI: 8.43%, 10.9%	3.8%, 95%CI: 3.13%, 4.53%
Japanese	17.6%, 95%CI: 16.9%, 18.3%	41.7%, 95%CI: 39.5%, 43.9%	11.0%, 95%CI: 9.70%, 12.5%	5.3%, 95%CI: 4.36%, 6.39%	6.1%, 95%CI: 5.15%, 7.29%
Filipino	16.3%, 95%CI: 15.6%, 17.0%	39.9%, 95%CI: 37.5%, 42.4%	13.0%, 95%CI: 11.4%, 14.7%	4.5%, 95%CI: 3.57%, 5.66%	3.1%, 95%CI: 2.40%, 4.05%
Chinese	6.0%, 95%CI: 5.57%, 6.47%	41.2%, 95%CI: 37.3%, 45.1%	10.1%, 95%CI: 8.11%, 12.5%	4.4%, 95%CI: 3.06%, 6.30%	3.8%, 95%CI: 2.62%, 5.53%
OtherAsian	5.1%, 95%CI: 4.75%, 5.58%	48.1%, 95%CI: 43.7%, 52.5%	17.5%, 95%CI: 14.4%, 21.2%	7.6%, 95%CI: 5.50%, 10.3%	5.4%, 95%CI: 3.79%, 7.64%
Other Pacific Islander	4.7%, 95%CI: 4.33%, 5.13%	43.1%, 95%CI: 38.7%, 47.7%	24.2%, 95%CI: 20.6%, 28.3%	10.1%, 95%CI: 7.67%, 13.2%	4.0%, 95%CI: 2.61%, 5.94%
Black	2.8%, 95%CI: 2.46%, 3.17%	50.7%, 95%CI: 43.9%, 57.4%	17.3%, 95%CI: 13.1%, 22.5%	9.0%, 95%CI: 5.97%, 13.5%	5.3%, 95%CI: 3.20%, 8.74%
AIAN	1.7%, 95%CI: 1.49%, 1.92%	50.8%, 95%CI: 44.1%, 57.5%	16.1%, 95%CI: 11.8%, 21.4%	6.5%, 95%CI: 3.97%, 10.3%	5.7%, 95%CI: 3.36%, 9.62%
Other	1.1%, 95%CI: 0.88%, 1.26%	53.1%, 95%CI: 44.0%, 62.0%	18.0%, 95%CI: 11.7%, 26.8%	6.1%, 95%CI: 3.38%, 10.8%	10.0%, 95%CI: 5.35%, 17.9%
Sexual/Gender Minority†					
No	93.6%, 95%CI: 93.1%, 94.1%	48.7%, 95%CI: 47.7%, 49.7%	16.5%, 95%CI: 15.8%, 17.3%	7.5%, 95%CI: 7.03%, 8.03%	5.9%, 95%CI: 5.48%, 6.31%
Yes	6.4%, 95%CI: 5.94%, 6.87%	52.4%, 95%CI: 48.5%, 56.2%	21.9%, 95%CI: 18.6%, 25.7%	9.7%, 95%CI: 7.30%, 12.8%	4.4%, 95%CI: 3.28%, 5.95%
Federal Poverty Threshold†					
0-100%	17.1%, 95%CI: 16.3%, 17.9%	36.5%, 95%CI: 34.1%, 38.9%	17.6%, 95%CI: 15.7%, 19.6%	7.6%, 95%CI: 6.35%, 9.13%	3.2%, 95%CI: 2.54%, 4.09%
101-185%	17.8%, 95%CI: 17.0%, 18.5%	44.7%, 95%CI: 42.3%, 47.1%	17.0%, 95%CI: 15.2%, 18.9%	6.9%, 95%CI: 5.82%, 8.20%	5.2%, 95%CI: 4.29%, 6.32%
186-300%	23.7%, 95%CI: 22.9%, 24.6%	51.6%, 95%CI: 49.6%, 53.7%	17.3%, 95%CI: 15.8%, 18.9%	8.2%, 95%CI: 7.13%, 9.49%	6.1%, 95%CI: 5.24%, 7.06%
301+%	41.4%, 95%CI: 40.5%, 42.3%	56.1%, 95%CI: 54.7%, 57.6%	18.0%, 95%CI: 17.0%, 19.2%	8.5%, 95%CI: 7.75%, 9.32%	7.2%, 95%CI: 6.54%, 7.93%
Health Insurance‡					
Insured	96.2%, 95%CI: 95.8%, 96.5%	49.0%, 95%CI: 48.2%, 49.9%	17.0%, 95%CI: 16.3%, 17.6%	7.7%, 95%CI: 7.26%, 8.14%	5.8%, 95%CI: 5.49%, 6.19%
Not Insured	3.8%, 95%CI: 3.49%, 4.19%	51.7%, 95%CI: 47.1%, 56.2%	25.5%, 95%CI: 21.5%, 30.0%	12.7%, 95%CI: 9.77%, 16.4%	5.0%, 95%CI: 3.18%, 7.72%
Depressive Disorder‡					
No	87.9%, 95%CI: 87.3%, 88.4%	48.9%, 95%CI: 48.0%, 49.8%	17.0%, 95%CI: 16.4%, 17.7%	7.7%, 95%CI: 7.21%, 8.15%	5.9%, 95%CI: 5.49%, 6.24%
Yes	12.1%, 95%CI: 11.6%, 12.7%	49.5%, 95%CI: 47.3%, 51.7%	18.2%, 95%CI: 16.5%, 20.0%	9.2%, 95%CI: 8.01%, 10.4%	5.3%, 95%CI: 4.48%, 6.17%
Poor Mental Health Days in Past 30 Days‡					
None	66.0%, 95%CI: 65.2%, 66.9%	46.1%, 95%CI: 45.1%, 47.1%	14.8%, 95%CI: 14.1%, 15.5%	6.5%, 95%CI: 6.03%, 6.97%	5.9%, 95%CI: 5.52%, 6.38%
1-15 Days	26.7%, 95%CI: 25.9%, 27.5%	55.7%, 95%CI: 54.2%, 57.3%	21.6%, 95%CI: 20.3%, 22.9%	9.6%, 95%CI: 8.66%, 10.6%	4.9%, 95%CI: 4.27%, 5.52%
16-30 Days	7.3%, 95%CI: 6.84%, 7.78%	49.1%, 95%CI: 46.2%, 52.1%	21.7%, 95%CI: 19.2%, 24.3%	12.9%, 95%CI: 11.0%, 15.1%	7.8%, 95%CI: 6.51%, 9.40%
County of Residence†					
Honolulu County	69.0%, 95%CI: 68.5%, 69.6%	48.5%, 95%CI: 47.3%, 49.7%	16.5%, 95%CI: 15.6%, 17.5%	7.0%, 95%CI: 6.40%, 7.68%	4.9%, 95%CI: 4.42%, 5.38%
Hawaii County	14.2%, 95%CI: 13.8%, 14.6%	49.3%, 95%CI: 47.3%, 51.3%	18.2%, 95%CI: 16.6%, 19.9%	8.7%, 95%CI: 7.61%, 9.82%	8.0%, 95%CI: 6.92%, 9.18%
Maui County	11.8%, 95%CI: 11.4%, 12.1%	50.2%, 95%CI: 48.0%, 52.3%	16.6%, 95%CI: 15.0%, 18.2%	9.9%, 95%CI: 8.68%, 11.3%	7.7%, 95%CI: 6.74%, 8.84%
Kauai County	5.0%, 95%CI: 4.76%, 5.16%	49.1%, 95%CI: 46.4%, 51.8%	16.7%, 95%CI: 14.8%, 18.9%	8.7%, 95%CI: 7.22%, 10.4%	7.2%, 95%CI: 6.05%, 8.60%

†Data derives from the 2020-2022 HI BRFSS dataset

‡Data derives from the 2020-2023 HI BRFSS dataset

Table S5. Types of Current Nicotine Use among Middle School Students, 2019-2023 YRBS

	2019		2021		2023		Combined Years	
	Any Current e-Cigarette Use	Any Current Cigarette Use	Any Current e-Cigarette Use	Any Current Cigarette Use	Any Current e-Cigarette Use	Any Current Cigarette Use	Any Current e-Cigarette Use	Any Current Cigarette Use
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	17.7%, 95%CI: 14.7%, 21.2%	3.9%, 95%CI: 2.94%, 5.15%	6.7%, 95%CI: 5.80%, 7.67%	1.9%, 95%CI: 1.46%, 2.41%	10.3%, 95%CI: 9.03%, 11.6%	2.4%, 95%CI: 1.88%, 3.01%	11.7%, 95%CI: 10.8%, 12.7%	2.8%, 95%CI: 2.39%, 3.19%
County of School								
Honolulu County	16.4%, 95%CI: 12.2%, 21.9%	4.1%, 95%CI: 2.77%, 6.16%	5.7%, 95%CI: 4.56%, 7.19%	1.8%, 95%CI: 1.20%, 2.57%	9.5%, 95%CI: 7.79%, 11.6%	2.4%, 95%CI: 1.72%, 3.33%	10.8%, 95%CI: 9.45%, 12.2%	2.8%, 95%CI: 2.29%, 3.48%
Hawaii County	20.3%, 95%CI: 17.9%, 23.1%	3.5%, 95%CI: 2.66%, 4.68%	9.3%, 95%CI: 7.42%, 11.7%	2.4%, 95%CI: 1.68%, 3.45%	13.5%, 95%CI: 11.0%, 16.4%	2.6%, 95%CI: 1.68%, 4.02%	14.4%, 95%CI: 13.0%, 15.9%	2.9%, 95%CI: 2.37%, 3.46%
Maui County	18.7%, 95%CI: 16.1%, 21.6%	3.0%, 95%CI: 2.25%, 3.96%	7.7%, 95%CI: 6.17%, 9.61%	1.8%, 95%CI: 1.14%, 2.90%	10.7%, 95%CI: 8.72%, 13.1%	2.5%, 95%CI: 1.60%, 3.86%	12.5%, 95%CI: 11.3%, 13.9%	2.4%, 95%CI: 1.96%, 3.07%
Kauai County	22.5%, 95%CI: 19.4%, 25.9%	4.2%, 95%CI: 3.07%, 5.76%	7.6%, 95%CI: 6.00%, 9.60%	1.9%, 95%CI: 1.23%, 2.96%	9.2%, 95%CI: 7.03%, 11.9%	1.4%, 95%CI: 0.80%, 2.60%	13.3%, 95%CI: 11.8%, 15.1%	2.6%, 95%CI: 2.02%, 3.33%
Sex Assigned at Birth								
Male	15.2%, 95%CI: 12.0%, 19.1%	4.3%, 95%CI: 3.35%, 5.50%	5.1%, 95%CI: 4.30%, 6.00%	1.6%, 95%CI: 1.08%, 2.36%	7.9%, 95%CI: 6.25%, 9.84%	1.6%, 95%CI: 1.15%, 2.27%	9.6%, 95%CI: 8.39%, 10.9%	2.6%, 95%CI: 2.09%, 3.18%
Female	20.2%, 95%CI: 16.8%, 24.1%	3.3%, 95%CI: 2.07%, 5.28%	8.5%, 95%CI: 7.24%, 9.87%	2.1%, 95%CI: 1.61%, 2.83%	12.8%, 95%CI: 11.4%, 14.4%	3.2%, 95%CI: 2.46%, 4.17%	14.0%, 95%CI: 13.0%, 15.2%	2.9%, 95%CI: 2.41%, 3.48%
Grade Level								
6th Grade	11.7%, 95%CI: 8.51%, 16.0%	5.4%, 95%CI: 3.20%, 9.08%	4.1%, 95%CI: 3.17%, 5.23%	1.3%, 95%CI: 0.64%, 2.55%	8.8%, 95%CI: 5.80%, 13.2%	2.2%, 95%CI: 1.39%, 3.42%	8.2%, 95%CI: 6.47%, 10.3%	3.0%, 95%CI: 2.12%, 4.11%
7th Grade	15.9%, 95%CI: 12.3%, 20.4%	2.6%, 95%CI: 1.83%, 3.64%	6.1%, 95%CI: 5.03%, 7.32%	1.8%, 95%CI: 1.22%, 2.61%	9.4%, 95%CI: 8.17%, 10.8%	2.3%, 95%CI: 1.65%, 3.31%	10.8%, 95%CI: 9.59%, 12.1%	2.3%, 95%CI: 1.96%, 2.64%
8th Grade	22.7%, 95%CI: 19.2%, 26.6%	4.1%, 95%CI: 2.97%, 5.54%	8.7%, 95%CI: 6.66%, 11.3%	2.3%, 95%CI: 1.55%, 3.31%	12.4%, 95%CI: 10.6%, 14.4%	2.4%, 95%CI: 1.60%, 3.65%	14.6%, 95%CI: 13.2%, 16.2%	3.0%, 95%CI: 2.42%, 3.61%
DOH Race/Ethnicity								
White	5.6%, 95%CI: 3.37%, 9.30%	0.7%, 95%CI: 0.26%, 1.82%	3.3%, 95%CI: 1.89%, 5.80%	1.6%, 95%CI: 0.94%, 2.72%	5.2%, 95%CI: 3.18%, 8.27%	2.2%, 95%CI: 1.09%, 4.42%	4.7%, 95%CI: 3.71%, 5.95%	1.5%, 95%CI: 1.01%, 2.33%
Native Hawaiian	27.5%, 95%CI: 24.4%, 30.9%	4.7%, 95%CI: 3.48%, 6.40%	11.7%, 95%CI: 9.59%, 14.1%	2.2%, 95%CI: 1.55%, 3.06%	15.5%, 95%CI: 13.1%, 18.2%	3.4%, 95%CI: 2.48%, 4.78%	18.8%, 95%CI: 17.2%, 20.4%	3.5%, 95%CI: 2.93%, 4.28%
Japanese	5.7%, 95%CI: 1.71%, 17.2%	0.8%, 95%CI: 0.13%, 4.76%	0.5%, 95%CI: 0.11%, 2.46%	0.0%	0.6%, 95%CI: 0.15%, 2.75%	0.0%	4.0%, 95%CI: 1.57%, 9.98%	0.5%, 95%CI: 0.08%, 3.49%
Filipino	17.5%, 95%CI: 14.3%, 21.3%	2.2%, 95%CI: 1.09%, 4.55%	3.3%, 95%CI: 1.85%, 5.68%	1.1%, 95%CI: 0.46%, 2.48%	7.6%, 95%CI: 5.93%, 9.67%	0.9%, 95%CI: 0.43%, 1.73%	9.7%, 95%CI: 8.50%, 11.0%	1.4%, 95%CI: 0.81%, 2.54%
Other Asian	3.6%, 95%CI: 1.50%, 8.18%	1.9%, 95%CI: 0.44%, 7.78%	0.8%, 95%CI: 0.16%, 3.66%	0.2%, 95%CI: 0.03%, 1.75%	1.8%, 95%CI: 0.41%, 7.63%	1.0%, 95%CI: 0.19%, 4.81%	2.3%, 95%CI: 1.28%, 4.22%	1.2%, 95%CI: 0.40%, 3.54%
Other Pacific Islander	35.0%, 95%CI: 28.6%, 42.0%	15.4%, 95%CI: 9.69%, 23.5%	15.4%, 95%CI: 11.5%, 20.3%	5.6%, 95%CI: 2.99%, 10.3%	24.9%, 95%CI: 18.0%, 33.3%	1.9%, 95%CI: 1.03%, 3.41%	27.6%, 95%CI: 23.4%, 32.3%	9.6%, 95%CI: 5.86%, 15.2%
Black	6.6%, 95%CI: 2.74%, 15.1%	3.6%, 95%CI: 1.28%, 9.86%	9.7%, 95%CI: 5.88%, 15.6%	2.4%, 95%CI: 0.27%, 17.8%	12.4%, 95%CI: 4.49%, 29.8%	0.4%, 95%CI: 0.06%, 2.99%	10.2%, 95%CI: 5.78%, 17.3%	1.9%, 95%CI: 0.38%, 8.62%
AIAN	.	.	.	.	.	.	5.0%, 95%CI: 1.72%, 13.9%	8.9%, 95%CI: 3.62%, 20.2%
Other Race/Ethnicity	21.8%, 95%CI: 19.3%, 24.5%	3.5%, 95%CI: 2.66%, 4.66%	9.9%, 95%CI: 7.53%, 12.9%	2.8%, 95%CI: 1.64%, 4.62%	12.5%, 95%CI: 10.9%, 14.4%	3.6%, 95%CI: 2.51%, 5.06%	13.5%, 95%CI: 12.1%, 15.0%	3.2%, 95%CI: 2.51%, 4.19%
Gender Identity								
Cisgender	17.3%, 95%CI: 14.5%, 20.6%	3.3%, 95%CI: 2.56%, 4.26%	6.8%, 95%CI: 5.77%, 7.94%	1.9%, 95%CI: 1.43%, 2.47%	10.3%, 95%CI: 8.91%, 11.9%	2.0%, 95%CI: 1.46%, 2.72%	11.7%, 95%CI: 10.9%, 12.6%	2.4%, 95%CI: 2.09%, 2.85%
Not Sure	14.2%, 95%CI: 7.21%, 26.0%	6.9%, 95%CI: 2.31%, 18.7%	4.6%, 95%CI: 3.08%, 6.95%	0.6%, 95%CI: 0.25%, 1.59%	10.3%, 95%CI: 6.53%, 15.9%	5.3%, 95%CI: 2.62%, 10.5%	8.5%, 95%CI: 6.26%, 11.3%	3.5%, 95%CI: 1.95%, 6.04%
Transgender	31.2%, 95%CI: 21.1%, 43.6%	20.3%, 95%CI: 9.28%, 39.0%	14.2%, 95%CI: 6.44%, 28.4%	3.9%, 95%CI: 1.46%, 10.0%	15.0%, 95%CI: 7.73%, 27.2%	9.4%, 95%CI: 4.12%, 20.2%	18.4%, 95%CI: 12.5%, 26.3%	9.7%, 95%CI: 5.70%, 16.0%
Mental Health Issue Ever								
No	13.6%, 95%CI: 10.4%, 17.7%	2.8%, 95%CI: 1.93%, 4.10%	2.6%, 95%CI: 1.41%, 4.82%	0.7%, 95%CI: 0.24%, 1.93%	4.6%, 95%CI: 2.94%, 7.26%	1.2%, 95%CI: 0.62%, 2.23%	7.6%, 95%CI: 6.33%, 9.05%	1.7%, 95%CI: 1.20%, 2.40%
Yes	19.3%, 95%CI: 15.9%, 23.3%	4.0%, 95%CI: 2.88%, 5.59%	7.6%, 95%CI: 6.62%, 8.72%	2.0%, 95%CI: 1.58%, 2.54%	12.1%, 95%CI: 10.8%, 13.6%	2.6%, 95%CI: 1.92%, 3.49%	13.0%, 95%CI: 12.0%, 14.1%	2.9%, 95%CI: 2.49%, 3.33%
Depressed Ever								
No	12.8%, 95%CI: 10.0%, 16.3%	2.7%, 95%CI: 1.91%, 3.70%	3.4%, 95%CI: 2.54%, 4.64%	1.1%, 95%CI: 0.75%, 1.59%	5.3%, 95%CI: 4.41%, 6.44%	1.1%, 95%CI: 0.73%, 1.57%	7.5%, 95%CI: 6.40%, 8.70%	1.7%, 95%CI: 1.32%, 2.12%
Yes	28.3%, 95%CI: 24.0%, 33.1%	6.3%, 95%CI: 4.44%, 8.82%	13.2%, 95%CI: 11.5%, 15.1%	3.3%, 95%CI: 2.33%, 4.62%	19.8%, 95%CI: 17.6%, 22.1%	4.8%, 95%CI: 3.59%, 6.44%	20.3%, 95%CI: 19.0%, 21.6%	4.8%, 95%CI: 4.07%, 5.61%
Ever Self-Harmed								
No	12.5%, 95%CI: 9.80%, 15.7%	2.3%, 95%CI: 1.71%, 2.98%	3.9%, 95%CI: 3.23%, 4.75%	1.0%, 95%CI: 0.73%, 1.35%	6.2%, 95%CI: 4.99%, 7.62%	1.2%, 95%CI: 0.82%, 1.71%	7.7%, 95%CI: 6.79%, 8.64%	1.5%, 95%CI: 1.26%, 1.81%
Yes	33.0%, 95%CI: 28.3%, 38.1%	8.0%, 95%CI: 5.46%, 11.7%	15.3%, 95%CI: 12.5%, 18.6%	4.4%, 95%CI: 3.00%, 6.54%	23.0%, 95%CI: 19.4%, 27.0%	6.0%, 95%CI: 4.34%, 8.23%	23.9%, 95%CI: 22.3%, 25.6%	6.2%, 95%CI: 5.13%, 7.51%

Table S6. Types of Current Nicotine Use among High School Students, 2019-2023 YRBS

	2019		2021		2023		Combined Years	
	Any Current e-Cigarette Use	Any Current Cigarette Use	Any Current e-Cigarette Use	Any Current Cigarette Use	Any Current e-Cigarette Use	Any Current Cigarette Use	Any Current e-Cigarette Use	Any Current Cigarette Use
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	30.6%, 95%CI: 27.6%, 33.8%	5.3%, 95%CI: 4.24%, 6.56%	14.8%, 95%CI: 13.6%, 16.0%	3.0%, 95%CI: 2.38%, 3.89%	13.2%, 95%CI: 11.8%, 14.7%	3.0%, 95%CI: 2.05%, 4.45%	19.3%, 95%CI: 18.3%, 20.3%	3.8%, 95%CI: 3.29%, 4.31%
County of School								
Honolulu County	28.0%, 95%CI: 23.8%, 32.7%	4.9%, 95%CI: 3.55%, 6.86%	12.6%, 95%CI: 11.0%, 14.4%	2.5%, 95%CI: 1.61%, 3.83%	12.4%, 95%CI: 10.6%, 14.4%	3.2%, 95%CI: 1.85%, 5.47%	17.5%, 95%CI: 16.1%, 19.0%	3.5%, 95%CI: 2.88%, 4.33%
Hawaii County	35.4%, 95%CI: 32.1%, 38.9%	5.8%, 95%CI: 4.42%, 7.63%	21.5%, 95%CI: 18.4%, 24.9%	4.3%, 95%CI: 3.06%, 6.15%	15.4%, 95%CI: 12.9%, 18.3%	3.0%, 95%CI: 1.99%, 4.40%	23.6%, 95%CI: 21.9%, 25.4%	4.3%, 95%CI: 3.50%, 5.33%
Maui County	36.4%, 95%CI: 33.0%, 40.0%	6.3%, 95%CI: 4.83%, 8.06%	18.0%, 95%CI: 15.4%, 20.8%	4.3%, 95%CI: 3.10%, 5.81%	15.1%, 95%CI: 11.8%, 19.2%	2.6%, 95%CI: 1.62%, 4.22%	22.9%, 95%CI: 21.0%, 25.0%	4.3%, 95%CI: 3.59%, 5.23%
Kauai County	35.9%, 95%CI: 32.7%, 39.2%	5.7%, 95%CI: 4.01%, 8.11%	16.0%, 95%CI: 13.0%, 19.5%	3.4%, 95%CI: 2.27%, 5.16%	12.0%, 95%CI: 9.29%, 15.3%	2.2%, 95%CI: 1.32%, 3.79%	21.0%, 95%CI: 19.0%, 23.1%	3.8%, 95%CI: 3.00%, 4.74%
Sex Assigned at Birth								
Male	27.4%, 95%CI: 23.9%, 31.2%	5.0%, 95%CI: 3.69%, 6.85%	12.5%, 95%CI: 10.8%, 14.5%	4.0%, 95%CI: 2.83%, 5.73%	10.1%, 95%CI: 8.61%, 11.8%	3.1%, 95%CI: 1.83%, 5.35%	16.4%, 95%CI: 15.0%, 17.9%	4.1%, 95%CI: 3.19%, 5.16%
Female	33.9%, 95%CI: 29.7%, 38.3%	5.0%, 95%CI: 3.86%, 6.35%	17.1%, 95%CI: 15.0%, 19.4%	1.9%, 95%CI: 1.38%, 2.69%	16.5%, 95%CI: 14.1%, 19.1%	2.8%, 95%CI: 1.90%, 4.13%	22.3%, 95%CI: 20.9%, 23.7%	3.2%, 95%CI: 2.68%, 3.82%
Grade Level								
9th Grade	24.5%, 95%CI: 20.4%, 29.0%	4.6%, 95%CI: 2.72%, 7.52%	12.8%, 95%CI: 10.9%, 15.0%	2.1%, 95%CI: 1.26%, 3.41%	11.6%, 95%CI: 9.11%, 14.7%	3.1%, 95%CI: 1.81%, 5.22%	16.0%, 95%CI: 14.2%, 17.9%	3.2%, 95%CI: 2.51%, 4.04%
10th Grade	30.4%, 95%CI: 25.7%, 35.5%	4.8%, 95%CI: 3.11%, 7.31%	11.3%, 95%CI: 9.59%, 13.2%	2.1%, 95%CI: 1.33%, 3.36%	11.4%, 95%CI: 8.68%, 14.9%	2.4%, 95%CI: 1.23%, 4.64%	17.5%, 95%CI: 15.1%, 20.0%	3.1%, 95%CI: 2.28%, 4.14%
11th Grade	32.7%, 95%CI: 29.1%, 36.4%	4.9%, 95%CI: 3.40%, 7.06%	15.9%, 95%CI: 13.6%, 18.4%	3.9%, 95%CI: 2.45%, 6.03%	12.5%, 95%CI: 9.89%, 15.6%	2.7%, 95%CI: 1.25%, 5.52%	20.3%, 95%CI: 18.1%, 22.6%	3.8%, 95%CI: 3.04%, 4.79%
12th Grade	35.5%, 95%CI: 29.4%, 42.0%	5.6%, 95%CI: 3.71%, 8.50%	20.0%, 95%CI: 16.5%, 24.0%	4.3%, 95%CI: 2.94%, 6.22%	17.8%, 95%CI: 14.6%, 21.5%	3.0%, 95%CI: 1.97%, 4.63%	24.1%, 95%CI: 21.4%, 27.0%	4.3%, 95%CI: 3.33%, 5.50%
DOH Race/Ethnicity								
White	23.7%, 95%CI: 18.0%, 30.6%	4.7%, 95%CI: 3.22%, 6.86%	15.8%, 95%CI: 11.2%, 21.9%	5.7%, 95%CI: 3.71%, 8.68%	11.4%, 95%CI: 7.92%, 16.2%	4.4%, 95%CI: 1.38%, 13.1%	16.5%, 95%CI: 13.6%, 19.8%	4.9%, 95%CI: 3.24%, 7.49%
Native Hawaiian	42.0%, 95%CI: 37.7%, 46.4%	6.4%, 95%CI: 5.16%, 7.83%	21.3%, 95%CI: 18.8%, 24.0%	2.3%, 95%CI: 1.44%, 3.57%	16.9%, 95%CI: 14.6%, 19.4%	2.2%, 95%CI: 1.45%, 3.46%	26.8%, 95%CI: 24.5%, 29.3%	3.6%, 95%CI: 2.96%, 4.47%
Japanese	19.8%, 95%CI: 12.8%, 29.4%	4.2%, 95%CI: 0.96%, 16.4%	3.0%, 95%CI: 1.55%, 5.80%	1.2%, 95%CI: 0.39%, 3.78%	3.9%, 95%CI: 1.27%, 11.1%	2.9%, 95%CI: 0.81%, 9.65%	12.6%, 95%CI: 7.88%, 19.4%	3.2%, 95%CI: 1.11%, 8.96%
Filipino	29.1%, 95%CI: 24.4%, 34.2%	2.2%, 95%CI: 0.99%, 4.91%	10.7%, 95%CI: 8.72%, 13.1%	1.7%, 95%CI: 0.76%, 3.60%	10.6%, 95%CI: 7.95%, 14.0%	2.1%, 95%CI: 1.17%, 3.91%	16.6%, 95%CI: 14.6%, 18.9%	2.0%, 95%CI: 1.35%, 2.98%
Other Asian	13.3%, 95%CI: 7.30%, 23.1%	1.6%, 95%CI: 0.78%, 3.22%	2.5%, 95%CI: 1.05%, 5.93%	1.7%, 95%CI: 0.46%, 6.01%	2.3%, 95%CI: 0.71%, 7.18%	0.0%	7.5%, 95%CI: 5.19%, 10.8%	1.2%, 95%CI: 0.57%, 2.65%
Other Pacific Islander	31.0%, 95%CI: 21.2%, 43.0%	9.0%, 95%CI: 5.25%, 14.9%	19.0%, 95%CI: 12.4%, 27.9%	4.0%, 95%CI: 1.53%, 9.94%	26.7%, 95%CI: 18.5%, 36.9%	9.9%, 95%CI: 5.26%, 17.7%	27.4%, 95%CI: 21.7%, 34.0%	8.0%, 95%CI: 5.45%, 11.7%
Black	36.0%, 95%CI: 19.5%, 56.7%	12.2%, 95%CI: 5.75%, 24.1%	15.3%, 95%CI: 6.48%, 32.1%	1.8%, 95%CI: 0.52%, 6.10%	11.2%, 95%CI: 3.13%, 33.0%	1.6%, 95%CI: 0.22%, 10.5%	16.1%, 95%CI: 8.67%, 27.9%	3.1%, 95%CI: 1.51%, 6.23%
AIAN	.	.	.	.	.	.	.	.
Other Race/Ethnicity	34.8%, 95%CI: 32.1%, 37.7%	5.8%, 95%CI: 4.64%, 7.29%	14.3%, 95%CI: 12.1%, 16.8%	3.5%, 95%CI: 2.61%, 4.65%	15.1%, 95%CI: 12.8%, 17.7%	3.4%, 95%CI: 2.47%, 4.80%	18.5%, 95%CI: 16.9%, 20.2%	3.9%, 95%CI: 3.38%, 4.53%
Gender Identity								
Cisgender	30.9%, 95%CI: 27.8%, 34.1%	4.5%, 95%CI: 3.57%, 5.66%	14.6%, 95%CI: 13.4%, 15.9%	2.7%, 95%CI: 2.08%, 3.50%	12.8%, 95%CI: 11.5%, 14.2%	2.4%, 95%CI: 1.64%, 3.41%	19.2%, 95%CI: 18.2%, 20.2%	3.2%, 95%CI: 2.72%, 3.69%
Not Sure	14.9%, 95%CI: 5.74%, 33.5%	9.4%, 95%CI: 2.48%, 29.9%	14.4%, 95%CI: 8.05%, 24.3%	1.8%, 95%CI: 0.55%, 5.77%	22.5%, 95%CI: 13.3%, 35.4%	8.3%, 95%CI: 3.94%, 16.5%	16.9%, 95%CI: 11.6%, 24.0%	6.1%, 95%CI: 2.99%, 12.1%
Transgender	21.7%, 95%CI: 11.1%, 38.1%	17.0%, 95%CI: 8.63%, 30.8%	25.8%, 95%CI: 14.6%, 41.2%	14.4%, 95%CI: 7.54%, 25.7%	13.8%, 95%CI: 7.98%, 22.8%	14.1%, 95%CI: 7.68%, 24.3%	19.9%, 95%CI: 14.8%, 26.3%	14.9%, 95%CI: 10.6%, 20.6%
Mental Health Issue Ever								
No	23.3%, 95%CI: 18.4%, 29.0%	3.4%, 95%CI: 2.19%, 5.34%	6.7%, 95%CI: 4.88%, 9.20%	1.6%, 95%CI: 1.03%, 2.44%	6.0%, 95%CI: 4.00%, 8.81%	1.5%, 95%CI: 0.73%, 3.10%	12.5%, 95%CI: 10.4%, 14.8%	2.2%, 95%CI: 1.60%, 3.14%
Yes	32.9%, 95%CI: 29.9%, 36.1%	5.8%, 95%CI: 4.50%, 7.46%	16.6%, 95%CI: 14.8%, 18.6%	3.4%, 95%CI: 2.53%, 4.52%	15.6%, 95%CI: 13.4%, 18.1%	3.3%, 95%CI: 2.13%, 5.20%	21.1%, 95%CI: 20.0%, 22.3%	4.1%, 95%CI: 3.57%, 4.68%
Depressed in Past Year								
No	24.7%, 95%CI: 21.6%, 28.2%	2.9%, 95%CI: 1.86%, 4.44%	9.1%, 95%CI: 7.94%, 10.4%	1.5%, 95%CI: 1.05%, 2.21%	7.8%, 95%CI: 6.45%, 9.46%	1.1%, 95%CI: 0.70%, 1.84%	13.6%, 95%CI: 12.5%, 14.9%	1.8%, 95%CI: 1.42%, 2.35%
Yes	40.0%, 95%CI: 35.8%, 44.5%	6.7%, 95%CI: 5.45%, 8.25%	25.1%, 95%CI: 22.2%, 28.3%	5.5%, 95%CI: 3.95%, 7.49%	23.1%, 95%CI: 19.9%, 26.6%	5.9%, 95%CI: 3.77%, 9.14%	29.2%, 95%CI: 27.3%, 31.2%	6.0%, 95%CI: 4.92%, 7.32%
Self-Harmed in Past Year								
No	26.1%, 95%CI: 23.3%, 29.1%	3.0%, 95%CI: 2.15%, 4.06%	10.4%, 95%CI: 9.22%, 11.8%	1.5%, 95%CI: 1.07%, 2.15%	9.5%, 95%CI: 8.16%, 11.0%	1.9%, 95%CI: 1.13%, 3.13%	15.2%, 95%CI: 14.2%, 16.3%	2.1%, 95%CI: 1.75%, 2.57%
Yes	48.0%, 95%CI: 41.9%, 54.1%	13.3%, 95%CI: 9.81%, 17.7%	30.4%, 95%CI: 26.9%, 34.3%	8.4%, 95%CI: 5.76%, 12.0%	26.4%, 95%CI: 22.6%, 30.6%	6.3%, 95%CI: 4.24%, 9.39%	34.2%, 95%CI: 31.8%, 36.7%	9.1%, 95%CI: 7.59%, 10.9%

Table S7. Current Nicotine Use & Patterns of Use among Emerging Adults (age 18-29 years), HI-BRFSS

	Total col-%, 95%CI	Any Nicotine row-%, 95%CI	Any E-Cigarette row-%, 95%CI	Any Cigarette row-%, 95%CI	Any Chewing Tobacco row-%, 95%CI	Any Poly-Nicotine Product row-%, 95%CI
Total, HI-BRFSS 2020-2022†		27.7%, 95%CI: 25.4%, 30.0%	21.8%, 95%CI: 19.8%, 24.0%	9.2%, 95%CI: 7.74%, 10.8%	3.2%, 95%CI: 2.39%, 4.34%	5.9%, 95%CI: 4.72%, 7.26%
Total, HI-BRFSS 2020-2023‡		28.2%, 95%CI: 26.3%, 30.3%	23.0%, 95%CI: 21.1%, 24.9%	8.6%, 95%CI: 7.40%, 10.0%	3.1%, 95%CI: 2.42%, 4.04%	5.9%, 95%CI: 4.86%, 7.04%
Age Group‡						
25-34 Years	40.0%, 95%CI: 38.0%, 42.1%	29.4%, 95%CI: 26.3%, 32.8%	22.3%, 95%CI: 19.5%, 25.5%	11.5%, 95%CI: 9.37%, 13.9%	3.2%, 95%CI: 2.18%, 4.61%	6.7%, 95%CI: 5.12%, 8.79%
18-24 Years	60.0%, 95%CI: 57.9%, 62.0%	27.5%, 95%CI: 24.9%, 30.1%	23.4%, 95%CI: 21.0%, 25.9%	6.7%, 95%CI: 5.35%, 8.46%	3.1%, 95%CI: 2.19%, 4.37%	5.3%, 95%CI: 4.09%, 6.79%
Generation†						
Generation Z	58.5%, 95%CI: 56.2%, 60.8%	28.5%, 95%CI: 25.6%, 31.6%	24.4%, 95%CI: 21.6%, 27.3%	6.9%, 95%CI: 5.35%, 8.98%	3.3%, 95%CI: 2.18%, 5.04%	5.3%, 95%CI: 3.90%, 7.11%
Millennial	41.5%, 95%CI: 39.2%, 43.8%	26.4%, 95%CI: 23.1%, 30.0%	18.1%, 95%CI: 15.2%, 21.4%	12.3%, 95%CI: 9.92%, 15.3%	3.1%, 95%CI: 2.06%, 4.55%	6.7%, 95%CI: 4.90%, 9.09%
Sex Assigned at Birth‡						
Female	46.0%, 95%CI: 43.9%, 48.1%	23.7%, 95%CI: 21.0%, 26.7%	18.9%, 95%CI: 16.4%, 21.7%	7.4%, 95%CI: 5.80%, 9.46%	2.1%, 95%CI: 1.27%, 3.51%	4.1%, 95%CI: 2.92%, 5.70%
Male	54.0%, 95%CI: 51.9%, 56.1%	32.1%, 95%CI: 29.3%, 35.0%	26.4%, 95%CI: 23.8%, 29.2%	9.6%, 95%CI: 7.93%, 11.6%	4.0%, 95%CI: 2.98%, 5.33%	7.4%, 95%CI: 5.88%, 9.16%
Education Level‡						
College Graduate	16.9%, 95%CI: 15.6%, 18.3%	13.3%, 95%CI: 10.8%, 16.4%	11.3%, 95%CI: 8.93%, 14.1%	3.0%, 95%CI: 1.80%, 4.98%	1.5%, 95%CI: 0.78%, 2.69%	2.3%, 95%CI: 1.29%, 4.11%
Some College	28.4%, 95%CI: 26.6%, 30.4%	27.3%, 95%CI: 23.8%, 31.1%	23.3%, 95%CI: 19.9%, 27.0%	8.0%, 95%CI: 5.98%, 10.6%	2.1%, 95%CI: 1.32%, 3.45%	5.8%, 95%CI: 4.04%, 8.22%
HS Graduate	45.9%, 95%CI: 43.9%, 48.0%	31.8%, 95%CI: 29.0%, 34.8%	26.3%, 95%CI: 23.6%, 29.1%	9.2%, 95%CI: 7.63%, 11.1%	3.4%, 95%CI: 2.47%, 4.63%	6.3%, 95%CI: 5.00%, 7.98%
Less than HS	8.7%, 95%CI: 7.22%, 10.5%	41.7%, 95%CI: 31.9%, 52.3%	28.0%, 95%CI: 19.5%, 38.4%	18.4%, 95%CI: 11.5%, 28.2%	8.2%, 95%CI: 3.90%, 16.6%	10.6%, 95%CI: 5.67%, 18.9%
Marital Status‡						
Married	16.5%, 95%CI: 14.9%, 18.1%	25.1%, 95%CI: 20.4%, 30.5%	19.9%, 95%CI: 15.5%, 25.1%	7.3%, 95%CI: 5.01%, 10.6%	4.1%, 95%CI: 2.19%, 7.70%	5.4%, 95%CI: 3.17%, 9.14%
Divorced/Sep	3.0%, 95%CI: 2.30%, 3.81%	44.5%, 95%CI: 31.7%, 58.0%	31.6%, 95%CI: 20.0%, 46.1%	20.6%, 95%CI: 11.5%, 34.3%	14.2%, 95%CI: 6.76%, 27.5%	19.7%, 95%CI: 10.7%, 33.5%
Widowed	0.3%, 95%CI: 0.12%, 0.56%	.	.	.	.	.
Never/Unmarried	80.3%, 95%CI: 78.5%, 82.0%	28.2%, 95%CI: 26.1%, 30.5%	23.3%, 95%CI: 21.3%, 25.5%	8.4%, 95%CI: 7.02%, 9.92%	2.6%, 95%CI: 1.91%, 3.44%	5.5%, 95%CI: 4.49%, 6.81%
Rent/Own Home‡						
Own	27.3%, 95%CI: 25.2%, 29.6%	25.5%, 95%CI: 21.1%, 30.6%	21.1%, 95%CI: 16.9%, 26.0%	8.9%, 95%CI: 6.29%, 12.4%	2.7%, 95%CI: 1.53%, 4.73%	6.5%, 95%CI: 4.30%, 9.61%
Rent	41.6%, 95%CI: 39.7%, 43.6%	31.5%, 95%CI: 28.7%, 34.4%	24.1%, 95%CI: 21.7%, 26.8%	9.8%, 95%CI: 8.11%, 11.9%	4.8%, 95%CI: 3.42%, 6.57%	6.6%, 95%CI: 5.12%, 8.39%
Other Arrangement	31.0%, 95%CI: 29.2%, 32.9%	26.3%, 95%CI: 23.1%, 29.7%	22.8%, 95%CI: 19.9%, 26.0%	7.0%, 95%CI: 5.12%, 9.43%	1.5%, 95%CI: 0.87%, 2.58%	4.5%, 95%CI: 3.12%, 6.38%
DOH Race/Ethnicity†						
White	20.7%, 95%CI: 18.8%, 22.8%	27.8%, 95%CI: 22.5%, 33.9%	22.1%, 95%CI: 17.0%, 28.2%	10.6%, 95%CI: 7.19%, 15.3%	5.4%, 95%CI: 3.16%, 9.08%	8.2%, 95%CI: 5.13%, 13.0%
Native Hawaiian	24.9%, 95%CI: 22.9%, 26.9%	35.1%, 95%CI: 30.6%, 40.0%	26.1%, 95%CI: 22.0%, 30.5%	12.3%, 95%CI: 9.26%, 16.3%	2.7%, 95%CI: 1.55%, 4.83%	5.7%, 95%CI: 3.82%, 8.39%
Japanese	9.5%, 95%CI: 8.16%, 11.0%	18.5%, 95%CI: 13.2%, 25.4%	16.3%, 95%CI: 11.2%, 23.1%	5.8%, 95%CI: 3.13%, 10.5%	0.8%, 95%CI: 0.24%, 2.74%	4.4%, 95%CI: 2.14%, 9.00%
Filipino	17.5%, 95%CI: 15.8%, 19.3%	26.9%, 95%CI: 22.1%, 32.5%	22.8%, 95%CI: 18.4%, 27.9%	7.4%, 95%CI: 4.65%, 11.7%	1.4%, 95%CI: 0.61%, 3.16%	4.7%, 95%CI: 2.88%, 7.49%
Chinese	5.0%, 95%CI: 4.06%, 6.20%	7.8%, 95%CI: 4.03%, 14.5%	7.0%, 95%CI: 3.49%, 13.6%	1.5%, 95%CI: 0.38%, 5.90%	0.8%, 95%CI: 0.11%, 5.29%	1.5%, 95%CI: 0.38%, 5.90%
OtherAsian	5.5%, 95%CI: 4.59%, 6.54%	31.0%, 95%CI: 22.7%, 40.8%	26.2%, 95%CI: 18.3%, 36.2%	14.1%, 95%CI: 8.11%, 23.3%	2.4%, 95%CI: 0.85%, 6.38%	11.7%, 95%CI: 6.17%, 21.1%
Other Pacific Islander	8.9%, 95%CI: 7.66%, 10.3%	29.9%, 95%CI: 22.9%, 37.9%	22.3%, 95%CI: 16.0%, 30.3%	9.9%, 95%CI: 6.13%, 15.5%	8.3%, 95%CI: 4.26%, 15.7%	8.2%, 95%CI: 4.02%, 15.9%
Black	4.7%, 95%CI: 3.65%, 6.02%	27.9%, 95%CI: 17.0%, 42.3%	19.2%, 95%CI: 10.8%, 31.8%	4.2%, 95%CI: 1.61%, 10.7%	4.7%, 95%CI: 0.90%, 21.4%	1.5%, 95%CI: 0.37%, 5.94%
AIAN	1.4%, 95%CI: 0.95%, 2.06%	23.0%, 95%CI: 11.0%, 42.1%	17.8%, 95%CI: 7.32%, 37.3%	8.0%, 95%CI: 3.17%, 18.9%	0.0%	3.3%, 95%CI: 0.80%, 12.7%
Other	2.0%, 95%CI: 1.37%, 2.83%	15.5%, 95%CI: 5.64%, 36.1%	8.3%, 95%CI: 2.19%, 26.8%	7.2%, 95%CI: 1.40%, 29.8%	0.0%	0.0%
Sexual/Gender Minority†						
No	86.7%, 95%CI: 84.8%, 88.4%	26.3%, 95%CI: 24.0%, 28.8%	20.7%, 95%CI: 18.5%, 22.9%	9.1%, 95%CI: 7.58%, 11.0%	2.8%, 95%CI: 2.02%, 3.92%	5.7%, 95%CI: 4.48%, 7.20%
Yes	13.3%, 95%CI: 11.6%, 15.2%	38.4%, 95%CI: 31.0%, 46.4%	31.1%, 95%CI: 24.1%, 39.2%	11.0%, 95%CI: 7.00%, 16.8%	5.9%, 95%CI: 2.71%, 12.4%	8.3%, 95%CI: 4.76%, 14.1%
Federal Poverty Threshold†						
0-100%	27.7%, 95%CI: 25.4%, 30.1%	31.6%, 95%CI: 26.9%, 36.8%	22.1%, 95%CI: 18.0%, 26.9%	13.5%, 95%CI: 10.2%, 17.5%	4.2%, 95%CI: 2.23%, 7.85%	6.9%, 95%CI: 4.61%, 10.3%
101-185%	22.9%, 95%CI: 20.7%, 25.2%	34.2%, 95%CI: 28.9%, 40.0%	26.0%, 95%CI: 21.3%, 31.4%	11.0%, 95%CI: 7.63%, 15.7%	4.8%, 95%CI: 2.86%, 7.83%	7.2%, 95%CI: 4.81%, 10.7%
186-300%	23.6%, 95%CI: 21.4%, 26.0%	25.9%, 95%CI: 20.8%, 31.7%	22.2%, 95%CI: 17.3%, 27.9%	9.2%, 95%CI: 6.08%, 13.8%	2.2%, 95%CI: 1.04%, 4.60%	6.9%, 95%CI: 4.17%, 11.3%
301+%	25.9%, 95%CI: 23.5%, 28.3%	19.2%, 95%CI: 15.1%, 23.9%	15.1%, 95%CI: 11.5%, 19.6%	5.2%, 95%CI: 3.19%, 8.49%	1.7%, 95%CI: 0.91%, 3.29%	2.8%, 95%CI: 1.44%, 5.47%
Health Insurance‡						
Insured	92.6%, 95%CI: 91.3%, 93.6%	27.9%, 95%CI: 25.8%, 30.1%	23.1%, 95%CI: 21.1%, 25.2%	8.2%, 95%CI: 6.90%, 9.63%	3.2%, 95%CI: 2.44%, 4.20%	5.8%, 95%CI: 4.73%, 7.07%
Not Insured	7.4%, 95%CI: 6.39%, 8.66%	33.9%, 95%CI: 26.7%, 42.0%	21.2%, 95%CI: 15.6%, 28.1%	17.8%, 95%CI: 12.3%, 25.1%	2.6%, 95%CI: 1.20%, 5.51%	8.3%, 95%CI: 4.94%, 13.6%
Depressive Disorder‡						
No	85.6%, 95%CI: 84.1%, 86.9%	27.0%, 95%CI: 24.9%, 29.2%	22.1%, 95%CI: 20.2%, 24.3%	7.6%, 95%CI: 6.33%, 9.02%	2.9%, 95%CI: 2.19%, 3.85%	5.2%, 95%CI: 4.20%, 6.43%
Yes	14.4%, 95%CI: 13.1%, 15.9%	35.6%, 95%CI: 30.5%, 41.1%	27.9%, 95%CI: 23.2%, 33.3%	14.9%, 95%CI: 11.2%, 19.6%	4.4%, 95%CI: 2.43%, 7.94%	9.8%, 95%CI: 6.69%, 14.1%
Poor Mental Health Days in Past 30 Days‡						
None	50.5%, 95%CI: 48.4%, 52.6%	26.5%, 95%CI: 23.9%, 29.3%	20.8%, 95%CI: 18.5%, 23.4%	7.5%, 95%CI: 5.97%, 9.33%	3.0%, 95%CI: 2.03%, 4.30%	4.6%, 95%CI: 3.48%, 6.14%
1-15 Days	39.2%, 95%CI: 37.1%, 41.2%	27.4%, 95%CI: 24.2%, 30.8%	23.5%, 95%CI: 20.5%, 26.9%	8.8%, 95%CI: 6.82%, 11.3%	3.2%, 95%CI: 2.07%, 4.78%	7.0%, 95%CI: 5.23%, 9.30%
16-30 Days	10.3%, 95%CI: 9.07%, 11.7%	38.6%, 95%CI: 32.0%, 45.6%	29.7%, 95%CI: 23.6%, 36.7%	13.6%, 95%CI: 9.65%, 18.9%	3.8%, 95%CI: 2.02%, 7.18%	7.6%, 95%CI: 4.89%, 11.6%
County of Residence†						
Honolulu County	74.8%, 95%CI: 73.5%, 76.0%	27.8%, 95%CI: 24.9%, 30.8%	22.3%, 95%CI: 19.7%, 25.1%	9.2%, 95%CI: 7.38%, 11.3%	3.2%, 95%CI: 2.14%, 4.70%	6.0%, 95%CI: 4.60%, 7.92%
Hawaii County	11.3%, 95%CI: 10.4%, 12.3%	32.2%, 95%CI: 26.8%, 38.1%	25.4%, 95%CI: 20.5%, 31.1%	9.7%, 95%CI: 6.80%, 13.7%	2.8%, 95%CI: 1.48%, 5.36%	5.6%, 95%CI: 3.57%, 8.57%
Maui County	10.2%, 95%CI: 9.46%, 11.0%	27.9%, 95%CI: 22.5%, 34.0%	20.4%, 95%CI: 15.6%, 26.1%	10.2%, 95%CI: 6.95%, 14.8%	4.3%, 95%CI: 2.06%, 8.72%	6.7%, 95%CI: 3.83%, 11.4%
Kauai County	3.7%, 95%CI: 3.23%, 4.23%	20.1%, 95%CI: 14.3%, 27.5%	14.6%, 95%CI: 9.80%, 21.2%	6.6%, 95%CI: 3.52%, 12.2%	3.7%, 95%CI: 1.48%, 8.84%	4.9%, 95%CI: 2.26%, 10.2%

†Data derives from the 2020-2022 HI BRFSS dataset

‡Data derives from the 2020-2023 HI BRFSS dataset

Table S8. Current Nicotine Use & Patterns of Use among All Adults (age 18+ years), HI-BRFSS

	Total col-%, 95%CI	Any Nicotine row-%, 95%CI	Any E-Cigarette row-%, 95%CI	Any Cigarette row-%, 95%CI	Any Chewing Tobacco row-%, 95%CI	Any Poly-Nicotine Product row-%, 95%CI
Total, HI-BRFSS 2020-2022†		17.4%, 95%CI: 16.6%, 18.1%	7.4%, 95%CI: 6.85%, 7.92%	10.6%, 95%CI: 9.98%, 11.2%	2.1%, 95%CI: 1.85%, 2.42%	2.5%, 95%CI: 2.24%, 2.88%
Total, HI-BRFSS 2020-2023‡		17.7%, 95%CI: 17.1%, 18.4%	8.1%, 95%CI: 7.61%, 8.58%	10.2%, 95%CI: 9.67%, 10.7%	2.3%, 95%CI: 2.02%, 2.53%	2.7%, 95%CI: 2.44%, 3.01%
Age Group‡						
65+ Years	25.2%, 95%CI: 24.5%, 26.0%	8.3%, 95%CI: 7.51%, 9.12%	1.1%, 95%CI: 0.85%, 1.40%	6.8%, 95%CI: 6.10%, 7.58%	0.8%, 95%CI: 0.57%, 1.02%	0.5%, 95%CI: 0.33%, 0.66%
55-64 Years	15.6%, 95%CI: 15.0%, 16.2%	14.0%, 95%CI: 12.7%, 15.4%	2.5%, 95%CI: 2.00%, 3.20%	10.9%, 95%CI: 9.77%, 12.2%	1.8%, 95%CI: 1.33%, 2.31%	1.3%, 95%CI: 0.95%, 1.84%
45-54 Years	14.9%, 95%CI: 14.3%, 15.5%	17.3%, 95%CI: 15.8%, 18.8%	4.6%, 95%CI: 3.86%, 5.54%	12.2%, 95%CI: 11.0%, 13.6%	2.6%, 95%CI: 2.01%, 3.27%	2.3%, 95%CI: 1.81%, 2.94%
35-44 Years	16.7%, 95%CI: 16.0%, 17.4%	22.3%, 95%CI: 20.6%, 24.0%	8.5%, 95%CI: 7.48%, 9.62%	14.0%, 95%CI: 12.6%, 15.4%	3.2%, 95%CI: 2.55%, 3.98%	3.4%, 95%CI: 2.75%, 4.08%
25-34 Years	17.0%, 95%CI: 16.3%, 17.7%	25.9%, 95%CI: 23.9%, 27.9%	17.3%, 95%CI: 15.5%, 19.1%	11.3%, 95%CI: 9.96%, 12.9%	3.3%, 95%CI: 2.59%, 4.31%	5.6%, 95%CI: 4.60%, 6.84%
18-24 Years	10.6%, 95%CI: 9.99%, 11.2%	27.5%, 95%CI: 24.9%, 30.1%	23.4%, 95%CI: 21.0%, 25.9%	6.7%, 95%CI: 5.35%, 8.46%	3.1%, 95%CI: 2.19%, 4.37%	5.3%, 95%CI: 4.09%, 6.78%
Generation†						
Generation Z	10.6%, 95%CI: 9.99%, 11.2%	28.5%, 95%CI: 25.6%, 31.6%	24.4%, 95%CI: 21.6%, 27.3%	6.9%, 95%CI: 5.35%, 8.98%	3.3%, 95%CI: 2.18%, 5.04%	5.3%, 95%CI: 3.90%, 7.11%
Millennial	27.2%, 95%CI: 26.4%, 28.0%	23.6%, 95%CI: 21.9%, 25.3%	12.4%, 95%CI: 11.1%, 13.8%	13.0%, 95%CI: 11.7%, 14.4%	3.1%, 95%CI: 2.52%, 3.88%	4.6%, 95%CI: 3.81%, 5.55%
Generation X	24.0%, 95%CI: 23.2%, 24.7%	17.7%, 95%CI: 16.3%, 19.1%	4.4%, 95%CI: 3.70%, 5.23%	13.0%, 95%CI: 11.8%, 14.2%	2.2%, 95%CI: 1.73%, 2.78%	2.0%, 95%CI: 1.56%, 2.55%
Baby Boomer	28.9%, 95%CI: 28.1%, 29.7%	11.4%, 95%CI: 10.4%, 12.5%	1.5%, 95%CI: 1.16%, 1.87%	9.6%, 95%CI: 8.64%, 10.6%	1.2%, 95%CI: 0.91%, 1.58%	0.8%, 95%CI: 0.56%, 1.17%
Greatest/Silent Generation	9.4%, 95%CI: 8.83%, 9.91%	5.7%, 95%CI: 4.44%, 7.37%	0.4%, 95%CI: 0.20%, 0.69%	5.0%, 95%CI: 3.81%, 6.61%	0.5%, 95%CI: 0.27%, 1.10%	0.3%, 95%CI: 0.12%, 0.73%
Sex Assigned at Birth‡						
Female	50.3%, 95%CI: 49.4%, 51.2%	14.3%, 95%CI: 13.5%, 15.2%	6.0%, 95%CI: 5.46%, 6.63%	9.0%, 95%CI: 8.36%, 9.66%	1.1%, 95%CI: 0.86%, 1.36%	1.8%, 95%CI: 1.50%, 2.11%
Male	49.7%, 95%CI: 48.8%, 50.6%	21.2%, 95%CI: 20.2%, 22.2%	10.2%, 95%CI: 9.41%, 11.0%	11.3%, 95%CI: 10.6%, 12.1%	3.4%, 95%CI: 3.03%, 3.91%	3.6%, 95%CI: 3.19%, 4.15%
Education Level‡						
College Graduate	30.9%, 95%CI: 30.1%, 31.6%	7.9%, 95%CI: 7.32%, 8.54%	3.4%, 95%CI: 3.04%, 3.91%	4.3%, 95%CI: 3.86%, 4.77%	1.3%, 95%CI: 1.12%, 1.61%	1.2%, 95%CI: 0.95%, 1.48%
Some College	32.5%, 95%CI: 31.7%, 33.4%	17.2%, 95%CI: 16.2%, 18.3%	8.0%, 95%CI: 7.18%, 8.83%	9.9%, 95%CI: 9.13%, 10.8%	1.9%, 95%CI: 1.53%, 2.27%	2.5%, 95%CI: 2.09%, 3.03%
HS Graduate	28.7%, 95%CI: 27.9%, 29.6%	25.6%, 95%CI: 24.3%, 26.9%	12.7%, 95%CI: 11.7%, 13.8%	14.1%, 95%CI: 13.1%, 15.1%	3.1%, 95%CI: 2.61%, 3.69%	4.2%, 95%CI: 3.59%, 4.82%
Less than HS	7.9%, 95%CI: 7.17%, 8.64%	31.4%, 95%CI: 27.5%, 35.7%	10.7%, 95%CI: 8.20%, 13.9%	21.0%, 95%CI: 17.7%, 24.7%	4.6%, 95%CI: 3.05%, 6.89%	4.5%, 95%CI: 2.93%, 6.75%
Marital Status‡						
Married	52.1%, 95%CI: 51.2%, 53.0%	11.7%, 95%CI: 11.0%, 12.5%	4.2%, 95%CI: 3.75%, 4.73%	7.0%, 95%CI: 6.42%, 7.56%	2.1%, 95%CI: 1.80%, 2.52%	1.6%, 95%CI: 1.34%, 1.96%
Divorced/Sep	11.1%, 95%CI: 10.6%, 11.6%	22.2%, 95%CI: 20.3%, 24.1%	6.5%, 95%CI: 5.45%, 7.83%	16.4%, 95%CI: 14.8%, 18.2%	2.2%, 95%CI: 1.60%, 3.00%	3.0%, 95%CI: 2.34%, 3.91%
Widowed	6.4%, 95%CI: 5.98%, 6.89%	11.7%, 95%CI: 9.91%, 13.9%	1.7%, 95%CI: 1.06%, 2.63%	10.0%, 95%CI: 8.34%, 12.0%	1.1%, 95%CI: 0.63%, 1.77%	1.1%, 95%CI: 0.66%, 1.76%
Never/Unmarried	30.4%, 95%CI: 29.6%, 31.2%	27.7%, 95%CI: 26.3%, 29.2%	16.6%, 95%CI: 15.4%, 17.8%	13.5%, 95%CI: 12.5%, 14.6%	2.8%, 95%CI: 2.33%, 3.35%	4.8%, 95%CI: 4.16%, 5.57%
Rent/Own Home‡						
Own	64.9%, 95%CI: 64.0%, 65.7%	12.4%, 95%CI: 11.7%, 13.2%	4.4%, 95%CI: 3.94%, 4.99%	7.9%, 95%CI: 7.37%, 8.56%	1.6%, 95%CI: 1.34%, 1.89%	1.6%, 95%CI: 1.32%, 1.95%
Rent	24.9%, 95%CI: 24.2%, 25.7%	28.5%, 95%CI: 27.2%, 29.9%	14.1%, 95%CI: 13.1%, 15.2%	15.4%, 95%CI: 14.4%, 16.5%	4.1%, 95%CI: 3.49%, 4.86%	4.9%, 95%CI: 4.32%, 5.66%
Other Arrangement	10.2%, 95%CI: 9.69%, 10.7%	26.4%, 95%CI: 24.2%, 28.7%	17.0%, 95%CI: 15.1%, 19.1%	11.9%, 95%CI: 10.4%, 13.7%	2.2%, 95%CI: 1.65%, 3.02%	4.5%, 95%CI: 3.56%, 5.78%
DOH Race/Ethnicity†						
White	25.7%, 95%CI: 25.0%, 26.5%	15.3%, 95%CI: 14.0%, 16.7%	6.5%, 95%CI: 5.52%, 7.69%	9.3%, 95%CI: 8.30%, 10.4%	2.2%, 95%CI: 1.73%, 2.84%	2.5%, 95%CI: 1.83%, 3.32%
Native Hawaiian	19.0%, 95%CI: 18.3%, 19.7%	26.8%, 95%CI: 25.0%, 28.8%	11.4%, 95%CI: 10.1%, 13.0%	17.1%, 95%CI: 15.5%, 18.7%	2.2%, 95%CI: 1.69%, 2.98%	3.9%, 95%CI: 3.13%, 4.83%
Japanese	17.6%, 95%CI: 16.9%, 18.3%	11.8%, 95%CI: 10.4%, 13.4%	5.0%, 95%CI: 4.05%, 6.26%	7.3%, 95%CI: 6.17%, 8.53%	1.0%, 95%CI: 0.66%, 1.47%	1.4%, 95%CI: 0.97%, 2.07%
Filipino	16.3%, 95%CI: 15.6%, 17.0%	15.2%, 95%CI: 13.4%, 17.1%	7.1%, 95%CI: 5.93%, 8.52%	8.7%, 95%CI: 7.33%, 10.2%	1.5%, 95%CI: 1.00%, 2.12%	2.0%, 95%CI: 1.41%, 2.77%
Chinese	6.0%, 95%CI: 5.57%, 6.47%	7.9%, 95%CI: 6.11%, 10.1%	2.5%, 95%CI: 1.58%, 3.83%	5.2%, 95%CI: 3.82%, 7.14%	1.7%, 95%CI: 0.95%, 2.91%	1.5%, 95%CI: 0.88%, 2.65%
OtherAsian	5.1%, 95%CI: 4.75%, 5.58%	16.4%, 95%CI: 13.2%, 20.2%	7.2%, 95%CI: 5.18%, 9.82%	11.1%, 95%CI: 8.31%, 14.6%	2.0%, 95%CI: 1.21%, 3.40%	3.8%, 95%CI: 2.41%, 6.03%
Other Pacific Islander	4.7%, 95%CI: 4.33%, 5.13%	28.5%, 95%CI: 24.6%, 32.8%	12.1%, 95%CI: 9.41%, 15.5%	14.2%, 95%CI: 11.6%, 17.4%	8.6%, 95%CI: 6.00%, 12.2%	5.1%, 95%CI: 3.26%, 7.91%
Black	2.8%, 95%CI: 2.46%, 3.17%	20.6%, 95%CI: 15.7%, 26.6%	8.2%, 95%CI: 5.32%, 12.5%	10.4%, 95%CI: 7.20%, 14.8%	2.1%, 95%CI: 0.66%, 6.63%	0.9%, 95%CI: 0.36%, 2.13%
AIAN	1.7%, 95%CI: 1.49%, 1.92%	23.6%, 95%CI: 18.2%, 30.0%	7.0%, 95%CI: 4.40%, 10.8%	17.3%, 95%CI: 12.5%, 23.5%	2.1%, 95%CI: 0.90%, 4.63%	2.6%, 95%CI: 1.24%, 5.25%
Other	1.1%, 95%CI: 0.88%, 1.26%	14.6%, 95%CI: 8.87%, 23.0%	3.7%, 95%CI: 1.28%, 10.2%	10.3%, 95%CI: 5.70%, 17.9%	1.8%, 95%CI: 0.54%, 6.08%	1.5%, 95%CI: 0.38%, 5.76%
Sexual/Gender Minority†						
No	93.6%, 95%CI: 93.1%, 94.1%	16.7%, 95%CI: 16.0%, 17.4%	6.8%, 95%CI: 6.26%, 7.32%	10.4%, 95%CI: 9.84%, 11.1%	2.0%, 95%CI: 1.72%, 2.27%	2.4%, 95%CI: 2.05%, 2.71%
Yes	6.4%, 95%CI: 5.94%, 6.87%	29.7%, 95%CI: 25.9%, 33.7%	17.1%, 95%CI: 13.9%, 20.9%	14.6%, 95%CI: 12.2%, 17.5%	4.4%, 95%CI: 2.65%, 7.13%	5.7%, 95%CI: 4.05%, 8.08%
Federal Poverty Threshold†						
0-100%	17.1%, 95%CI: 16.3%, 17.9%	28.2%, 95%CI: 25.9%, 30.5%	10.2%, 95%CI: 8.73%, 12.0%	19.0%, 95%CI: 17.2%, 21.1%	3.9%, 95%CI: 2.88%, 5.29%	4.6%, 95%CI: 3.63%, 5.78%
101-185%	17.8%, 95%CI: 17.0%, 18.5%	22.1%, 95%CI: 20.1%, 24.2%	8.6%, 95%CI: 7.32%, 10.1%	14.2%, 95%CI: 12.6%, 16.0%	2.5%, 95%CI: 1.83%, 3.41%	3.2%, 95%CI: 2.47%, 4.13%
186-300%	23.7%, 95%CI: 22.9%, 24.6%	16.8%, 95%CI: 15.2%, 18.4%	7.3%, 95%CI: 6.17%, 8.65%	10.2%, 95%CI: 8.96%, 11.5%	1.7%, 95%CI: 1.29%, 2.26%	2.4%, 95%CI: 1.75%, 3.19%
301+%	41.4%, 95%CI: 40.5%, 42.3%	11.4%, 95%CI: 10.5%, 12.4%	4.9%, 95%CI: 4.29%, 5.69%	6.3%, 95%CI: 5.63%, 7.03%	1.7%, 95%CI: 1.34%, 2.05%	1.5%, 95%CI: 1.12%, 1.88%
Health Insurance‡						
Insured	96.2%, 95%CI: 95.8%, 96.5%	17.2%, 95%CI: 16.5%, 17.8%	7.8%, 95%CI: 7.33%, 8.31%	9.8%, 95%CI: 9.35%, 10.4%	2.2%, 95%CI: 1.93%, 2.45%	2.6%, 95%CI: 2.33%, 2.91%
Not Insured	3.8%, 95%CI: 3.49%, 4.19%	32.3%, 95%CI: 28.2%, 36.8%	12.4%, 95%CI: 9.80%, 15.7%	20.6%, 95%CI: 17.0%, 24.7%	4.2%, 95%CI: 2.83%, 6.28%	5.4%, 95%CI: 3.72%, 7.89%
Depressive Disorder‡						
No	87.9%, 95%CI: 87.3%, 88.4%	16.3%, 95%CI: 15.7%, 17.0%	7.4%, 95%CI: 6.95%, 7.96%	9.0%, 95%CI: 8.53%, 9.55%	2.3%, 95%CI: 2.03%, 2.58%	2.4%, 95%CI: 2.13%, 2.71%
Yes	12.1%, 95%CI: 11.6%, 12.7%	27.2%, 95%CI: 25.2%, 29.2%	12.4%, 95%CI: 11.0%, 14.0%	17.9%, 95%CI: 16.2%, 19.7%	2.1%, 95%CI: 1.50%, 2.85%	4.8%, 95%CI: 3.92%, 5.97%
Poor Mental Health Days in Past 30 Days‡						
None	66.0%, 95%CI: 65.2%, 66.9%	15.1%, 95%CI: 14.4%, 15.9%	6.2%, 95%CI: 5.65%, 6.69%	8.8%, 95%CI: 8.23%, 9.40%	2.2%, 95%CI: 1.91%, 2.54%	2.1%, 95%CI: 1.80%, 2.42%
1-15 Days	26.7%, 95%CI: 25.9%, 27.5%	20.3%, 95%CI: 19.0%, 21.6%	10.7%, 95%CI: 9.69%, 11.9%	10.9%, 95%CI: 9.96%, 11.9%	2.5%, 95%CI: 2.03%, 3.09%	3.6%, 95%CI: 3.00%, 4.34%
16-30 Days	7.3%, 95%CI: 6.84%, 7.78%	30.3%, 95%CI: 27.5%, 33.2%	14.6%, 95%CI: 12.5%, 17.0%	18.5%, 95%CI: 16.3%, 21.0%	1.9%, 95%CI: 1.28%, 2.88%	4.8%, 95%CI: 3.74%, 6.08%
County of Residence†						
Honolulu County	69.0%, 95%CI: 68.5%, 69.6%	17.0%, 95%CI: 16.0%, 18.0%	7.7%, 95%CI: 6.98%, 8.43%	10.1%, 95%CI: 9.31%, 10.9%	2.1%, 95%CI: 1.75%, 2.52%	2.7%, 95%CI: 2.26%, 3.15%
Hawaii County	14.2%, 95%CI: 13.8%, 14.6%	19.8%, 95%CI: 18.2%, 21.5%	7.0%, 95%CI: 6.02%, 8.17%	13.1%, 95%CI: 11.7%, 14.5%	2.0%, 95%CI: 1.54%, 2.62%	2.2%, 95%CI: 1.70%, 2.83%
Maui County	11.8%, 95%CI: 11.4%, 12.1%	17.1%, 95%CI: 15.5%, 18.8%	6.1%, 95%CI: 5.12%, 7.35%	10.8%, 95%CI: 9.57%, 12.2%	2.4%, 95%CI: 1.80%, 3.30%	2.3%, 95%CI: 1.71%, 3.17%
Kauai County	5.0%, 95%CI: 4.76%, 5.16%	15.7%, 95%CI: 13.8%, 17.7%	5.6%, 95%CI: 4.44%, 7.00%	10.6%, 95%CI: 9.07%, 12.4%	1.5%, 95%CI: 0.99%, 2.30%	2.1%, 95%CI: 1.37%, 3.06%

†Data derives from the 2020-2022 HI BRFSS dataset

‡Data derives from the 2020-2023 HI BRFSS dataset

Table S9. Cannabis Use and Patterns of Use among Middle School Students, 2019-2023 YRBS

	2019			2021			2023			Combined Years		
	Any Current Cannabis Use	Lifetime Cannabis Use	Early Cannabis Initiation	Any Current Cannabis Use	Lifetime Cannabis Use	Early Cannabis Initiation	Any Current Cannabis Use	Lifetime Cannabis Use	Early Cannabis Initiation	Any Current Cannabis Use	Lifetime Cannabis Use	Early Cannabis Initiation
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	7.2%, 95%CI: 6.12%, 8.52%	10.6%, 95%CI: 8.72%, 12.9%	7.4%, 95%CI: 5.90%, 9.23%	2.8%, 95%CI: 2.24%, 3.41%	5.0%, 95%CI: 3.90%, 6.28%	3.9%, 95%CI: 3.06%, 4.92%	5.4%, 95%CI: 4.49%, 6.39%	7.7%, 95%CI: 6.65%, 8.88%	4.9%, 95%CI: 4.21%, 5.61%	5.2%, 95%CI: 4.64%, 5.83%	7.9%, 95%CI: 7.01%, 8.83%	5.5%, 95%CI: 4.83%, 6.18%
County of School												
Honolulu County	6.2%, 95%CI: 4.72%, 8.18%	8.8%, 95%CI: 6.21%, 12.4%	5.9%, 95%CI: 3.87%, 8.83%	2.1%, 95%CI: 1.46%, 3.11%	3.8%, 95%CI: 2.36%, 5.98%	3.0%, 95%CI: 1.91%, 4.73%	4.6%, 95%CI: 3.44%, 6.06%	5.6%, 95%CI: 4.33%, 7.34%	3.2%, 95%CI: 2.49%, 4.21%	4.4%, 95%CI: 3.64%, 5.31%	6.2%, 95%CI: 5.10%, 7.55%	4.1%, 95%CI: 3.34%, 5.12%
Hawaii County	9.6%, 95%CI: 8.00%, 11.6%	15.6%, 95%CI: 13.4%, 18.2%	11.5%, 95%CI: 9.69%, 13.6%	4.2%, 95%CI: 3.07%, 5.74%	7.5%, 95%CI: 5.94%, 9.42%	5.7%, 95%CI: 4.40%, 7.23%	7.1%, 95%CI: 5.21%, 9.52%	12.8%, 95%CI: 10.2%, 16.0%	8.3%, 95%CI: 6.48%, 10.5%	7.0%, 95%CI: 6.08%, 8.12%	12.0%, 95%CI: 10.6%, 13.5%	8.5%, 95%CI: 7.50%, 9.64%
Maui County	7.9%, 95%CI: 6.36%, 9.69%	11.8%, 95%CI: 9.94%, 14.0%	8.4%, 95%CI: 6.91%, 10.3%	3.7%, 95%CI: 2.74%, 5.01%	7.1%, 95%CI: 5.57%, 8.95%	5.6%, 95%CI: 4.44%, 6.99%	7.2%, 95%CI: 5.50%, 9.47%	11.4%, 95%CI: 9.29%, 13.8%	8.5%, 95%CI: 6.77%, 10.7%	6.3%, 95%CI: 5.44%, 7.34%	10.1%, 95%CI: 8.99%, 11.4%	7.5%, 95%CI: 6.60%, 8.59%
Kauai County	10.7%, 95%CI: 8.33%, 13.6%	15.5%, 95%CI: 12.7%, 18.8%	11.8%, 95%CI: 9.69%, 14.3%	3.6%, 95%CI: 2.51%, 5.15%	6.0%, 95%CI: 4.59%, 7.84%	4.6%, 95%CI: 3.52%, 6.09%	5.0%, 95%CI: 3.35%, 7.46%	7.9%, 95%CI: 5.35%, 11.5%	4.9%, 95%CI: 2.79%, 8.33%	6.6%, 95%CI: 5.46%, 8.06%	10.1%, 95%CI: 8.59%, 11.8%	7.3%, 95%CI: 6.07%, 8.82%
Sex Assigned at Birth												
Male	7.1%, 95%CI: 5.76%, 8.68%	10.0%, 95%CI: 8.19%, 12.1%	7.6%, 95%CI: 6.11%, 9.35%	2.3%, 95%CI: 1.65%, 3.24%	4.6%, 95%CI: 3.07%, 6.91%	3.4%, 95%CI: 2.27%, 4.93%	4.6%, 95%CI: 3.50%, 6.08%	6.3%, 95%CI: 5.16%, 7.63%	3.7%, 95%CI: 2.95%, 4.62%	4.8%, 95%CI: 4.14%, 5.52%	7.1%, 95%CI: 6.25%, 8.06%	5.0%, 95%CI: 4.33%, 5.78%
Female	7.3%, 95%CI: 5.80%, 9.07%	11.1%, 95%CI: 8.63%, 14.2%	7.0%, 95%CI: 5.16%, 9.47%	3.2%, 95%CI: 2.52%, 4.17%	5.3%, 95%CI: 4.29%, 6.52%	4.4%, 95%CI: 3.52%, 5.53%	6.2%, 95%CI: 5.21%, 7.44%	9.3%, 95%CI: 7.73%, 11.2%	6.2%, 95%CI: 5.25%, 7.31%	5.7%, 95%CI: 4.96%, 6.43%	8.7%, 95%CI: 7.57%, 9.94%	5.9%, 95%CI: 5.11%, 6.85%
Grade Level												
6th Grade	4.0%, 95%CI: 2.46%, 6.32%	5.0%, 95%CI: 3.50%, 7.10%	4.9%, 95%CI: 3.41%, 6.98%	1.6%, 95%CI: 0.67%, 3.63%	2.1%, 95%CI: 1.32%, 3.25%	2.1%, 95%CI: 1.32%, 3.25%	3.9%, 95%CI: 2.43%, 6.09%	4.9%, 95%CI: 3.35%, 7.07%	4.8%, 95%CI: 3.29%, 7.01%	3.1%, 95%CI: 2.24%, 4.34%	4.0%, 95%CI: 3.07%, 5.15%	3.9%, 95%CI: 3.02%, 5.09%
7th Grade	5.7%, 95%CI: 4.28%, 7.52%	8.5%, 95%CI: 6.23%, 11.4%	6.8%, 95%CI: 4.86%, 9.35%	2.1%, 95%CI: 1.25%, 3.45%	3.8%, 95%CI: 2.76%, 5.09%	3.6%, 95%CI: 2.66%, 4.83%	5.0%, 95%CI: 3.64%, 6.95%	7.3%, 95%CI: 5.80%, 9.06%	4.9%, 95%CI: 4.06%, 5.81%	4.5%, 95%CI: 3.85%, 5.14%	6.7%, 95%CI: 5.84%, 7.75%	5.2%, 95%CI: 4.44%, 6.13%
8th Grade	10.1%, 95%CI: 8.44%, 12.1%	15.9%, 95%CI: 13.4%, 18.7%	9.2%, 95%CI: 7.43%, 11.4%	4.0%, 95%CI: 2.72%, 5.95%	7.6%, 95%CI: 5.19%, 11.0%	5.2%, 95%CI: 3.51%, 7.58%	6.7%, 95%CI: 5.36%, 8.36%	10.3%, 95%CI: 8.60%, 12.2%	4.8%, 95%CI: 3.67%, 6.24%	7.0%, 95%CI: 5.83%, 8.30%	11.3%, 95%CI: 9.65%, 13.3%	6.5%, 95%CI: 5.59%, 7.63%
DOH Race/Ethnicity												
White	3.1%, 95%CI: 1.77%, 5.42%	6.9%, 95%CI: 3.74%, 12.3%	4.6%, 95%CI: 2.49%, 8.30%	1.9%, 95%CI: 0.86%, 4.09%	5.7%, 95%CI: 3.30%, 9.83%	4.1%, 95%CI: 2.54%, 6.52%	3.3%, 95%CI: 1.76%, 6.15%	5.3%, 95%CI: 3.29%, 8.34%	3.0%, 95%CI: 1.69%, 5.23%	2.8%, 95%CI: 1.80%, 4.29%	5.9%, 95%CI: 4.11%, 8.50%	3.9%, 95%CI: 2.69%, 5.48%
Native Hawaiian	11.8%, 95%CI: 9.90%, 13.9%	18.3%, 95%CI: 15.4%, 21.6%	13.3%, 95%CI: 11.1%, 15.9%	5.3%, 95%CI: 3.95%, 7.11%	8.8%, 95%CI: 7.25%, 10.7%	7.2%, 95%CI: 5.70%, 8.95%	9.2%, 95%CI: 7.57%, 11.0%	13.6%, 95%CI: 11.4%, 16.1%	9.5%, 95%CI: 7.81%, 11.5%	9.0%, 95%CI: 7.83%, 10.3%	13.9%, 95%CI: 12.5%, 15.5%	10.3%, 95%CI: 9.25%, 11.4%
Japanese	2.8%, 95%CI: 0.73%, 10.2%	6.6%, 95%CI: 2.98%, 14.1%	5.4%, 95%CI: 1.70%, 15.8%	1.6%, 95%CI: 0.63%, 3.94%	1.6%, 95%CI: 0.64%, 3.95%	1.6%, 95%CI: 0.64%, 3.95%	1.7%, 95%CI: 0.37%, 7.57%	0.3%, 95%CI: 0.04%, 2.03%	0.3%, 95%CI: 0.04%, 2.03%	2.4%, 95%CI: 0.82%, 7.06%	4.8%, 95%CI: 2.59%, 8.83%	4.0%, 95%CI: 1.57%, 9.71%
Filipino	4.0%, 95%CI: 2.74%, 5.76%	5.4%, 95%CI: 4.26%, 6.73%	4.3%, 95%CI: 3.38%, 5.36%	0.6%, 95%CI: 0.13%, 2.54%	0.8%, 95%CI: 0.26%, 2.40%	0.7%, 95%CI: 0.19%, 2.48%	2.8%, 95%CI: 1.67%, 4.50%	3.4%, 95%CI: 2.23%, 5.21%	2.0%, 95%CI: 1.29%, 2.99%	2.5%, 95%CI: 1.70%, 3.68%	3.3%, 95%CI: 2.47%, 4.33%	2.4%, 95%CI: 1.77%, 3.21%
Other Asian	0.1%, 95%CI: 0.01%, 0.88%	4.4%, 95%CI: 1.63%, 11.4%	1.7%, 95%CI: 0.42%, 6.30%	1.0%, 95%CI: 0.26%, 3.68%	2.1%, 95%CI: 0.88%, 4.94%	1.2%, 95%CI: 0.35%, 3.85%	0.0%	1.3%, 95%CI: 0.24%, 6.71%	0.0%	0.3%, 95%CI: 0.11%, 0.98%	3.0%, 95%CI: 1.62%, 5.44%	1.1%, 95%CI: 0.35%, 3.42%
Other Pacific Islander	15.1%, 95%CI: 10.6%, 21.0%	15.9%, 95%CI: 11.6%, 21.5%	8.9%, 95%CI: 4.78%, 16.1%	3.1%, 95%CI: 1.56%, 6.18%	5.9%, 95%CI: 2.81%, 11.9%	3.6%, 95%CI: 1.78%, 6.97%	8.3%, 95%CI: 5.87%, 11.6%	8.9%, 95%CI: 5.73%, 13.7%	4.3%, 95%CI: 2.86%, 6.52%	10.5%, 95%CI: 7.64%, 14.3%	11.7%, 95%CI: 8.68%, 15.7%	6.5%, 95%CI: 4.29%, 9.64%
Black	11.0%, 95%CI: 6.24%, 18.6%	8.1%, 95%CI: 4.49%, 14.3%	6.7%, 95%CI: 3.20%, 13.4%	2.4%, 95%CI: 0.27%, 18.1%	5.8%, 95%CI: 2.41%, 13.3%	5.8%, 95%CI: 2.41%, 13.3%	5.7%, 95%CI: 1.46%, 20.0%	9.0%, 95%CI: 1.81%, 34.3%	5.5%, 95%CI: 1.57%, 17.7%	4.8%, 95%CI: 1.71%, 12.9%	7.2%, 95%CI: 2.95%, 16.7%	5.8%, 95%CI: 2.96%, 11.2%
AIAN										5.8%, 95%CI: 2.26%, 13.9%	4.8%, 95%CI: 1.90%, 11.5%	2.9%, 95%CI: 0.89%, 9.13%
Other Race/Ethnicity	10.8%, 95%CI: 9.20%, 12.7%	16.1%, 95%CI: 14.3%, 18.2%	10.7%, 95%CI: 9.17%, 12.6%	4.1%, 95%CI: 2.86%, 5.72%	7.2%, 95%CI: 4.78%, 10.7%	5.9%, 95%CI: 3.97%, 8.68%	7.2%, 95%CI: 6.24%, 8.32%	10.7%, 95%CI: 9.28%, 12.2%	6.9%, 95%CI: 5.87%, 8.21%	6.8%, 95%CI: 6.05%, 7.58%	10.5%, 95%CI: 9.14%, 12.1%	7.4%, 95%CI: 6.36%, 8.54%
Gender Identity												
Cisgender	6.6%, 95%CI: 5.52%, 7.81%	10.3%, 95%CI: 8.44%, 12.6%	7.0%, 95%CI: 5.48%, 8.87%	2.5%, 95%CI: 1.93%, 3.19%	4.6%, 95%CI: 3.75%, 5.75%	3.7%, 95%CI: 2.94%, 4.64%	5.4%, 95%CI: 4.42%, 6.47%	7.9%, 95%CI: 6.74%, 9.16%	4.9%, 95%CI: 4.20%, 5.75%	4.9%, 95%CI: 4.38%, 5.49%	7.8%, 95%CI: 6.96%, 8.68%	5.3%, 95%CI: 4.69%, 5.98%
Not Sure	8.7%, 95%CI: 4.36%, 16.6%	10.9%, 95%CI: 5.83%, 19.6%	9.2%, 95%CI: 4.46%, 18.1%	2.2%, 95%CI: 1.07%, 4.34%	4.6%, 95%CI: 2.36%, 8.67%	4.2%, 95%CI: 2.07%, 8.15%	3.8%, 95%CI: 1.75%, 8.17%	3.8%, 95%CI: 1.78%, 7.72%	3.8%, 95%CI: 1.78%, 7.72%	4.1%, 95%CI: 2.78%, 5.95%	5.6%, 95%CI: 3.67%, 8.47%	5.1%, 95%CI: 3.21%, 7.89%
Transgender	30.2%, 95%CI: 18.1%, 46.0%	21.2%, 95%CI: 12.8%, 33.0%	15.7%, 95%CI: 8.99%, 26.1%	11.3%, 95%CI: 4.08%, 27.4%	20.0%, 95%CI: 7.44%, 43.7%	11.9%, 95%CI: 5.75%, 23.1%	9.1%, 95%CI: 3.98%, 19.6%	9.4%, 95%CI: 4.19%, 19.9%	8.8%, 95%CI: 3.74%, 19.4%	15.2%, 95%CI: 9.03%, 24.6%	17.0%, 95%CI: 9.09%, 29.5%	11.9%, 95%CI: 7.41%, 18.5%
Mental Health Issue Ever												
No	5.1%, 95%CI: 3.87%, 6.67%	7.4%, 95%CI: 5.99%, 9.18%	4.9%, 95%CI: 3.73%, 6.48%	1.1%, 95%CI: 0.60%, 1.96%	1.6%, 95%CI: 0.97%, 2.51%	1.3%, 95%CI: 0.74%, 2.23%	2.1%, 95%CI: 1.30%, 3.40%	3.3%, 95%CI: 2.45%, 4.51%	1.9%, 95%CI: 1.32%, 2.63%	3.0%, 95%CI: 2.48%, 3.69%	4.5%, 95%CI: 3.72%, 5.41%	2.9%, 95%CI: 2.35%, 3.66%
Yes	8.0%, 95%CI: 6.47%, 9.89%	12.0%, 95%CI: 9.31%, 15.4%	8.4%, 95%CI: 6.38%, 11.0%	3.0%, 95%CI: 2.50%, 3.55%	5.9%, 95%CI: 4.55%, 7.64%	4.6%, 95%CI: 3.58%, 5.94%	6.4%, 95%CI: 5.41%, 7.55%	9.3%, 95%CI: 8.05%, 10.7%	6.0%, 95%CI: 5.12%, 6.92%	5.8%, 95%CI: 5.09%, 6.63%	9.1%, 95%CI: 7.92%, 10.4%	6.3%, 95%CI: 5.47%, 7.35%
Depressed Ever												
No	4.8%, 95%CI: 3.88%, 5.87%	7.0%, 95%CI: 5.78%, 8.44%	4.7%, 95%CI: 3.67%, 5.91%	1.6%, 95%CI: 1.05%, 2.42%	2.7%, 95%CI: 2.01%, 3.51%	1.9%, 95%CI: 1.49%, 2.52%	2.9%, 95%CI: 2.23%, 3.71%	4.4%, 95%CI: 3.66%, 5.35%	2.7%, 95%CI: 2.25%, 3.29%	3.2%, 95%CI: 2.68%, 3.79%	4.8%, 95%CI: 4.20%, 5.56%	3.2%, 95%CI: 2.80%, 3.67%
Yes	11.5%, 95%CI: 9.41%, 13.9%	18.1%, 95%CI: 14.8%, 21.9%	12.7%, 95%CI: 10.2%, 15.8%	4.9%, 95%CI: 3.94%, 5.96%	9.6%, 95%CI: 7.48%, 12.2%	7.8%, 95%CI: 5.99%, 10.1%	10.0%, 95%CI: 8.20%, 12.2%	14.1%, 95%CI: 12.0%, 16.5%	9.1%, 95%CI: 7.53%, 11.0%	8.8%, 95%CI: 7.68%, 9.99%	13.9%, 95%CI: 12.3%, 15.7%	9.9%, 95%CI: 8.57%, 11.4%
Ever Self-Harmed												
No	4.2%, 95%CI: 3.64%, 4.91%	6.6%, 95%CI: 5.50%, 7.96%	4.2%, 95%CI: 3.46%, 5.10%	1.9%, 95%CI: 1.27%, 2.73%	2.8%, 95%CI: 2.19%, 3.63%	2.0%, 95%CI: 1.48%, 2.65%	2.7%, 95%CI: 2.12%, 3.43%	4.6%, 95%CI: 3.87%, 5.42%	2.6%, 95%CI: 2.13%, 3.15%	3.0%, 95%CI: 2.56%, 3.47%	4.8%, 95%CI: 4.17%, 5.44%	3.0%, 95%CI: 2.63%, 3.37%
Yes	14.1%, 95%CI: 11.3%, 17.3%	21.3%, 95%CI: 17.3%, 25.9%	15.3%, 95%CI: 11.9%, 19.6%	5.6%, 95%CI: 4.50%, 6.99%	11.5%, 95%CI: 8.60%, 15.2%	9.6%, 95%CI: 6.98%, 13.2%	13.4%, 95%CI: 10.5%, 16.9%	17.2%, 95%CI: 13.8%, 21.2%	11.9%, 95%CI: 9.54%, 14.7%	11.1%, 95%CI: 9.74%, 12.6%	16.8%, 95%CI: 14.7%, 19.2%	12.4%, 95%CI: 10.5%, 14.6%

Table S10. Current Cannabis Use among High School Students, 2019-2023 YRBS

	2019	2021	2023	Combined Years
	Any Current Cannabis Use	Any Current Cannabis Use	Any Current Cannabis Use	Any Current Cannabis Use
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	17.2%, 95%CI: 14.9%, 19.7%	12.0%, 95%CI: 10.8%, 13.2%	14.0%, 95%CI: 12.1%, 16.1%	14.3%, 95%CI: 13.3%, 15.4%
County of School				
Honolulu County	14.0%, 95%CI: 11.0%, 17.7%	9.9%, 95%CI: 8.33%, 11.7%	13.3%, 95%CI: 10.7%, 16.4%	12.4%, 95%CI: 10.9%, 13.9%
Hawaii County	23.4%, 95%CI: 20.4%, 26.6%	18.1%, 95%CI: 15.2%, 21.5%	16.0%, 95%CI: 13.4%, 19.0%	18.9%, 95%CI: 17.3%, 20.8%
Maui County	25.1%, 95%CI: 22.2%, 28.2%	15.0%, 95%CI: 12.6%, 17.9%	16.1%, 95%CI: 13.0%, 19.8%	18.6%, 95%CI: 16.8%, 20.6%
Kauai County	21.5%, 95%CI: 18.6%, 24.8%	13.5%, 95%CI: 10.8%, 16.9%	12.4%, 95%CI: 9.16%, 16.5%	15.7%, 95%CI: 14.0%, 17.6%
Sex Assigned at Birth				
Male	15.8%, 95%CI: 13.5%, 18.3%	11.3%, 95%CI: 9.02%, 14.1%	12.1%, 95%CI: 10.3%, 14.2%	13.0%, 95%CI: 11.7%, 14.4%
Female	18.0%, 95%CI: 15.2%, 21.2%	12.2%, 95%CI: 10.5%, 14.1%	15.9%, 95%CI: 13.0%, 19.3%	15.3%, 95%CI: 13.5%, 17.2%
Grade Level				
9th Grade	11.8%, 95%CI: 9.37%, 14.7%	9.7%, 95%CI: 7.65%, 12.1%	10.2%, 95%CI: 7.84%, 13.2%	10.5%, 95%CI: 9.10%, 12.1%
10th Grade	16.7%, 95%CI: 14.0%, 19.8%	9.4%, 95%CI: 7.38%, 11.8%	11.1%, 95%CI: 9.00%, 13.6%	12.3%, 95%CI: 10.9%, 13.8%
11th Grade	20.3%, 95%CI: 17.7%, 23.3%	13.6%, 95%CI: 11.1%, 16.7%	14.8%, 95%CI: 11.6%, 18.9%	16.2%, 95%CI: 14.4%, 18.2%
12th Grade	19.9%, 95%CI: 15.5%, 25.3%	15.8%, 95%CI: 12.4%, 19.9%	20.0%, 95%CI: 16.0%, 24.7%	18.6%, 95%CI: 16.5%, 20.9%
DOH Race/Ethnicity				
White	17.1%, 95%CI: 14.2%, 20.4%	16.4%, 95%CI: 11.9%, 22.2%	20.8%, 95%CI: 14.1%, 29.6%	18.2%, 95%CI: 14.5%, 22.6%
Native Hawaiian	25.7%, 95%CI: 22.7%, 29.0%	17.1%, 95%CI: 15.4%, 18.9%	15.8%, 95%CI: 13.4%, 18.4%	19.5%, 95%CI: 18.0%, 21.1%
Japanese	4.4%, 95%CI: 1.12%, 15.9%	6.4%, 95%CI: 1.67%, 21.3%	6.7%, 95%CI: 2.99%, 14.4%	5.4%, 95%CI: 2.48%, 11.2%
Filipino	11.4%, 95%CI: 8.71%, 14.8%	4.2%, 95%CI: 2.95%, 6.03%	7.0%, 95%CI: 4.85%, 10.1%	7.5%, 95%CI: 6.20%, 9.03%
Other Asian	3.4%, 95%CI: 1.26%, 9.05%	3.6%, 95%CI: 1.76%, 7.36%	0.6%, 95%CI: 0.20%, 2.06%	2.8%, 95%CI: 1.55%, 5.10%
Other Pacific Islander	17.6%, 95%CI: 11.8%, 25.2%	11.8%, 95%CI: 7.01%, 19.1%	20.3%, 95%CI: 14.2%, 28.2%	16.9%, 95%CI: 13.6%, 20.8%
Black	41.6%, 95%CI: 21.2%, 65.3%	14.5%, 95%CI: 5.58%, 32.7%	22.5%, 95%CI: 9.06%, 45.8%	21.6%, 95%CI: 13.8%, 32.2%
AIAN	.	.	.	.
Other Race/Ethnicity	23.0%, 95%CI: 20.5%, 25.8%	13.6%, 95%CI: 11.7%, 15.8%	16.8%, 95%CI: 14.7%, 19.1%	16.7%, 95%CI: 15.2%, 18.3%
Gender Identity				
Cisgender	17.2%, 95%CI: 15.0%, 19.6%	11.7%, 95%CI: 10.6%, 13.0%	13.2%, 95%CI: 11.2%, 15.7%	14.0%, 95%CI: 12.9%, 15.1%
Not Sure	10.8%, 95%CI: 3.77%, 27.1%	9.4%, 95%CI: 3.93%, 21.0%	19.8%, 95%CI: 11.5%, 31.8%	13.1%, 95%CI: 8.07%, 20.5%
Transgender	14.3%, 95%CI: 7.80%, 24.9%	21.8%, 95%CI: 13.5%, 33.1%	26.2%, 95%CI: 15.6%, 40.4%	21.9%, 95%CI: 15.6%, 29.8%
Mental Health Issue Ever				
No	12.8%, 95%CI: 10.1%, 16.0%	7.6%, 95%CI: 5.95%, 9.68%	8.1%, 95%CI: 5.82%, 11.1%	9.7%, 95%CI: 8.33%, 11.2%
Yes	18.1%, 95%CI: 15.7%, 20.9%	12.8%, 95%CI: 11.2%, 14.6%	15.8%, 95%CI: 12.9%, 19.3%	15.4%, 95%CI: 14.1%, 16.8%
Depressed in Past Year				
No	13.1%, 95%CI: 11.2%, 15.4%	8.1%, 95%CI: 6.89%, 9.43%	9.6%, 95%CI: 7.95%, 11.6%	10.2%, 95%CI: 9.25%, 11.2%
Yes	23.7%, 95%CI: 19.7%, 28.2%	18.7%, 95%CI: 15.8%, 22.0%	21.7%, 95%CI: 18.2%, 25.7%	21.3%, 95%CI: 19.1%, 23.5%
Self-Harmed in Past Year				
No	14.7%, 95%CI: 12.8%, 17.0%	8.8%, 95%CI: 7.72%, 9.94%	10.4%, 95%CI: 8.61%, 12.6%	11.3%, 95%CI: 10.2%, 12.5%
Yes	26.7%, 95%CI: 21.8%, 32.3%	22.9%, 95%CI: 18.8%, 27.5%	26.0%, 95%CI: 21.4%, 31.3%	25.1%, 95%CI: 22.8%, 27.6%

Table S11. Current Cannabis Use & Patterns of Use among Emerging Adults (age 18-29 years), 2020-2022 BRFSS

	Total col-%, 95%CI	Cannabis row-%, 95%CI		Number of Cannabis Use Days row-%, 95%CI	
		None	Any	1-24 Days of Use	25 or More Days of Use
Total		81.2%, 95%CI: 78.9%, 83.2%	18.8%, 95%CI: 16.8%, 21.1%	12.1%, 95%CI: 10.4%, 14.1%	6.7%, 95%CI: 5.57%, 8.08%
Age Group					
25-34 Years	40.8%, 95%CI: 38.5%, 43.1%	82.1%, 95%CI: 78.7%, 85.0%	17.9%, 95%CI: 15.0%, 21.3%	10.6%, 95%CI: 8.31%, 13.6%	7.2%, 95%CI: 5.44%, 9.58%
18-24 Years	59.2%, 95%CI: 56.9%, 61.5%	80.5%, 95%CI: 77.5%, 83.2%	19.5%, 95%CI: 16.8%, 22.5%	13.1%, 95%CI: 10.8%, 15.9%	6.4%, 95%CI: 4.95%, 8.12%
Generation					
Generation Z	58.5%, 95%CI: 56.2%, 60.8%	80.7%, 95%CI: 77.7%, 83.4%	19.3%, 95%CI: 16.6%, 22.3%	12.8%, 95%CI: 10.5%, 15.6%	6.4%, 95%CI: 5.00%, 8.22%
Millennial	41.5%, 95%CI: 39.2%, 43.8%	81.8%, 95%CI: 78.4%, 84.7%	18.2%, 95%CI: 15.3%, 21.6%	11.1%, 95%CI: 8.73%, 14.0%	7.1%, 95%CI: 5.36%, 9.41%
Sex Assigned at Birth					
Female	46.0%, 95%CI: 43.7%, 48.3%	83.4%, 95%CI: 80.1%, 86.2%	16.6%, 95%CI: 13.8%, 19.9%	11.7%, 95%CI: 9.19%, 14.7%	5.0%, 95%CI: 3.58%, 6.85%
Male	54.0%, 95%CI: 51.7%, 56.3%	79.3%, 95%CI: 76.2%, 82.1%	20.7%, 95%CI: 17.9%, 23.8%	12.5%, 95%CI: 10.2%, 15.2%	8.2%, 95%CI: 6.54%, 10.3%
Education Level					
College Graduate	17.2%, 95%CI: 15.7%, 18.7%	86.4%, 95%CI: 82.8%, 89.3%	13.6%, 95%CI: 10.7%, 17.2%	10.4%, 95%CI: 7.88%, 13.7%	3.2%, 95%CI: 1.85%, 5.48%
Some College	28.6%, 95%CI: 26.5%, 30.8%	83.2%, 95%CI: 79.3%, 86.5%	16.8%, 95%CI: 13.5%, 20.7%	12.6%, 95%CI: 9.63%, 16.2%	4.2%, 95%CI: 2.82%, 6.33%
HS Graduate	45.6%, 95%CI: 43.3%, 48.0%	81.6%, 95%CI: 78.4%, 84.4%	18.4%, 95%CI: 15.6%, 21.6%	10.7%, 95%CI: 8.39%, 13.6%	7.7%, 95%CI: 6.03%, 9.79%
Less than HS	8.6%, 95%CI: 6.95%, 10.7%	62.4%, 95%CI: 50.0%, 73.3%	37.6%, 95%CI: 26.7%, 50.0%	21.0%, 95%CI: 12.3%, 33.4%	16.6%, 95%CI: 10.1%, 26.3%
Marital Status					
Married	16.4%, 95%CI: 14.6%, 18.3%	90.4%, 95%CI: 85.5%, 93.8%	9.6%, 95%CI: 6.17%, 14.5%	5.6%, 95%CI: 2.98%, 10.4%	3.9%, 95%CI: 2.20%, 6.86%
Divorced/Sep	3.0%, 95%CI: 2.30%, 4.01%	78.9%, 95%CI: 60.9%, 90.0%	21.1%, 95%CI: 10.0%, 39.1%	9.7%, 95%CI: 3.53%, 24.0%	11.4%, 95%CI: 3.57%, 30.9%
Widowed	0.3%, 95%CI: 0.14%, 0.72%	.	.	.	.
Never/Unmarried	80.3%, 95%CI: 78.3%, 82.2%	79.6%, 95%CI: 77.1%, 81.9%	20.4%, 95%CI: 18.1%, 22.9%	13.5%, 95%CI: 11.5%, 15.8%	6.9%, 95%CI: 5.62%, 8.42%
Rent/Own Home					
Own	26.6%, 95%CI: 24.3%, 29.1%	83.3%, 95%CI: 77.6%, 87.7%	16.7%, 95%CI: 12.3%, 22.4%	12.1%, 95%CI: 8.22%, 17.4%	4.7%, 95%CI: 2.67%, 8.08%
Rent	42.6%, 95%CI: 40.4%, 44.9%	77.6%, 95%CI: 74.3%, 80.6%	22.4%, 95%CI: 19.4%, 25.7%	13.4%, 95%CI: 11.0%, 16.2%	9.0%, 95%CI: 7.16%, 11.4%
Other Arrangement	30.8%, 95%CI: 28.7%, 32.9%	84.0%, 95%CI: 80.4%, 87.1%	16.0%, 95%CI: 12.9%, 19.6%	10.4%, 95%CI: 7.83%, 13.7%	5.6%, 95%CI: 3.97%, 7.81%
DOH Race/Ethnicity					
White	20.7%, 95%CI: 18.8%, 22.8%	74.9%, 95%CI: 68.4%, 80.5%	25.1%, 95%CI: 19.5%, 31.6%	17.2%, 95%CI: 12.2%, 23.7%	7.9%, 95%CI: 5.33%, 11.5%
Native Hawaiian	24.9%, 95%CI: 22.9%, 26.9%	75.9%, 95%CI: 71.3%, 80.0%	24.1%, 95%CI: 20.0%, 28.7%	13.8%, 95%CI: 10.4%, 18.0%	10.3%, 95%CI: 7.82%, 13.5%
Japanese	9.5%, 95%CI: 8.16%, 11.0%	86.3%, 95%CI: 79.6%, 91.0%	13.7%, 95%CI: 8.96%, 20.4%	5.9%, 95%CI: 3.62%, 9.36%	7.8%, 95%CI: 4.01%, 14.8%
Filipino	17.5%, 95%CI: 15.8%, 19.3%	89.4%, 95%CI: 85.0%, 92.6%	10.6%, 95%CI: 7.43%, 15.0%	7.0%, 95%CI: 4.46%, 10.7%	3.7%, 95%CI: 1.92%, 6.94%
Chinese	5.0%, 95%CI: 4.06%, 6.20%	90.8%, 95%CI: 80.2%, 96.0%	9.2%, 95%CI: 3.96%, 19.8%	9.0%, 95%CI: 3.81%, 19.7%	0.2%, 95%CI: 0.03%, 1.42%
OtherAsian	5.5%, 95%CI: 4.59%, 6.54%	90.7%, 95%CI: 83.9%, 94.8%	9.3%, 95%CI: 5.19%, 16.1%	8.6%, 95%CI: 4.64%, 15.3%	0.7%, 95%CI: 0.10%, 4.99%
Other Pacific Islander	8.9%, 95%CI: 7.66%, 10.3%	74.4%, 95%CI: 65.9%, 81.4%	25.6%, 95%CI: 18.6%, 34.1%	17.2%, 95%CI: 11.3%, 25.4%	8.4%, 95%CI: 4.70%, 14.5%
Black	4.7%, 95%CI: 3.65%, 6.02%	78.1%, 95%CI: 62.9%, 88.2%	21.9%, 95%CI: 11.8%, 37.1%	14.2%, 95%CI: 6.03%, 29.8%	7.7%, 95%CI: 3.05%, 18.3%
AIAN	1.4%, 95%CI: 0.95%, 2.06%	90.5%, 95%CI: 72.9%, 97.1%	9.5%, 95%CI: 2.90%, 27.1%	3.8%, 95%CI: 0.52%, 22.9%	5.8%, 95%CI: 1.35%, 21.4%
Other	2.0%, 95%CI: 1.37%, 2.83%	81.9%, 95%CI: 63.4%, 92.2%	18.1%, 95%CI: 7.82%, 36.6%	15.8%, 95%CI: 6.18%, 34.9%	2.3%, 95%CI: 0.54%, 9.21%
Sexual/Gender Minority					
No	86.7%, 95%CI: 84.8%, 88.4%	84.1%, 95%CI: 81.9%, 86.0%	15.9%, 95%CI: 14.0%, 18.1%	10.1%, 95%CI: 8.49%, 11.9%	5.8%, 95%CI: 4.70%, 7.22%
Yes	13.3%, 95%CI: 11.6%, 15.2%	62.0%, 95%CI: 53.8%, 69.6%	38.0%, 95%CI: 30.4%, 46.2%	26.4%, 95%CI: 19.3%, 35.0%	11.6%, 95%CI: 7.72%, 17.1%
Federal Poverty Threshold					
0-100%	27.7%, 95%CI: 25.4%, 30.1%	77.8%, 95%CI: 72.5%, 82.3%	22.2%, 95%CI: 17.7%, 27.5%	14.7%, 95%CI: 10.8%, 19.8%	7.4%, 95%CI: 5.18%, 10.6%
101-185%	22.9%, 95%CI: 20.7%, 25.2%	78.6%, 95%CI: 73.4%, 83.1%	21.4%, 95%CI: 16.9%, 26.6%	11.6%, 95%CI: 8.32%, 15.9%	9.8%, 95%CI: 6.80%, 13.9%
186-300%	23.6%, 95%CI: 21.4%, 26.0%	79.2%, 95%CI: 73.1%, 84.2%	20.8%, 95%CI: 15.8%, 26.9%	14.2%, 95%CI: 9.79%, 20.1%	6.7%, 95%CI: 4.25%, 10.3%
301+%	25.9%, 95%CI: 23.5%, 28.3%	86.2%, 95%CI: 81.9%, 89.6%	13.8%, 95%CI: 10.4%, 18.1%	10.7%, 95%CI: 7.65%, 14.6%	3.1%, 95%CI: 1.78%, 5.50%
Health Insurance					
Insured	92.0%, 95%CI: 90.7%, 93.2%	81.7%, 95%CI: 79.4%, 83.8%	18.3%, 95%CI: 16.2%, 20.6%	12.3%, 95%CI: 10.4%, 14.4%	6.0%, 95%CI: 4.87%, 7.36%
Not Insured	8.0%, 95%CI: 6.76%, 9.33%	72.3%, 95%CI: 63.5%, 79.7%	27.7%, 95%CI: 20.3%, 36.5%	11.7%, 95%CI: 7.52%, 17.8%	15.9%, 95%CI: 10.0%, 24.3%
Depressive Disorder					
No	86.3%, 95%CI: 84.6%, 87.8%	83.6%, 95%CI: 81.3%, 85.7%	16.4%, 95%CI: 14.3%, 18.7%	11.0%, 95%CI: 9.19%, 13.0%	5.4%, 95%CI: 4.32%, 6.74%
Yes	13.7%, 95%CI: 12.2%, 15.4%	65.8%, 95%CI: 58.7%, 72.2%	34.2%, 95%CI: 27.8%, 41.3%	19.2%, 95%CI: 13.9%, 25.9%	15.0%, 95%CI: 10.7%, 20.7%
Poor Mental Health Days in Past 30 Days					
None	51.6%, 95%CI: 49.2%, 53.9%	87.3%, 95%CI: 84.6%, 89.6%	12.7%, 95%CI: 10.4%, 15.4%	7.6%, 95%CI: 5.71%, 9.99%	5.1%, 95%CI: 3.86%, 6.79%
1-15 Days	38.6%, 95%CI: 36.3%, 40.9%	76.4%, 95%CI: 72.5%, 80.0%	23.6%, 95%CI: 20.0%, 27.5%	17.2%, 95%CI: 14.0%, 21.0%	6.3%, 95%CI: 4.58%, 8.61%
16-30 Days	9.8%, 95%CI: 8.50%, 11.4%	68.7%, 95%CI: 60.6%, 75.8%	31.3%, 95%CI: 24.2%, 39.4%	15.6%, 95%CI: 10.5%, 22.5%	15.7%, 95%CI: 10.6%, 22.6%
County of Residence					
Honolulu County	74.8%, 95%CI: 73.5%, 76.0%	81.9%, 95%CI: 79.1%, 84.5%	18.1%, 95%CI: 15.5%, 20.9%	12.4%, 95%CI: 10.1%, 15.0%	5.7%, 95%CI: 4.41%, 7.27%
Hawaii County	11.3%, 95%CI: 10.4%, 12.3%	77.3%, 95%CI: 71.5%, 82.2%	22.7%, 95%CI: 17.8%, 28.5%	13.1%, 95%CI: 9.45%, 18.0%	9.6%, 95%CI: 6.33%, 14.2%
Maui County	10.2%, 95%CI: 9.46%, 11.0%	76.0%, 95%CI: 69.9%, 81.1%	24.0%, 95%CI: 18.9%, 30.1%	14.5%, 95%CI: 10.6%, 19.5%	9.5%, 95%CI: 6.10%, 14.6%
Kauai County	3.7%, 95%CI: 3.23%, 4.23%	88.6%, 95%CI: 83.3%, 92.3%	11.4%, 95%CI: 7.65%, 16.7%	7.1%, 95%CI: 4.26%, 11.6%	4.3%, 95%CI: 2.27%, 8.07%

***All cannabis-related data among emerging adults derives from the 2020-2022 HI BRFSS**

Table S12. Current Cannabis Use & Patterns of Use among All Adults (age 18+ years), 2020-2022 BRFSS

	Total col-%, 95%CI	Cannabis row-%, 95%CI		Number of Cannabis Use Days row-%, 95%CI	
		None	Any	1-24 Days of Use	25 or More Days of Use
Total		88.7%, 95%CI: 88.1%, 89.2%	11.3%, 95%CI: 10.8%, 11.9%	6.5%, 95%CI: 6.05%, 7.00%	4.8%, 95%CI: 4.46%, 5.24%
Age Group					
65+ Years	25.2%, 95%CI: 24.5%, 26.0%	94.2%, 95%CI: 93.6%, 94.8%	5.8%, 95%CI: 5.21%, 6.44%	3.5%, 95%CI: 3.04%, 4.04%	2.3%, 95%CI: 1.95%, 2.67%
55-64 Years	15.6%, 95%CI: 15.0%, 16.2%	89.8%, 95%CI: 88.5%, 91.1%	10.2%, 95%CI: 8.94%, 11.5%	5.6%, 95%CI: 4.67%, 6.62%	4.6%, 95%CI: 3.78%, 5.61%
45-54 Years	14.9%, 95%CI: 14.3%, 15.5%	90.6%, 95%CI: 89.2%, 91.8%	9.4%, 95%CI: 8.19%, 10.8%	5.5%, 95%CI: 4.53%, 6.60%	4.0%, 95%CI: 3.17%, 4.93%
35-44 Years	16.7%, 95%CI: 16.0%, 17.4%	86.3%, 95%CI: 84.7%, 87.7%	13.7%, 95%CI: 12.3%, 15.3%	6.6%, 95%CI: 5.61%, 7.68%	7.2%, 95%CI: 6.07%, 8.45%
25-34 Years	17.0%, 95%CI: 16.3%, 17.7%	84.4%, 95%CI: 82.5%, 86.2%	15.6%, 95%CI: 13.8%, 17.5%	9.0%, 95%CI: 7.59%, 10.6%	6.6%, 95%CI: 5.48%, 7.94%
18-24 Years	10.6%, 95%CI: 9.99%, 11.2%	80.5%, 95%CI: 77.5%, 83.2%	19.5%, 95%CI: 16.8%, 22.5%	13.1%, 95%CI: 10.8%, 15.9%	6.4%, 95%CI: 4.96%, 8.12%
Generation					
Generation Z	10.6%, 95%CI: 9.99%, 11.2%	80.7%, 95%CI: 77.7%, 83.4%	19.3%, 95%CI: 16.6%, 22.3%	12.8%, 95%CI: 10.5%, 15.6%	6.4%, 95%CI: 5.01%, 8.22%
Millennial	27.2%, 95%CI: 26.4%, 28.0%	84.8%, 95%CI: 83.3%, 86.1%	15.2%, 95%CI: 13.9%, 16.7%	8.2%, 95%CI: 7.24%, 9.38%	7.0%, 95%CI: 6.10%, 8.01%
Generation X	24.0%, 95%CI: 23.2%, 24.7%	89.8%, 95%CI: 88.6%, 90.8%	10.2%, 95%CI: 9.19%, 11.4%	5.5%, 95%CI: 4.80%, 6.40%	4.7%, 95%CI: 3.96%, 5.53%
Baby Boomer	28.9%, 95%CI: 28.1%, 29.7%	90.9%, 95%CI: 90.0%, 91.7%	9.1%, 95%CI: 8.33%, 10.0%	5.4%, 95%CI: 4.74%, 6.05%	3.8%, 95%CI: 3.26%, 4.37%
Greatest/Silent Generation	9.4%, 95%CI: 8.83%, 9.91%	97.5%, 95%CI: 96.8%, 98.1%	2.5%, 95%CI: 1.89%, 3.21%	1.4%, 95%CI: 1.00%, 2.06%	1.0%, 95%CI: 0.70%, 1.51%
Sex Assigned at Birth					
Female	50.3%, 95%CI: 49.4%, 51.2%	91.3%, 95%CI: 90.5%, 92.0%	8.7%, 95%CI: 7.96%, 9.46%	5.4%, 95%CI: 4.78%, 6.02%	3.3%, 95%CI: 2.90%, 3.80%
Male	49.7%, 95%CI: 48.8%, 50.6%	85.9%, 95%CI: 85.0%, 86.8%	14.1%, 95%CI: 13.2%, 15.0%	7.7%, 95%CI: 6.98%, 8.44%	6.4%, 95%CI: 5.77%, 7.06%
Education Level					
College Graduate	30.9%, 95%CI: 30.1%, 31.6%	92.3%, 95%CI: 91.6%, 93.0%	7.7%, 95%CI: 7.04%, 8.35%	5.2%, 95%CI: 4.72%, 5.83%	2.4%, 95%CI: 2.09%, 2.81%
Some College	32.5%, 95%CI: 31.7%, 33.4%	88.4%, 95%CI: 87.3%, 89.4%	11.6%, 95%CI: 10.6%, 12.7%	6.8%, 95%CI: 6.02%, 7.65%	4.8%, 95%CI: 4.21%, 5.50%
HS Graduate	28.7%, 95%CI: 27.9%, 29.6%	86.6%, 95%CI: 85.3%, 87.8%	13.4%, 95%CI: 12.2%, 14.7%	6.9%, 95%CI: 5.94%, 7.89%	6.6%, 95%CI: 5.78%, 7.44%
Less than HS	7.9%, 95%CI: 7.17%, 8.64%	82.2%, 95%CI: 78.2%, 85.7%	17.8%, 95%CI: 14.3%, 21.8%	9.3%, 95%CI: 6.75%, 12.6%	8.5%, 95%CI: 6.25%, 11.5%
Marital Status					
Married	52.1%, 95%CI: 51.2%, 53.0%	93.0%, 95%CI: 92.4%, 93.6%	7.0%, 95%CI: 6.37%, 7.60%	4.2%, 95%CI: 3.70%, 4.70%	2.8%, 95%CI: 2.44%, 3.19%
Divorced/Sep	11.1%, 95%CI: 10.6%, 11.6%	84.6%, 95%CI: 82.7%, 86.4%	15.4%, 95%CI: 13.6%, 17.3%	7.9%, 95%CI: 6.71%, 9.30%	7.5%, 95%CI: 6.16%, 9.07%
Widowed	6.4%, 95%CI: 5.98%, 6.89%	94.9%, 95%CI: 93.3%, 96.1%	5.1%, 95%CI: 3.88%, 6.71%	3.0%, 95%CI: 2.15%, 4.15%	2.1%, 95%CI: 1.31%, 3.41%
Never/Unmarried	30.4%, 95%CI: 29.6%, 31.2%	81.3%, 95%CI: 79.8%, 82.7%	18.7%, 95%CI: 17.3%, 20.2%	10.8%, 95%CI: 9.66%, 12.0%	7.9%, 95%CI: 7.04%, 8.94%
Rent/Own Home					
Own	64.9%, 95%CI: 64.0%, 65.7%	91.4%, 95%CI: 90.7%, 92.1%	8.6%, 95%CI: 7.90%, 9.28%	5.0%, 95%CI: 4.49%, 5.59%	3.6%, 95%CI: 3.14%, 4.02%
Rent	24.9%, 95%CI: 24.2%, 25.7%	82.8%, 95%CI: 81.5%, 84.1%	17.2%, 95%CI: 15.9%, 18.5%	9.4%, 95%CI: 8.43%, 10.5%	7.8%, 95%CI: 6.93%, 8.77%
Other Arrangement	10.2%, 95%CI: 9.69%, 10.7%	84.4%, 95%CI: 82.1%, 86.5%	15.6%, 95%CI: 13.5%, 17.9%	9.3%, 95%CI: 7.58%, 11.3%	6.3%, 95%CI: 5.01%, 7.89%
DOH Race/Ethnicity					
White	25.7%, 95%CI: 25.0%, 26.5%	83.0%, 95%CI: 81.7%, 84.3%	17.0%, 95%CI: 15.7%, 18.3%	9.8%, 95%CI: 8.78%, 11.0%	7.2%, 95%CI: 6.41%, 8.06%
Native Hawaiian	19.0%, 95%CI: 18.3%, 19.7%	84.8%, 95%CI: 83.1%, 86.3%	15.2%, 95%CI: 13.7%, 16.9%	7.6%, 95%CI: 6.48%, 8.90%	7.6%, 95%CI: 6.49%, 8.91%
Japanese	17.6%, 95%CI: 16.9%, 18.3%	94.8%, 95%CI: 93.7%, 95.7%	5.2%, 95%CI: 4.26%, 6.26%	3.1%, 95%CI: 2.46%, 3.90%	2.1%, 95%CI: 1.47%, 2.92%
Filipino	16.3%, 95%CI: 15.6%, 17.0%	94.5%, 95%CI: 93.3%, 95.6%	5.5%, 95%CI: 4.45%, 6.74%	3.7%, 95%CI: 2.89%, 4.80%	1.8%, 95%CI: 1.21%, 2.54%
Chinese	6.0%, 95%CI: 5.57%, 6.47%	94.5%, 95%CI: 92.2%, 96.2%	5.5%, 95%CI: 3.80%, 7.77%	3.4%, 95%CI: 2.09%, 5.48%	2.1%, 95%CI: 1.20%, 3.51%
OtherAsian	5.1%, 95%CI: 4.75%, 5.58%	92.3%, 95%CI: 89.9%, 94.2%	7.7%, 95%CI: 5.79%, 10.1%	5.6%, 95%CI: 3.98%, 7.82%	2.1%, 95%CI: 1.27%, 3.30%
Other Pacific Islander	4.7%, 95%CI: 4.33%, 5.13%	86.5%, 95%CI: 82.8%, 89.4%	13.5%, 95%CI: 10.6%, 17.2%	8.7%, 95%CI: 6.24%, 11.9%	4.9%, 95%CI: 3.28%, 7.16%
Black	2.8%, 95%CI: 2.46%, 3.17%	84.1%, 95%CI: 78.5%, 88.4%	15.9%, 95%CI: 11.6%, 21.5%	8.4%, 95%CI: 5.10%, 13.5%	7.5%, 95%CI: 4.95%, 11.3%
AIAN	1.7%, 95%CI: 1.49%, 1.92%	80.8%, 95%CI: 75.1%, 85.4%	19.2%, 95%CI: 14.6%, 24.9%	8.2%, 95%CI: 5.30%, 12.6%	11.0%, 95%CI: 7.55%, 15.7%
Other	1.1%, 95%CI: 0.88%, 1.26%	85.4%, 95%CI: 77.4%, 90.9%	14.6%, 95%CI: 9.14%, 22.6%	9.3%, 95%CI: 4.81%, 17.0%	5.4%, 95%CI: 2.76%, 10.2%
Sexual/Gender Minority					
No	93.6%, 95%CI: 93.1%, 94.1%	89.4%, 95%CI: 88.8%, 90.0%	10.6%, 95%CI: 10.00%, 11.2%	6.0%, 95%CI: 5.58%, 6.50%	4.5%, 95%CI: 4.17%, 4.96%
Yes	6.4%, 95%CI: 5.94%, 6.87%	74.8%, 95%CI: 70.9%, 78.4%	25.2%, 95%CI: 21.6%, 29.1%	15.3%, 95%CI: 12.2%, 19.1%	9.8%, 95%CI: 7.75%, 12.3%
Federal Poverty Threshold					
0-100%	17.1%, 95%CI: 16.3%, 17.9%	83.4%, 95%CI: 81.4%, 85.2%	16.6%, 95%CI: 14.8%, 18.6%	9.0%, 95%CI: 7.60%, 10.7%	7.6%, 95%CI: 6.39%, 8.92%
101-185%	17.8%, 95%CI: 17.0%, 18.5%	86.1%, 95%CI: 84.5%, 87.6%	13.9%, 95%CI: 12.4%, 15.5%	7.0%, 95%CI: 5.93%, 8.22%	6.9%, 95%CI: 5.85%, 8.15%
186-300%	23.7%, 95%CI: 22.9%, 24.6%	88.3%, 95%CI: 86.9%, 89.6%	11.7%, 95%CI: 10.4%, 13.1%	6.8%, 95%CI: 5.71%, 7.97%	4.9%, 95%CI: 4.11%, 5.86%
301+%	41.4%, 95%CI: 40.5%, 42.3%	91.6%, 95%CI: 90.7%, 92.3%	8.4%, 95%CI: 7.67%, 9.28%	5.6%, 95%CI: 4.99%, 6.38%	2.8%, 95%CI: 2.39%, 3.27%
Health Insurance					
Insured	96.2%, 95%CI: 95.8%, 96.5%	89.2%, 95%CI: 88.6%, 89.8%	10.8%, 95%CI: 10.2%, 11.4%	6.2%, 95%CI: 5.78%, 6.74%	4.6%, 95%CI: 4.19%, 4.96%
Not Insured	3.8%, 95%CI: 3.49%, 4.19%	75.4%, 95%CI: 70.8%, 79.4%	24.6%, 95%CI: 20.6%, 29.2%	12.5%, 95%CI: 9.80%, 15.9%	12.1%, 95%CI: 9.06%, 16.0%
Depressive Disorder					
No	87.9%, 95%CI: 87.3%, 88.4%	90.3%, 95%CI: 89.7%, 90.9%	9.7%, 95%CI: 9.13%, 10.3%	5.9%, 95%CI: 5.42%, 6.40%	3.8%, 95%CI: 3.47%, 4.19%
Yes	12.1%, 95%CI: 11.6%, 12.7%	76.9%, 95%CI: 74.6%, 79.2%	23.1%, 95%CI: 20.8%, 25.4%	10.9%, 95%CI: 9.30%, 12.7%	12.2%, 95%CI: 10.5%, 14.1%
Poor Mental Health Days in Past 30 Days					
None	66.0%, 95%CI: 65.2%, 66.9%	92.6%, 95%CI: 91.9%, 93.1%	7.4%, 95%CI: 6.89%, 8.05%	4.4%, 95%CI: 3.93%, 4.88%	3.1%, 95%CI: 2.73%, 3.45%
1-15 Days	26.7%, 95%CI: 25.9%, 27.5%	82.8%, 95%CI: 81.3%, 84.2%	17.2%, 95%CI: 15.8%, 18.7%	10.6%, 95%CI: 9.45%, 11.8%	6.6%, 95%CI: 5.79%, 7.54%
16-30 Days	7.3%, 95%CI: 6.84%, 7.78%	75.7%, 95%CI: 72.5%, 78.7%	24.3%, 95%CI: 21.3%, 27.5%	10.4%, 95%CI: 8.45%, 12.7%	13.9%, 95%CI: 11.4%, 16.7%
County of Residence					
Honolulu County	69.0%, 95%CI: 68.5%, 69.6%	91.1%, 95%CI: 90.3%, 91.8%	8.9%, 95%CI: 8.21%, 9.71%	5.5%, 95%CI: 4.92%, 6.15%	3.4%, 95%CI: 3.00%, 3.91%
Hawaii County	14.2%, 95%CI: 13.8%, 14.6%	81.9%, 95%CI: 80.3%, 83.5%	18.1%, 95%CI: 16.5%, 19.7%	9.4%, 95%CI: 8.25%, 10.7%	8.7%, 95%CI: 7.54%, 9.93%
Maui County	11.8%, 95%CI: 11.4%, 12.1%	83.3%, 95%CI: 81.5%, 85.0%	16.7%, 95%CI: 15.0%, 18.5%	8.8%, 95%CI: 7.51%, 10.2%	7.9%, 95%CI: 6.72%, 9.34%
Kauai County	5.0%, 95%CI: 4.76%, 5.16%	87.4%, 95%CI: 85.7%, 89.0%	12.6%, 95%CI: 11.0%, 14.3%	7.1%, 95%CI: 5.84%, 8.56%	5.5%, 95%CI: 4.51%, 6.64%

***All cannabis-related data among adults derives from the 2020-2022 HI BRFSS**

Table S13. Current Co-Substance Use Patterns of Alcohol, Nicotine, & Cannabis among Middle School Students, 2019-2023 YRBS

	2019			2021			2023			Combined Years		
	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	2.8%, 95%CI: 2.35%, 3.30%	4.4%, 95%CI: 3.77%, 5.16%	5.7%, 95%CI: 4.76%, 6.77%	1.4%, 95%CI: 1.04%, 1.95%	2.9%, 95%CI: 2.05%, 4.12%	1.9%, 95%CI: 1.55%, 2.24%	2.5%, 95%CI: 2.07%, 3.04%	3.9%, 95%CI: 3.25%, 4.57%	3.9%, 95%CI: 3.33%, 4.58%	2.3%, 95%CI: 1.98%, 2.56%	3.7%, 95%CI: 3.32%, 4.21%	3.9%, 95%CI: 3.47%, 4.35%
County of School												
Honolulu County	2.2%, 95%CI: 1.66%, 3.00%	3.5%, 95%CI: 2.64%, 4.60%	5.0%, 95%CI: 3.73%, 6.63%	1.2%, 95%CI: 0.67%, 2.03%	2.7%, 95%CI: 1.50%, 4.75%	1.4%, 95%CI: 1.08%, 1.93%	1.9%, 95%CI: 1.41%, 2.57%	3.4%, 95%CI: 2.58%, 4.39%	3.3%, 95%CI: 2.62%, 4.23%	1.8%, 95%CI: 1.43%, 2.23%	3.2%, 95%CI: 2.59%, 3.91%	3.3%, 95%CI: 2.79%, 3.95%
Hawaii County	3.8%, 95%CI: 2.87%, 4.95%	6.9%, 95%CI: 5.65%, 8.36%	7.5%, 95%CI: 6.23%, 9.10%	2.0%, 95%CI: 1.40%, 2.95%	3.8%, 95%CI: 2.72%, 5.17%	2.9%, 95%CI: 2.03%, 4.07%	4.5%, 95%CI: 3.28%, 6.02%	5.8%, 95%CI: 4.53%, 7.49%	5.1%, 95%CI: 3.88%, 6.80%	3.4%, 95%CI: 2.84%, 4.10%	5.5%, 95%CI: 4.71%, 6.37%	5.2%, 95%CI: 4.52%, 6.02%
Maui County	3.5%, 95%CI: 2.71%, 4.53%	5.4%, 95%CI: 4.09%, 6.98%	5.7%, 95%CI: 4.49%, 7.11%	1.8%, 95%CI: 1.23%, 2.78%	2.8%, 95%CI: 2.00%, 3.85%	2.5%, 95%CI: 1.69%, 3.60%	3.4%, 95%CI: 2.23%, 5.15%	4.6%, 95%CI: 3.30%, 6.36%	5.6%, 95%CI: 4.04%, 7.82%	2.9%, 95%CI: 2.39%, 3.59%	4.3%, 95%CI: 3.54%, 5.12%	4.6%, 95%CI: 3.87%, 5.49%
Kauai County	4.5%, 95%CI: 3.31%, 6.20%	6.3%, 95%CI: 4.84%, 8.25%	8.8%, 95%CI: 6.82%, 11.4%	1.6%, 95%CI: 0.94%, 2.81%	3.5%, 95%CI: 2.44%, 5.09%	2.3%, 95%CI: 1.46%, 3.64%	2.0%, 95%CI: 1.05%, 3.83%	2.5%, 95%CI: 1.70%, 3.57%	2.9%, 95%CI: 1.85%, 4.40%	2.8%, 95%CI: 2.11%, 3.68%	4.2%, 95%CI: 3.41%, 5.08%	4.8%, 95%CI: 3.86%, 6.04%
Sex Assigned at Birth												
Male	2.5%, 95%CI: 1.87%, 3.31%	3.4%, 95%CI: 2.50%, 4.73%	5.2%, 95%CI: 4.03%, 6.59%	1.1%, 95%CI: 0.59%, 2.04%	2.2%, 95%CI: 1.41%, 3.45%	1.3%, 95%CI: 0.82%, 2.17%	1.8%, 95%CI: 1.25%, 2.50%	2.8%, 95%CI: 2.17%, 3.47%	2.9%, 95%CI: 2.21%, 3.77%	1.8%, 95%CI: 1.47%, 2.23%	2.8%, 95%CI: 2.34%, 3.39%	3.2%, 95%CI: 2.69%, 3.83%
Female	3.1%, 95%CI: 2.43%, 4.02%	5.5%, 95%CI: 4.38%, 6.91%	6.1%, 95%CI: 4.71%, 7.99%	1.8%, 95%CI: 1.34%, 2.45%	3.7%, 95%CI: 2.60%, 5.29%	2.4%, 95%CI: 1.89%, 3.06%	3.4%, 95%CI: 2.77%, 4.06%	5.0%, 95%CI: 4.12%, 5.99%	5.1%, 95%CI: 4.19%, 6.14%	2.8%, 95%CI: 2.42%, 3.18%	4.7%, 95%CI: 4.16%, 5.42%	4.6%, 95%CI: 3.98%, 5.31%
Grade Level												
6th Grade	1.8%, 95%CI: 1.18%, 2.76%	2.8%, 95%CI: 1.86%, 4.19%	3.1%, 95%CI: 1.92%, 5.01%	0.5%, 95%CI: 0.26%, 0.85%	1.1%, 95%CI: 0.76%, 1.55%	0.7%, 95%CI: 0.41%, 1.24%	1.5%, 95%CI: 0.84%, 2.54%	2.4%, 95%CI: 1.51%, 3.66%	2.8%, 95%CI: 1.59%, 4.90%	1.2%, 95%CI: 0.89%, 1.73%	2.1%, 95%CI: 1.60%, 2.67%	2.2%, 95%CI: 1.52%, 3.19%
7th Grade	2.4%, 95%CI: 1.74%, 3.22%	3.3%, 95%CI: 2.42%, 4.45%	4.3%, 95%CI: 3.40%, 5.40%	1.0%, 95%CI: 0.49%, 2.05%	2.0%, 95%CI: 1.28%, 3.16%	1.6%, 95%CI: 0.87%, 2.84%	2.0%, 95%CI: 1.37%, 2.92%	3.6%, 95%CI: 2.87%, 4.53%	3.7%, 95%CI: 2.91%, 4.69%	1.9%, 95%CI: 1.49%, 2.31%	3.0%, 95%CI: 2.56%, 3.60%	3.3%, 95%CI: 2.85%, 3.85%
8th Grade	3.9%, 95%CI: 3.14%, 4.76%	6.7%, 95%CI: 5.69%, 7.92%	8.3%, 95%CI: 6.72%, 10.2%	2.3%, 95%CI: 1.39%, 3.90%	4.7%, 95%CI: 2.98%, 7.48%	2.8%, 95%CI: 1.86%, 4.20%	3.8%, 95%CI: 2.82%, 5.01%	5.2%, 95%CI: 4.01%, 6.66%	4.9%, 95%CI: 3.84%, 6.17%	3.3%, 95%CI: 2.63%, 4.08%	5.6%, 95%CI: 4.70%, 6.55%	5.3%, 95%CI: 4.39%, 6.48%
DOH Race/Ethnicity												
White	1.2%, 95%CI: 0.57%, 2.47%	1.5%, 95%CI: 0.75%, 3.15%	1.8%, 95%CI: 0.95%, 3.44%	1.3%, 95%CI: 0.41%, 4.08%	2.1%, 95%CI: 0.96%, 4.38%	1.4%, 95%CI: 0.44%, 4.04%	1.3%, 95%CI: 0.61%, 2.89%	2.6%, 95%CI: 1.38%, 4.80%	1.9%, 95%CI: 0.94%, 3.96%	1.3%, 95%CI: 0.68%, 2.38%	2.1%, 95%CI: 1.46%, 3.00%	1.7%, 95%CI: 1.02%, 2.86%
Native Hawaiian	4.5%, 95%CI: 3.63%, 5.64%	7.1%, 95%CI: 5.79%, 8.76%	9.7%, 95%CI: 8.11%, 11.5%	2.5%, 95%CI: 1.65%, 3.68%	5.5%, 95%CI: 4.01%, 7.61%	3.3%, 95%CI: 2.52%, 4.27%	4.4%, 95%CI: 3.38%, 5.67%	6.4%, 95%CI: 5.24%, 7.88%	7.1%, 95%CI: 5.86%, 8.47%	3.8%, 95%CI: 3.21%, 4.59%	6.4%, 95%CI: 5.60%, 7.32%	6.9%, 95%CI: 6.05%, 7.86%
Japanese	2.3%, 95%CI: 0.54%, 9.38%	3.4%, 95%CI: 1.21%, 9.11%	2.4%, 95%CI: 0.58%, 9.31%	0.5%, 95%CI: 0.11%, 2.36%	0.3%, 95%CI: 0.03%, 2.18%	0.3%, 95%CI: 0.03%, 2.18%	1.4%, 95%CI: 0.24%, 8.26%	0.4%, 95%CI: 0.05%, 2.72%	0.3%, 95%CI: 0.04%, 2.01%	1.9%, 95%CI: 0.54%, 6.29%	2.4%, 95%CI: 0.98%, 5.78%	1.7%, 95%CI: 0.45%, 6.32%
Filipino	2.0%, 95%CI: 1.02%, 3.74%	4.3%, 95%CI: 3.19%, 5.76%	2.6%, 95%CI: 1.62%, 4.29%	0.5%, 95%CI: 0.10%, 2.61%	1.2%, 95%CI: 0.55%, 2.66%	0.6%, 95%CI: 0.13%, 2.51%	1.2%, 95%CI: 0.53%, 2.60%	2.2%, 95%CI: 1.12%, 4.15%	1.9%, 95%CI: 1.23%, 2.86%	1.2%, 95%CI: 0.72%, 2.15%	2.6%, 95%CI: 1.82%, 3.71%	1.7%, 95%CI: 1.07%, 2.80%
Other Asian	0.0%	0.2%, 95%CI: 0.06%, 0.82%	0.1%, 95%CI: 0.01%, 0.88%	0.8%, 95%CI: 0.16%, 3.61%	0.8%, 95%CI: 0.16%, 3.66%	0.8%, 95%CI: 0.16%, 3.60%	0.0%	0.3%, 95%CI: 0.07%, 1.15%	0.0%	0.2%, 95%CI: 0.05%, 0.94%	0.4%, 95%CI: 0.15%, 1.00%	0.3%, 95%CI: 0.07%, 0.93%
Other Pacific Islander	4.4%, 95%CI: 3.55%, 5.56%	5.0%, 95%CI: 4.09%, 6.20%	13.5%, 95%CI: 8.72%, 20.4%	0.8%, 95%CI: 0.24%, 2.28%	2.0%, 95%CI: 0.97%, 4.16%	2.5%, 95%CI: 0.99%, 6.37%	4.3%, 95%CI: 2.69%, 6.91%	4.5%, 95%CI: 2.40%, 8.20%	6.5%, 95%CI: 4.73%, 8.87%	3.5%, 95%CI: 2.38%, 5.20%	4.1%, 95%CI: 2.82%, 6.05%	9.1%, 95%CI: 6.25%, 13.1%
Black	2.7%, 95%CI: 0.46%, 13.9%	2.7%, 95%CI: 0.45%, 14.2%	3.7%, 95%CI: 0.83%, 14.9%	2.4%, 95%CI: 0.27%, 18.1%	4.8%, 95%CI: 1.75%, 12.6%	2.4%, 95%CI: 0.27%, 17.8%	4.3%, 95%CI: 0.76%, 21.1%	6.9%, 95%CI: 1.03%, 34.8%	4.8%, 95%CI: 0.98%, 20.2%	3.1%, 95%CI: 0.62%, 14.2%	5.3%, 95%CI: 1.89%, 13.8%	3.4%, 95%CI: 0.75%, 13.9%
AIAN	.	.	.	.	.	.	.	.	.	2.9%, 95%CI: 0.68%, 11.7%	4.2%, 95%CI: 1.26%, 12.9%	2.9%, 95%CI: 0.67%, 11.5%
Other Race/Ethnicity	4.8%, 95%CI: 3.86%, 5.91%	7.3%, 95%CI: 6.31%, 8.53%	8.8%, 95%CI: 7.42%, 10.3%	2.3%, 95%CI: 1.58%, 3.32%	4.7%, 95%CI: 2.53%, 8.44%	3.1%, 95%CI: 2.26%, 4.16%	3.0%, 95%CI: 2.26%, 4.01%	5.1%, 95%CI: 3.96%, 6.55%	5.5%, 95%CI: 4.53%, 6.68%	3.1%, 95%CI: 2.62%, 3.71%	5.4%, 95%CI: 4.27%, 6.82%	5.3%, 95%CI: 4.64%, 5.96%
Gender Identity												
Cisgender	2.7%, 95%CI: 2.22%, 3.30%	4.3%, 95%CI: 3.73%, 5.05%	5.3%, 95%CI: 4.33%, 6.37%	1.3%, 95%CI: 0.90%, 1.73%	2.9%, 95%CI: 2.02%, 4.17%	1.7%, 95%CI: 1.33%, 2.11%	2.5%, 95%CI: 1.99%, 3.03%	3.8%, 95%CI: 3.09%, 4.58%	3.9%, 95%CI: 3.24%, 4.65%	2.2%, 95%CI: 1.88%, 2.49%	3.7%, 95%CI: 3.23%, 4.23%	3.7%, 95%CI: 3.31%, 4.11%
Not Sure	4.3%, 95%CI: 1.27%, 13.5%	4.4%, 95%CI: 1.32%, 13.5%	5.1%, 95%CI: 1.80%, 13.7%	0.9%, 95%CI: 0.30%, 2.95%	1.8%, 95%CI: 0.75%, 4.13%	1.5%, 95%CI: 0.60%, 3.63%	2.3%, 95%CI: 0.83%, 6.25%	3.1%, 95%CI: 1.42%, 6.63%	2.3%, 95%CI: 0.82%, 6.06%	2.1%, 95%CI: 1.06%, 4.01%	2.7%, 95%CI: 1.68%, 4.42%	2.5%, 95%CI: 1.37%, 4.46%
Transgender	6.5%, 95%CI: 3.16%, 12.9%	9.7%, 95%CI: 5.35%, 17.0%	17.4%, 95%CI: 10.6%, 27.2%	9.9%, 95%CI: 3.15%, 27.0%	10.1%, 95%CI: 3.34%, 26.8%	11.2%, 95%CI: 4.05%, 27.3%	8.2%, 95%CI: 3.35%, 18.9%	12.0%, 95%CI: 5.44%, 24.6%	9.1%, 95%CI: 3.96%, 19.5%	8.6%, 95%CI: 4.21%, 16.6%	10.6%, 95%CI: 6.06%, 18.0%	12.0%, 95%CI: 6.95%, 20.0%
Mental Health Issue Ever												
No	1.3%, 95%CI: 0.82%, 2.18%	2.2%, 95%CI: 1.46%, 3.28%	3.5%, 95%CI: 2.51%, 4.94%	0.5%, 95%CI: 0.24%, 1.01%	1.1%, 95%CI: 0.53%, 2.37%	0.5%, 95%CI: 0.22%, 0.93%	1.0%, 95%CI: 0.53%, 1.79%	0.9%, 95%CI: 0.53%, 1.59%	1.6%, 95%CI: 0.93%, 2.69%	1.0%, 95%CI: 0.70%, 1.38%	1.5%, 95%CI: 1.14%, 1.93%	2.1%, 95%CI: 1.63%, 2.58%
Yes	3.4%, 95%CI: 2.73%, 4.34%	5.5%, 95%CI: 4.55%, 6.70%	6.5%, 95%CI: 5.17%, 8.19%	1.8%, 95%CI: 1.30%, 2.36%	3.5%, 95%CI: 2.48%, 4.83%	2.3%, 95%CI: 1.94%, 2.80%	3.0%, 95%CI: 2.43%, 3.66%	4.8%, 95%CI: 4.03%, 5.67%	4.8%, 95%CI: 4.03%, 5.71%	2.7%, 95%CI: 2.36%, 3.14%	4.6%, 95%CI: 4.08%, 5.13%	4.6%, 95%CI: 3.94%, 5.27%
Depressed Ever												
No	1.5%, 95%CI: 1.19%, 2.00%	2.4%, 95%CI: 1.93%, 3.05%	3.6%, 95%CI: 2.94%, 4.36%	0.6%, 95%CI: 0.28%, 1.41%	1.3%, 95%CI: 0.77%, 2.30%	0.8%, 95%CI: 0.45%, 1.42%	1.3%, 95%CI: 0.87%, 1.95%	1.8%, 95%CI: 1.34%, 2.30%	1.9%, 95%CI: 1.46%, 2.55%	1.2%, 95%CI: 0.92%, 1.51%	1.9%, 95%CI: 1.56%, 2.23%	2.2%, 95%CI: 1.84%, 2.60%
Yes	5.7%, 95%CI: 4.41%, 7.30%	9.2%, 95%CI: 7.33%, 11.6%	9.5%, 95%CI: 7.50%, 11.9%	3.0%, 95%CI: 2.19%, 4.15%	6.1%, 95%CI: 4.14%, 8.79%	4.0%, 95%CI: 3.27%, 4.92%	4.8%, 95%CI: 3.84%, 5.95%	7.9%, 95%CI: 6.40%, 9.61%	7.8%, 95%CI: 6.43%, 9.37%	4.5%, 95%CI: 3.82%, 5.25%	7.7%, 95%CI: 6.76%, 8.69%	7.1%, 95%CI: 6.15%, 8.11%
Ever Self-Harmed												
No	1.3%, 95%CI: 0.92%, 1.80%	2.2%, 95%CI: 1.72%, 2.83%	3.2%, 95%CI: 2.70%, 3.78%	0.9%, 95%CI: 0.49%, 1.55%	1.5%, 95%CI: 1.01%, 2.30%	1.0%, 95%CI: 0.65%, 1.53%	1.2%, 95%CI: 0.87%, 1.65%	2.0%, 95%CI: 1.51%, 2.64%	1.8%, 95%CI: 1.35%, 2.35%	1.1%, 95%CI: 0.88%, 1.45%	1.9%, 95%CI: 1.60%, 2.29%	2.0%, 95%CI: 1.76%, 2.36%
Yes	7.3%, 95%CI: 5.83%, 9.07%	11.5%, 95%CI: 9.30%, 14.0%	11.9%, 95%CI: 9.40%, 15.1%	3.1%, 95%CI: 2.24%, 4.17%	7.1%, 95%CI: 4.85%, 10.3%	4.5%, 95%CI: 3.65%, 5.52%	6.5%, 95%CI: 4.91%, 8.45%	9.7%, 95%CI: 7.85%, 12.0%	10.5%, 95%CI: 8.46%, 13.0%	5.6%, 95%CI: 4.90%, 6.47%	9.4%, 95%CI: 8.43%, 10.5%	9.1%, 95%CI: 7.84%, 10.4%

Table S14. Current Co-Substance Use Patterns of Alcohol, Nicotine, & Cannabis among High School Students, 2019-2023 YRBS

	2019			2021			2023			Combined Years		
	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use	Current Cannabis-Alcohol Co-Use	Current Nicotine-Alcohol Co-Use	Current Nicotine-Cannabis Co-Use
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	8.9%, 95%CI: 7.04%, 11.1%	14.4%, 95%CI: 12.1%, 17.1%	13.3%, 95%CI: 11.2%, 15.6%	7.5%, 95%CI: 6.46%, 8.75%	8.3%, 95%CI: 7.41%, 9.33%	7.7%, 95%CI: 6.72%, 8.73%	6.8%, 95%CI: 5.60%, 8.19%	6.9%, 95%CI: 5.83%, 8.19%	7.9%, 95%CI: 6.55%, 9.39%	7.7%, 95%CI: 6.90%, 8.58%	9.8%, 95%CI: 9.02%, 10.6%	9.5%, 95%CI: 8.72%, 10.4%
County of School												
Honolulu County	6.9%, 95%CI: 4.53%, 10.4%	12.2%, 95%CI: 9.06%, 16.2%	10.9%, 95%CI: 8.18%, 14.4%	6.3%, 95%CI: 4.80%, 8.14%	7.0%, 95%CI: 5.74%, 8.50%	6.4%, 95%CI: 5.09%, 8.02%	5.9%, 95%CI: 4.39%, 8.01%	6.2%, 95%CI: 4.78%, 8.01%	7.5%, 95%CI: 5.75%, 9.70%	6.4%, 95%CI: 5.28%, 7.67%	8.4%, 95%CI: 7.32%, 9.65%	8.2%, 95%CI: 7.11%, 9.49%
Hawaii County	11.3%, 95%CI: 9.41%, 13.6%	18.9%, 95%CI: 16.5%, 21.7%	17.3%, 95%CI: 14.7%, 20.3%	11.6%, 95%CI: 9.15%, 14.6%	12.1%, 95%CI: 9.73%, 14.9%	11.8%, 95%CI: 9.48%, 14.5%	9.4%, 95%CI: 7.39%, 11.9%	9.6%, 95%CI: 7.50%, 12.1%	8.9%, 95%CI: 6.88%, 11.4%	10.8%, 95%CI: 9.34%, 12.4%	13.3%, 95%CI: 12.0%, 14.7%	12.4%, 95%CI: 11.2%, 13.8%
Maui County	15.3%, 95%CI: 13.2%, 17.8%	19.9%, 95%CI: 17.4%, 22.7%	19.3%, 95%CI: 16.8%, 22.1%	8.7%, 95%CI: 6.88%, 11.0%	10.3%, 95%CI: 8.39%, 12.5%	9.2%, 95%CI: 7.38%, 11.4%	8.2%, 95%CI: 6.00%, 11.2%	8.2%, 95%CI: 6.06%, 11.1%	9.3%, 95%CI: 6.80%, 12.7%	10.7%, 95%CI: 9.33%, 12.2%	12.6%, 95%CI: 11.2%, 14.1%	12.5%, 95%CI: 11.0%, 14.1%
Kauai County	12.3%, 95%CI: 9.93%, 15.2%	19.0%, 95%CI: 16.0%, 22.3%	17.9%, 95%CI: 15.3%, 20.8%	9.0%, 95%CI: 6.88%, 11.8%	10.1%, 95%CI: 7.64%, 13.2%	8.3%, 95%CI: 6.20%, 11.1%	6.3%, 95%CI: 4.06%, 9.59%	5.2%, 95%CI: 3.31%, 8.02%	6.2%, 95%CI: 4.10%, 9.24%	9.2%, 95%CI: 7.75%, 10.8%	11.3%, 95%CI: 9.58%, 13.2%	10.7%, 95%CI: 9.21%, 12.4%
Sex Assigned at Birth												
Male	7.1%, 95%CI: 5.34%, 9.30%	11.6%, 95%CI: 8.94%, 14.9%	11.6%, 95%CI: 9.63%, 13.9%	7.3%, 95%CI: 5.49%, 9.58%	6.9%, 95%CI: 5.61%, 8.54%	7.0%, 95%CI: 5.33%, 9.03%	4.7%, 95%CI: 3.86%, 5.82%	4.9%, 95%CI: 3.89%, 6.25%	6.2%, 95%CI: 4.48%, 8.40%	6.4%, 95%CI: 5.29%, 7.63%	7.7%, 95%CI: 6.55%, 9.09%	8.2%, 95%CI: 6.98%, 9.50%
Female	10.1%, 95%CI: 8.00%, 12.7%	17.2%, 95%CI: 14.7%, 19.9%	14.7%, 95%CI: 12.2%, 17.8%	7.8%, 95%CI: 6.54%, 9.25%	9.8%, 95%CI: 8.28%, 11.6%	8.2%, 95%CI: 6.85%, 9.76%	9.0%, 95%CI: 6.72%, 11.8%	9.1%, 95%CI: 7.15%, 11.5%	9.6%, 95%CI: 7.71%, 11.8%	8.9%, 95%CI: 7.79%, 10.2%	11.9%, 95%CI: 10.9%, 13.0%	10.8%, 95%CI: 9.66%, 12.0%
Grade Level												
9th Grade	6.2%, 95%CI: 4.51%, 8.33%	9.9%, 95%CI: 7.55%, 12.9%	9.1%, 95%CI: 7.06%, 11.8%	5.4%, 95%CI: 4.25%, 6.72%	6.1%, 95%CI: 4.89%, 7.61%	6.6%, 95%CI: 5.34%, 8.20%	3.8%, 95%CI: 2.42%, 5.95%	4.6%, 95%CI: 2.91%, 7.17%	6.1%, 95%CI: 4.30%, 8.49%	5.1%, 95%CI: 4.32%, 5.98%	6.8%, 95%CI: 5.84%, 7.87%	7.2%, 95%CI: 6.14%, 8.45%
10th Grade	8.0%, 95%CI: 6.17%, 10.3%	15.1%, 95%CI: 12.1%, 18.6%	13.2%, 95%CI: 10.3%, 16.8%	5.8%, 95%CI: 4.31%, 7.87%	6.2%, 95%CI: 4.63%, 8.23%	5.9%, 95%CI: 4.58%, 7.67%	5.3%, 95%CI: 3.75%, 7.54%	6.2%, 95%CI: 4.52%, 8.37%	7.0%, 95%CI: 5.27%, 9.24%	6.4%, 95%CI: 5.35%, 7.55%	9.0%, 95%CI: 7.63%, 10.6%	8.6%, 95%CI: 7.41%, 10.0%
11th Grade	10.3%, 95%CI: 7.97%, 13.1%	14.5%, 95%CI: 12.5%, 16.7%	14.4%, 95%CI: 11.8%, 17.4%	9.0%, 95%CI: 6.56%, 12.1%	9.5%, 95%CI: 7.81%, 11.5%	7.5%, 95%CI: 5.71%, 9.90%	7.6%, 95%CI: 5.06%, 11.4%	6.9%, 95%CI: 5.21%, 9.06%	6.4%, 95%CI: 4.54%, 8.95%	8.9%, 95%CI: 7.38%, 10.8%	10.3%, 95%CI: 9.07%, 11.6%	9.4%, 95%CI: 8.24%, 10.7%
12th Grade	10.9%, 95%CI: 7.77%, 15.0%	18.8%, 95%CI: 13.5%, 25.7%	16.7%, 95%CI: 13.1%, 21.1%	11.1%, 95%CI: 8.45%, 14.3%	12.8%, 95%CI: 9.93%, 16.2%	11.1%, 95%CI: 8.47%, 14.3%	10.6%, 95%CI: 7.63%, 14.7%	10.5%, 95%CI: 7.36%, 14.7%	11.6%, 95%CI: 8.21%, 16.1%	10.8%, 95%CI: 9.04%, 13.0%	13.9%, 95%CI: 11.5%, 16.7%	13.0%, 95%CI: 11.1%, 15.2%
DOH Race/Ethnicity												
White	8.5%, 95%CI: 5.17%, 13.8%	13.7%, 95%CI: 8.99%, 20.2%	11.7%, 95%CI: 9.21%, 14.7%	12.7%, 95%CI: 8.66%, 18.3%	10.3%, 95%CI: 7.35%, 14.3%	10.9%, 95%CI: 8.01%, 14.7%	8.5%, 95%CI: 5.05%, 14.0%	6.7%, 95%CI: 4.48%, 9.95%	10.8%, 95%CI: 5.60%, 19.8%	10.0%, 95%CI: 7.66%, 13.0%	10.0%, 95%CI: 8.00%, 12.4%	11.1%, 95%CI: 8.18%, 14.8%
Native Hawaiian	14.8%, 95%CI: 12.7%, 17.2%	22.4%, 95%CI: 19.8%, 25.4%	20.6%, 95%CI: 18.0%, 23.6%	10.2%, 95%CI: 8.61%, 12.0%	11.7%, 95%CI: 9.75%, 14.0%	11.6%, 95%CI: 9.94%, 13.4%	8.7%, 95%CI: 6.80%, 11.1%	10.2%, 95%CI: 8.42%, 12.2%	8.7%, 95%CI: 7.30%, 10.4%	11.2%, 95%CI: 10.1%, 12.4%	14.7%, 95%CI: 13.4%, 16.1%	13.7%, 95%CI: 12.4%, 15.0%
Japanese	0.4%, 95%CI: 0.12%, 1.23%	4.7%, 95%CI: 1.21%, 16.6%	3.4%, 95%CI: 0.63%, 16.4%	2.4%, 95%CI: 0.98%, 5.79%	1.0%, 95%CI: 0.31%, 3.44%	0.9%, 95%CI: 0.26%, 3.45%	5.2%, 95%CI: 2.05%, 12.7%	2.0%, 95%CI: 0.47%, 8.23%	3.0%, 95%CI: 0.93%, 9.27%	1.9%, 95%CI: 0.91%, 3.90%	3.3%, 95%CI: 1.17%, 8.94%	2.8%, 95%CI: 0.90%, 8.14%
Filipino	5.1%, 95%CI: 3.63%, 7.01%	11.7%, 95%CI: 9.21%, 14.8%	8.9%, 95%CI: 6.78%, 11.7%	2.9%, 95%CI: 1.85%, 4.58%	6.2%, 95%CI: 4.62%, 8.15%	2.8%, 95%CI: 1.87%, 4.06%	4.0%, 95%CI: 2.42%, 6.51%	5.3%, 95%CI: 3.39%, 8.13%	4.7%, 95%CI: 2.88%, 7.54%	4.0%, 95%CI: 3.13%, 5.02%	7.7%, 95%CI: 6.28%, 9.30%	5.4%, 95%CI: 4.37%, 6.61%
Other Asian	0.6%, 95%CI: 0.21%, 1.98%	3.8%, 95%CI: 2.70%, 5.45%	2.5%, 95%CI: 0.48%, 12.3%	3.1%, 95%CI: 1.24%, 7.64%	2.2%, 95%CI: 0.78%, 6.01%	1.8%, 95%CI: 0.54%, 5.85%	0.2%, 95%CI: 0.03%, 1.45%	0.0%	0.3%, 95%CI: 0.03%, 1.86%	1.3%, 95%CI: 0.49%, 3.17%	2.4%, 95%CI: 1.86%, 3.20%	1.8%, 95%CI: 0.52%, 5.92%
Other Pacific Islander	6.7%, 95%CI: 3.42%, 12.6%	10.0%, 95%CI: 5.43%, 17.7%	15.1%, 95%CI: 9.24%, 23.8%	3.8%, 95%CI: 1.94%, 7.35%	4.9%, 95%CI: 2.25%, 10.2%	8.3%, 95%CI: 4.02%, 16.5%	5.3%, 95%CI: 1.97%, 13.5%	6.8%, 95%CI: 3.03%, 14.7%	16.1%, 95%CI: 10.2%, 24.5%	5.8%, 95%CI: 3.53%, 9.25%	8.2%, 95%CI: 5.37%, 12.2%	13.8%, 95%CI: 10.5%, 17.9%
Black	18.3%, 95%CI: 7.51%, 38.3%	15.8%, 95%CI: 6.12%, 35.2%	37.6%, 95%CI: 18.9%, 60.9%	3.8%, 95%CI: 1.11%, 12.4%	3.9%, 95%CI: 1.11%, 12.5%	8.5%, 95%CI: 2.27%, 27.0%	6.9%, 95%CI: 1.14%, 32.3%	5.9%, 95%CI: 0.74%, 34.1%	11.6%, 95%CI: 3.47%, 32.6%	7.0%, 95%CI: 2.49%, 18.2%	6.2%, 95%CI: 2.01%, 17.6%	13.5%, 95%CI: 6.55%, 25.9%
AIAN	.	.	.	.	.	.	.	.	.	.	.	.
Other Race/Ethnicity	12.6%, 95%CI: 10.7%, 14.8%	17.9%, 95%CI: 15.8%, 20.3%	17.5%, 95%CI: 15.5%, 19.7%	8.1%, 95%CI: 6.82%, 9.68%	8.3%, 95%CI: 6.86%, 10.0%	7.9%, 95%CI: 6.55%, 9.54%	8.3%, 95%CI: 7.07%, 9.67%	7.5%, 95%CI: 6.09%, 9.22%	9.1%, 95%CI: 7.41%, 11.1%	9.0%, 95%CI: 8.17%, 9.96%	9.8%, 95%CI: 8.79%, 10.9%	10.2%, 95%CI: 9.11%, 11.4%
Gender Identity												
Cisgender	8.8%, 95%CI: 7.01%, 11.0%	14.4%, 95%CI: 12.1%, 17.1%	13.4%, 95%CI: 11.4%, 15.7%	7.4%, 95%CI: 6.22%, 8.72%	8.1%, 95%CI: 7.15%, 9.18%	7.4%, 95%CI: 6.35%, 8.53%	6.5%, 95%CI: 5.22%, 8.16%	6.7%, 95%CI: 5.50%, 8.05%	7.3%, 95%CI: 6.09%, 8.67%	7.6%, 95%CI: 6.75%, 8.43%	9.6%, 95%CI: 8.89%, 10.4%	9.3%, 95%CI: 8.49%, 10.1%
Not Sure	5.1%, 95%CI: 1.32%, 17.9%	8.8%, 95%CI: 4.45%, 16.6%	4.2%, 95%CI: 1.23%, 13.3%	5.9%, 95%CI: 2.08%, 15.6%	9.9%, 95%CI: 4.32%, 21.0%	6.8%, 95%CI: 2.55%, 16.8%	7.2%, 95%CI: 3.21%, 15.3%	7.4%, 95%CI: 3.58%, 14.6%	14.7%, 95%CI: 7.80%, 25.9%	6.1%, 95%CI: 2.94%, 12.1%	8.8%, 95%CI: 5.47%, 13.9%	8.5%, 95%CI: 5.13%, 13.8%
Transgender	6.0%, 95%CI: 2.79%, 12.4%	14.4%, 95%CI: 7.77%, 25.3%	10.8%, 95%CI: 5.41%, 20.6%	12.9%, 95%CI: 6.40%, 24.2%	12.8%, 95%CI: 5.94%, 25.5%	18.3%, 95%CI: 10.7%, 29.6%	12.9%, 95%CI: 6.65%, 23.6%	12.8%, 95%CI: 6.71%, 23.1%	13.4%, 95%CI: 7.73%, 22.1%	11.2%, 95%CI: 7.24%, 17.0%	13.2%, 95%CI: 8.81%, 19.4%	14.5%, 95%CI: 9.96%, 20.5%
Mental Health Issue Ever												
No	5.9%, 95%CI: 4.26%, 8.11%	9.8%, 95%CI: 7.26%, 13.2%	9.1%, 95%CI: 6.71%, 12.2%	4.2%, 95%CI: 3.01%, 5.86%	3.4%, 95%CI: 2.34%, 4.93%	4.1%, 95%CI: 2.58%, 6.57%	3.2%, 95%CI: 1.91%, 5.47%	2.4%, 95%CI: 1.38%, 4.17%	4.1%, 95%CI: 2.66%, 6.13%	4.5%, 95%CI: 3.73%, 5.52%	5.4%, 95%CI: 4.39%, 6.74%	5.9%, 95%CI: 4.72%, 7.44%
Yes	9.6%, 95%CI: 7.60%, 12.0%	16.0%, 95%CI: 13.5%, 18.9%	14.5%, 95%CI: 12.4%, 16.9%	8.1%, 95%CI: 6.66%, 9.81%	9.3%, 95%CI: 8.08%, 10.6%	8.3%, 95%CI: 7.15%, 9.72%	7.9%, 95%CI: 6.07%, 10.2%	8.7%, 95%CI: 7.14%, 10.6%	9.0%, 95%CI: 7.03%, 11.5%	8.5%, 95%CI: 7.45%, 9.59%	11.0%, 95%CI: 10.1%, 12.0%	10.4%, 95%CI: 9.46%, 11.4%
Depressed in Past Year												
No	6.2%, 95%CI: 4.83%, 7.80%	11.4%, 95%CI: 9.06%, 14.3%	9.5%, 95%CI: 7.78%, 11.6%	4.9%, 95%CI: 4.12%, 5.93%	4.4%, 95%CI: 3.79%, 5.20%	4.4%, 95%CI: 3.74%, 5.25%	4.0%, 95%CI: 3.16%, 4.94%	3.3%, 95%CI: 2.49%, 4.39%	4.6%, 95%CI: 3.75%, 5.70%	5.0%, 95%CI: 4.39%, 5.68%	6.3%, 95%CI: 5.43%, 7.23%	6.1%, 95%CI: 5.47%, 6.84%
Yes	13.2%, 95%CI: 10.2%, 17.0%	19.4%, 95%CI: 15.8%, 23.5%	19.7%, 95%CI: 16.1%, 23.9%	12.2%, 95%CI: 9.84%, 15.0%	15.6%, 95%CI: 12.9%, 18.7%	13.4%, 95%CI: 10.9%, 16.3%	12.0%, 95%CI: 9.18%, 15.6%	13.8%, 95%CI: 10.9%, 17.3%	13.5%, 95%CI: 10.3%, 17.5%	12.5%, 95%CI: 10.8%, 14.3%	16.2%, 95%CI: 14.5%, 18.1%	15.4%, 95%CI: 13.5%, 17.6%
Self-Harmed in Past Year												
No	6.8%, 95%CI: 5.30%, 8.77%	11.4%, 95%CI: 9.56%, 13.6%	10.9%, 95%CI: 9.20%, 13.0%	5.1%, 95%CI: 4.32%, 5.95%	5.2%, 95%CI: 4.58%, 5.88%	4.8%, 95%CI: 4.16%, 5.65%	4.9%, 95%CI: 3.82%, 6.20%	4.7%, 95%CI: 3.73%, 6.01%	5.5%, 95%CI: 4.30%, 6.98%	5.6%, 95%CI: 4.81%, 6.47%	7.1%, 95%CI: 6.36%, 7.86%	7.1%, 95%CI: 6.29%, 7.91%
Yes	17.1%, 95%CI: 12.8%, 22.5%	27.5%, 95%CI: 21.6%, 34.4%	23.2%, 95%CI: 18.4%, 28.8%	16.4%, 95%CI: 13.0%, 20.4%	19.9%, 95%CI: 16.4%, 23.9%	17.6%, 95%CI: 14.1%, 21.8%	13.6%, 95%CI: 10.9%, 16.8%	14.7%, 95%CI: 12.1%, 17.9%	15.6%, 95%CI: 12.8%, 18.9%	15.6%, 95%CI: 13.8%, 17.6%	20.4%, 95%CI: 18.1%, 22.8%	18.5%, 95%CI: 16.5%, 20.7%

Table S15. Current Poly-Substance Use of Alcohol, Nicotine, & Cannabis among Middle School Students, 2019-2023 YRBS

	2019	2021	2023	Combined Years
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	3.0%, 95%CI: 2.41%, 3.62%	1.3%, 95%CI: 0.96%, 1.83%	2.1%, 95%CI: 1.71%, 2.64%	2.1%, 95%CI: 1.86%, 2.44%
County of School				
Honolulu County	2.4%, 95%CI: 1.67%, 3.40%	1.1%, 95%CI: 0.62%, 1.90%	1.7%, 95%CI: 1.18%, 2.33%	1.7%, 95%CI: 1.36%, 2.15%
Hawaii County	4.2%, 95%CI: 3.19%, 5.53%	2.0%, 95%CI: 1.36%, 3.03%	3.4%, 95%CI: 2.44%, 4.75%	3.2%, 95%CI: 2.62%, 3.85%
Maui County	3.5%, 95%CI: 2.65%, 4.73%	1.6%, 95%CI: 0.96%, 2.56%	3.3%, 95%CI: 2.08%, 5.08%	2.8%, 95%CI: 2.20%, 3.50%
Kauai County	4.8%, 95%CI: 3.37%, 6.71%	1.6%, 95%CI: 0.91%, 2.87%	1.2%, 95%CI: 0.76%, 1.94%	2.5%, 95%CI: 1.91%, 3.40%
Sex Assigned at Birth				
Male	2.7%, 95%CI: 1.88%, 3.75%	1.0%, 95%CI: 0.49%, 1.95%	1.4%, 95%CI: 0.98%, 2.11%	1.7%, 95%CI: 1.34%, 2.13%
Female	3.3%, 95%CI: 2.40%, 4.50%	1.7%, 95%CI: 1.27%, 2.40%	2.9%, 95%CI: 2.35%, 3.54%	2.6%, 95%CI: 2.25%, 3.09%
Grade Level				
6th Grade	1.9%, 95%CI: 1.17%, 3.00%	0.5%, 95%CI: 0.24%, 0.84%	0.9%, 95%CI: 0.47%, 1.69%	1.1%, 95%CI: 0.73%, 1.52%
7th Grade	2.6%, 95%CI: 1.81%, 3.59%	0.9%, 95%CI: 0.42%, 1.99%	1.9%, 95%CI: 1.27%, 2.80%	1.8%, 95%CI: 1.45%, 2.30%
8th Grade	4.1%, 95%CI: 3.23%, 5.16%	2.2%, 95%CI: 1.33%, 3.57%	3.2%, 95%CI: 2.45%, 4.13%	3.1%, 95%CI: 2.50%, 3.84%
DOH Race/Ethnicity				
White	1.0%, 95%CI: 0.47%, 2.32%	1.3%, 95%CI: 0.42%, 4.17%	1.0%, 95%CI: 0.40%, 2.43%	1.1%, 95%CI: 0.56%, 2.24%
Native Hawaiian	5.1%, 95%CI: 4.02%, 6.44%	2.2%, 95%CI: 1.46%, 3.28%	4.0%, 95%CI: 3.01%, 5.25%	3.8%, 95%CI: 3.15%, 4.53%
Japanese	2.6%, 95%CI: 0.61%, 10.3%	0.3%, 95%CI: 0.03%, 2.19%	0.00%	1.7%, 95%CI: 0.43%, 6.81%
Filipino	2.3%, 95%CI: 1.17%, 4.37%	0.5%, 95%CI: 0.10%, 2.69%	0.8%, 95%CI: 0.33%, 2.02%	1.2%, 95%CI: 0.65%, 2.20%
Other Asian	0.00%	0.8%, 95%CI: 0.16%, 3.66%	0.00%	0.2%, 95%CI: 0.05%, 0.99%
Other Pacific Islander	4.5%, 95%CI: 2.57%, 7.60%	0.8%, 95%CI: 0.26%, 2.42%	4.1%, 95%CI: 2.33%, 7.13%	3.4%, 95%CI: 2.21%, 5.34%
Black	2.9%, 95%CI: 0.53%, 14.3%	2.4%, 95%CI: 0.27%, 18.4%	4.5%, 95%CI: 0.78%, 21.8%	3.2%, 95%CI: 0.63%, 14.7%
AIAN	.	.	.	3.2%, 95%CI: 0.74%, 12.8%
Other Race/Ethnicity	4.9%, 95%CI: 3.92%, 6.05%	2.1%, 95%CI: 1.40%, 3.13%	2.7%, 95%CI: 1.89%, 3.75%	2.9%, 95%CI: 2.35%, 3.52%
Gender Identity				
Cisgender	2.9%, 95%CI: 2.24%, 3.64%	1.2%, 95%CI: 0.83%, 1.61%	2.1%, 95%CI: 1.63%, 2.63%	2.0%, 95%CI: 1.75%, 2.37%
Not Sure	3.8%, 95%CI: 0.85%, 15.1%	0.7%, 95%CI: 0.18%, 2.80%	1.2%, 95%CI: 0.31%, 4.73%	1.5%, 95%CI: 0.60%, 3.54%
Transgender	6.9%, 95%CI: 3.30%, 14.0%	9.9%, 95%CI: 3.16%, 27.1%	8.3%, 95%CI: 3.38%, 19.1%	8.8%, 95%CI: 4.24%, 17.4%
Mental Health Issue Ever				
No	1.3%, 95%CI: 0.80%, 2.17%	0.3%, 95%CI: 0.09%, 0.75%	0.7%, 95%CI: 0.40%, 1.24%	0.8%, 95%CI: 0.55%, 1.15%
Yes	3.6%, 95%CI: 2.83%, 4.70%	1.7%, 95%CI: 1.23%, 2.27%	2.6%, 95%CI: 2.07%, 3.26%	2.6%, 95%CI: 2.23%, 3.03%
Depressed Ever				
No	1.7%, 95%CI: 1.29%, 2.20%	0.5%, 95%CI: 0.18%, 1.43%	1.0%, 95%CI: 0.65%, 1.47%	1.1%, 95%CI: 0.82%, 1.40%
Yes	6.0%, 95%CI: 4.41%, 8.03%	2.9%, 95%CI: 2.17%, 4.00%	4.3%, 95%CI: 3.37%, 5.55%	4.3%, 95%CI: 3.63%, 5.17%
Ever Self-Harmed				
No	1.3%, 95%CI: 0.87%, 1.96%	0.7%, 95%CI: 0.40%, 1.34%	0.9%, 95%CI: 0.67%, 1.31%	1.0%, 95%CI: 0.76%, 1.30%
Yes	8.0%, 95%CI: 6.32%, 9.99%	3.1%, 95%CI: 2.22%, 4.29%	5.8%, 95%CI: 4.36%, 7.67%	5.6%, 95%CI: 4.82%, 6.46%

Table S16. Current Poly-Substance Use of Alcohol, Nicotine, & Cannabis among High School Students, 2019-2023 YRBS

	2019	2021	2023	Combined Years
	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI	row-%, 95%CI
Total, Hawaii YRBS	8.5%, 95%CI: 6.70%, 10.8%	6.1%, 95%CI: 5.18%, 7.18%	4.9%, 95%CI: 3.93%, 6.12%	6.5%, 95%CI: 5.76%, 7.27%
County of School				
Honolulu County	6.6%, 95%CI: 4.29%, 10.1%	5.1%, 95%CI: 3.89%, 6.75%	4.2%, 95%CI: 2.98%, 5.94%	5.3%, 95%CI: 4.34%, 6.49%
Hawaii County	10.9%, 95%CI: 8.96%, 13.2%	9.6%, 95%CI: 7.34%, 12.4%	7.1%, 95%CI: 5.28%, 9.55%	9.1%, 95%CI: 7.90%, 10.4%
Maui County	14.8%, 95%CI: 12.5%, 17.5%	6.8%, 95%CI: 5.26%, 8.80%	6.3%, 95%CI: 4.13%, 9.40%	9.2%, 95%CI: 7.84%, 10.7%
Kauai County	12.7%, 95%CI: 10.2%, 15.6%	6.9%, 95%CI: 4.94%, 9.59%	4.2%, 95%CI: 2.50%, 6.95%	7.8%, 95%CI: 6.43%, 9.48%
Sex Assigned at Birth				
Male	7.1%, 95%CI: 5.26%, 9.55%	5.8%, 95%CI: 4.50%, 7.57%	3.5%, 95%CI: 2.59%, 4.70%	5.4%, 95%CI: 4.46%, 6.63%
Female	9.6%, 95%CI: 7.66%, 12.0%	6.4%, 95%CI: 5.02%, 8.02%	6.4%, 95%CI: 4.66%, 8.83%	7.4%, 95%CI: 6.52%, 8.49%
Grade Level				
9th Grade	5.8%, 95%CI: 4.15%, 8.13%	4.9%, 95%CI: 3.71%, 6.51%	2.9%, 95%CI: 1.67%, 5.14%	4.5%, 95%CI: 3.79%, 5.43%
10th Grade	8.1%, 95%CI: 6.23%, 10.6%	4.4%, 95%CI: 3.19%, 6.16%	4.3%, 95%CI: 2.65%, 6.77%	5.6%, 95%CI: 4.55%, 6.80%
11th Grade	9.4%, 95%CI: 7.23%, 12.1%	6.5%, 95%CI: 4.63%, 9.09%	4.2%, 95%CI: 2.78%, 6.19%	6.7%, 95%CI: 5.59%, 7.99%
12th Grade	10.8%, 95%CI: 7.53%, 15.2%	9.2%, 95%CI: 6.67%, 12.6%	8.6%, 95%CI: 5.61%, 13.0%	9.5%, 95%CI: 7.53%, 11.9%
DOH Race/Ethnicity				
White	6.8%, 95%CI: 4.12%, 11.1%	10.1%, 95%CI: 6.97%, 14.3%	6.1%, 95%CI: 3.30%, 10.9%	7.7%, 95%CI: 5.75%, 10.1%
Native Hawaiian	15.5%, 95%CI: 13.2%, 18.2%	9.4%, 95%CI: 7.70%, 11.4%	6.3%, 95%CI: 4.56%, 8.63%	10.4%, 95%CI: 9.32%, 11.5%
Japanese	0.4%, 95%CI: 0.13%, 1.29%	1.0%, 95%CI: 0.27%, 3.61%	2.2%, 95%CI: 0.51%, 8.70%	0.9%, 95%CI: 0.34%, 2.38%
Filipino	4.8%, 95%CI: 3.38%, 6.65%	2.3%, 95%CI: 1.42%, 3.84%	2.9%, 95%CI: 1.47%, 5.75%	3.3%, 95%CI: 2.53%, 4.34%
Other Asian	0.7%, 95%CI: 0.22%, 2.09%	1.9%, 95%CI: 0.58%, 6.18%	0.00%	0.9%, 95%CI: 0.28%, 2.68%
Other Pacific Islander	7.6%, 95%CI: 3.82%, 14.5%	3.2%, 95%CI: 1.32%, 7.44%	5.6%, 95%CI: 1.95%, 15.1%	6.2%, 95%CI: 3.67%, 10.3%
Black	16.2%, 95%CI: 6.22%, 36.2%	4.1%, 95%CI: 1.19%, 13.2%	6.4%, 95%CI: 0.87%, 34.7%	6.7%, 95%CI: 2.21%, 18.4%
AIAN	.	.	.	.
Other Race/Ethnicity	12.2%, 95%CI: 10.3%, 14.4%	5.8%, 95%CI: 4.62%, 7.33%	6.0%, 95%CI: 4.81%, 7.44%	7.1%, 95%CI: 6.20%, 8.05%
Gender Identity				
Cisgender	8.5%, 95%CI: 6.69%, 10.6%	5.8%, 95%CI: 4.82%, 6.99%	4.7%, 95%CI: 3.58%, 6.06%	6.3%, 95%CI: 5.57%, 7.06%
Not Sure	4.3%, 95%CI: 1.15%, 14.9%	5.5%, 95%CI: 1.71%, 16.1%	5.8%, 95%CI: 2.39%, 13.6%	5.2%, 95%CI: 2.53%, 10.6%
Transgender	6.1%, 95%CI: 2.63%, 13.3%	14.4%, 95%CI: 6.60%, 28.7%	10.7%, 95%CI: 4.98%, 21.4%	10.9%, 95%CI: 6.60%, 17.4%
Mental Health Issue Ever				
No	5.4%, 95%CI: 3.85%, 7.64%	2.8%, 95%CI: 1.81%, 4.40%	2.1%, 95%CI: 1.04%, 4.27%	3.6%, 95%CI: 2.84%, 4.46%
Yes	9.3%, 95%CI: 7.47%, 11.6%	6.5%, 95%CI: 5.38%, 7.95%	5.9%, 95%CI: 4.41%, 7.83%	7.1%, 95%CI: 6.28%, 8.10%
Depressed in Past Year				
No	5.6%, 95%CI: 4.31%, 7.34%	3.6%, 95%CI: 2.97%, 4.39%	2.5%, 95%CI: 1.86%, 3.46%	3.9%, 95%CI: 3.36%, 4.50%
Yes	13.4%, 95%CI: 10.2%, 17.6%	10.7%, 95%CI: 8.09%, 13.9%	9.6%, 95%CI: 7.03%, 12.9%	11.2%, 95%CI: 9.58%, 13.0%
Self-Harmed in Past Year				
No	6.5%, 95%CI: 4.96%, 8.38%	3.7%, 95%CI: 3.08%, 4.42%	3.2%, 95%CI: 2.37%, 4.31%	4.4%, 95%CI: 3.79%, 5.18%
Yes	17.5%, 95%CI: 12.8%, 23.4%	15.1%, 95%CI: 11.6%, 19.3%	11.2%, 95%CI: 8.69%, 14.3%	14.5%, 95%CI: 12.5%, 16.7%

Table S17. Current Patterns of Poly-Substance Use of Alcohol, Nicotine, & Cannabis among Emerging Adults (age 18-29 years), 2020-2022 BRFSS

	Total col-%, 95%CI	Any Cannabis-Alcohol Co-Use row-%, 95%CI	Any Nicotine-Alcohol Co-Use row-%, 95%CI	Any Nicotine-Cannabis Co-Use row-%, 95%CI	Cannabis-Alcohol Co-Use Only row-%, 95%CI	Nicotine-Alcohol Co-Use Only row-%, 95%CI	Nicotine-Cannabis Co-Use Only row-%, 95%CI	Poly-Substance Use row-%, 95%CI
Total		13.3%, 95%CI: 11.6%, 15.3%	19.1%, 95%CI: 17.1%, 21.2%	9.4%, 95%CI: 7.86%, 11.2%	6.0%, 95%CI: 4.92%, 7.28%	10.6%, 95%CI: 9.11%, 12.3%	1.9%, 95%CI: 1.24%, 2.76%	8.0%, 95%CI: 6.57%, 9.81%
Age Group								
25-34 Years	40.8%, 95%CI: 38.5%, 43.1%	13.9%, 95%CI: 11.3%, 17.0%	19.4%, 95%CI: 16.5%, 22.8%	7.4%, 95%CI: 5.45%, 9.88%	8.1%, 95%CI: 6.14%, 10.5%	12.4%, 95%CI: 9.99%, 15.4%	1.4%, 95%CI: 0.79%, 2.38%	6.4%, 95%CI: 4.52%, 9.00%
18-24 Years	59.2%, 95%CI: 56.9%, 61.5%	13.0%, 95%CI: 10.8%, 15.5%	18.8%, 95%CI: 16.3%, 21.6%	10.7%, 95%CI: 8.63%, 13.3%	4.6%, 95%CI: 3.45%, 6.11%	9.4%, 95%CI: 7.60%, 11.5%	2.2%, 95%CI: 1.30%, 3.64%	9.1%, 95%CI: 7.13%, 11.7%
Generation								
Generation Z	58.5%, 95%CI: 56.2%, 60.8%	12.8%, 95%CI: 10.6%, 15.3%	19.2%, 95%CI: 16.7%, 22.1%	10.7%, 95%CI: 8.61%, 13.3%	4.4%, 95%CI: 3.25%, 5.81%	9.9%, 95%CI: 8.06%, 12.1%	2.1%, 95%CI: 1.27%, 3.61%	9.2%, 95%CI: 7.15%, 11.7%
Millennial	41.5%, 95%CI: 39.2%, 43.8%	14.1%, 95%CI: 11.5%, 17.2%	18.8%, 95%CI: 15.9%, 22.1%	7.4%, 95%CI: 5.51%, 9.91%	8.4%, 95%CI: 6.41%, 10.9%	11.6%, 95%CI: 9.30%, 14.4%	1.4%, 95%CI: 0.83%, 2.48%	6.4%, 95%CI: 4.52%, 8.94%
Sex Assigned at Birth								
Female	46.0%, 95%CI: 43.7%, 48.3%	10.9%, 95%CI: 8.64%, 13.8%	15.1%, 95%CI: 12.5%, 18.2%	7.8%, 95%CI: 5.67%, 10.7%	5.0%, 95%CI: 3.81%, 6.57%	8.7%, 95%CI: 6.74%, 11.0%	1.7%, 95%CI: 0.86%, 3.32%	6.6%, 95%CI: 4.55%, 9.50%
Male	54.0%, 95%CI: 51.7%, 56.3%	15.4%, 95%CI: 13.0%, 18.2%	22.4%, 95%CI: 19.7%, 25.4%	10.7%, 95%CI: 8.72%, 13.1%	6.8%, 95%CI: 5.22%, 8.94%	12.3%, 95%CI: 10.2%, 14.8%	2.0%, 95%CI: 1.23%, 3.22%	9.3%, 95%CI: 7.35%, 11.7%
Education Level								
College Graduate	17.2%, 95%CI: 15.7%, 18.7%	11.2%, 95%CI: 8.60%, 14.4%	11.3%, 95%CI: 8.61%, 14.7%	3.9%, 95%CI: 2.37%, 6.28%	7.9%, 95%CI: 5.80%, 10.6%	6.8%, 95%CI: 4.86%, 9.53%	0.5%, 95%CI: 0.13%, 2.17%	3.6%, 95%CI: 2.12%, 6.01%
Some College	28.6%, 95%CI: 26.5%, 30.8%	12.3%, 95%CI: 9.47%, 15.9%	20.7%, 95%CI: 17.1%, 24.8%	8.4%, 95%CI: 6.00%, 11.5%	5.7%, 95%CI: 3.89%, 8.31%	13.1%, 95%CI: 10.1%, 16.7%	1.5%, 95%CI: 0.73%, 2.89%	7.3%, 95%CI: 5.01%, 10.5%
HS Graduate	45.6%, 95%CI: 43.3%, 48.0%	11.8%, 95%CI: 9.59%, 14.5%	19.1%, 95%CI: 16.4%, 22.0%	9.7%, 95%CI: 7.63%, 12.3%	4.6%, 95%CI: 3.27%, 6.42%	10.9%, 95%CI: 8.84%, 13.3%	2.3%, 95%CI: 1.40%, 3.81%	8.1%, 95%CI: 6.10%, 10.6%
Less than HS	8.6%, 95%CI: 6.95%, 10.7%	28.6%, 95%CI: 19.0%, 40.7%	28.9%, 95%CI: 19.1%, 41.3%	22.2%, 95%CI: 13.6%, 34.2%	10.2%, 95%CI: 5.28%, 18.7%	8.6%, 95%CI: 3.57%, 19.1%	3.5%, 95%CI: 0.88%, 12.6%	19.0%, 95%CI: 10.9%, 31.1%
Marital Status								
Married	16.4%, 95%CI: 14.6%, 18.3%	7.1%, 95%CI: 4.23%, 11.7%	16.3%, 95%CI: 11.9%, 21.9%	4.2%, 95%CI: 1.92%, 8.82%	3.8%, 95%CI: 2.07%, 6.90%	13.1%, 95%CI: 9.10%, 18.6%	0.4%, 95%CI: 0.08%, 2.34%	4.0%, 95%CI: 1.73%, 9.07%
Divorced/Sep	3.0%, 95%CI: 2.30%, 4.01%	17.9%, 95%CI: 7.92%, 35.6%	35.7%, 95%CI: 22.0%, 52.2%	14.9%, 95%CI: 5.72%, 33.7%	3.4%, 95%CI: 1.00%, 10.9%	14.9%, 95%CI: 6.20%, 31.7%	0.00%	15.8%, 95%CI: 6.10%, 35.3%
Widowed	0.3%, 95%CI: 0.14%, 0.72%	.	.	.	.	.	.	.
Never/Unmarried	80.3%, 95%CI: 78.3%, 82.2%	14.3%, 95%CI: 12.3%, 16.5%	19.0%, 95%CI: 16.8%, 21.3%	10.1%, 95%CI: 8.41%, 12.2%	6.4%, 95%CI: 5.20%, 7.93%	10.1%, 95%CI: 8.52%, 11.9%	2.2%, 95%CI: 1.45%, 3.27%	8.5%, 95%CI: 6.81%, 10.4%
Rent/Own Home								
Own	26.6%, 95%CI: 24.3%, 29.1%	10.8%, 95%CI: 7.21%, 15.9%	15.8%, 95%CI: 11.7%, 20.8%	7.5%, 95%CI: 4.46%, 12.2%	4.9%, 95%CI: 2.77%, 8.66%	8.1%, 95%CI: 5.39%, 12.0%	1.4%, 95%CI: 0.47%, 4.03%	6.4%, 95%CI: 3.54%, 11.2%
Rent	42.6%, 95%CI: 40.4%, 44.9%	16.8%, 95%CI: 14.3%, 19.7%	21.7%, 95%CI: 18.9%, 24.8%	10.1%, 95%CI: 8.01%, 12.8%	9.0%, 95%CI: 7.16%, 11.2%	13.1%, 95%CI: 10.8%, 15.7%	1.9%, 95%CI: 1.00%, 3.67%	9.0%, 95%CI: 6.93%, 11.5%
Other Arrangement	30.8%, 95%CI: 28.7%, 32.9%	10.9%, 95%CI: 8.34%, 14.1%	18.5%, 95%CI: 15.2%, 22.4%	10.0%, 95%CI: 7.49%, 13.2%	3.2%, 95%CI: 2.11%, 4.70%	9.7%, 95%CI: 7.35%, 12.7%	2.2%, 95%CI: 1.32%, 3.69%	8.1%, 95%CI: 5.77%, 11.4%
DOH Race/Ethnicity								
White	20.7%, 95%CI: 18.8%, 22.8%	19.5%, 95%CI: 14.6%, 25.5%	22.1%, 95%CI: 17.2%, 28.0%	10.9%, 95%CI: 6.87%, 16.7%	9.2%, 95%CI: 6.47%, 12.9%	11.2%, 95%CI: 7.64%, 16.1%	0.4%, 95%CI: 0.09%, 1.46%	11.9%, 95%CI: 7.48%, 18.5%
Native Hawaiian	24.9%, 95%CI: 22.9%, 26.9%	16.6%, 95%CI: 13.1%, 20.9%	23.2%, 95%CI: 19.1%, 27.9%	12.2%, 95%CI: 9.15%, 16.0%	7.3%, 95%CI: 4.97%, 10.5%	12.0%, 95%CI: 9.10%, 15.7%	2.5%, 95%CI: 1.45%, 4.41%	9.8%, 95%CI: 6.99%, 13.6%
Japanese	9.5%, 95%CI: 8.16%, 11.0%	11.1%, 95%CI: 7.13%, 16.9%	12.0%, 95%CI: 7.93%, 17.7%	7.5%, 95%CI: 4.15%, 13.2%	4.1%, 95%CI: 2.28%, 7.17%	4.7%, 95%CI: 2.74%, 8.06%	0.4%, 95%CI: 0.06%, 3.00%	7.3%, 95%CI: 3.95%, 13.2%
Filipino	17.5%, 95%CI: 15.8%, 19.3%	7.5%, 95%CI: 4.91%, 11.2%	17.1%, 95%CI: 13.3%, 21.7%	6.6%, 95%CI: 4.21%, 10.2%	3.0%, 95%CI: 1.38%, 6.30%	11.6%, 95%CI: 8.34%, 15.9%	2.2%, 95%CI: 0.83%, 5.54%	4.7%, 95%CI: 2.86%, 7.60%
Chinese	5.0%, 95%CI: 4.06%, 6.20%	5.1%, 95%CI: 2.15%, 11.5%	3.7%, 95%CI: 1.67%, 8.18%	1.0%, 95%CI: 0.19%, 4.74%	4.9%, 95%CI: 2.03%, 11.5%	3.7%, 95%CI: 1.59%, 8.35%	0.8%, 95%CI: 0.11%, 5.49%	0.2%, 95%CI: 0.03%, 1.42%
Other Asian	5.5%, 95%CI: 4.59%, 6.54%	7.0%, 95%CI: 3.59%, 13.3%	23.7%, 95%CI: 16.1%, 33.4%	6.6%, 95%CI: 3.22%, 13.1%	2.2%, 95%CI: 0.73%, 6.46%	16.9%, 95%CI: 10.3%, 26.5%	1.7%, 95%CI: 0.42%, 6.73%	5.1%, 95%CI: 2.17%, 11.3%
Other Pacific Islander	8.9%, 95%CI: 7.66%, 10.3%	17.7%, 95%CI: 11.7%, 25.8%	22.9%, 95%CI: 16.6%, 30.8%	12.4%, 95%CI: 7.28%, 20.3%	7.5%, 95%CI: 4.22%, 13.1%	11.9%, 95%CI: 7.74%, 17.8%	1.9%, 95%CI: 0.63%, 5.39%	11.2%, 95%CI: 6.14%, 19.5%
Black	4.7%, 95%CI: 3.65%, 6.02%	8.5%, 95%CI: 3.99%, 17.1%	12.2%, 95%CI: 6.21%, 22.6%	15.6%, 95%CI: 7.16%, 30.7%	3.8%, 95%CI: 1.06%, 12.8%	3.8%, 95%CI: 1.19%, 11.6%	9.8%, 95%CI: 3.00%, 27.8%	6.6%, 95%CI: 2.64%, 15.7%
AIAN	1.4%, 95%CI: 0.95%, 2.06%	7.5%, 95%CI: 2.29%, 21.9%	14.6%, 95%CI: 5.40%, 33.7%	4.7%, 95%CI: 1.12%, 18.0%	3.8%, 95%CI: 0.52%, 22.9%	13.8%, 95%CI: 3.90%, 38.6%	0.00%	5.8%, 95%CI: 1.35%, 21.4%
Other	2.0%, 95%CI: 1.37%, 2.83%	11.0%, 95%CI: 3.30%, 30.8%	14.3%, 95%CI: 4.79%, 35.5%	1.3%, 95%CI: 0.17%, 8.58%	11.2%, 95%CI: 3.36%, 31.3%	15.3%, 95%CI: 5.13%, 37.5%	1.3%, 95%CI: 0.18%, 9.17%	0.00%
Sexual/Gender Minority								
No	86.7%, 95%CI: 84.8%, 88.4%	11.3%, 95%CI: 9.62%, 13.1%	17.9%, 95%CI: 15.9%, 20.1%	7.7%, 95%CI: 6.37%, 9.40%	5.2%, 95%CI: 4.16%, 6.54%	11.1%, 95%CI: 9.50%, 13.0%	1.6%, 95%CI: 1.05%, 2.41%	6.3%, 95%CI: 5.06%, 7.92%
Yes	13.3%, 95%CI: 11.6%, 15.2%	29.0%, 95%CI: 22.0%, 37.1%	28.1%, 95%CI: 21.2%, 36.1%	22.6%, 95%CI: 15.9%, 31.2%	10.3%, 95%CI: 6.70%, 15.4%	8.0%, 95%CI: 4.73%, 13.2%	3.7%, 95%CI: 1.40%, 9.57%	19.5%, 95%CI: 13.1%, 28.1%
Federal Poverty Threshold								
0-100%	27.7%, 95%CI: 25.4%, 30.1%	15.4%, 95%CI: 11.5%, 20.3%	19.9%, 95%CI: 15.9%, 24.6%	13.3%, 95%CI: 9.59%, 18.1%	6.0%, 95%CI: 3.77%, 9.31%	9.4%, 95%CI: 6.97%, 12.7%	3.4%, 95%CI: 1.75%, 6.51%	10.3%, 95%CI: 6.95%, 15.0%
101-185%	22.9%, 95%CI: 20.7%, 25.2%	14.8%, 95%CI: 11.4%, 18.9%	25.9%, 95%CI: 21.0%, 31.6%	9.6%, 95%CI: 6.83%, 13.5%	7.2%, 95%CI: 4.84%, 10.6%	15.5%, 95%CI: 11.3%, 20.8%	2.0%, 95%CI: 0.71%, 5.47%	8.2%, 95%CI: 5.71%, 11.5%
186-300%	23.6%, 95%CI: 21.4%, 26.0%	15.6%, 95%CI: 11.2%, 21.3%	18.6%, 95%CI: 14.1%, 24.2%	9.1%, 95%CI: 5.60%, 14.5%	8.0%, 95%CI: 5.26%, 12.0%	11.0%, 95%CI: 7.78%, 15.4%	1.3%, 95%CI: 0.50%, 3.55%	8.3%, 95%CI: 4.83%, 14.0%
301+%	25.9%, 95%CI: 23.5%, 28.3%	10.1%, 95%CI: 7.32%, 13.8%	12.2%, 95%CI: 9.15%, 16.1%	5.2%, 95%CI: 3.22%, 8.19%	6.4%, 95%CI: 4.25%, 9.61%	7.8%, 95%CI: 5.39%, 11.2%	1.1%, 95%CI: 0.40%, 3.16%	4.4%, 95%CI: 2.61%, 7.48%
Health Insurance								
Insured	92.0%, 95%CI: 90.7%, 93.2%	12.8%, 95%CI: 11.0%, 14.8%	18.8%, 95%CI: 16.7%, 21.0%	9.1%, 95%CI: 7.48%, 10.9%	5.8%, 95%CI: 4.72%, 7.17%	10.6%, 95%CI: 9.01%, 12.4%	1.9%, 95%CI: 1.22%, 2.89%	7.7%, 95%CI: 6.15%, 9.50%
Not Insured	8.0%, 95%CI: 6.76%, 9.33%	20.1%, 95%CI: 13.7%, 28.4%	22.5%, 95%CI: 16.3%, 30.3%	12.0%, 95%CI: 7.57%, 18.6%	10.4%, 95%CI: 5.84%, 17.9%	11.7%, 95%CI: 7.40%, 17.9%	2.4%, 95%CI: 0.99%, 5.93%	10.1%, 95%CI: 5.89%, 16.7%
Depressive Disorder								
No	86.3%, 95%CI: 84.6%, 87.8%	11.4%, 95%CI: 9.69%, 13.4%	17.9%, 95%CI: 15.8%, 20.1%	7.9%, 95%CI: 6.41%, 9.71%	5.4%, 95%CI: 4.30%, 6.81%	10.7%, 95%CI: 9.09%, 12.6%	1.7%, 95%CI: 1.08%, 2.76%	6.6%, 95%CI: 5.17%, 8.32%
Yes	13.7%, 95%CI: 12.2%, 15.4%	25.2%, 95%CI: 19.4%, 31.9%	26.9%, 95%CI: 21.1%, 33.5%	18.9%, 95%CI: 13.6%, 25.5%	9.3%, 95%CI: 6.37%, 13.5%	10.1%, 95%CI: 6.85%, 14.5%	2.7%, 95%CI: 1.34%, 5.22%	17.5%, 95%CI: 12.1%, 24.5%
Poor Mental Health Days in Past 30 Days								
None	51.6%, 95%CI: 49.2%, 53.9%	8.0%, 95%CI: 6.26%, 10.2%	16.6%, 95%CI: 14.1%, 19.4%	7.0%, 95%CI: 5.30%, 9.18%	3.0%, 95%CI: 2.02%, 4.51%	10.6%, 95%CI: 8.51%, 13.2%	1.9%, 95%CI: 1.06%, 3.46%	5.5%, 95%CI: 4.01%, 7.50%
1-15 Days	38.6%, 95%CI: 36.3%, 40.9%	18.1%, 95%CI: 14.9%, 21.8%	20.7%, 95%CI: 17.4%, 24.5%	10.9%, 95%CI: 8.22%, 14.4%	8.8%, 95%CI: 6.81%, 11.3%	10.0%, 95%CI: 7.93%, 12.5%	1.5%, 95%CI: 0.77%, 3.04%	9.9%, 95%CI: 7.18%, 13.4%
16-30 Days	9.8%, 95%CI: 8.50%, 11.4%	21.6%, 95%CI: 15.9%, 28.7%	24.6%, 95%CI: 18.6%, 31.9%	14.8%, 95%CI: 10.1%, 21.1%	10.3%, 95%CI: 6.50%, 16.0%	12.5%, 95%CI: 8.05%, 19.0%	3.0%, 95%CI: 1.35%, 6.39%	12.9%, 95%CI: 8.37%, 19.4%
County of Residence								
Honolulu County	74.8%, 95%CI: 73.5%, 76.0%	12.9%, 95%CI: 10.8%, 15.5%	19.9%, 95%CI: 17.3%, 22.6%	9.3%, 95%CI: 7.35%, 11.7%	5.7%, 95%CI: 4.42%, 7.40%	11.6%, 95%CI: 9.67%, 13.8%	1.9%, 95%CI: 1.15%, 3.17%	7.8%, 95%CI: 5.93%, 10.1%
Hawaii County	11.3%, 95%CI: 10.4%, 12.3%	17.6%, 95%CI: 13.2%, 23.0%	19.4%, 95%CI: 15.0%, 24.6%	9.4%, 95%CI: 6.46%, 13.6%	9.3%, 95%CI: 6.00%, 14.2%	9.8%, 95%CI: 6.59%, 14.2%	0.9%, 95%CI: 0.26%, 2.93%	8.9%, 95%CI: 5.97%, 13.1%
Maui County	10.2%, 95%CI: 9.46%, 11.0%	15.9%, 95%CI: 11.7%, 21.2%	16.8%, 95%CI: 12.6%, 22.2%	13.1%, 95%CI: 9.00%, 18.7%	5.9%, 95%CI: 3.93%, 8.77%	6.6%, 95%CI: 4.34%, 9.82%	3.1%, 95%CI: 1.49%, 6.47%	10.4%, 95%CI: 6.67%, 15.8%
Kauai County	3.7%, 95%CI: 3.23%, 4.23%	8.8%, 95%CI: 5.61%, 13.6%	12.8%, 95%CI: 8.52%, 18.7%	4.6%, 95%CI: 2.53%, 8.20%	4.2%, 95%CI: 2.12%, 8.17%	7.8%, 95%CI: 4.45%, 13.2%	0.00%	4.7%, 95%CI: 2.60%, 8.43%

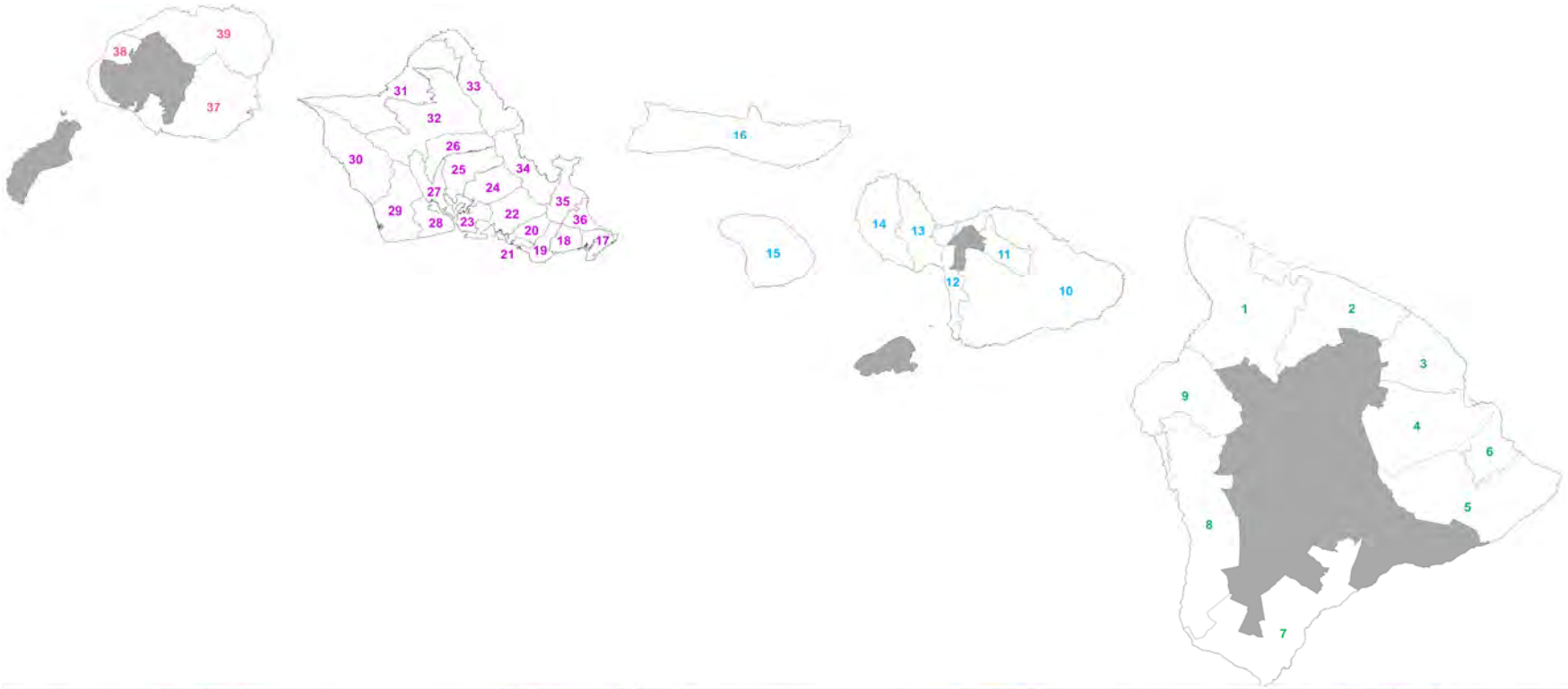
***All Co- & Poly-Substance Use-related data among emerging adults derives from the 2020-2022 HI BRFSS**

Table S18. Current Patterns of Poly-Substance Use of Alcohol, Nicotine, & Cannabis among All Adults (age 18+ years), 2020-2022 BRFSS

	Total N (col-%, 95%CI)	Any Cannabis-Alcohol Co-Use N (row-%, 95%CI)	Any Nicotine-Alcohol Co-Use N (row-%, 95%CI)	Any Nicotine-Cannabis Co-Use N (row-%, 95%CI)	Cannabis-Alcohol Co-Use Only N (row-%, 95%CI)	Nicotine-Alcohol Co-Use Only N (row-%, 95%CI)	Nicotine-Cannabis Co-Use Only N (row-%, 95%CI)	Poly-Substance Use N (row-%, 95%CI)
Total		7.5%, 95%CI: 7.00%, 7.96%	9.9%, 95%CI: 9.34%, 10.5%	4.4%, 95%CI: 4.01%, 4.83%	4.5%, 95%CI: 4.20%, 4.91%	6.6%, 95%CI: 6.11%, 7.10%	1.4%, 95%CI: 1.22%, 1.68%	3.2%, 95%CI: 2.83%, 3.57%
Age Group								
65+ Years	25.2%, 95%CI: 24.5%, 26.0%	3.6%, 95%CI: 3.19%, 4.15%	3.4%, 95%CI: 2.80%, 4.02%	1.2%, 95%CI: 0.90%, 1.48%	3.1%, 95%CI: 2.71%, 3.59%	2.8%, 95%CI: 2.22%, 3.42%	0.6%, 95%CI: 0.41%, 0.81%	0.6%, 95%CI: 0.43%, 0.88%
55-64 Years	15.6%, 95%CI: 15.0%, 16.2%	5.8%, 95%CI: 4.98%, 6.86%	6.6%, 95%CI: 5.63%, 7.83%	3.3%, 95%CI: 2.57%, 4.19%	4.1%, 95%CI: 3.44%, 4.90%	4.9%, 95%CI: 4.03%, 5.98%	1.6%, 95%CI: 1.11%, 2.23%	1.9%, 95%CI: 1.32%, 2.63%
45-54 Years	14.9%, 95%CI: 14.3%, 15.5%	5.9%, 95%CI: 4.93%, 7.01%	8.2%, 95%CI: 7.09%, 9.40%	3.1%, 95%CI: 2.42%, 3.95%	3.9%, 95%CI: 3.12%, 4.89%	6.2%, 95%CI: 5.21%, 7.32%	1.1%, 95%CI: 0.68%, 1.68%	2.2%, 95%CI: 1.63%, 2.93%
35-44 Years	16.7%, 95%CI: 16.0%, 17.4%	9.4%, 95%CI: 8.28%, 10.7%	12.4%, 95%CI: 11.1%, 14.0%	6.1%, 95%CI: 5.12%, 7.24%	5.7%, 95%CI: 4.84%, 6.74%	8.4%, 95%CI: 7.21%, 9.72%	2.4%, 95%CI: 1.79%, 3.31%	4.0%, 95%CI: 3.20%, 4.88%
25-34 Years	17.0%, 95%CI: 16.3%, 17.7%	11.1%, 95%CI: 9.60%, 12.8%	16.5%, 95%CI: 14.6%, 18.6%	6.1%, 95%CI: 5.00%, 7.38%	6.6%, 95%CI: 5.44%, 7.91%	11.2%, 95%CI: 9.49%, 13.1%	1.5%, 95%CI: 1.03%, 2.13%	4.9%, 95%CI: 3.91%, 6.21%
18-24 Years	10.6%, 95%CI: 9.99%, 11.2%	13.0%, 95%CI: 10.8%, 15.5%	18.8%, 95%CI: 16.3%, 21.6%	10.7%, 95%CI: 8.63%, 13.3%	4.6%, 95%CI: 3.45%, 6.10%	9.4%, 95%CI: 7.60%, 11.5%	2.2%, 95%CI: 1.30%, 3.64%	9.1%, 95%CI: 7.13%, 11.7%
Generation								
Generation Z	10.6%, 95%CI: 9.99%, 11.2%	12.8%, 95%CI: 10.6%, 15.3%	19.2%, 95%CI: 16.7%, 22.1%	10.7%, 95%CI: 8.61%, 13.3%	4.4%, 95%CI: 3.25%, 5.80%	9.9%, 95%CI: 8.06%, 12.1%	2.1%, 95%CI: 1.27%, 3.61%	9.2%, 95%CI: 7.15%, 11.7%
Millennial	27.2%, 95%CI: 26.4%, 28.0%	10.7%, 95%CI: 9.61%, 11.9%	15.4%, 95%CI: 14.0%, 16.9%	6.2%, 95%CI: 5.37%, 7.17%	6.3%, 95%CI: 5.49%, 7.30%	10.3%, 95%CI: 9.11%, 11.7%	1.8%, 95%CI: 1.37%, 2.35%	4.7%, 95%CI: 3.98%, 5.65%
Generation X	24.0%, 95%CI: 23.2%, 24.7%	6.6%, 95%CI: 5.78%, 7.49%	8.9%, 95%CI: 7.98%, 9.95%	3.8%, 95%CI: 3.20%, 4.57%	4.3%, 95%CI: 3.62%, 5.05%	6.5%, 95%CI: 5.70%, 7.50%	1.5%, 95%CI: 1.10%, 2.07%	2.5%, 95%CI: 2.01%, 3.09%
Baby Boomer	28.9%, 95%CI: 28.1%, 29.7%	5.6%, 95%CI: 4.97%, 6.22%	5.1%, 95%CI: 4.47%, 5.86%	2.5%, 95%CI: 2.02%, 2.99%	4.4%, 95%CI: 3.86%, 4.90%	3.8%, 95%CI: 3.26%, 4.51%	1.2%, 95%CI: 0.95%, 1.62%	1.3%, 95%CI: 0.98%, 1.75%
Greatest/Silent Generation	9.4%, 95%CI: 8.83%, 9.91%	1.3%, 95%CI: 0.95%, 1.90%	2.0%, 95%CI: 1.26%, 3.21%	0.2%, 95%CI: 0.07%, 0.41%	1.3%, 95%CI: 0.92%, 1.88%	2.0%, 95%CI: 1.19%, 3.22%	0.1%, 95%CI: 0.03%, 0.27%	0.1%, 95%CI: 0.02%, 0.34%
Sex Assigned at Birth								
Female	50.3%, 95%CI: 49.4%, 51.2%	5.5%, 95%CI: 4.93%, 6.12%	6.8%, 95%CI: 6.12%, 7.46%	3.3%, 95%CI: 2.82%, 3.89%	3.3%, 95%CI: 2.92%, 3.73%	4.3%, 95%CI: 3.82%, 4.86%	1.1%, 95%CI: 0.82%, 1.40%	2.4%, 95%CI: 1.95%, 2.91%
Male	49.7%, 95%CI: 48.8%, 50.6%	9.5%, 95%CI: 8.75%, 10.3%	13.1%, 95%CI: 12.2%, 14.1%	5.5%, 95%CI: 4.93%, 6.17%	5.8%, 95%CI: 5.25%, 6.43%	8.9%, 95%CI: 8.12%, 9.82%	1.8%, 95%CI: 1.47%, 2.19%	4.0%, 95%CI: 3.48%, 4.60%
Education Level								
College Graduate	30.9%, 95%CI: 30.1%, 31.6%	6.1%, 95%CI: 5.51%, 6.68%	5.4%, 95%CI: 4.81%, 6.01%	1.8%, 95%CI: 1.53%, 2.20%	4.7%, 95%CI: 4.20%, 5.22%	3.8%, 95%CI: 3.34%, 4.40%	0.4%, 95%CI: 0.28%, 0.59%	1.5%, 95%CI: 1.23%, 1.87%
Some College	32.5%, 95%CI: 31.7%, 33.4%	7.7%, 95%CI: 6.89%, 8.53%	10.2%, 95%CI: 9.28%, 11.3%	4.3%, 95%CI: 3.72%, 5.04%	4.8%, 95%CI: 4.23%, 5.50%	7.0%, 95%CI: 6.20%, 7.97%	1.4%, 95%CI: 1.09%, 1.84%	3.1%, 95%CI: 2.58%, 3.76%
HS Graduate	28.7%, 95%CI: 27.9%, 29.6%	7.9%, 95%CI: 6.96%, 8.89%	13.3%, 95%CI: 12.1%, 14.5%	6.2%, 95%CI: 5.36%, 7.08%	4.0%, 95%CI: 3.35%, 4.72%	8.7%, 95%CI: 7.78%, 9.79%	2.3%, 95%CI: 1.80%, 2.82%	4.3%, 95%CI: 3.55%, 5.09%
Less than HS	7.9%, 95%CI: 7.17%, 8.64%	10.8%, 95%CI: 8.16%, 14.3%	14.6%, 95%CI: 11.2%, 18.7%	8.8%, 95%CI: 6.32%, 12.1%	4.8%, 95%CI: 3.27%, 7.12%	8.3%, 95%CI: 5.78%, 11.9%	2.7%, 95%CI: 1.49%, 4.72%	6.4%, 95%CI: 4.23%, 9.49%
Marital Status								
Married	52.1%, 95%CI: 51.2%, 53.0%	4.7%, 95%CI: 4.23%, 5.19%	6.3%, 95%CI: 5.65%, 6.91%	1.9%, 95%CI: 1.57%, 2.26%	3.6%, 95%CI: 3.19%, 4.01%	5.0%, 95%CI: 4.40%, 5.58%	0.7%, 95%CI: 0.54%, 0.96%	1.3%, 95%CI: 0.99%, 1.59%
Divorced/Sep	11.1%, 95%CI: 10.6%, 11.6%	9.7%, 95%CI: 8.32%, 11.3%	11.9%, 95%CI: 10.3%, 13.8%	6.6%, 95%CI: 5.32%, 8.11%	5.2%, 95%CI: 4.34%, 6.22%	6.9%, 95%CI: 5.65%, 8.39%	2.1%, 95%CI: 1.45%, 3.13%	4.7%, 95%CI: 3.63%, 6.09%
Widowed	6.4%, 95%CI: 5.98%, 6.89%	2.5%, 95%CI: 1.69%, 3.68%	4.5%, 95%CI: 3.33%, 5.97%	2.0%, 95%CI: 1.20%, 3.22%	1.6%, 95%CI: 1.02%, 2.49%	3.4%, 95%CI: 2.45%, 4.66%	1.1%, 95%CI: 0.55%, 2.13%	1.0%, 95%CI: 0.48%, 2.06%
Never/Unmarried	30.4%, 95%CI: 29.6%, 31.2%	12.6%, 95%CI: 11.4%, 13.8%	16.8%, 95%CI: 15.4%, 18.2%	8.5%, 95%CI: 7.54%, 9.67%	6.6%, 95%CI: 5.76%, 7.48%	10.1%, 95%CI: 8.96%, 11.3%	2.5%, 95%CI: 1.98%, 3.13%	6.4%, 95%CI: 5.52%, 7.48%
Rent/Own Home								
Own	64.9%, 95%CI: 64.0%, 65.7%	5.5%, 95%CI: 5.02%, 6.11%	6.7%, 95%CI: 6.02%, 7.35%	2.5%, 95%CI: 2.14%, 2.98%	4.0%, 95%CI: 3.63%, 4.50%	4.8%, 95%CI: 4.29%, 5.44%	1.0%, 95%CI: 0.78%, 1.27%	1.6%, 95%CI: 1.31%, 2.06%
Rent	24.9%, 95%CI: 24.2%, 25.7%	11.9%, 95%CI: 10.8%, 13.0%	16.4%, 95%CI: 15.1%, 17.7%	7.6%, 95%CI: 6.68%, 8.56%	6.5%, 95%CI: 5.75%, 7.36%	10.6%, 95%CI: 9.56%, 11.8%	2.1%, 95%CI: 1.61%, 2.66%	5.9%, 95%CI: 5.10%, 6.85%
Other Arrangement	10.2%, 95%CI: 9.69%, 10.7%	9.5%, 95%CI: 7.81%, 11.4%	15.2%, 95%CI: 13.1%, 17.6%	9.0%, 95%CI: 7.27%, 11.0%	3.3%, 95%CI: 2.56%, 4.35%	8.4%, 95%CI: 6.86%, 10.2%	2.8%, 95%CI: 1.92%, 4.07%	6.5%, 95%CI: 5.00%, 8.41%
DOH Race/Ethnicity								
White	25.7%, 95%CI: 25.0%, 26.5%	12.5%, 95%CI: 11.4%, 13.7%	10.4%, 95%CI: 9.24%, 11.7%	5.2%, 95%CI: 4.37%, 6.13%	8.7%, 95%CI: 7.92%, 9.62%	6.0%, 95%CI: 5.06%, 7.05%	1.2%, 95%CI: 0.94%, 1.65%	4.3%, 95%CI: 3.48%, 5.23%
Native Hawaiian	19.0%, 95%CI: 18.3%, 19.7%	9.2%, 95%CI: 7.97%, 10.7%	14.1%, 95%CI: 12.6%, 15.7%	7.2%, 95%CI: 6.08%, 8.50%	4.5%, 95%CI: 3.69%, 5.59%	9.0%, 95%CI: 7.81%, 10.3%	2.5%, 95%CI: 1.88%, 3.28%	4.9%, 95%CI: 3.94%, 6.10%
Japanese	17.6%, 95%CI: 16.9%, 18.3%	3.3%, 95%CI: 2.66%, 4.21%	5.6%, 95%CI: 4.71%, 6.77%	2.2%, 95%CI: 1.63%, 2.91%	2.0%, 95%CI: 1.46%, 2.63%	4.2%, 95%CI: 3.39%, 5.23%	0.8%, 95%CI: 0.51%, 1.25%	1.4%, 95%CI: 0.98%, 2.09%
Filipino	16.3%, 95%CI: 15.6%, 17.0%	3.4%, 95%CI: 2.64%, 4.39%	8.4%, 95%CI: 7.17%, 9.92%	2.5%, 95%CI: 1.84%, 3.40%	1.8%, 95%CI: 1.26%, 2.61%	6.4%, 95%CI: 5.29%, 7.82%	0.9%, 95%CI: 0.53%, 1.65%	1.7%, 95%CI: 1.20%, 2.46%
Chinese	6.0%, 95%CI: 5.57%, 6.47%	2.9%, 95%CI: 1.81%, 4.57%	4.9%, 95%CI: 3.51%, 6.78%	1.7%, 95%CI: 0.98%, 3.06%	2.0%, 95%CI: 1.10%, 3.55%	3.6%, 95%CI: 2.46%, 5.29%	0.8%, 95%CI: 0.34%, 1.93%	1.0%, 95%CI: 0.46%, 2.11%
OtherAsian	5.1%, 95%CI: 4.75%, 5.58%	4.7%, 95%CI: 3.39%, 6.58%	11.3%, 95%CI: 8.70%, 14.4%	2.7%, 95%CI: 1.70%, 4.28%	3.0%, 95%CI: 2.00%, 4.50%	9.1%, 95%CI: 6.68%, 12.2%	0.9%, 95%CI: 0.42%, 1.95%	1.9%, 95%CI: 1.07%, 3.39%
Other Pacific Islander	4.7%, 95%CI: 4.33%, 5.13%	8.8%, 95%CI: 6.37%, 12.0%	16.4%, 95%CI: 13.2%, 20.2%	6.1%, 95%CI: 4.09%, 9.05%	4.2%, 95%CI: 2.76%, 6.45%	11.5%, 95%CI: 8.81%, 14.9%	1.5%, 95%CI: 0.78%, 2.83%	4.9%, 95%CI: 3.00%, 7.89%
Black	2.8%, 95%CI: 2.46%, 3.17%	9.1%, 95%CI: 6.39%, 12.8%	10.2%, 95%CI: 7.18%, 14.3%	8.2%, 95%CI: 5.12%, 12.9%	4.1%, 95%CI: 2.37%, 6.90%	4.4%, 95%CI: 2.56%, 7.35%	2.8%, 95%CI: 0.92%, 8.43%	5.9%, 95%CI: 3.71%, 9.30%
AIAN	1.7%, 95%CI: 1.49%, 1.92%	9.7%, 95%CI: 6.90%, 13.5%	12.3%, 95%CI: 8.30%, 17.7%	6.1%, 95%CI: 3.66%, 9.84%	7.8%, 95%CI: 5.20%, 11.6%	10.0%, 95%CI: 6.11%, 15.9%	4.0%, 95%CI: 1.91%, 8.12%	2.5%, 95%CI: 1.38%, 4.38%
Other	1.1%, 95%CI: 0.88%, 1.26%	8.6%, 95%CI: 4.61%, 15.6%	9.0%, 95%CI: 4.51%, 17.1%	3.8%, 95%CI: 1.57%, 9.10%	7.9%, 95%CI: 3.94%, 15.2%	8.6%, 95%CI: 4.04%, 17.6%	3.1%, 95%CI: 1.00%, 9.35%	1.0%, 95%CI: 0.38%, 2.55%
Sexual/Gender Minority								
No	93.6%, 95%CI: 93.1%, 94.1%	7.0%, 95%CI: 6.58%, 7.54%	9.5%, 95%CI: 8.93%, 10.1%	4.1%, 95%CI: 3.68%, 4.46%	4.4%, 95%CI: 4.02%, 4.75%	6.6%, 95%CI: 6.07%, 7.09%	1.3%, 95%CI: 1.14%, 1.59%	2.9%, 95%CI: 2.53%, 3.21%
Yes	6.4%, 95%CI: 5.94%, 6.87%	16.3%, 95%CI: 13.2%, 19.8%	17.6%, 95%CI: 14.4%, 21.4%	11.8%, 95%CI: 8.95%, 15.4%	7.8%, 95%CI: 6.00%, 9.98%	8.5%, 95%CI: 6.37%, 11.3%	3.1%, 95%CI: 1.85%, 5.17%	9.1%, 95%CI: 6.50%, 12.6%
Federal Poverty Threshold								
0-100%	17.1%, 95%CI: 16.3%, 17.9%	9.6%, 95%CI: 8.17%, 11.3%	13.9%, 95%CI: 12.2%, 15.8%	8.1%, 95%CI: 6.74%, 9.71%	4.7%, 95%CI: 3.78%, 5.87%	8.4%, 95%CI: 7.03%, 9.94%	3.0%, 95%CI: 2.25%, 4.07%	5.4%, 95%CI: 4.22%, 6.83%
101-185%	17.8%, 95%CI: 17.0%, 18.5%	8.8%, 95%CI: 7.65%, 10.1%	12.6%, 95%CI: 11.0%, 14.3%	6.0%, 95%CI: 4.96%, 7.16%	5.0%, 95%CI: 4.18%, 5.99%	7.8%, 95%CI: 6.47%, 9.36%	2.1%, 95%CI: 1.52%, 2.95%	4.1%, 95%CI: 3.26%, 5.09%
186-300%	23.7%, 95%CI: 22.9%, 24.6%	8.0%, 95%CI: 6.95%, 9.30%	10.1%, 95%CI: 8.87%, 11.6%	4.3%, 95%CI: 3.51%, 5.37%	4.8%, 95%CI: 4.04%, 5.74%	6.7%, 95%CI: 5.65%, 7.90%	1.1%, 95%CI: 0.74%, 1.54%	3.5%, 95%CI: 2.68%, 4.48%
301+%	41.4%, 95%CI: 40.5%, 42.3%	6.2%, 95%CI: 5.60%, 6.91%	7.2%, 95%CI: 6.45%, 7.95%	2.2%, 95%CI: 1.85%, 2.70%	4.7%, 95%CI: 4.15%, 5.27%	5.4%, 95%CI: 4.76%, 6.11%	0.7%, 95%CI: 0.47%, 0.94%	1.7%, 95%CI: 1.33%, 2.10%
Health Insurance								
Insured	96.2%, 95%CI: 95.8%, 96.5%	7.1%, 95%CI: 6.60%, 7.56%	9.5%, 95%CI: 8.89%, 10.1%	4.2%, 95%CI: 3.78%, 4.58%	4.3%, 95%CI: 3.99%, 4.70%	6.4%, 95%CI: 5.88%, 6.88%	1.4%, 95%CI: 1.17%, 1.64%	3.0%, 95%CI: 2.63%, 3.35%
Not Insured	3.8%, 95%CI: 3.49%, 4.19%	17.2%, 95%CI: 13.8%, 21.2%	20.2%, 95%CI: 16.3%, 24.6%	9.1%, 95%CI: 6.71%, 12.1%	10.7%, 95%CI: 7.94%, 14.2%	12.3%, 95%CI: 9.09%, 16.5%	2.4%, 95%CI: 1.34%, 4.11%	7.1%, 95%CI: 4.94%, 10.0%
Depressive Disorder								
No	87.9%, 95%CI: 87.3%, 88.4%	6.6%, 95%CI: 6.09%, 7.06%	9.3%, 95%CI: 8.69%, 9.92%	3.5%, 95%CI: 3.16%, 3.94%	4.2%, 95%CI: 3.81%, 4.53%	6.5%, 95%CI: 5.97%, 7.05%	1.1%, 95%CI: 0.87%, 1.30%	2.6%, 95%CI: 2.30%, 3.01%
Yes	12.1%, 95%CI: 11.6%, 12.7%	14.0%, 95%CI: 12.2%, 16.0%	14.4%, 95%CI: 12.6%, 16.4%	10.6%, 95%CI: 8.99%, 12.6%	7.3%, 95%CI: 6.12%, 8.71%	7.3%, 95%CI: 6.08%, 8.77%	4.1%, 95%CI: 3.11%, 5.27%	7.1%, 95%CI: 5.62%, 8.81%
Poor Mental Health Days in Past 30 Days								
None	66.0%, 95%CI: 65.2%, 66.9%	4.8%, 95%CI: 4.37%, 5.27%	8.3%, 95%CI: 7.68%, 9.01%	2.7%, 95%CI: 2.37%, 3.12%	3.1%, 95%CI: 2.74%, 3.43%	6.3%, 95%CI: 5.68%, 6.92%	0.9%, 95%CI: 0.73%, 1.20%	1.9%, 95%CI: 1.62%, 2.27%
1-15 Days	26.7%, 95%CI: 25.9%, 27.5%	11.9%, 95%CI: 10.8%, 13.2%	12.2%, 95%CI: 11.0%, 13.5%	6.7%, 95%CI: 5.74%, 7.76%	7.3%, 95%CI: 6.44%, 8.20%	7.0%, 95%CI: 6.11%, 8.00%	2.0%, 95%CI: 1.53%, 2.55%	5.0%, 95%CI: 4.10%, 5.98%
16-30 Days	7.3%, 95%CI: 6.84%, 7.78%	14.6%, 95%CI: 12.2%, 17.3%	15.1%, 95%CI: 12.8%, 17.8%	11.1%, 95%CI: 8.99%, 13.7%	7.4%, 95%CI: 5.77%, 9.35%	7.5%, 95%CI: 5.82%, 9.49%	4.0%, 95%CI: 2.80%, 5.69%	7.6%, 95%CI: 5.77%, 9.90%
County of Residence								
Honolulu County	69.0%, 95%CI: 68.5%, 69.6%	6.1%, 95%CI: 5.49%, 6.73%	9.9%, 95%CI: 9.15%, 10.7%	3.9%, 95%CI: 3.40%, 4.48%	3.4%, 95%CI: 2.95%, 3.81%	6.9%, 95%CI: 6.24%, 7.58%	1.2%, 95%CI: 0.92%, 1.49%	2.9%, 95%CI: 2.45%, 3.43%
Hawaii County	14.2%, 95%CI: 13.8%, 14.6%	11.4%, 95%CI: 10.2%, 12.8%	10.6%, 95%CI: 9.36%, 11.9%	6.5%, 95%CI: 5.51%, 7.62%	7.8%, 95%CI: 6.74%, 8.94%	6.4%, 95%CI: 5.45%, 7.55%	2.8%, 95%CI: 2.12%, 3.67%	4.0%, 95%CI: 3.22%, 4.85%
Maui County	11.8%, 95%CI: 11.4%, 12.1%	11.2%, 95%CI: 9.87%, 12.6%	9.4%, 95%CI: 8.26%, 10.7%	5.4%, 95%CI: 4.45%, 6.58%	7.3%, 95%CI: 6.32%, 8.47%	5.2%, 95%CI: 4.40%, 6.15%	1.4%, 95%CI: 0.98%, 2.14%	4.1%, 95%CI: 3.28%, 5.22%
Kauai County	5.0%, 95%CI: 4.76%, 5.16%	8.7%, 95%CI: 7.40%, 10.1%	8.5%, 95%CI: 7.10%, 10.0%	4.0%, 95%CI: 3.12%, 5.04%	6.0%, 95%CI: 4.91%, 7.22%	5.3%, 95%CI: 4.26%, 6.70%	1.2%, 95%CI: 0.74%, 1.82%	2.9%, 95%CI: 2.21%, 3.91%

***All Co- & Poly-Substance Use-related data among adults derives from the 2020-2022 HI BRFSS**

Figure S1. Reference Map for the HI-BRFSS 2020-2022 Geolocation Data



Kaua'i County		City and County of Honolulu		Maui County		Hawai'i County	
Reference Number	***Community Name***	***Reference Number***	***Community Name***	***Reference Number***	***Community Name***	***Reference Number***	***Community Name***
37	Kaua'i	17	Kaiser	10	Hāna	1	Kohala
38	Waimea	18	Kalani	11	King Kekaulike	2	Honoka'a
39	Kapa'a	19	Kaimukī	12	Maui	3	Laupāhoehoe
		20	Roosevelt	13	Baldwin	4	Hilo & Waiākea
		21	McKinley	14	Lahainaluna	5	Pāhoa
		22	Farrington	15	Lāna'i	6	Kea'au
		23	Moanalua & Radford	16	Moloka'i	7	Ka'ū
		24	Aiea			8	Konawaena
		25	Pearl City			9	Kealakehe
		26	Mililani				
		27	Waipahu				
		28	Campbell				
		29	Kapolei				
		30	Wai'anae & Nānākuli				
		31	Waialua				
		32	Leilehua				
		33	Kahuku				
		34	Castle				
		35	Kailua				
		36	Kalāheo				