

NCI Monograph 24

Tobacco and Alcohol: Understanding Co-Use to Reduce Cancer Incidence and Mortality

Chapter 3

**Surveillance and Behavioral Epidemiology
of Tobacco and Alcohol Use Among Population
Subgroups in the United States**

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Chapter 3

Surveillance and Behavioral Epidemiology of Tobacco and Alcohol Use Among Population Subgroups in the United States

Introduction

Tobacco and alcohol are among the most widely used addictive and carcinogenic substances that, separately and together, have large impacts on the U.S. and global burden of disease.^{1,2} Epidemiological surveillance of tobacco and alcohol co-use in specific population subgroups is critical for many public health goals. First, it can document disparities in health-related behaviors and associated morbidity and mortality, pointing to demographic groups in need of further attention. Second, it can help generate ideas about the factors influencing use and co-use of tobacco and alcohol. Third, it allows the detection of emerging trends over time in response to policy and societal changes.

This chapter, a companion to chapter 2, provides a summary of tobacco and alcohol co-use in specific population subgroups of adults based on a review of the literature and new analyses of National Alcohol Surveys (NAS) and National Survey on Drug Use and Health (NSDUH) data. The chapter reviews tobacco and alcohol co-use among groups by race and/or ethnicity, educational attainment, income, geographic location, sexual minority status, veteran status, and presence of comorbidities including cancer, chronic health conditions, HIV, mental health conditions, and pregnancy. Information about tobacco and alcohol co-use by adolescents in 8th, 10th, and 12th grade is provided in chapter 2; however, co-use by other adolescent population subgroups is limited by small sample sizes in national surveillance surveys. This chapter focuses on differences between demographic groups. It is important to note that each demographic group includes a wide range of tobacco and alcohol use characteristics. Future studies could further examine within group variation in tobacco and alcohol use and co-use. Further, when this volume refers to smoking or tobacco use, it refers to the use of commercial tobacco and not the traditional use of tobacco by some American Indian and Alaska Native communities.

Methods

To identify studies that estimated the prevalence of tobacco and alcohol co-use in the U.S. population overall, targeted keyword searches using combinations of tobacco and alcohol terms were conducted using Google Scholar, PubMed, Ovid, and Scopus. Literature searches were also conducted for prospective alcohol mortality and morbidity studies because these studies have often examined both tobacco and alcohol. Search terms are listed in Appendix 3A.

The chapter highlights findings from nationally representative studies; findings from non-nationally representative studies are also included to provide information about specific subgroups. In addition, the 2014–2015 NAS and the 2015–2019 NSDUH were analyzed to better understand tobacco and alcohol co-use patterns among adults. These surveys were chosen

because they are nationally representative, have large sample sizes, and include detailed tobacco and alcohol measures or subgroup data not included in other nationally representative surveys. A detailed description of the NAS and NSDUH measures and analytic approaches are described in chapter 2. The NAS analyses focus on past-year tobacco product (never, former, daily, and nondaily use) and past-year alcohol use, defined as no past-year use, use within guidelines ($\leq 7/14$ drinks per week for women/men or $< 4/5$ drinks per day for women/men), and use exceeding guidelines ($> 7/14$ drinks per week for women/men or $\geq 4/5$ drinks per week for women/men). The NSDUH analyses focus on past-month use of cigarettes, smokeless tobacco, and cigars, and past-month alcohol use (never, former, use within guidelines, binge drinking [drinking $\geq 4/5$ drinks on an occasion for women/men] without risky weekly use [$> 7/14$ drinks per week for women/men] in past 30 days, and risky weekly use [$> 7/14$ drinks per week for women/men] in past 30 days [with or without binge drinking]).

Within and Between Group Heterogeneity in Tobacco and Alcohol Use

Discussion and analysis of heterogeneous populations require attention to several issues related to aggregated data. First, U.S. surveillance data often include aggregate data from multiple distinct demographic groups who may have different distributions of behaviors and health outcomes. For example, although Asian populations in the United States may have lower prevalence of tobacco and alcohol use overall, differences by country of origin, sex, or other demographic variables could conceal significant variation in prevalence within this group.^{3,4} Second, within demographic groups with low levels of substance use or co-use, there are still people who use tobacco and/or alcohol and experience disproportionate harm. For example, lifetime abstinence from alcohol use is higher among American Indian and Alaska Native (AI/AN) populations than other demographic groups in the U.S. population.⁵⁻⁸ However, mortality from alcohol-related outcomes such as cirrhosis is higher for AI/AN populations than for other demographic groups on average.⁹⁻¹² With respect to tobacco use, AI/AN populations report some of the highest prevalences of lifetime and current smoking among demographic groups, and they also experience greater mortality from lung cancer compared to other demographic groups.⁴ Such observations further support the need to address within-group heterogeneity in tobacco and alcohol use even when overall prevalence is low. Much of the research in this chapter is based on federal health surveys, thus addressing heterogeneity in prevalence of co-use of tobacco and alcohol is limited by extant survey categories. Smaller studies or regional surveys designed to capture specific populations, such as the California Health Interview Survey,¹³ can help address these challenges.

Differences in prevalence of tobacco and alcohol co-use in a specific demographic group may reflect differences in prevalence of use of one of the substances, resulting in higher prevalence of co-use. For example, a population might have 10% of people who use tobacco and 10% of people who consume alcohol. In this case 100% co-use would result in 10% of the population using both substances. On the other hand, if 25% of the population reports tobacco use and 75% report alcohol use, a weaker association between tobacco and alcohol use would still result in a greater prevalence of people reporting co-use of tobacco and alcohol. This monograph focuses on the prevalence of alcohol use among people who use tobacco, rather than the strength of the association between tobacco and alcohol use, but further exploration of such associations could provide insight into biological and environmental factors influencing co-use.

Co-Use by Race and/or Ethnicity

The 2024 Surgeon General's report, *Eliminating Tobacco-Related Disease and Death: Addressing Disparities*, concluded that “racial and ethnic disparities in cigarette smoking have persisted since 2000, with prevalence remaining highest among American Indian and Alaska Native adults.”^{4,p.10} The report further noted that disparities in tobacco use “vary by ethnic group, nativity, and acculturation in the United States.”⁴ In the 2024 National Health Interview Survey (NHIS), cigarette smoking prevalence was highest among AI/AN (15.8%), Black (10.6%) and White (10.7%) adults, and lowest among Asian adults (3.8%).¹⁴ In the 2024 NSDUH, past-30-day alcohol use prevalence was highest among White adults (54.5%) and those of 2 or more races (51.4%) and lowest among Asian adults (35.5%).⁷ As described in this section, studies show differences in tobacco and alcohol co-use by race, ethnicity, and country of origin, with higher prevalence of co-use among White, Black, and AI/AN individuals compared to other groups and higher prevalence of co-use among U.S.-born compared to non-U.S.-born Hispanic individuals.¹⁵⁻²⁰

Adults. In the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) 2001–2002 study,¹⁷ prevalence of past-year tobacco and alcohol co-use varied by race and/or ethnicity. The group with the highest past-year co-use prevalence was AI/AN individuals (34.0% among men; 22.8% among women). The group with the lowest prevalence of co-use was Asian/Native Hawaiian/Pacific Islander individuals (18.1% among men; 6.6% among women). This study also included the prevalence of comorbidity of alcohol use disorder (AUD) and nicotine dependence. Again, the AI/AN sample had the highest prevalence of comorbidity (7.0% among men; 4.0% among women). The lowest prevalence for comorbidity was seen in the Hispanic population (2.2% among men; 0.9% among women).¹⁷

In a study analyzing NSDUH data from 2002 to 2016, cigarette smoking prevalence in 2016 among people with past-year AUDs was 37.8%, and ranged from 28.2% among Hispanic participants to 50.5% among non-Hispanic Black participants.²⁰ Among people without AUDs, cigarette smoking prevalence in 2016 was 16.1% and ranged from approximately 10.9% among Hispanic participants to 18.2% among White participants. Cigarette smoking declined significantly from 2002 to 2016 among participants with and without AUDs in all racial and/or ethnic groups except for non-Hispanic Black participants with AUDs. Smoking prevalence was consistently highest among people with severe AUDs. For example, in 2016, smoking prevalence was 50.5% among non-Hispanic White individuals with severe AUD, and 75.5% among non-Hispanic Black individuals with severe AUD.²⁰

Another study used 2010–2019 NSDUH data to analyze tobacco use and nicotine dependence among people with no alcohol use, “low-risk” alcohol use ($\leq 7/14$ drinks per week for women/men), and “high-risk” alcohol use ($> 7/14$ drinks per week for women/men).¹⁸ Compared to non-Hispanic White individuals with high-risk alcohol use, Hispanic individuals with high-risk alcohol use had decreased odds of past-month tobacco use (adjusted odds ratio [aOR] = 0.58, 95% confidence interval [CI] = 0.51–0.67) and nicotine dependence (aOR = 0.33, 95% CI = 0.28–0.40), while Black individuals with high-risk alcohol use had increased odds of past-month tobacco and cannabis use (aOR = 1.19, 95% CI = 1.03–1.38).¹⁸

Adolescents. A study examining race and/or ethnic differences in substance use among 10th grade adolescents in Alabama, California, and Texas in 2009–2011 reported that the prevalence of cigarette and alcohol co-use (exclusively or with cannabis) was 8% for Black adolescents, 6% for Hispanic adolescents, and 12% for White adolescents.¹⁹ The authors also found that White adolescents were more likely than Hispanic adolescents to report exclusive cigarette smoking and co-use of cigarette and alcohol. White adolescents were also more likely than Black adolescents to report cigarette and alcohol co-use and polysubstance use (concurrent use of cannabis, alcohol, and cigarettes).¹⁹ Analyzing data from the 2011–2014 NSDUH, Banks and colleagues (2017)¹⁶ found that among adolescents ages 12–18, alcohol and cigarette co-use was less prevalent among African American, Asian, and Hispanic adolescents compared to White adolescents, but found no statistically significant differences between White and Native American adolescents. Additionally, a study analyzed pooled 2011–2014 NSUDH data for African American adolescents and young adults (ages 12–25; $N = 11,124$) to understand the relationship between use of blunts (little cigars or cigarillos filled with cannabis) and alcohol.²¹ Among those who consumed alcohol in the past year, more than one-third (36.8%) also reported blunt use. Additionally, the study found increased odds of alcohol dependence among adolescents who co-used blunts and alcohol, compared with those who exclusively used alcohol.²¹

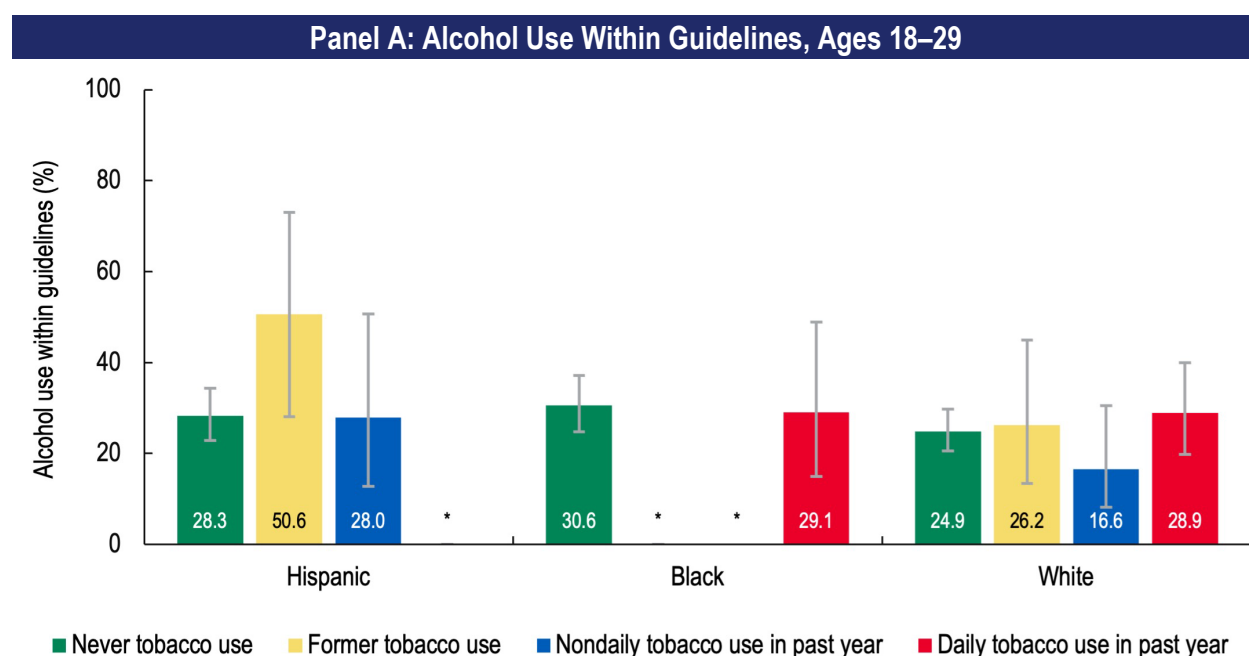
Hispanic/Latino/a Adults. A study examined current cigarette smoking and binge drinking in a diverse sample of 16,415 Hispanic adults (ages 18–74 years) residing in 4 U.S. cities between 2008 and 2011.¹⁵ Among men, co-use (i.e., current smoking and binge drinking) declined with age from 17.1% among 18–24-year-olds to 2.2% for those 65 and older. Similarly, among women, co-use declined with age from 7.0% for 18–24-year-olds to 0.3% for those 65 and older. U.S. born Hispanic women had a greater likelihood of co-use than foreign-born women ($aOR = 1.8$, 95% CI = 1.1–3.0). In contrast, among men, the likelihood of co-use did not differ significantly by birthplace. Significant differences in co-use were also found based on background country, education, marital status, and other variables.¹⁵

National Alcohol Surveys Analysis: Co-Use by Race and/or Ethnicity

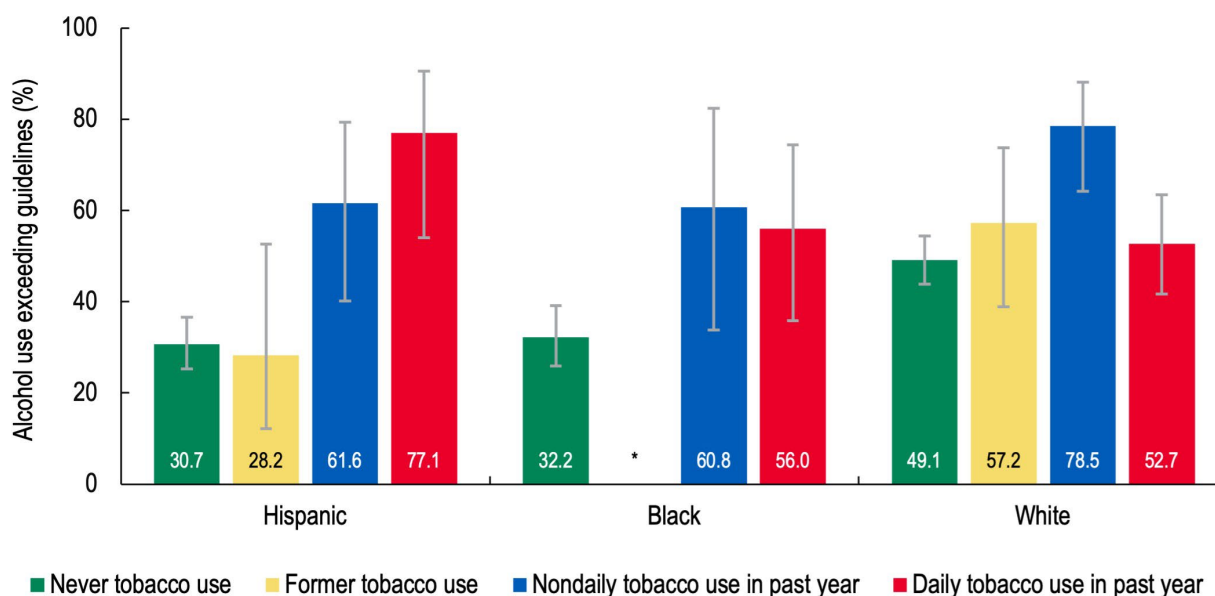
Figure 3.1 (Appendix Table 3B.1) presents data from NAS on the proportions of adults who drank within and exceeded alcohol use guidelines for Black, White, and Hispanic populations by age group and tobacco use category. Across age groups and race and/or ethnicity, prevalence of alcohol use exceeding guidelines was generally highest among adults who used tobacco either daily or nondaily. The bivariate association between tobacco and alcohol use was statistically significant among all subgroups at the $p < .05$ level except among White participants ages 18–29 ($p = .08$). Among those who reported any past-year tobacco use, either daily or nondaily, more than one-half of those ages 18–29 and more than 35% of those ages 30–59 reported alcohol use exceeding guidelines across racial and/or ethnic categories. Prevalence of alcohol use exceeding guidelines among those ages 18–29 who reported daily tobacco use was 77.1% (95% CI, 54.1%–90.6%) among Hispanic participants, 56.0% (95% CI, 35.8%–74.4%) among Black participants, and 52.7% (95% CI, 38.1%–64.2%) among White participants. Prevalence of alcohol use exceeding guidelines among those ages 18–29 who reported nondaily tobacco use was 61.6% (95% CI, 40.1%–79.3%) among Hispanic participants, 60.8% (95% CI, 33.8%–82.5%) among

Black participants, and 78.5% (95% CI, 64.3%–88.1%) among White participants. Levels of no past-year alcohol use generally increased with age. Those reporting never tobacco use or former tobacco use were the most likely to report not using alcohol in the past year, compared to those who used tobacco (Appendix Table 3B.1). Among people ages 18–29, across race and/or ethnicity categories, most people who used tobacco (daily or nondaily) in the past year reported past-year alcohol use, and alcohol use exceeding guidelines was more common than alcohol use within guidelines. The prevalence of no past-year alcohol use among those ages 18–29 who used tobacco was only 6.8% (95% CI, 3.5%–13.1%) among Hispanic participants, 17.5% (95% CI, 8.5%–32.6%) among Black participants, and 14.6% (95% CI, 9.3%–22.1%) among White participants.

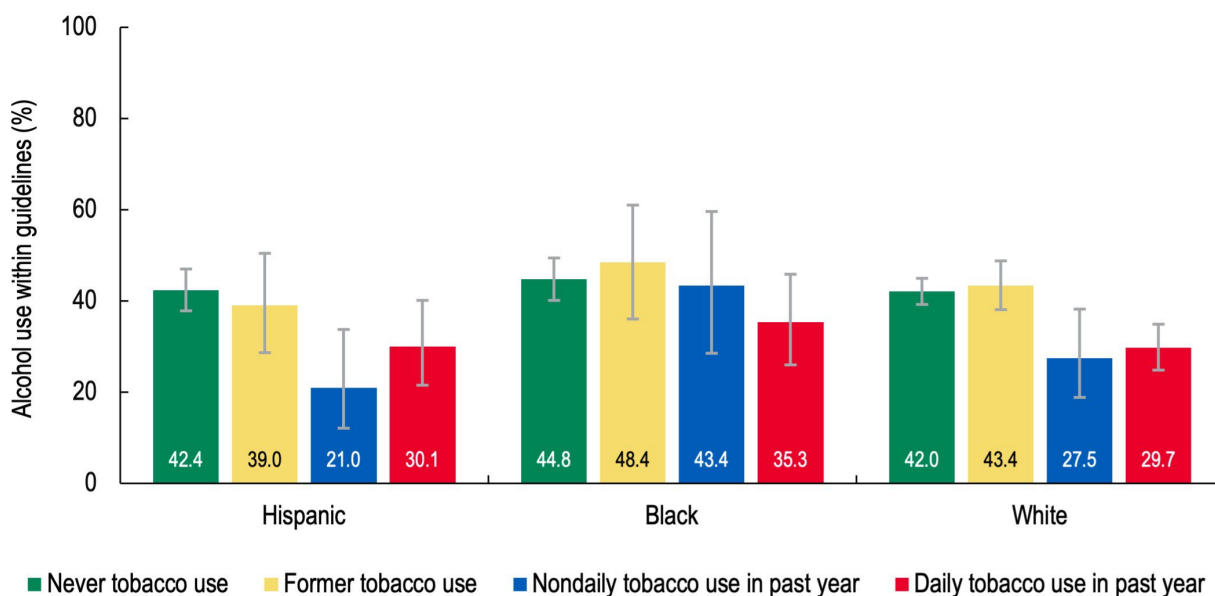
Figure 3.1 Past-Year Alcohol Use by Age, Past-Year Tobacco Use Status, and Race and/or Ethnicity (2014–2015 and 2019–2020 National Alcohol Surveys; $N = 14,125$)



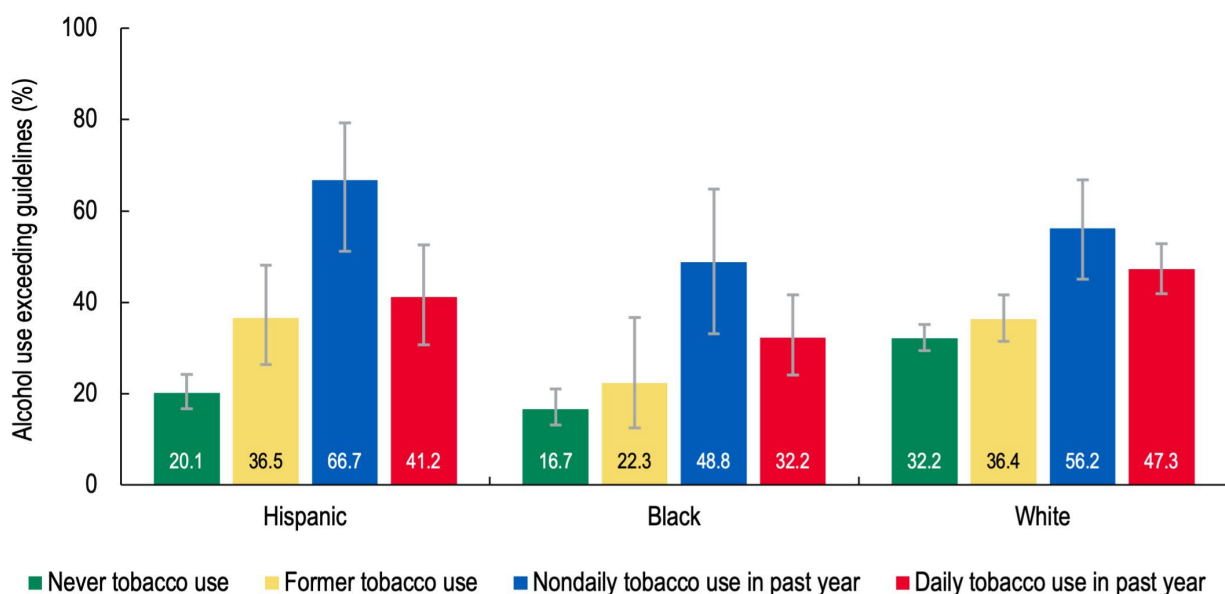
Panel B: Alcohol Use Exceeding Guidelines, Ages 18–29



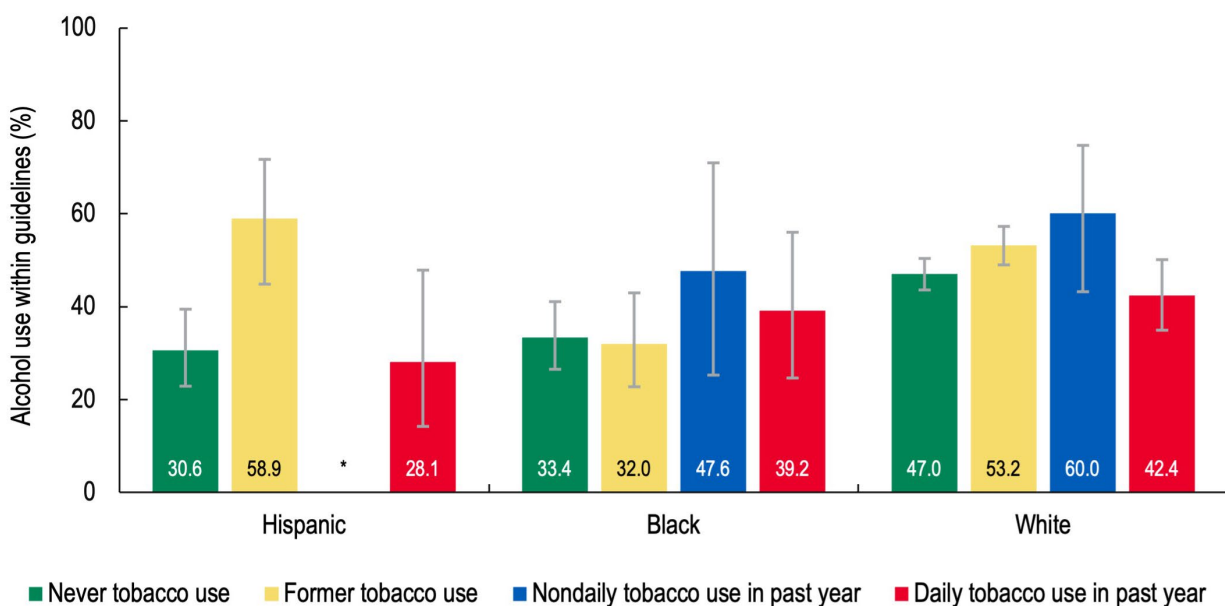
Panel C: Alcohol Use Within Guidelines, Ages 30–59



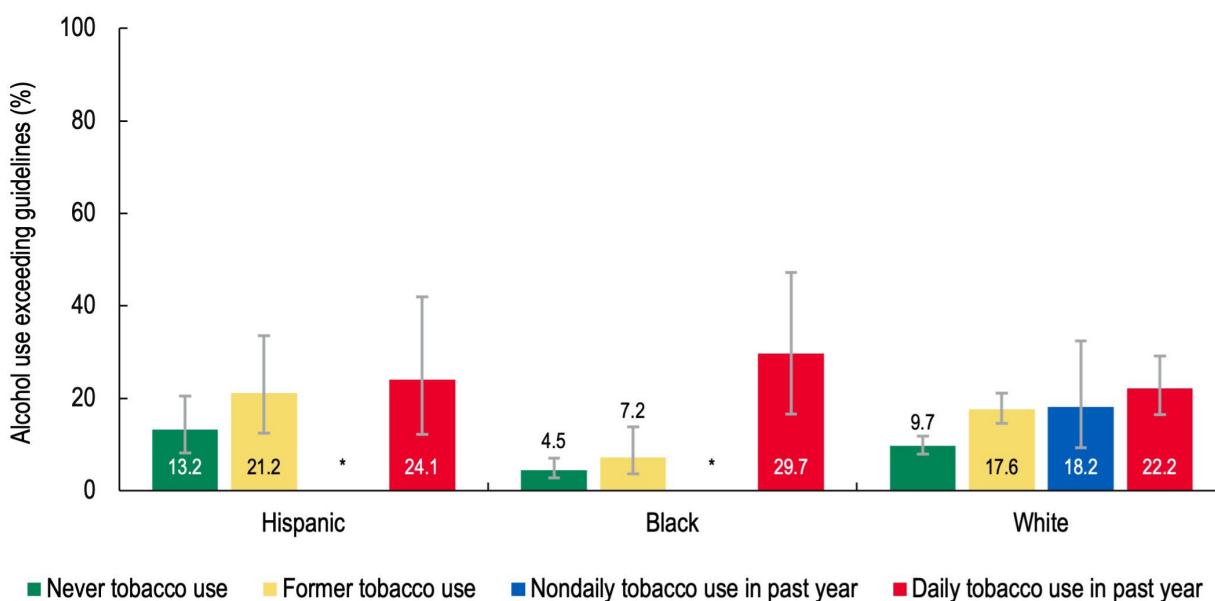
Panel D: Alcohol Use Exceeding Guidelines, Ages 30–59



Panel E: Alcohol Use Within Guidelines, Ages 60 and Older



Panel F: Alcohol Use Exceeding Guidelines, Ages 60 and Older



Note. For full data, see Appendix Table 3B.1. Black and White participants are non-Hispanic. Tobacco use is defined as use of non-e-cigarette tobacco products (due to survey question wording). Nondaily and daily current tobacco use are defined as use in the past year. Former tobacco use is defined as use within lifetime but not in the past year. Never tobacco use is defined as never use in lifetime. Alcohol use is measured within the past year. No past-year alcohol use is not shown in the charts. Alcohol use exceeding guidelines is defined as exceeding 7/14 drinks per week or drinking at least 4/5 drinks per day for women/men, per the Dietary Guidelines for Americans, 2020–2025²² and NIAAA's definition of heavy alcohol use.²³

*Categories with $n < 10$ are suppressed.

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

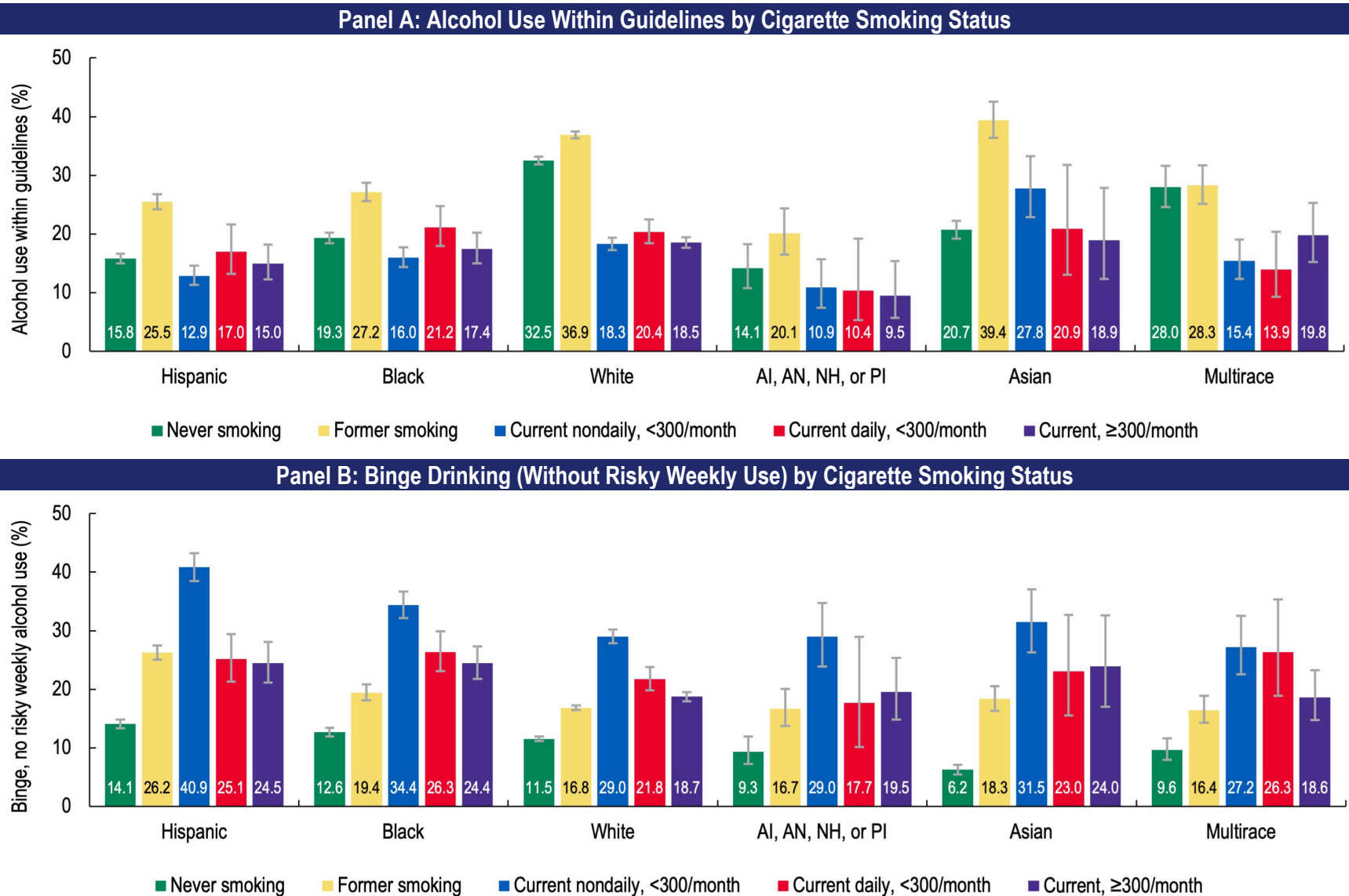
Tobacco use was also associated with higher prevalence of reporting having had 5+ drinks in a day in the past year, as well as reporting high intensity drinking (HID) ($\geq 8/12$ drinks in a day for women/men) in the past year. As shown in Appendix Table 3B.2, past-year nondaily and daily tobacco use are associated with a higher prevalence of 5+ drinking and HID compared to never tobacco use among those ages 18–59. Few people ($< 20\%$) ages 60 and older engaged in either 5+ drinking or HID. Prevalence of 5+ drinking among those ages 18–29 who used tobacco was 60.8% (95% CI, 45.4%–74.4%) among Hispanic participants, 46.6% (95% CI, 30.5–63.5%) among Black participants, and 54.1% (95% CI, 44.9%–63.0%) among White participants. There was a statistically significant association between tobacco use and HID or 5+ drinking among all groups at the $p < .05$ level except HID among Black participants ages 30–59 ($p = .27$) and ages 60 and older ($p = .68$).

National Survey on Drug Use and Health Analysis: Co-Use by Race and/or Ethnicity

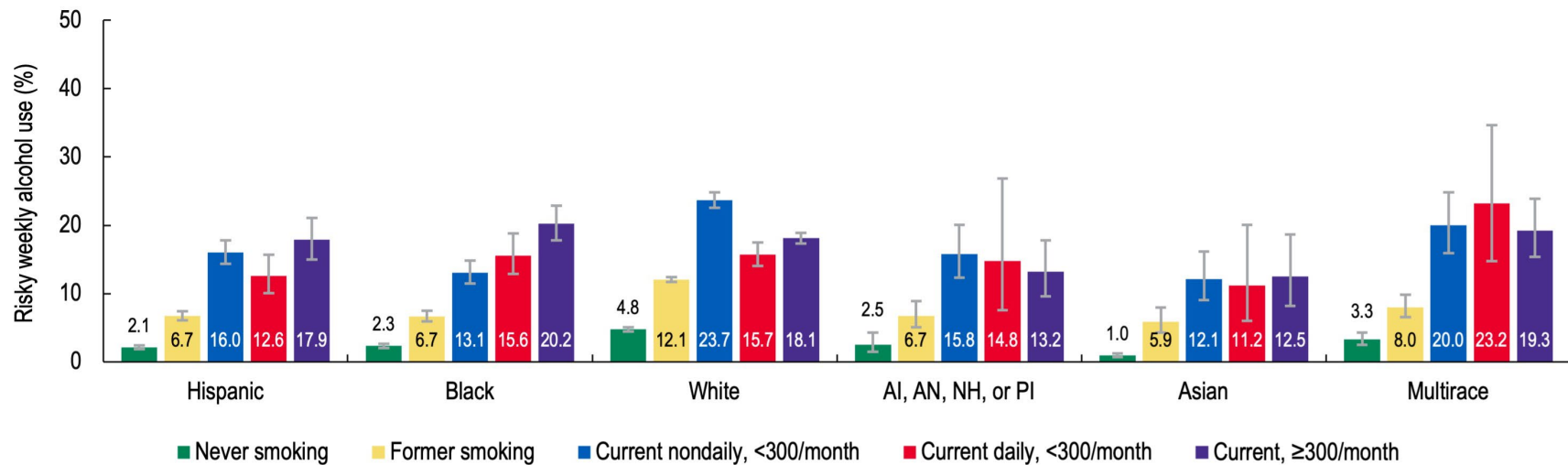
Estimates of alcohol use by cigarette smoking status from the 2015–2019 NSDUH are presented by race and/or ethnicity in Figure 3.2. Similar to the NAS results, there was a significant bivariate association between cigarette smoking and alcohol use across all racial and/or ethnic groups ($p < .001$). Those who reported never cigarette smoking were least likely to report alcohol use exceeding guidelines (binge drinking and risky weekly use). Further, those who formerly smoked had the highest prevalence of alcohol use within guidelines compared to other tobacco use categories. In general, those who smoked nondaily had the highest prevalence of alcohol use

exceeding guidelines compared to the other tobacco use categories. In particular, Hispanic, Black, and White participants who reported nondaily smoking were significantly more likely to report past month binge drinking than participants in any other tobacco use category, and White participants who reported nondaily smoking were also significantly more likely to report risky weekly alcohol use over the past month than White participants in any other tobacco use category. Prevalence of binge drinking (without risky weekly alcohol use) among those who smoked nondaily <300 cigarettes/month was 40.9% (95% CI, 38.5%–43.3%) among Hispanic participants; 34.4% (95% CI, 32.1%–36.7%) among Black participants; 29.0% (95% CI, 27.9%–30.2%) among White participants; 29.0% (95% CI, 23.9%–34.7%) among American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander participants; 31.5% (95% CI, 26.3%–37.1%) among Asian participants; and 27.2% (95% CI, 22.5%–32.5%) among multiracial participants. Prevalence of risky weekly alcohol use among those who smoked nondaily was 16.0% (95% CI, 14.4%–17.8%) among Hispanic participants; 13.1% (95% CI, 11.5%–14.9%) among Black participants; 23.7% (95% CI, 22.6%–24.8%) among White participants; 15.8% (95% CI, 12.3%–20.1%) among American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander participants; 12.1% (95% CI, 9.0%–16.1%) among Asian participants; and 20.0% (95% CI, 15.9%–24.8%) among multiracial participants. Overall, White and multiracial individuals were the least likely to report never use of alcohol (White: 9.1%, 95% CI = 8.9%–9.3%; multiracial: 11.2%, 95% CI = 9.8%–12.8%). Conversely, Asian individuals were the most likely to report never use of alcohol (33.7%, 95% CI = 32.2%–35.2%) (Appendix Table 3B.3). When considering smokeless tobacco use and cigar smoking, prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) was generally highest among individuals who reported past-30-day use of cigars or smokeless tobacco (daily or nondaily use), regardless of race and/or ethnicity (Appendix Tables 3B.4 and 3B.5).

Figure 3.2 Past-30-Day Alcohol Use by Race and/or Ethnicity and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; $N = 210,684$)



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status

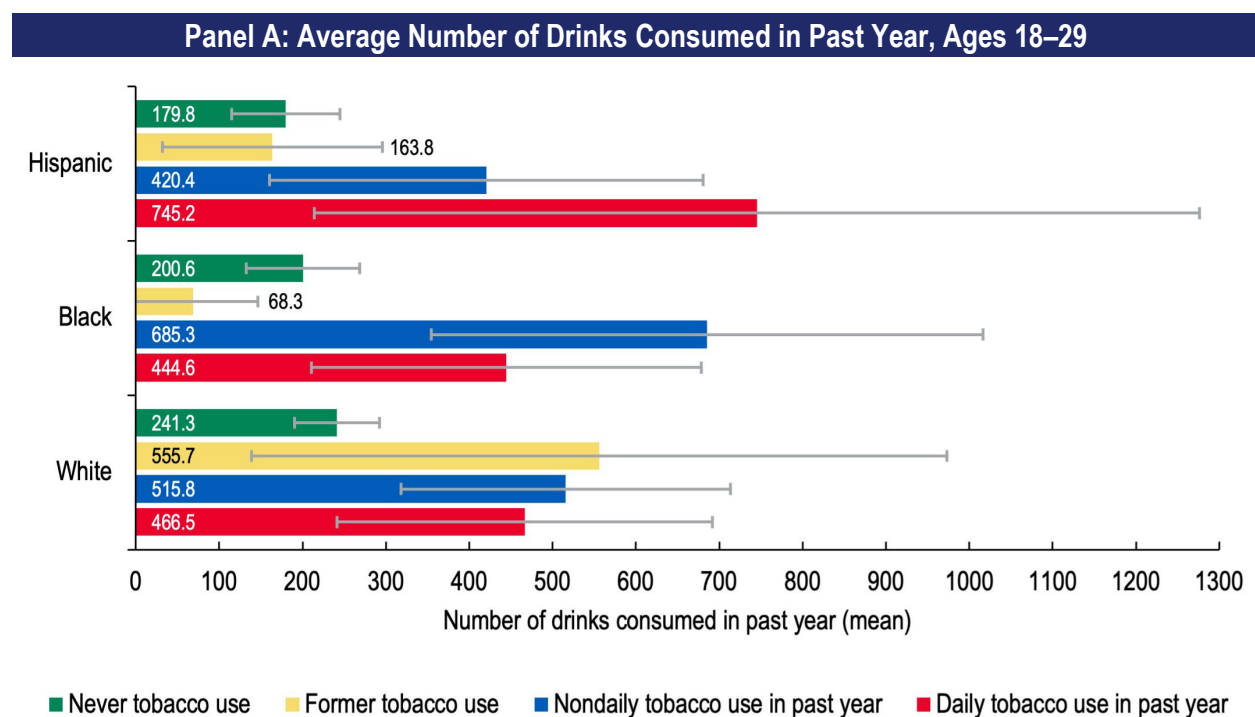


Note. AI = American Indian; AN = Alaska Native; NH = Native Hawaiian; PI = Pacific Islander. For full data, see Appendix Table 3B.3. Categories other than Hispanic are non-Hispanic. *Multirace* is defined as two or more races. AI, AN, NH, and PI participants were combined due to small sample sizes and because they are indigenous populations in the United States that have similar drinking patterns. *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking $>7/14$ drinks per week for women/men in the past 30 days. *Source:* 2015–2019 National Survey on Drug Use and Health.

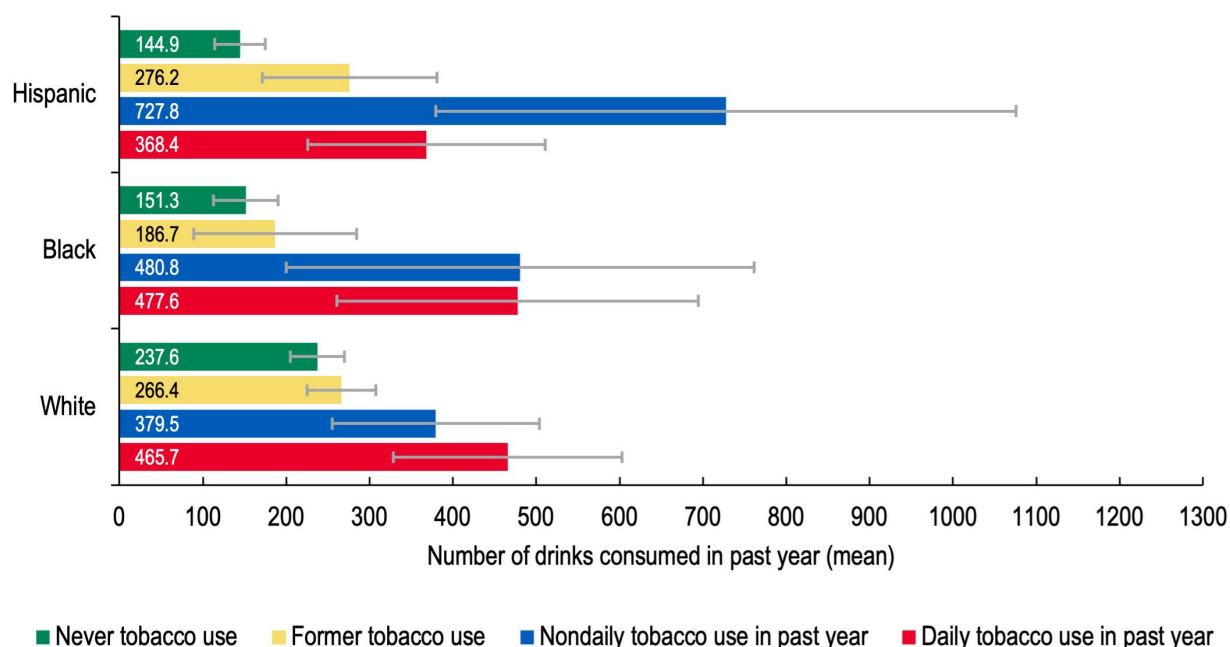
National Alcohol Surveys Analysis: Past-Year Volume of Consumption by Race and/or Ethnicity

The association between volume of alcohol consumption, tobacco use, and race and/or ethnicity are shown in Figure 3.3. Across racial and/or ethnic groups, those with past-year tobacco use had higher overall alcohol consumption (mean number of drinks consumed in past year) than those who never used tobacco. For example, as shown in Appendix Table 3B.6, among those ages 18–29, the average number of drinks consumed in the past year among those who also used tobacco in the past year and who never used tobacco was 579.3 (95% CI, 291.3–867.3) versus 179.8 (95% CI, 114.7–244.8) among Hispanic individuals; 522.2 (95% CI, 328.4–716.0) versus 200.6 (95% CI, 132.7–268.5) among Black individuals; and 480.4 (95% CI, 309.9–651.0) versus 241.3 (95% CI, 190.1–292.4) among White individuals. Among Hispanic individuals, associations between past-year tobacco use and overall alcohol consumption (compared to never tobacco use) were statistically significant among those younger than 60 ($p < .01$) but not among those 60 and older. In contrast, among Black and White individuals, past-year tobacco use was significantly associated with overall alcohol consumption (compared to never tobacco use; $p < .01$) across all age groups. Figure 3.3 also includes data for daily and nondaily tobacco use. Nondaily tobacco use was associated with greater numbers of drinks consumed in the past year compared to never or former tobacco use, particularly among Hispanic adults ages 30–59, Black adults ages 18–59, and White adults of all ages. These results are consistent with the extensive evidence for strong associations between tobacco and alcohol use and that these associations are most apparent for people who use more tobacco and alcohol.

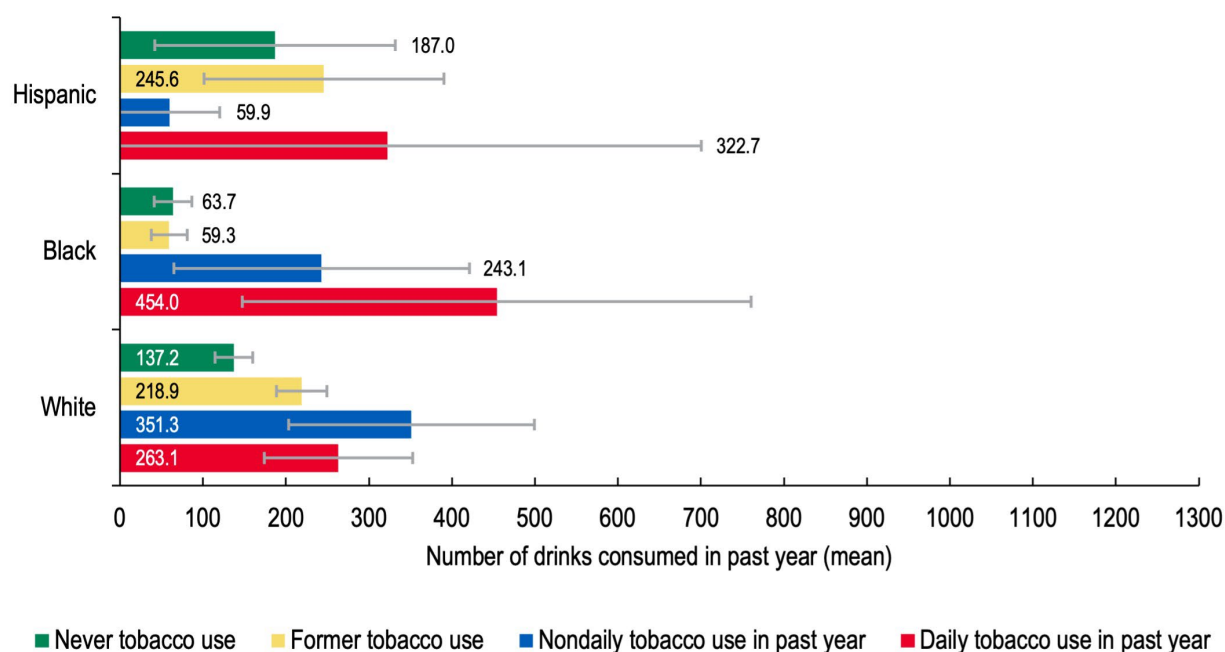
Figure 3.3 Average Number of Drinks Consumed in Past Year by Age, Past-Year Tobacco Use Status, and Race and/or Ethnicity (2014–2015 and 2019–2020 National Alcohol Surveys; $N = 14,125$)



Panel B: Average Number of Drinks Consumed in Past Year, Ages 30–59



Panel C: Average Number of Drinks Consumed in Past Year, Ages 60 and older



Note. For full data, see Appendix Table 3B.6. Black and White participants are non-Hispanic. *Tobacco use* is defined as use of non-e-cigarette tobacco products (due to survey question wording). *Current tobacco use* is defined as use in the past year. *Former tobacco use* is defined as use within lifetime but not in the past year. *Never tobacco use* is defined as never use in lifetime. Alcohol use is measured in the past year. Some confidence intervals contain negative values (not displayed).
Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

National Alcohol Survey Analysis: Lifetime Cigarette Pack Years and Heavy Alcohol Use by Race and/or Ethnicity

Lifetime accumulated co-use of pack years of cigarettes and 5+ drinking days is presented in Appendix Table 3B.7. In general, across race and/or ethnicity, people who never smoked were the most likely to report zero lifetime 5+ drinking days. For example, among participants ages 30–59 with ≥ 40 pack years, 12.3% of Hispanic individuals (95% CI, 4.3%–30.5%), 39.8% of Black individuals (95% CI, 18.7%–65.5%) and 19.2% of White individuals (95% CI, 12.3%–28.8%) reported zero lifetime 5+ drinking days. In contrast, among those with zero pack years in this same age group, zero lifetime 5+ drinking days was reported by 58.0% of Hispanic participants (95% CI, 50.1%–65.5%), 70.6% of Black individuals (95% CI, 62.4%–77.6%), and 34.8% of White individuals (95% CI, 30.4%–39.5%). There was a statistically significant association between pack years and lifetime 5+ drinking days among all groups ($p < .001$) except Hispanic and Black participants ages 18–29. Small sample sizes precluded reporting some estimates, especially for people who reported high levels of smoking, although there were 41 people ages 18–29 who reported 40+ pack years of cigarettes. This is a very high level of tobacco use for this age group, and it is possible that respondents inaccurately reported their smoking history. Estimates of lifetime accumulated exposure are important because of the synergistic increase in risk associated with co-use of tobacco and alcohol and the high-risk ratios for head and neck cancers associated with higher levels of consumption of both substances (see chapter 4).

Summary: Co-Use by Race and/or Ethnicity

The literature shows an association between tobacco and alcohol use among racial and/or ethnic subgroups. In general, across racial and/or ethnic groups, those who reported never tobacco use (NAS) or never cigarette smoking (NSDUH) had the lowest levels of hazardous drinking (exceeding guidelines, binge drinking, or risky weekly alcohol use) and consumed fewer drinks per year. People who reported nondaily cigarette smoking in the NSDUH had the highest prevalence of binge drinking and risky weekly alcohol use compared to other cigarette smoking categories, particularly among Hispanic, Black, and White participants. In NAS, prevalence of no alcohol use increased with age across racial and/or ethnic groups.

Box 3.1. Tobacco and Alcohol Use Among American Indian and Alaska Native Individuals

One goal of this monograph is to examine whether addressing alcohol use can contribute to tobacco control for cancer prevention. It is imperative, then, to consider population groups that engage in greater use and co-use of both substances or are more susceptible to the effects of co-use and, therefore, may be especially important when preventing tobacco initiation and improving tobacco cessation.

In the United States, AI/AN adults and youth have the highest prevalence of cigarette smoking, with 15.8% of AI/AN adults reporting current cigarette smoking in 2024 (compared to the overall adult prevalence of 9.9%).¹⁴ Even while overall tobacco product use among middle and high school students in the U.S. declined from 2023 to 2024, Jamal and colleagues (2024)²⁴ found that tobacco use among AI/AN youth increased.

Whenever describing and working to address the disproportionately high prevalence of tobacco use in AI/AN populations, it is critical to differentiate between the use of traditional tobacco and commercial tobacco products to effectively and respectfully address the health effects of tobacco. Traditional tobacco refers to tobacco used by some AI/AN communities for ceremonial or medicinal purposes.^{25,26} Commercial tobacco is tobacco sold for recreational use and includes cigarettes, e-cigarettes, smokeless tobacco, pipe tobacco, cigars, hookahs, and other products.⁴

With regard to alcohol use, according to the 2024 NSDUH, 404,000 AI/AN people ages 12 and older (29.7%) reported that they drank alcohol on at least 1 day in the past month.^{7,8} AI/AN adults report some of the highest prevalence of lifetime alcohol abstinence among demographic groups in the United States,²⁷ but other studies in the literature have also described heavy episodic drinking reported by AI/AN adults and adolescents.^{5,28} AI/AN adults also have higher rates of morbidity and mortality caused by alcohol compared with non-AI/AN people.^{11,29}

Although there are few studies focusing on tobacco and alcohol co-use in AI/AN populations, 1 study found that co-use of tobacco and alcohol was highest among AI men (34.0%) compared with AI women (22.8%) and other racial and/or ethnic groups.¹⁷

However, a wide variation in tobacco and alcohol use patterns exists among AI/AN populations that arise from both Tribal membership and geography. For example, although the overall prevalence of tobacco use is high among people who identify as AI/AN,^{4,30} prevalence varies widely from one Tribe to another. Redwood and colleagues (2010)³¹ found that current cigarette smoking was much higher among AI/AN in Alaska (31.6%) than among those in the Southwest (8.3%). An earlier 2005 study found that 14% of Southwest Tribal members smoked compared to 50% of Northern Plains Tribal members.³² Cunningham and colleagues (2019)³³ studied the roles of rurality and living on Tribal lands (living in Tribal lands vs. living in non-Tribal large metropolitan areas vs. living in non-Tribal small metropolitan areas vs. living in non-Tribal rural areas) on cigarette smoking among people identifying as AI/AN. This study found that although there was no statistical difference in smoking between AI/AN individuals living in urban non-Tribal lands and those living in non-Tribal suburban/rural areas, AI/AN individuals living in Tribal lands had a lower smoking rate compared to both non-Tribal urban and suburban/rural areas. In a study examining alcohol-attributable mortality among AI/AN by geographic region of the United States (and other factors), Landen and colleagues (2014)⁹ found that AI/AN people living in the Northern Plains had the highest death rates due to alcohol while AI/AN people living in the East had the lowest. This variation in tobacco and alcohol use across Tribal nations and contexts highlights how other sociodemographic factors beyond racial and/or ethnic groupings are important for understanding co-use patterns and resulting health burden.

People identifying as AI/AN have disproportionally lower smoking cessation rates than any other racial and/or ethnic group, a long-spanning disparity that has been documented for more than 3 decades.^{4,34} At the individual level, this may be due to a lack of treatment acceptability and cultural appropriateness in intervention approaches or delivery.^{35,36} Researchers and practitioners who engage with AI/AN people for tobacco use treatment must distinguish the differences between traditional and commercial tobacco use, because tobacco is a sacred plant to many AI/AN. Another challenge to providing effective treatment is the mistrust that exists within many Tribal communities for government interventions based on historical government actions that adversely affected these communities.^{37,38}

The policy environments unique to Tribal lands are important characteristics when considering AI/AN tobacco- and alcohol-associated behaviors and health outcomes. Tribal lands are generally exempt from state policies governing tobacco because federally recognized Tribes are considered sovereign nations;^{39,40} this can result in less expensive products.^{41,42} However, federally recognized Tribes are subject to federal and state alcohol policies but may also enact their own alcohol policies.⁴³ Lee and colleagues (2018)⁴⁴ concluded that standard measures used to assess alcohol policy may not adequately describe the effects experienced within reservations and the complex environments in which each Tribe operates.

Given the wide variation of both tobacco and alcohol use patterns and rates of cancer incidence and risk for AI/AN populations, disaggregated data are needed to reflect the heterogeneity within AI/AN subgroups. National estimates are often limited both by the number of participants in each race and/or ethnic group that was sampled for inclusion in the surveys and the measures used to assess race and/or ethnicity (e.g., collapsing people from many different Tribes, each with their own cultural practices and norms, into one AI/AN category).^{45,46} This monograph highlights the need for disaggregated data reporting and oversampling among multiple Tribal populations to foster greater understanding of tobacco and alcohol co-use patterns and cancer burden among all racial and/or ethnic minority groups, including AI/AN populations.

Co-Use by Educational Attainment

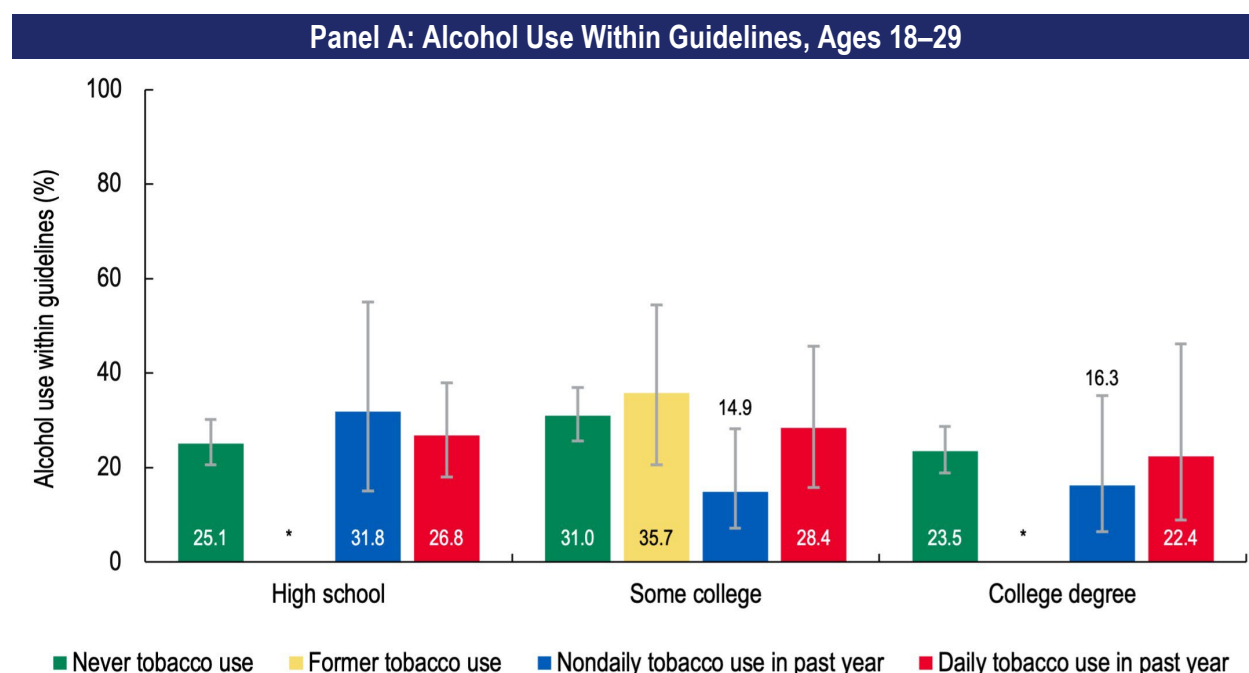
Lower educational attainment is strongly associated with higher cigarette smoking prevalence^{4,47}; as noted in the 2024 Surgeon General’s report, “prevalence of smoking is substantially higher among people without college diplomas than it is among those with college diplomas.”^{4,p.10} A study of birth cohort effects among adults ages 25 and older in the 1966–2018 NHIS found that, although smoking prevalence decreased over time across all educational groups, the difference between educational groups widened.⁴⁸ In general, lower educational attainment is associated with less alcohol use overall but more frequent heavy episodic drinking,^{49–52} although analysis of birth cohort effects in the NAS found that more education was associated with greater heavy drinking in younger birth cohorts (after 1976).⁵³ A growing literature suggests that although prevalence of alcohol use is lower in people with less education or lower incomes, the harms of drinking can be greater^{52,54} (this topic is discussed further in chapter 4).

Few nationally representative studies of co-use by educational attainment were identified. In a sample of young adults ages 18–25 in the 2001–2002 NESARC, there was no difference in the relationship between smoking status and alcohol use among young adults by college student status (full- or part-time enrollment in college in the past year).⁵⁵ However, among adults overall in the 2012–2013 NESARC, lower educational attainment was associated with increased prevalence of past-year co-use of nicotine and alcohol compared with alcohol only use.⁵⁶ A study using 2010–2019 NSDUH data found that, among people who reported “high-risk” alcohol use (>7/14 drinks per week for women/men), educational attainment of high school or more was associated with decreased odds of past-month tobacco use (aOR = 0.6, 95% CI = 0.52–0.69) and nicotine dependence (aOR = 0.48, 95% CI = 0.42–0.54) compared to less than high school education.¹⁸

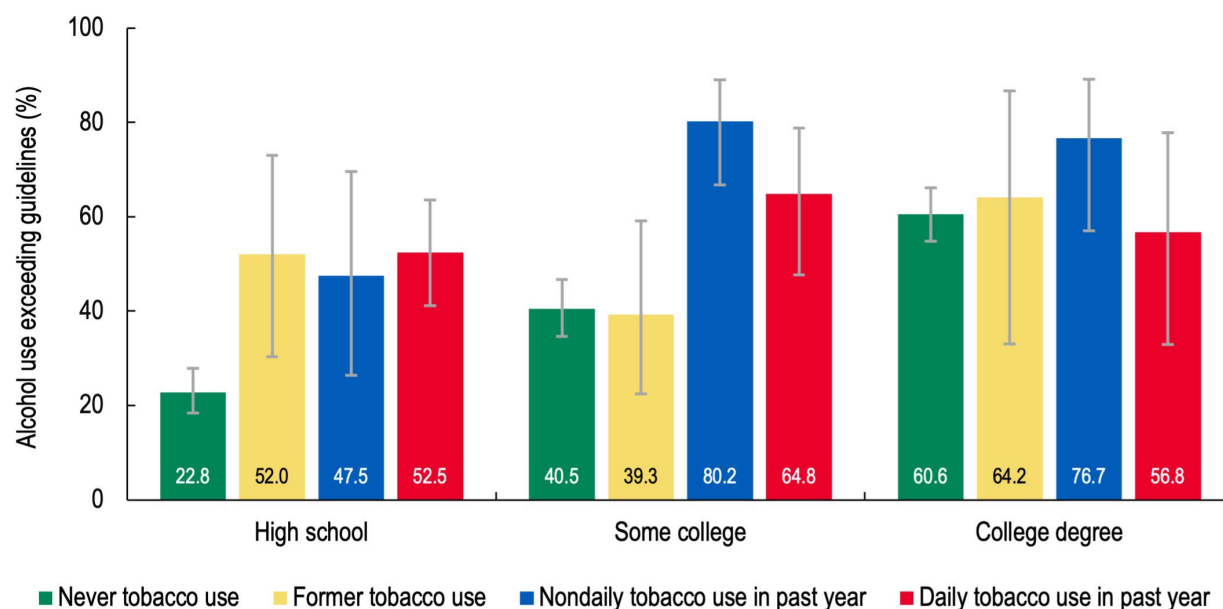
National Alcohol Surveys Analysis: Co-Use by Educational Attainment

Figure 3.4 (Appendix Table 3B.8) shows alcohol use by tobacco use status and educational attainment among 2014–2015 and 2019–2020 NAS participants. There was a statistically significant association between tobacco use and alcohol use categories across all groups ($p < .001$) except those ages 18–29 with a college degree ($p = .38$). Across most age groups and education levels, those who reported past-year tobacco use had a higher prevalence of alcohol use exceeding guidelines compared to those who never used tobacco. In general, those with either some college education or a college degree had higher prevalence of using alcohol than those with a high school education or less, and this was reflected across age groups and tobacco use categories. Alcohol use exceeding guidelines was most common among those ages 18–29 with either some college education or a college degree who used tobacco and among those with a college education who formerly used tobacco. For example, among people ages 18–29 with a college degree, 76.7% (95% CI, 57.0%–89.1%) of those who used tobacco nondaily reported alcohol use exceeding guidelines, as did 56.8% (95% CI, 33.0%–77.8%) of those who used tobacco daily. Among those ages 30–59, around one-half of those with a college degree who used tobacco daily (54.4%, 95% CI, 43.1%–65.3%) or nondaily (56.4%, 95% CI, 42.6%–69.3%) reported alcohol use exceeding guidelines. Alcohol use exceeding guidelines among those ages 60 and older who reported any past-year tobacco use was around 20% across education categories.

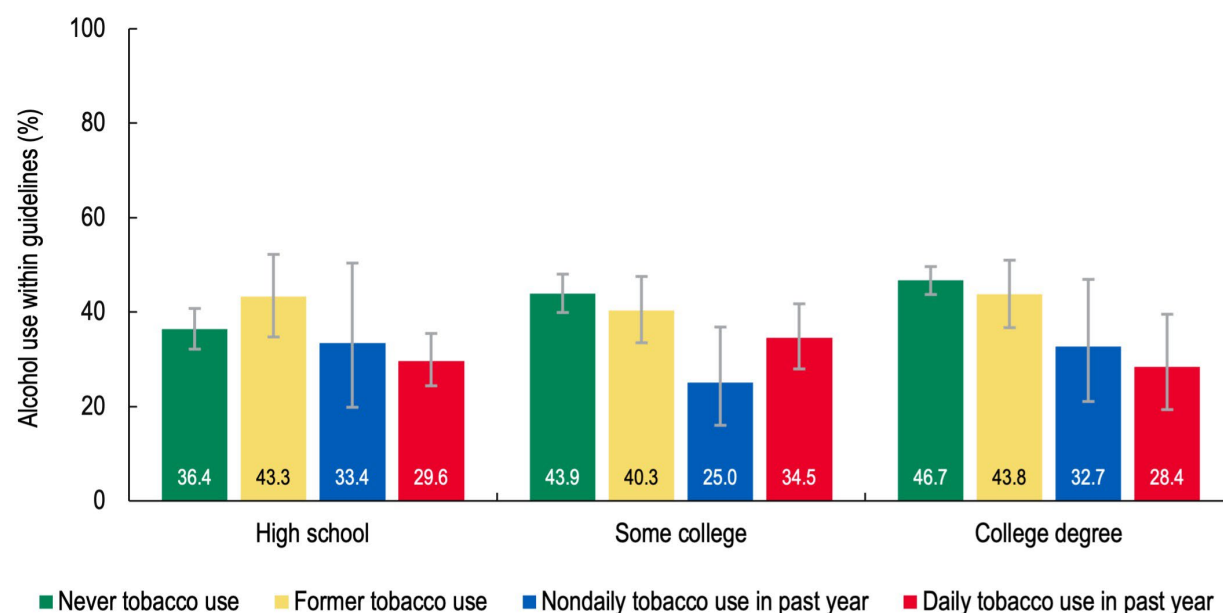
Figure 3.4 Past-Year Alcohol Use by Age, Past-Year Tobacco Use Status, and Educational Attainment (2014–2015 and 2019–2020 National Alcohol Surveys; $N = 14,125$)



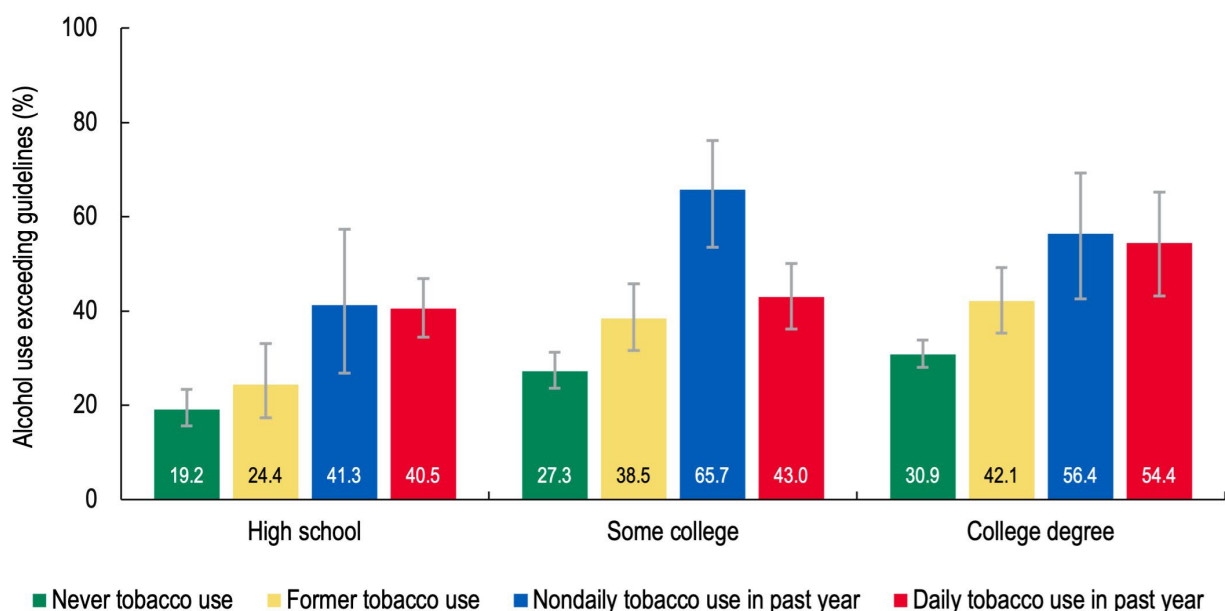
Panel B: Alcohol Use Exceeding Guidelines, Ages 18–29



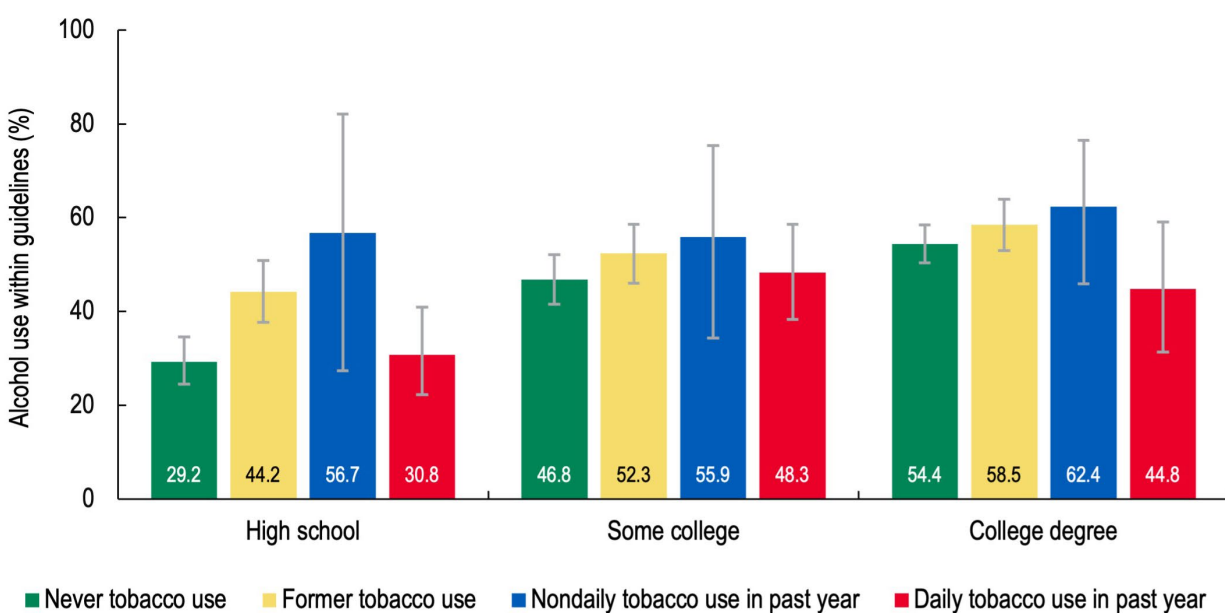
Panel C: Alcohol Use Within Guidelines, Ages 30–59



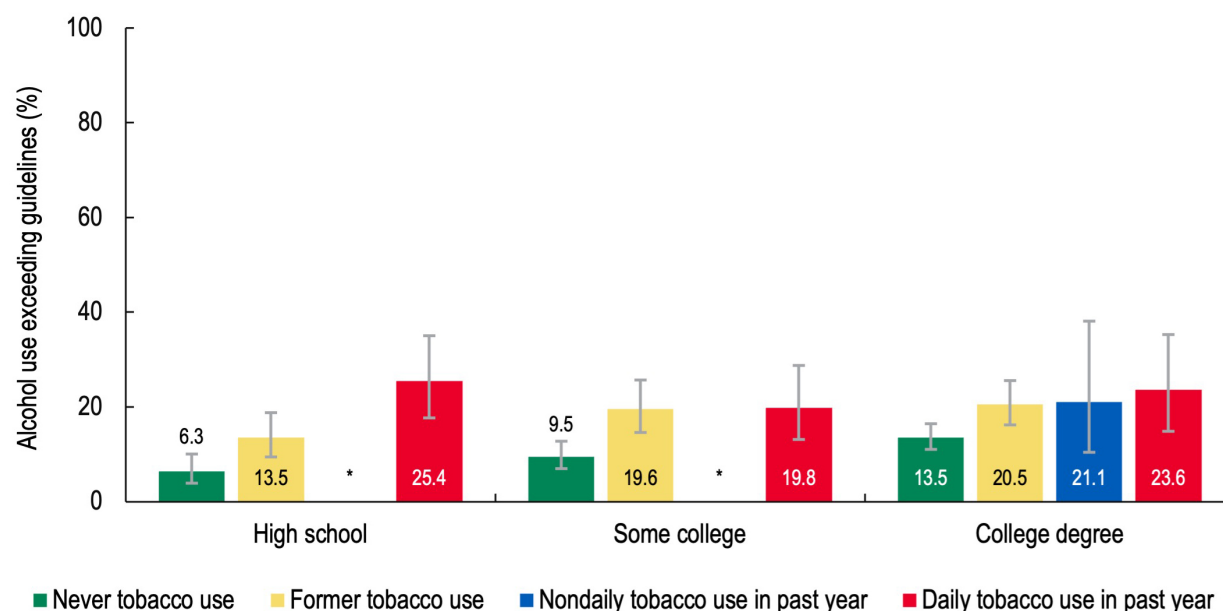
Panel D: Alcohol Use Exceeding Guidelines, Ages 30–59



Panel E: Alcohol Use Within Guidelines, Ages 60 and Older



Panel F: Alcohol Use Exceeding Guidelines, Ages 60 and Older



Note. For full data, see Appendix Table 3B.8. *Tobacco use* is defined as use of non-e-cigarette tobacco products (due to survey question wording). *Nondaily* and *daily current tobacco use* are defined as use in the past year. *Former tobacco use* is defined as use within lifetime but not in the past year. *Never tobacco use* is defined as never use in lifetime. Alcohol use is measured in the past year. No past-year alcohol use is not shown in the charts. *Alcohol use exceeding guidelines* is defined as exceeding 7/14 drinks per week or drinking at least 4/5 drinks per day for women/men, per the *Dietary Guidelines for Americans, 2020–2025*²² and NIAAA's definition of heavy alcohol use.²³

*Categories with $n < 10$ are suppressed.

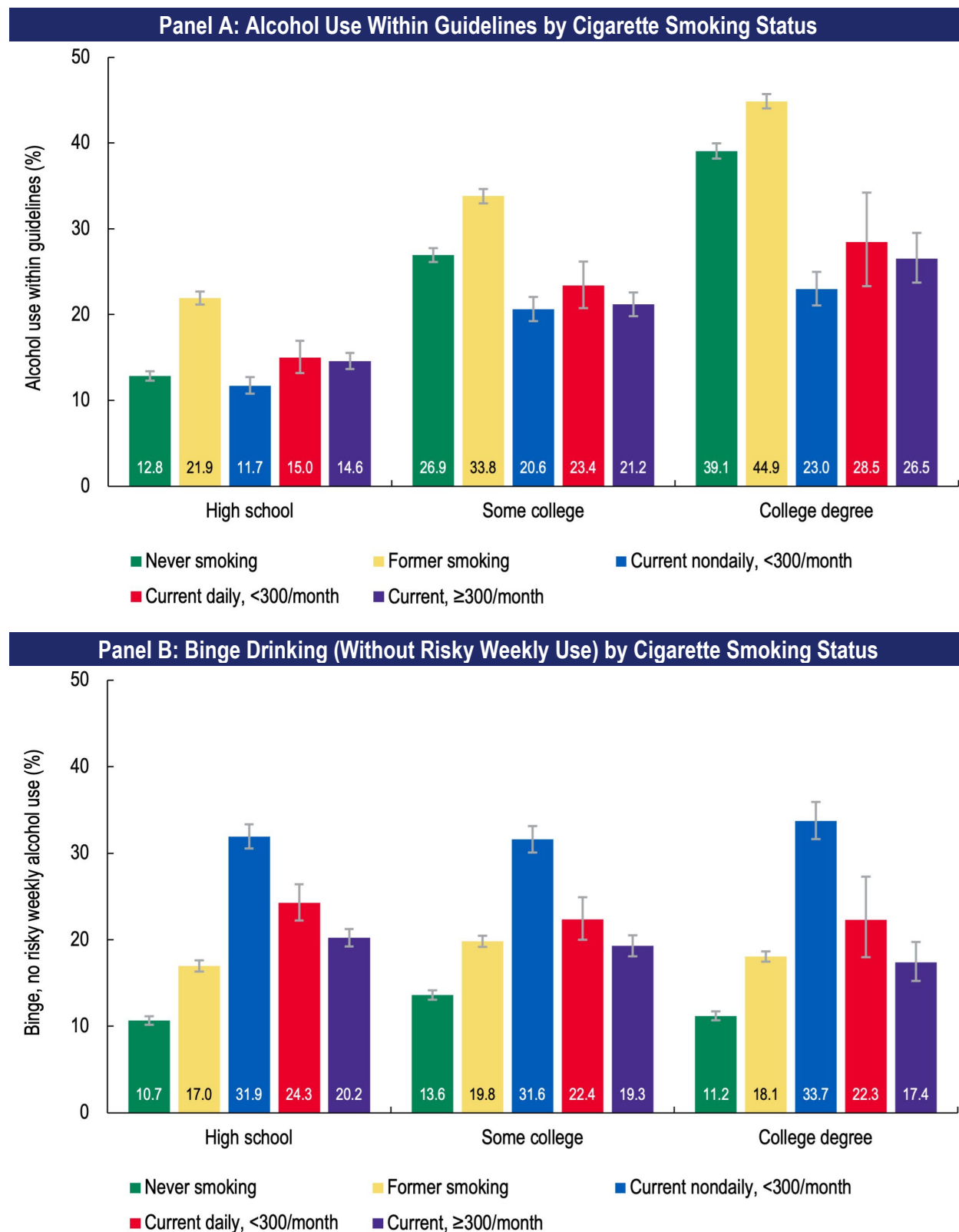
Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

An association with level of education is also seen when looking at 5+ drinking and HID by tobacco use categories (Appendix Table 3B.9). There was no significant association between tobacco use and hazardous alcohol use (HID or 5+ drinking) among those ages 18–29 with a college degree or between tobacco use and HID among those ages 60 and older with some college education, but there was a significant association between tobacco use and hazardous alcohol use among other age and education categories at the $p < .05$ level. In general, individuals who had never used tobacco had a lower prevalence of 5+ drinking and HID than those who used tobacco (daily or nondaily) in the past year. For example, among those ages 30–59 who reported past-year tobacco use, prevalence of 5+ drinking was 31.6% (95% CI, 26.4%–37.4%) among those with a high school education, 35.9% (95% CI, 30.2%–42.1%) among those with some college education, and 48.7% (95% CI, 40.0%–57.4%) among those with a college degree. Among those who never used tobacco in the same age group, prevalence of 5+ drinking was 14.6% (95% CI, 11.4%–18.5%) among those with a high school education, 19.9% (95% CI, 16.8%–23.5%) among those with some college education, and 21.8% (95% CI, 19.2%–24.6%) among those with a college degree.

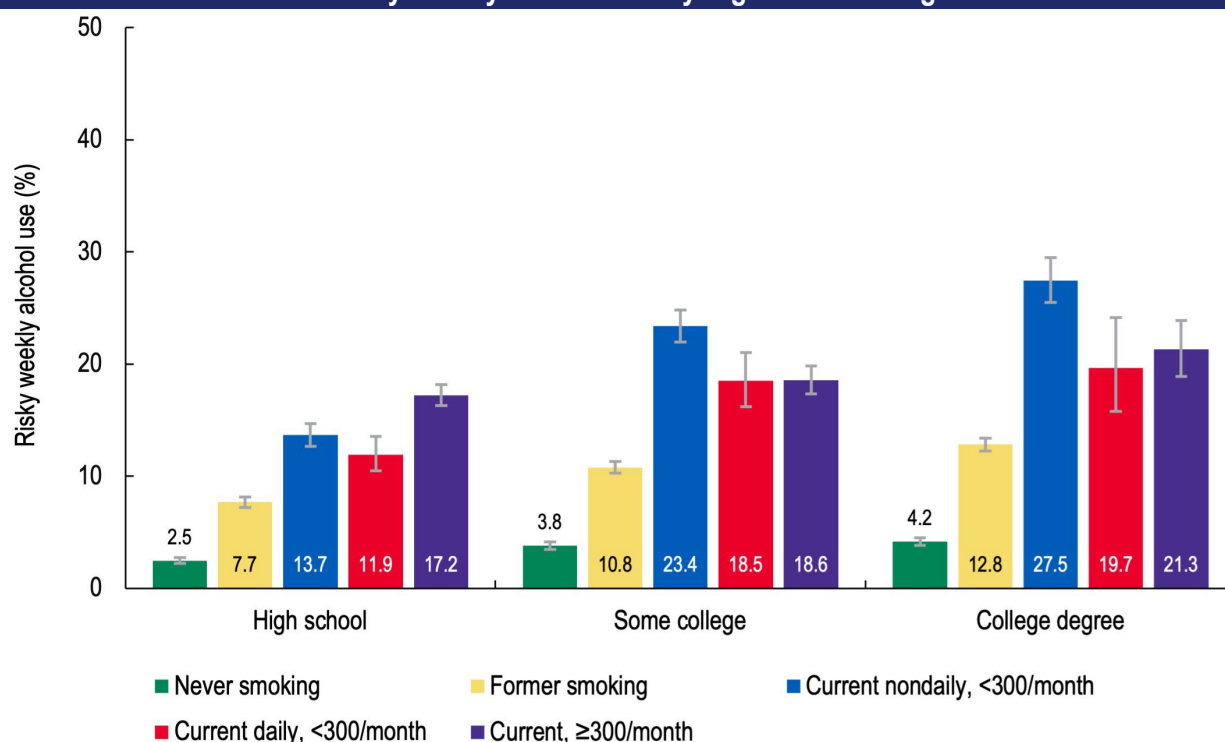
National Survey on Drug Use and Health Analysis: Co-Use by Educational Attainment

Findings from analysis of the 2015–2019 NSDUH complement the results of the NAS analysis. There was a statistically significant bivariate association between tobacco and alcohol use among all education attainment categories ($p < .001$). Similar to the NAS findings, people who never smoked cigarettes were the most likely to also report never use of alcohol. Among people who never smoked cigarettes, lifetime abstinence from alcohol was highest among those with a high school or less education (42.5%, 95% CI = 41.7%–43.3%); prevalence of lifetime abstinence from alcohol decreased as level of education increased. As seen in Figure 3.5 (Appendix Table 3B.10), past-30-day cigarette smoking was associated with higher prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly alcohol use). Results for smokeless tobacco and cigar smoking were similar to the results for cigarette smoking, with higher prevalence of any alcohol use and alcohol use exceeding guidelines among people with a college degree compared to other education groups (Appendix Tables 3B.11 and 3B.12). Binge drinking (without risky weekly use) was particularly prevalent among people who smoked cigarettes nondaily or used smokeless tobacco nondaily, but prevalence was very similar across levels of educational attainment (31.9% [95% CI, 30.5%–33.3%], 31.6% [95% CI, 30.1%–33.1%], and 33.7% [95% CI, 31.6%–35.9%] for high school education or less, some college education, and college degree, respectively, among those who smoked nondaily <300 cigarettes/month; 27.2% [95% CI, 24.8%–29.7%], 34.7% [95% CI, 31.8%–37.9%], and 39.7% [95% CI, 35.3%–44.3%] for high school education or less, some college education, and college degree, respectively, among those who used smokeless tobacco nondaily). In contrast, risky weekly alcohol use increased as level of education increased among all 3 groups of people who currently smoke cigarettes. This was especially true for people in the nondaily <300 cigarettes/month group; among those with a high school or less education, 13.7% (95% CI, 12.7%–14.7%) reported risky weekly alcohol use, compared to 27.5% (95% CI, 25.5%–29.5%) among those with a college degree.

Figure 3.5 Past-30-Day Alcohol Use by Educational Attainment and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; $N = 210,684$)



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



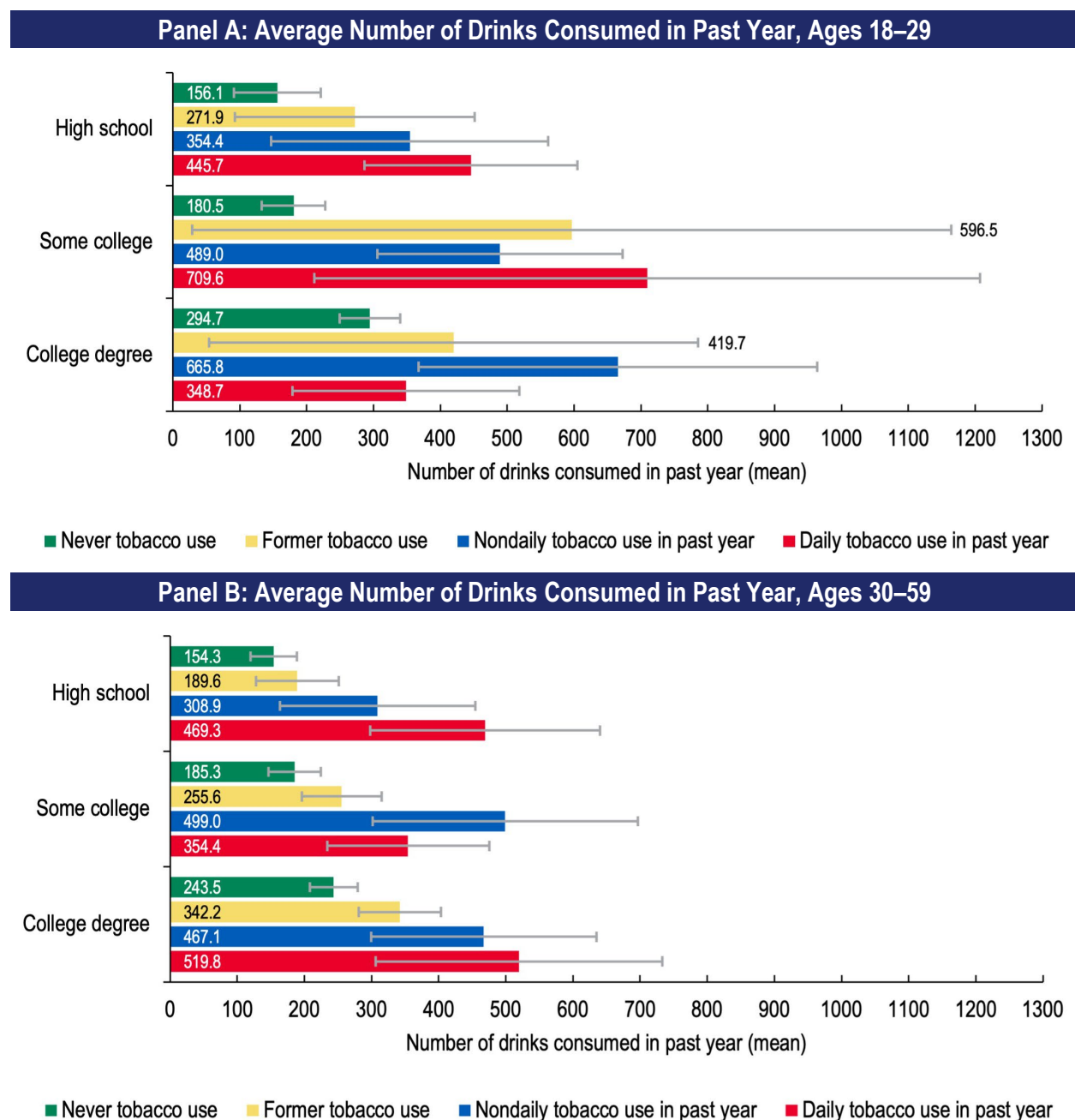
Note. For full data, see Appendix Table 3B.10. *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking $> 7/14$ drinks per week for women/men in the past 30 days.

Source: 2015–2019 National Survey on Drug Use and Health.

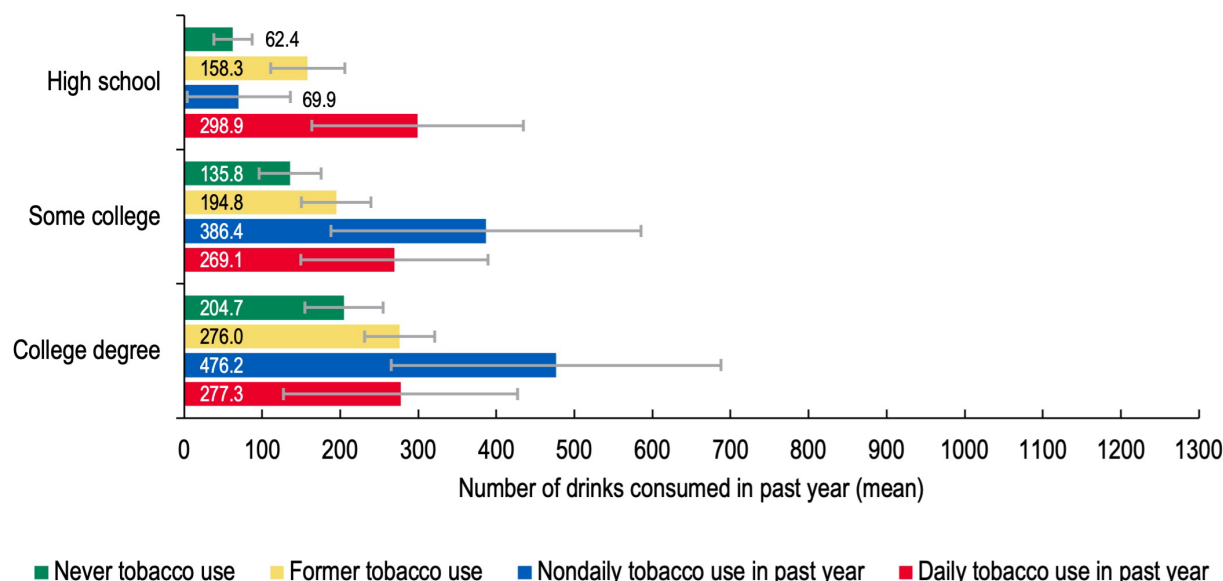
National Alcohol Surveys Analysis: Past-Year Volume of Consumption by Educational Attainment

Overall alcohol consumption (mean number of drinks consumed in past year) among 2014–2015 and 2019–2020 NAS participants, stratified by educational attainment and tobacco use status, is shown in Figure 3.6 (Appendix Table 3B.13). Past-year tobacco use was significantly associated with higher overall alcohol consumption compared with never tobacco use at the $p < .05$ level across educational and age groups except those ages 60 and older with a college degree ($p < .1$). Among those ages 30–59 with some college education or a college degree, and among those ages 60 and older with any level of education, former tobacco use was associated with higher alcohol consumption compared with never tobacco use. In most age and education categories, daily and nondaily tobacco use were associated with the highest alcohol consumption. Adults ages 60 and older with a high school education who never used tobacco reported the fewest number of mean drinks consumed.

Figure 3.6 Average Number of Drinks Consumed in Past Year by Age, Past-Year Tobacco Use Status, and Educational Attainment (2014–2015 and 2019–2020 National Alcohol Surveys; $N = 14,125$)



Panel C: Average Number of Drinks Consumed in Past Year, Ages 60 and older



Note. For full data, see Appendix Table 3B.13. *Tobacco use* is defined as use of non-e-cigarette tobacco products (due to survey question wording). *Nondaily* and *daily current tobacco use* are defined as use in the past year. *Former tobacco use* is defined as use within lifetime but not in the past year. *Never tobacco use* is defined as never use in lifetime. Alcohol use is measured in the past year. Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

National Alcohol Survey Analysis: Lifetime Cigarette Pack Years and Heavy Alcohol Use by Educational Attainment

Lifetime cigarette smoking and alcohol use associations for different education groups were assessed for 2014–2015 NAS participants (Appendix Table 3B.14). Across age and level of education, people who never smoked were least likely to reach the highest 5+ drinking day category for their age group (≥ 500 for those ages 18–29; $\geq 1,000$ for those ages 30–59 and 60 and older). Reaching $\geq 1,000$ 5+ drinking days generally declined with age, regardless of level of education and cigarette pack year category. There was a statistically significant positive association between pack years and lifetime 5+ drinking days among all education and age groups ($p < .001$). As noted in chapter 2, the presence of a substantial number of adults younger than 30 reporting 40+ pack years of tobacco use warrants attention given the health effects of such high intensity use and the potential for measurement error associated with self-report.

Summary: Co-Use by Educational Attainment

The literature indicates that lower educational attainment is associated with higher cigarette smoking prevalence and less alcohol use compared to higher educational attainment. Across tobacco use categories, analysis of NAS and NSDUH data found that, in general, alcohol use was most common among those with some college education or a college degree. Analysis of the NAS demonstrated that alcohol use exceeding guidelines was most common among those 18–29 years with either some college education or a college degree who also used tobacco; the association of co-use with level of education was least apparent among NAS participants ages 60 and older. Analysis of NSDUH found that risky weekly alcohol use was most common among people who smoked nondaily and had some college education or a college degree. Trends among

NSDUH participants who reported use of smokeless tobacco or cigars were roughly similar to those among participants who reported cigarette smoking: alcohol use and alcohol use exceeding guidelines (binge drinking and risky weekly use) were most common among participants with some college education or a college degree.

Co-Use by Income

Compared to people with higher incomes, those with lower incomes have a higher prevalence of current smoking^{4,47} and more abstinence from drinking.^{57,58} However, people with lower incomes who do report drinking also report more heavy drinking and greater negative alcohol-related consequences than people with higher incomes who report drinking.^{52,57} Higher incidence of alcohol- and tobacco-associated cancers, such as esophageal⁵⁹⁻⁶² and head and neck cancers,^{63,64} has also been documented among people of lower socioeconomic status compared to those of higher socioeconomic status. Factors influencing income-based disparities may include lack of access to reliable preventive care and treatment, occupational exposures to carcinogens, and differential tobacco and alcohol use patterns.⁶⁵ Additional studies of tobacco and alcohol co-use patterns as a function of income have been conducted outside the United States. For example, studies in Australia⁶⁶ and Thailand⁶⁷ found greater odds of tobacco and alcohol co-use among people with lower income compared to those with higher income.

However, as of 2026, few studies have analyzed tobacco-alcohol co-use among nationally representative, U.S.-based population surveys. In the 2012–2013 NESARC, lower annual income was associated with higher odds of co-use of nicotine and alcohol than alcohol use alone.⁵⁶ A study using 2010–2019 NSDUH data found that, among people who reported “high-risk” alcohol use (>7/14 drinks per week for women/men), lower income was associated with increased odds of past-month tobacco use (<\$50,000: aOR = 1.85, 95% CI = 1.69–2.02; \$50,000–\$74,999: aOR = 1.44, 95% CI = 1.29–1.62) and nicotine dependence (<\$50,000: aOR = 2.12, 95% CI = 1.90–2.37; \$50,000–\$74,999: aOR = 1.71, 95% CI = 1.49–1.96) compared to income of \$75,000 or higher.¹⁸ There is literature that examines tobacco and alcohol co-use in specific subpopulations within the United States, although these studies are often conducted with non-representative samples. For example, a study of low-income Black women in the United States found that current alcohol use (having ≥1 beverage monthly or more) was highest among those reporting smoking 11–19 cigarettes per day.⁶⁸ This study also found that weekly heavy episodic drinking (5+ drinks on a single occasion) was significantly higher among those who smoked 1–10 cigarettes per day (23%), 11–19 cigarettes per day (57%), or ≥20 cigarettes per day (31%), compared with those who did not smoke (1%).⁶⁸ In addition, a study of 6-year trajectories of concurrent tobacco and alcohol use among college students found that those from higher income families had 1.3 times the odds of belonging to the highest risk concurrent trajectory class, defined as steady high alcohol/steady high tobacco use (versus a low alcohol/abstaining tobacco class).⁶⁹ Higher family income was also positively associated with trajectory classes involving decreasing tobacco use.

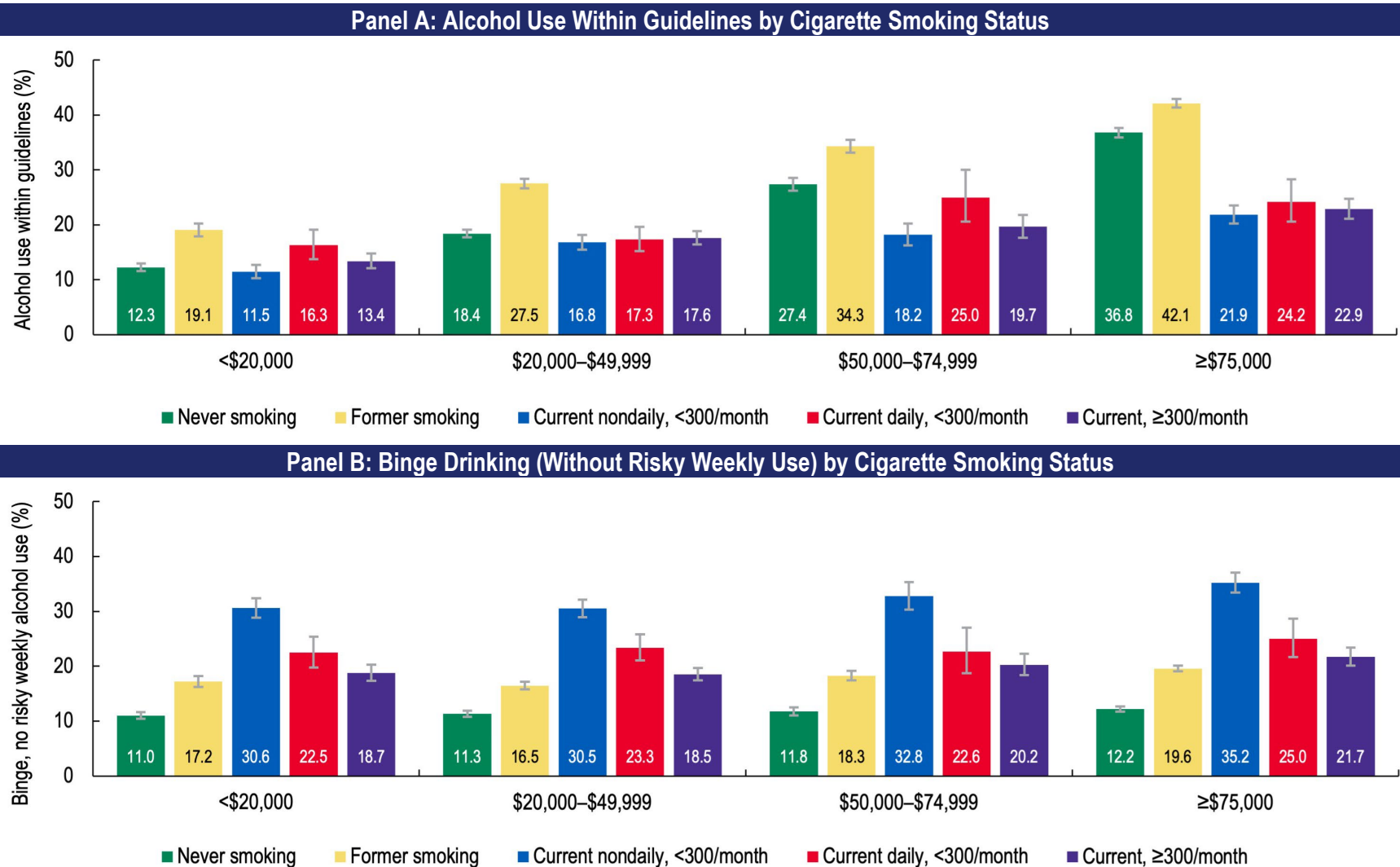
National Survey on Drug Use and Health Analysis: Co-Use by Income

Within income categories in the 2015–2019 NSDUH, levels of binge drinking (without risky weekly alcohol use) and risky weekly alcohol use were generally higher among people who used cigarettes, smokeless tobacco, or cigars in the past 30 days than among people who never or formerly used these products (Figure 3.7; Appendix Tables 3B.15, 3B.16, 3B.17). There was a statistically significant association between tobacco and alcohol use across income categories ($p < .001$). Across groups, people who smoked cigarettes nondaily had the highest prevalence of binge drinking (around 30% to 35%). Although binge drinking prevalence was similar across income categories among people who smoked, prevalence of risky weekly alcohol use among people who smoked increased as income increased. Around 20%–25% of people with an income of at least \$75,000 who smoked reported risky weekly use, compared to around 12%–16% of people with an income of <\$20,000 who smoked.

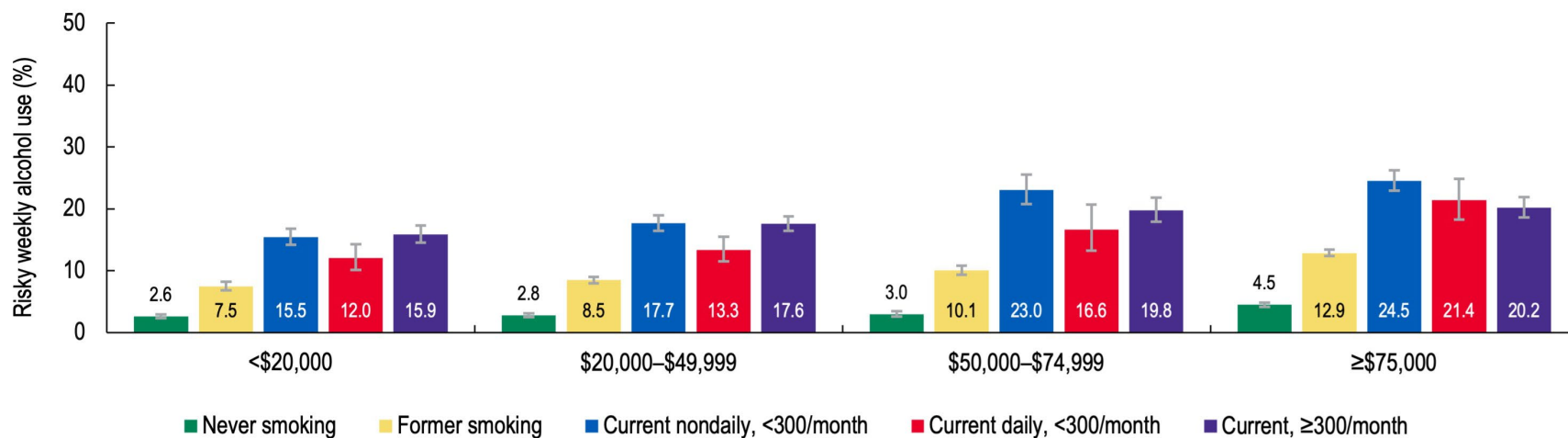
Further, the prevalence of overall alcohol use increased as income increased. Those with an annual income <\$20,000 had almost 3 times the prevalence of lifetime abstinence from alcohol compared to those with an income of at least \$75,000 (24.0% [95% CI, 23.3%–24.6%] versus 8.8% [95% CI, 8.5%–9.1%], respectively), and twice the prevalence of lifetime abstinence from alcohol compared to those with an income between \$50,000 and \$74,999 (12.2%, 95% CI = 11.7%–12.8%).

An association between income and alcohol use patterns was also seen among those who never smoked cigarettes. Those in the lowest income category had the highest prevalence of lifetime abstinence from alcohol (44.0%, 95% CI = 42.9%–45.2%). In contrast, among the highest income group, only 20.1% (95% CI, 19.4%–20.8%) of those who never smoked cigarettes reported lifetime abstinence from alcohol. Similar patterns were also observed among people who never used smokeless tobacco or cigars. In addition, lower income people who formerly smoked were more likely to report former alcohol use (46.9% [95% CI, 45.4%–48.3%] among those with income <\$20,000) than higher income people who formerly smoked (23.6% [95% CI, 22.9%–24.3%] among those with income of at least \$75,000).

Figure 3.7 Past-30-Day Alcohol Use by Income and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; *N* =210,684)



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



Note. For full data, see Appendix Table 3B.15. *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking >7/14 drinks per week for women/men in the past 30 days.

Source: 2015–2019 National Survey on Drug Use and Health.

Summary: Co-Use by Income

The literature indicates that lower income is associated with higher cigarette smoking prevalence and less alcohol use compared to higher income. Across tobacco use categories, analysis of NSDUH data found that, in general, alcohol use was most common among those with income of \$50,000 or higher. Risky weekly alcohol use among people who smoked also increased as income increased. Trends among NSDUH participants who reported use of smokeless tobacco or cigars were roughly similar to those among participants who reported cigarette smoking; alcohol use and alcohol use exceeding guidelines (binge drinking and risky weekly use) were most common among participants in the highest income category.

Co-Use by Geographic Location: Region, Urban/Rural, and Other Location Differences

Determining place-based differences in tobacco and alcohol co-use can help guide prevention efforts and effective policies in reducing disparities. U.S. regions that might warrant focused attention include the Midwest and South, where prevalence of tobacco or alcohol use is higher for some demographic groups than in other regions.^{4,70} A study that used 2018 Behavioral Risk Factor Surveillance System (BRFSS) data to estimate regional prevalence of past-30-day binge drinking ($\geq 4/5$ drinks on an occasion for women/men) found that the Midwest region had the highest prevalence of binge drinking (20.0%, 95% CI = 19.6%–20.5%).⁴⁹ Similarly, a study that used 1965–2018 NHIS data and 1992–2019 Tobacco Use Supplement to the Current Population Survey data, found that smoking prevalence was generally higher in states in the Midwest and South than the Northeast and West.⁷¹ Twelve states in the Midwest and South (Alabama, Arkansas, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, Tennessee, and West Virginia) have nearly 50% higher smoking prevalence than other states, according to 2020 BRFSS data.⁷² Differences in prevalence of tobacco and alcohol use may be attributed, in part, to differences in the sociodemographic makeup of states and regions and differences in tobacco and alcohol control policies. No studies have examined prevalence of tobacco and alcohol co-use by state and/or region.

The proportion of urban and rural residents within a geographic area can have a substantial influence on the prevalence of co-use. People living in urban, suburban, and rural areas vary in their use of tobacco and alcohol as well as their use patterns, such as types of products used. In rural areas, studies have found earlier initiation and higher prevalence of tobacco use^{4,73} compared to urban areas. With regard to alcohol use, adults living in rural areas are more likely to abstain from alcohol compared to those in urban areas,^{70,74,75} but those who do consume alcohol are more likely to report hazardous alcohol use (e.g., binge drinking, diagnosis of AUD, daily drinking, or Alcohol Use Disorder Identification Test [AUDIT] scores above a defined threshold) and alcohol-related harms.⁷⁶ A study using 2010–2019 NSDUH data found that “high-risk” alcohol use ($> 7/14$ drinks per week for women/men), was more prevalent in metropolitan areas than rural areas, and, among adults who reported high-risk alcohol use, residing in a metropolitan area was associated with decreased odds of past-month tobacco use (small metropolitan: aOR = 0.87, 95% CI = 0.78–0.97; large metropolitan: aOR = 0.74, 95% CI = 0.67–0.83) and nicotine dependence (small metropolitan: aOR = 0.87, 95% CI = 0.78–0.97; large metropolitan: aOR = 0.75, 95% CI = 0.67–0.84) compared with residing in a rural area.¹⁸ Further, in a study looking at tobacco and alcohol use in adolescents (ages 12–17

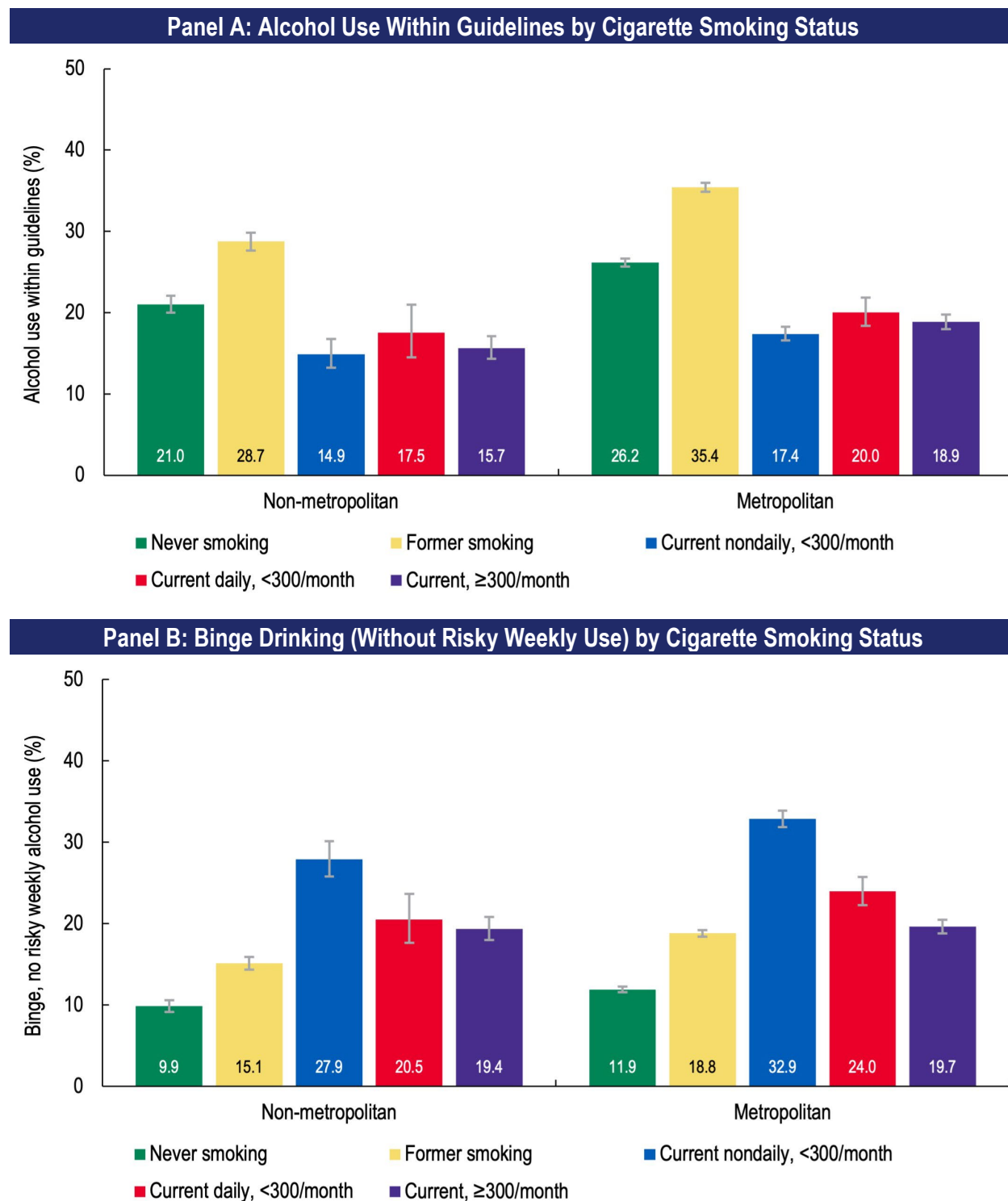
years) and adults (18 years or older) in the 2002–2004 NSDUH,⁷⁷ both adolescents and adults in rural counties had the highest proportion of any past-month tobacco use (adolescents: 20.5% in rural counties vs. 13.7% in urban counties; adults: 35.7% in rural counties vs. 30.7% in urban counties). Use of smokeless tobacco products was also higher among both adolescents and adults in rural counties than in urban counties (adolescents: 5.7% in rural counties vs. 1.6% in urban counties; adults: 7.5% in rural counties vs. 2.7% in urban counties). However, age differences between adolescents and adults in rural counties emerged when looking at alcohol use. Among adolescents, participants in rural counties had significantly higher past month alcohol use, binge alcohol use (defined as ≥ 5 drinks on the same occasion at least 1 day in the past 30 days), and heavy alcohol use (defined as ≥ 5 drinks on the same occasion on 5 or more days in the past 30 days) than those in urban counties (past month: 20.4% vs. 17.2%; binge: 13.8% vs. 10.3%; heavy: 3.3% vs. 2.5%). In contrast, adults in rural counties consistently had a lower prevalence of alcohol use (all measures) compared to those in urban counties (past month: 42.6% vs. 56.0%; binge: 21.2% vs. 24.5%; heavy: 6.6% vs. 7.3%).⁷⁷

Few studies examine the prevalence of co-use patterns in rural areas within the United States. One cross-sectional study, using data collected in 1993 from 630 high school students from a rural, tobacco-growing county, found that about 40% of the students had smoked cigarettes and almost 65% had consumed alcohol in the past 30 days.⁷⁸ Students who reported approval of drinking were more likely to drink ($\beta = 0.57$) and smoke ($\beta = 0.37$) than those who did not approve of drinking. Additionally, students who reported smoking tobacco in the past 30 days (compared to those who did not) were about three times more likely to report drinking alcohol, and students who reported drinking alcohol in the past 30 days (compared to those who did not) were about three times more likely to report smoking tobacco. Further, those who had friends who drank alcohol also had an increased likelihood of smoking ($\beta = 0.23$) than those who did not report having friends who drink alcohol. Absolute levels of tobacco and alcohol use in adolescents have declined dramatically since 1993,⁷⁹ but tobacco and alcohol use persist in both rural and urban areas.^{70,80} There is a critical need for more research on tobacco and alcohol co-use by geographic location to inform prevention and policy efforts, particularly to address harms from alcohol.⁷⁶ As discussed in relation to race and/or ethnicity, aggregated estimates across geographic areas that merge rural and urban spaces may conceal important variation in substance use and its consequences.

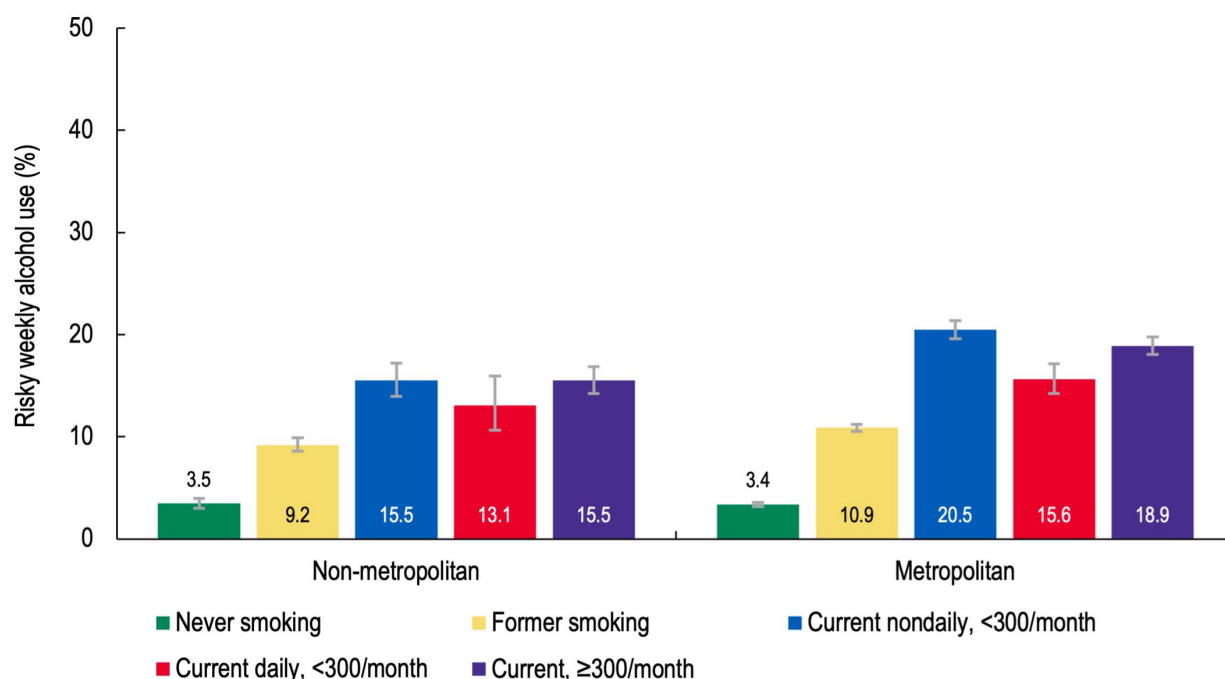
National Survey on Drug Use and Health Analysis: Co-Use by Metropolitan Status

NSDUH data were analyzed to examine alcohol use by tobacco use and county metropolitan status (Figure 3.8; Appendix Tables 3B.18, 3B.19, 3B.20). There was a statistically significant bivariate association between tobacco and alcohol use among participants in both metropolitan and nonmetropolitan counties ($p < .001$). Overall, prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) was highest among adults in metropolitan counties who reported use of cigarettes or smokeless tobacco in the past 30 days. For example, prevalence of binge drinking (without risky weekly use) among people in nonmetropolitan counties who smoked nondaily < 300 cigarettes/month was 27.9% (95% CI, 25.8%–30.2%) and 32.9% (95% CI, 31.9%–33.9%) in metropolitan counties. Among people who reported daily use of smokeless tobacco, prevalence of risky weekly use was 15.3% (95% CI, 13.1%–17.8%) among people in nonmetropolitan counties and 23.9% (95% CI, 21.4%–26.5%) among people in metropolitan counties.

Figure 3.8 Past-30-Day Alcohol Use by Metropolitan Status and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; $N = 210,684$)



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



Note. For full data, see Appendix Table 3B.18. The 2015–2019 National Survey on Drug Use and Health categorizes participants' counties of residence as large metropolitan, small metropolitan, and nonmetropolitan based on the 2013 Rural/Urban Continuum Codes⁸¹; large and small metropolitan counties are defined as *metropolitan* in this analysis. *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as no binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking $>7/14$ drinks per week for women/men in the past 30 days.

Source: 2015–2019 National Survey on Drug Use and Health.

Summary: Co-Use by Geographic Location

Compared to urban areas, studies have found that people in rural areas had higher prevalence of tobacco use and lifetime abstinence from alcohol, but also higher likelihood of hazardous alcohol use among people who drink. In the 2015–2019 NSDUH, prevalence of past-30-day risky weekly alcohol use was highest among adults in metropolitan counties who reported use of cigarettes or smokeless tobacco. Urban and rural areas seem likely to differ in different regions of the United States.

Co-Use Among People Who Identify as Part of a Sexual Minority Group

People who identify as a sexual minority, or those who self-report lesbian, gay, bisexual, or another nonheterosexual orientation, can face unique challenges and stressors as a result of their sexual orientation that puts them at increased risk for substance use.⁸² These individuals have consistently shown greater tobacco use, alcohol use, and their co-use compared to people who identify as heterosexual.^{4,83–88} In a 2022 scoping review of 63 studies on sexuality differences in polysubstance use in adolescents and adults,⁸⁶ one of the few consistent findings was that sexual minority individuals report more frequent polysubstance use than heterosexual individuals. A nationally representative study using 2013–2014 Population Assessment of Tobacco and

Health (PATH) study data found in a latent class analysis that, compared to heterosexual participants, sexual minority adolescents ages 15–17 had greater odds of being in 2 polysubstance use classes that included use of tobacco products and alcohol than in the class characterized by abstinence from tobacco, alcohol, and cannabis.⁸⁸ Further, in a study of same-day cigarette, cannabis, and alcohol use among people who smoke cigarettes ($N = 147$), almost 71% of sexual minority individuals reported using all 3 substances on the same day compared to 56% of heterosexual individuals.⁸⁹

In a study using data from the 2015 Youth Risk Behavior Surveillance System (YRBS), Dermody and colleagues (2018)⁸⁴ used a latent class analysis to characterize use patterns of tobacco products, alcohol, and cannabis among adolescents in 9th through 12th grade. Compared to heterosexual adolescents, bisexual adolescents had 2.64 (95% CI, 1.62–4.29) times the odds of belonging to a class characterized by polysubstance use of alcohol, binge drinking, cannabis, e-cigarettes, and other tobacco products, and adolescents who indicated they were “not sure” of their sexual orientation had 2.61 (95% CI, 1.48–4.63) times the odds of belonging to this polysubstance use class. However, lesbian/gay adolescents did not have significantly increased odds of belonging to this polysubstance use class compared with heterosexual adolescents (aOR = 2.14, 95% CI = 0.92–4.97).⁸⁴ A separate study that conducted a latent class analysis using 2015 YRBS data found that both lesbian/gay and bisexual adolescents had increased odds over heterosexual adolescents of belonging to a class characterized by tobacco and alcohol co-use (lesbian/gay: aOR = 3.10 [95% CI = 2.30–4.18]; bisexual: aOR = 2.95 [95% CI = 1.87–4.63]) than a class of nonusers.⁸³ Adolescents who were unsure of their identity also had increased odds of using tobacco and alcohol (aOR = 1.67, 95% CI = 1.02–2.73) compared to heterosexual adolescents.

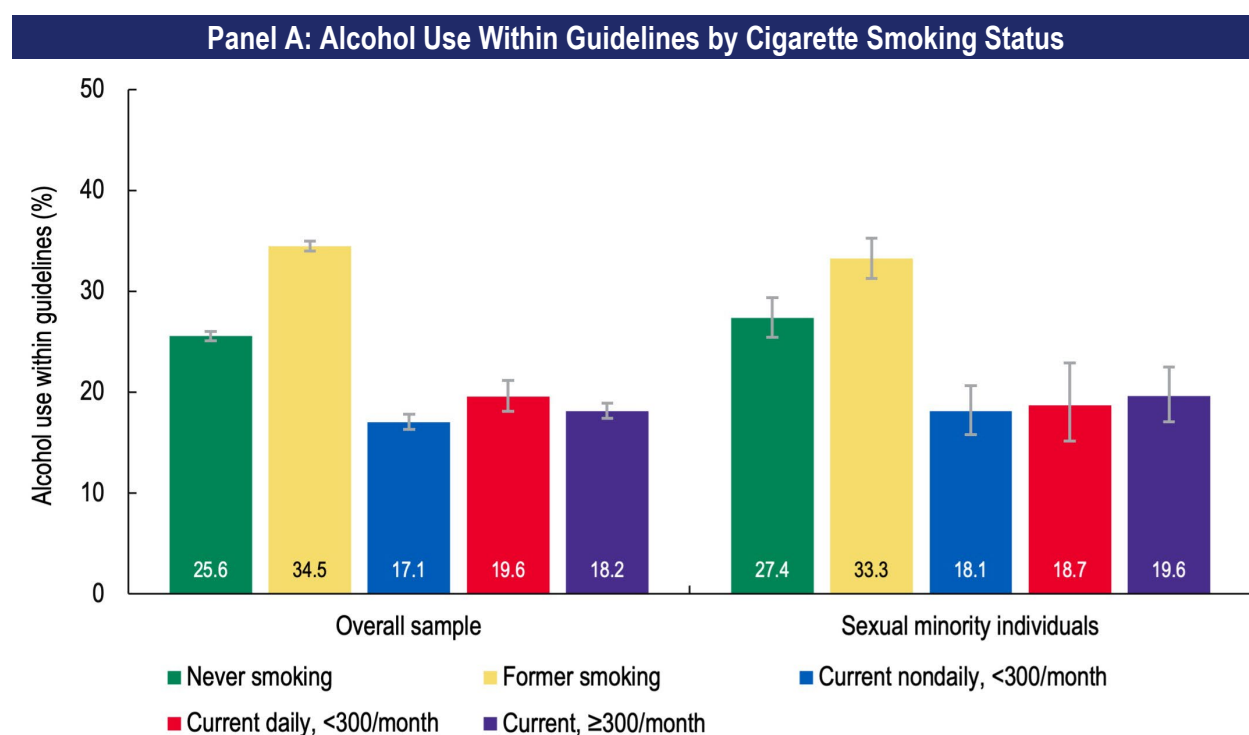
Another study used daily surveys to capture information about concurrent daily cigarette and alcohol use among 246 women and found that, compared to heterosexual women, sexual minority women drank more per drinking day, had a higher proportion of days smoking across the study (18% vs. 4%), smoked more per smoking day, and had a higher proportion of days drinking and smoking (7% vs. 1%).⁸⁷ The prevalence of days drinking, smoking, and drinking and smoking were similar for lesbian and bisexual women and elevated compared to heterosexual women.

National Survey on Drug Use and Health Analysis: Co-Use by Sexual Minority Status

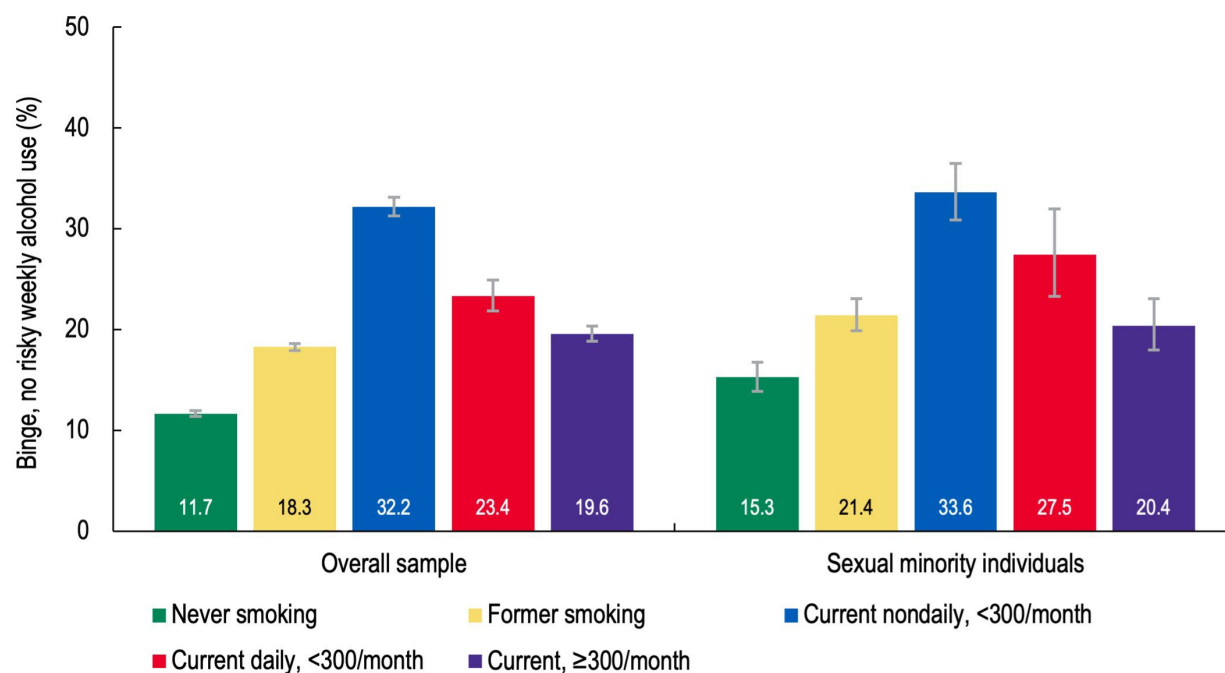
Analysis of NSDUH data found higher alcohol use among sexual minority adults who smoke cigarettes, compared to the general population (Figure 3.9; Appendix Table 3B.21). There was a statistically significant bivariate association between tobacco and alcohol use among sexual minority participants and the overall NSDUH sample ($p < .001$; Appendix Tables 3B.21, 3B.22, 3B.23). Overall, among those who reported sexual minority status (lesbian, gay, or bisexual), around one-third reported any alcohol use exceeding guidelines (binge drinking without risky weekly use: 21.2%, 95% CI = 20.3%–22.2%; risky weekly alcohol use: 14.5%, 95% CI = 13.6%–15.4%), compared to around one-quarter among the overall NSDUH sample (binge drinking without risky weekly use: 17.0%, 95% CI = 16.8%–17.2%; risky weekly use: 9.3%, 95% CI = 9.2%–9.5%). Additionally, for the 3 past-30-day cigarette smoking categories, a higher proportion of sexual minority individuals reported risky weekly alcohol use compared to their counterparts in the overall sample; similar results were also observed for people who reported

past-30-day cigar smoking. For example, among those who smoked <300 cigarettes/month on a nondaily basis, risky weekly alcohol use was reported by 25.5% (95% CI, 22.9%–28.3%) of sexual minority individuals, compared to 19.8% (95% CI, 19.0%–20.6%) of individuals among the overall NSDUH sample. Among sexual minority individuals, alcohol use exceeding guidelines was highest among those who smoked <300 cigarettes/month; for example, 33.6% (95% CI, 30.9%–36.5%) of those who smoked nondaily <300 cigarettes/month in the past 30 days and 27.5% (95% CI, 23.3%–32.0%) of those who smoked daily <300 cigarettes/month also reported binge drinking (without risky weekly use). Among those who reported past-30-day cigar smoking, 24.7% (95% CI, 21.3%–28.4%) of sexual minority individuals reported risky weekly use, compared with 20.2% (95% CI, 19.2%–21.2%) of the overall NSDUH sample. These findings are consistent with the literature, although smaller differences between sexual minority individuals and the general population in tobacco and alcohol use patterns were observed in this analysis. Greater differences might be observed if stratification by age, sex, and sexual minority status were possible; however, the NSDUH sample had a limited number of sexual minority individuals, preventing a more refined analysis.

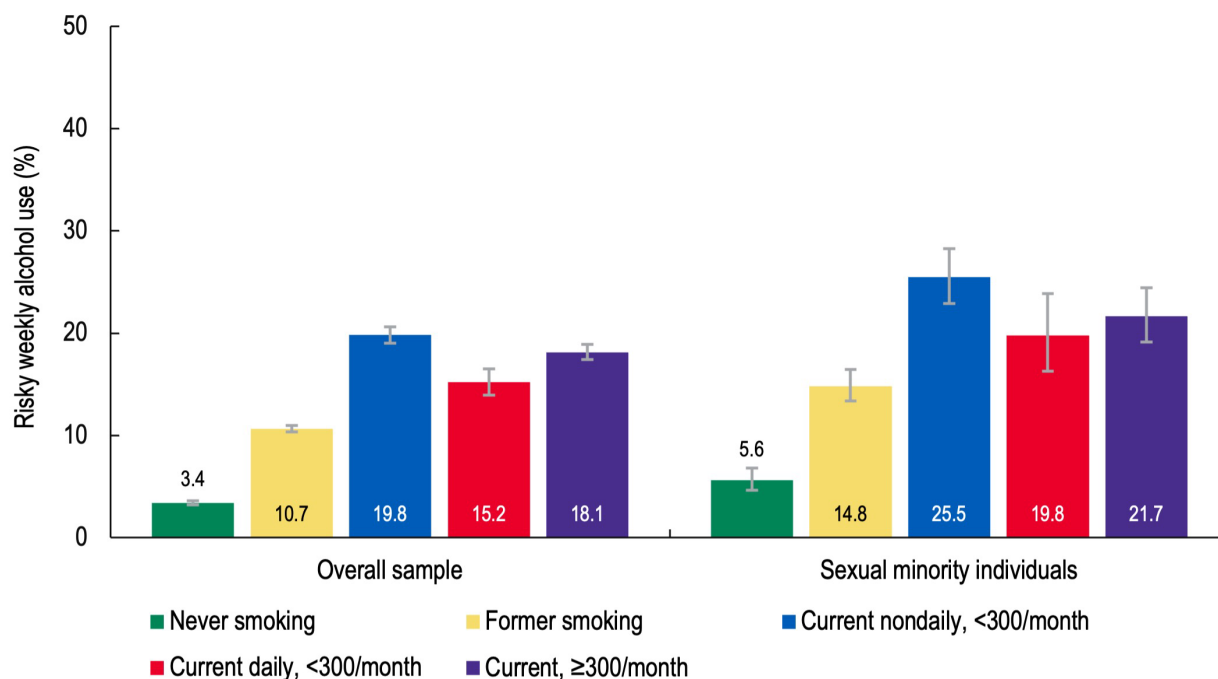
Figure 3.9 Past-30-Day Alcohol Use by Sexual Minority Status and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; N = 210,684)



Panel B: Binge Drinking (Without Risky Weekly Use) by Cigarette Smoking Status



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



Note. For full data, see Appendix Table 3B.21. *Overall* refers to the total 2015–2019 National Survey on Drug Use and Health sample. *Sexual minority individuals* are defined as participants who identified as “lesbian or gay” or “bisexual”. *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as no binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking >7/14 drinks per week for women/men in the past 30 days.

Source: 2015–2019 National Survey on Drug Use and Health.

Summary: Co-Use Among People Who Identify as Part of a Sexual Minority Group

The literature indicates that sexual minority individuals have higher prevalence of tobacco and alcohol use compared to heterosexual individuals. Data from the 2015–2019 NSDUH showed that around one-third of sexual minority adults reported past-30-day alcohol use exceeding guidelines (binge drinking and risky weekly alcohol use), compared to one-quarter among the overall NSDUH sample. Binge drinking and risky weekly alcohol use were highest among sexual minority adults who smoked <300 cigarettes per month.

Co-Use Among Military Service Members and Veterans

Veterans have higher prevalence of tobacco use and AUDs compared to the civilian population.⁹⁰⁻⁹² However, few studies have assessed tobacco and alcohol co-use among military service members and veterans. A national study of more than 5 million U.S. veterans found that, of those who received Veterans Health Administration services in fiscal year 2012, 11.1% received a diagnosis of tobacco use disorder (TUD) only, 3.3% received a diagnosis of AUD only, and 2.7% received diagnoses of both AUD and TUD.⁹³ Veterans diagnosed with AUD and TUD were more likely to receive diagnoses of other psychiatric disorders compared to those with a TUD only. A study that used data from the 2015 U.S. Department of Defense Health-Related Behaviors Survey found that active duty military service members with probable AUDs (based on Alcohol Use Disorders Identification Test-Concise [AUDIT-C] scores) had significantly greater odds of exclusive cigarette use (aOR = 2.61, 95% CI = 1.98–3.45), exclusive e-cigarette use (aOR = 2.06, 95% CI = 1.50–2.82), and dual use of cigarettes and e-cigarettes (aOR = 3.36, 95% CI = 2.17–5.20) compared to service members without AUDs.⁹⁴

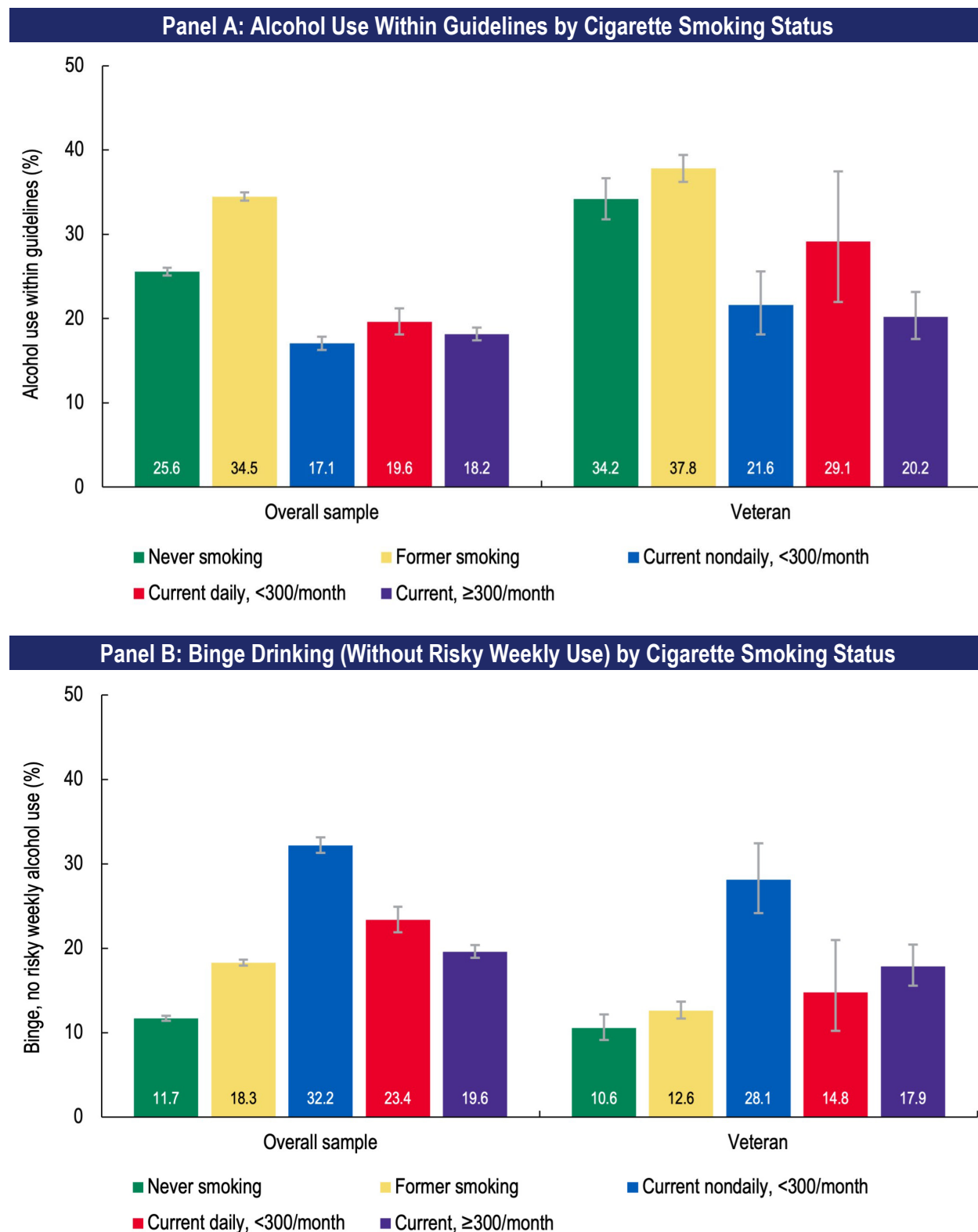
Results from several studies indicate an association between tobacco use and hazardous alcohol use among veterans. An analysis of the Millennium Cohort Study looked at 6,909 military service members and veterans who reported problem drinking (assessed using the lifetime CAGE questionnaire and the PRIME-MD Patient Health Questionnaire [PHQ]) in a 2000 baseline assessment but did not report problem drinking (based on the PHQ only) in the Wave 2 assessment (2004–2006).⁹⁵ At the Wave 3 assessment in 2007–2008, 16% of study participants reported a relapse to problem drinking (based on the PHQ) and current smoking was associated with increased relapse to problem drinking (aOR = 1.26, 95% CI = 1.05–1.51).⁹⁵ An analysis of tobacco use trajectories among veterans, using the PATH Study Wave 1 (2013–2014) and Wave 2 (2014–2015) data, showed that participants who reported binge drinking had increased odds of being in the continued tobacco product use group (aOR = 4.23, CI = 2.38–7.52) and the tobacco product initiation group (aOR = 8.63, CI = 3.79–19.63) than the non-tobacco use group.⁹⁰

Patterns of tobacco and alcohol co-use among veterans from different racial and/or ethnic groups are not presented in-depth here. However a 2023 study presents data on alcohol consumption and AUD from the Million Veteran Program cohort.⁹⁶ This study reports significantly higher levels of diagnosed AUD in Black and Hispanic veterans compared to White veterans at similar levels of self-reported alcohol consumption using AUDIT-C. The authors interpret this result as evidence for underdiagnosis of AUD in White veterans and state, “The absence of other factors to explain this discrepancy strongly suggests the presence of racial and ethnic biases in the diagnosis of AUD.”^{96,p.434} This misclassification bias has important implications for epidemiological and evaluation studies as well as for potential consequences for careers and employment.

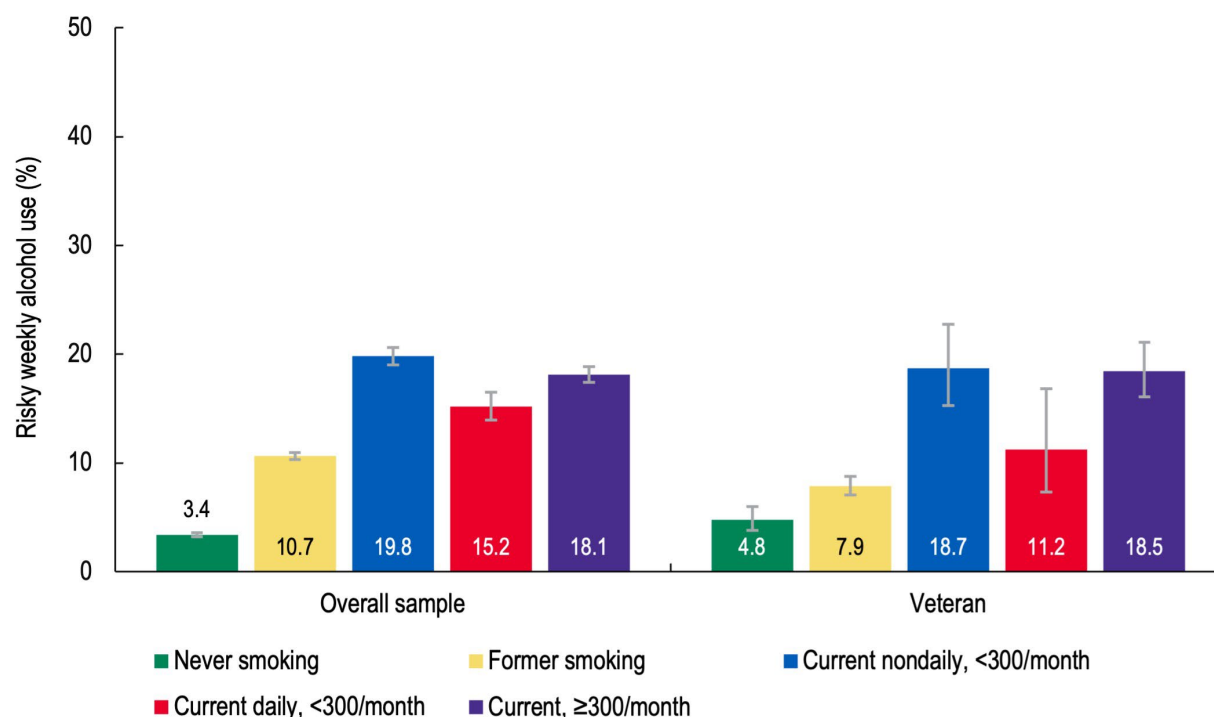
National Survey on Drug Use and Health Analysis: Co-Use by Veteran Status

Alcohol use prevalence by cigarette smoking status among U.S. military veterans in the 2015–2019 NSDUH are shown in Figure 3.10 (Appendix Table 3B.24). (The NSDUH sampling frame includes veterans but does not allow examination of tobacco and alcohol use patterns among active-duty military members.) There was a statistically significant bivariate association between tobacco and alcohol use among veteran participants and the overall NSDUH sample ($p < .001$). Overall, the prevalence of risky weekly alcohol use was similar among veterans (9.1%, 95% CI = 8.4%–9.8%) and the overall NSDUH sample (9.3%, 95% CI = 9.2%–9.5%). However, a smaller proportion of veterans overall reported never using alcohol than the overall NSDUH sample (6.6% [95% CI, 6.0%–7.2%] vs. 14.2% [95% CI, 14.0%–14.5%]). As in the NSDUH sample overall, cigarette smoking among veterans was associated with a higher prevalence of binge drinking (without risky weekly alcohol use) and risky weekly alcohol use, particularly among those who smoked nondaily. For example, a higher percentage of veterans reporting nondaily smoking <300 cigarettes/month reported binge drinking (without risky weekly use), compared with veterans who reported never smoking (28.1% [95% CI, 24.2%–32.4%] versus 10.6% [95% CI, 9.1%–12.2%]). Additionally, veterans reporting nondaily smoking <300 cigarettes/month, daily <300 cigarettes/month, and ≥ 300 cigarettes/month had higher prevalence of risky weekly alcohol use than those who reported never smoking (18.7% [95% CI, 15.3%–22.8%], 11.2% [95% CI, 7.4%–16.8%], and 18.5% [95% CI, 16.1%–21.1%], respectively versus 4.8% [95% CI, 3.8%–6.0%] among veterans who never smoked).

Figure 3.10 Past-30-Day Alcohol Use by Veteran Status and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; *N* = 210,684)



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



Note. For full data, see Appendix Table 3B.24. *Overall* refers to the total 2015–2019 National Survey on Drug Use and Health sample. *Veterans* are participants who indicated they are “now separated or retired from the military.” *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as no binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking >7/14 drinks per week for women/men in the past 30 days. Source: 2015–2019 National Survey on Drug Use and Health.

Summary: Co-Use Among Military Service Members and Veterans

The literature indicates that veterans have higher prevalence of tobacco use and AUD compared to the civilian population. In the 2015–2019 NSDUH, cigarette smoking was associated with a higher prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) among veterans, particularly among those who smoked nondaily, similar to the general population. A smaller proportion of veterans reported never using alcohol than the overall NSDUH sample.

Co-Use Among People with Comorbidities

This section discusses tobacco and alcohol co-use among the following groups with comorbidities: cancer survivors, people with mental health conditions, people with chronic health conditions (heart disease, hypertension, diabetes), people with HIV, and during pregnancy.

Co-Use Among Cancer Survivors

People previously diagnosed with cancer are an important group to consider when examining tobacco and alcohol co-use. This is because continued use of tobacco after a cancer diagnosis increases the risk of cancer-related mortality (and mortality from other diseases), as well as the risk of cancer recurrence, second primary cancers, and adverse treatment related outcomes, such as impaired response to chemotherapy and radiation therapy.^{47,97} Additionally, some evidence suggests that alcohol use may worsen response to cancer treatment.⁹⁸ Overall, among cancer survivors, co-use is not uncommon and is associated with symptoms of depression and anxiety.^{99,100} Polysubstance use in this population further merits attention because cannabis use is associated with tobacco and alcohol use among cancer survivors,¹⁰¹⁻¹⁰⁴ and cannabis use among cancer survivors may increase if or when more states legalize cannabis for medical and/or recreational purposes.^{105,106}

Adolescents and Young Adult Cancer Survivors. In a hospital-based study of 100 participants diagnosed with cancer between the ages 15–39, 15% reported past-year tobacco and alcohol co-use and most participants (65%) were exclusively using alcohol.⁹⁹ Compared to the other subgroups, those reporting co-use reported more symptoms of depression and anxiety. A study of 129 childhood cancer survivors 15 to 25 years old examined past-30-day substance use approximately 8 years after an initial cancer diagnosis.¹⁰⁰ Overall, 12.5% reported past-30-day tobacco use, 13.2% reported past-30-day binge drinking (≥ 5 drinks on 1 occasion), and 12.4% reported polysubstance use (cannabis, tobacco, and binge drinking); co-use of only tobacco and alcohol was not assessed.

Another study of 128 adolescent survivors (ages 14–20) of pediatric cancer explored the beliefs and behaviors associated with substance use.¹⁰⁷ Every participant who reported ever trying cigarette smoking ($n = 31$) also reported ever using alcohol. Conversely, 31 of the 71 participants who reported ever using alcohol had ever smoked a cigarette. Lower knowledge of the risks of smoking or binge drinking was associated with increased likelihood of cigarette and alcohol use, respectively.¹⁰⁷

National Studies of Adult Cancer Survivors. Several national studies have examined tobacco and alcohol co-use among adult cancer survivors using data from the general population.¹⁰⁸⁻¹¹¹ One such large study used data collected between 2018–2022 from the National Institutes of Health *All of Us* Research Program and included 15,199 participants who reported ever being diagnosed with cancer.¹¹¹ Overall, 77.7% of participants reported past-year alcohol use, and among those who did report past year alcohol use, 13% exceeded moderate drinking (>2 drinks on a typical day when drinking), 23.8% reported binge drinking (≥ 6 drinks on 1 occasion), and 38.3% reported hazardous drinking (AUDIT-C scores of 3 or higher for women and 4 or higher for men). Regarding smoking status, 35.1% of participants reported former smoking and 6.6% reported current smoking. In adjusted analyses, former smoking and current smoking (compared to never smoking) were associated with increased likelihood of current drinking, exceeding moderate drinking levels, binge drinking, and engaging in hazardous drinking (aORs ranging from 1.27 to 2.46 for former smoking and 1.44 to 4.14 for current smoking). Further, those

who were younger than 65 years old (versus older), men (versus women), or Hispanic (versus non-Hispanic White) were more likely to report exceeding moderate drinking and binge drinking. A cancer diagnosis before the age of 18 (versus a diagnosis at age 65 or older) predicted elevated risks of binge drinking and hazardous drinking.¹¹¹

Sanford and colleagues (2020)¹¹⁰ used NHIS data from 2000 to 2017 to examine alcohol use patterns among 34,080 adults reporting a diagnosis of cancer. A total of 56.5% of participants reported current drinking (≥ 1 drink in the past year). 34.9% of those reporting current drinking also reported exceeding moderate drinking (> 1 drink per day for women and > 2 drinks per day for men), and 21.0% reported a history of binge drinking (≥ 5 drinks on ≥ 1 day during the past year, for both men and women). Binge drinking was more prevalent among those who currently smoked than among those who never smoked (23.6% versus 8.0%, respectively). In adjusted logistic regression models, people who currently or formerly smoked were more likely than those who never smoked to report current drinking (versus never or former drinking), drinking in excess of moderate drinking guidelines (versus not exceeding moderate drinking), and binge drinking (versus not binge drinking).

Another study used data from the 2017–2020 Health Information National Trends Survey to examine risky health behaviors among 2,579 cancer survivors.¹⁰⁹ Former, but not current, cigarette smoking (compared to never smoking) was associated with higher odds of past-30-day moderate/heavy drinking (4–6 or ≥ 7 drinks per week; aOR = 1.58, 95% CI = 1.04–2.41). In addition, past-30-day moderate/heavy drinking (compared to light drinking, 0–3 drinks per week) was associated with higher odds of current cigarette smoking (aOR = 1.75, 95% CI = 1.22–2.52).

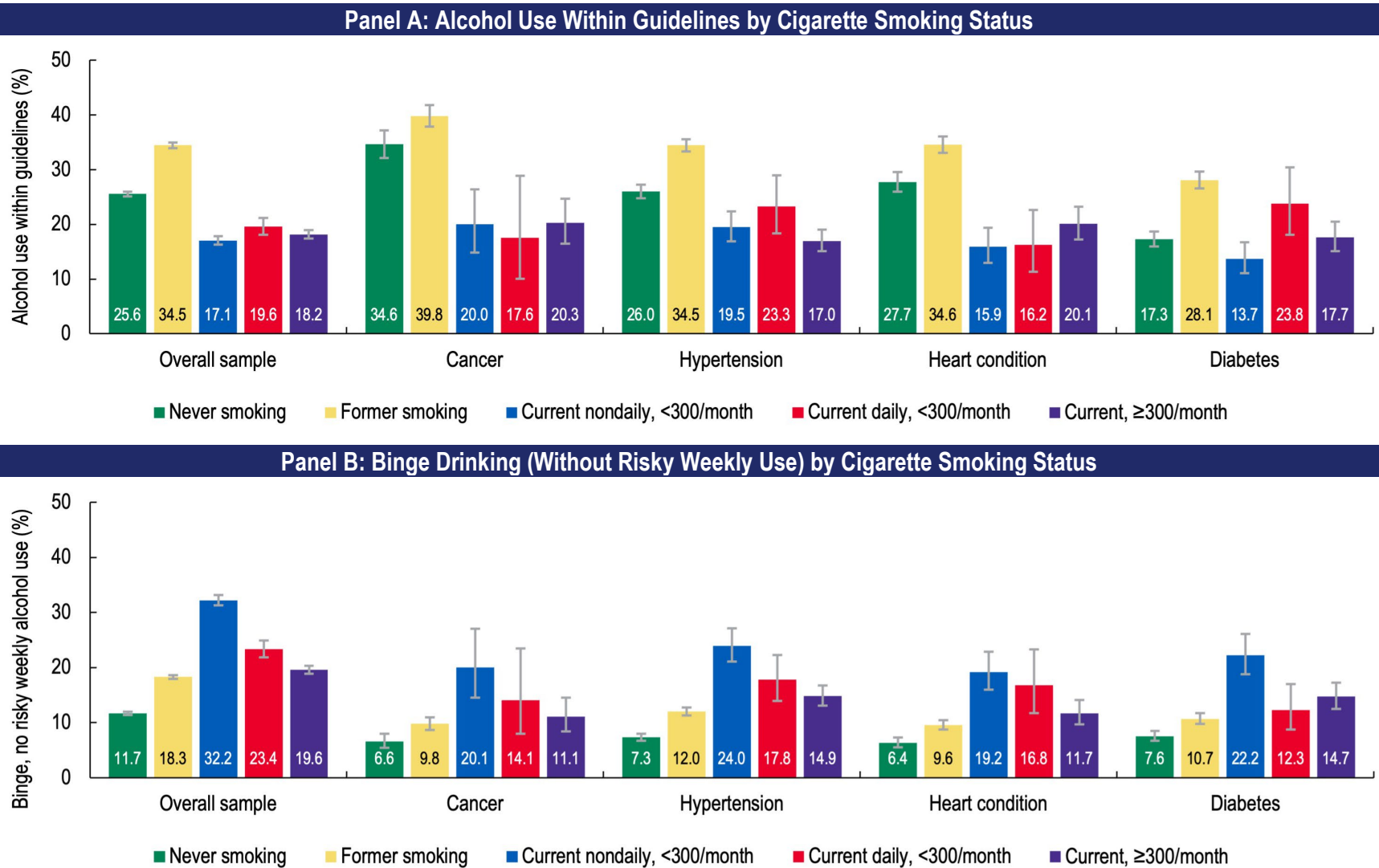
In a study of 1,438 adult survivors of childhood cancer, Asfar and colleagues (2016)¹⁰⁸ pooled data from the 1997–2010 NHIS to identify trends in smoking prevalence and correlates of cigarette smoking. Survivors who reported current drinking (≥ 12 drinks in the past year) were significantly more likely to report current smoking (defined as smoking every day or some days; aOR = 2.07, 95% CI = 1.42–3.01) than those who reported never or former drinking.

Studies of Adult Cancer Survivors—Data From Health Care Systems, Hospitals, and Cancer Registries. Several U.S. studies have examined tobacco and alcohol co-use by collecting data from health care systems, hospitals, or cancer registries among people with a variety of cancer types. Among 1,926 Black or African American female breast cancer survivors, those who currently smoked at the time of diagnosis reported drinking more drinks per week in the past year than people who formerly or never smoked.¹¹² Among 517 patients with cancers of the hepatobiliary-pancreatic system, 15.3% reported pre-diagnosis use of both tobacco and alcohol, whereas only 2.3% reported use of both substances after diagnosis.¹¹³ Among 503 people with a lymphoma diagnosis and 1,254 with a metastatic cancer diagnosis admitted to a mid-Atlantic acute health care system, around 4% reported current smoking and an AUD diagnosis.¹¹⁴

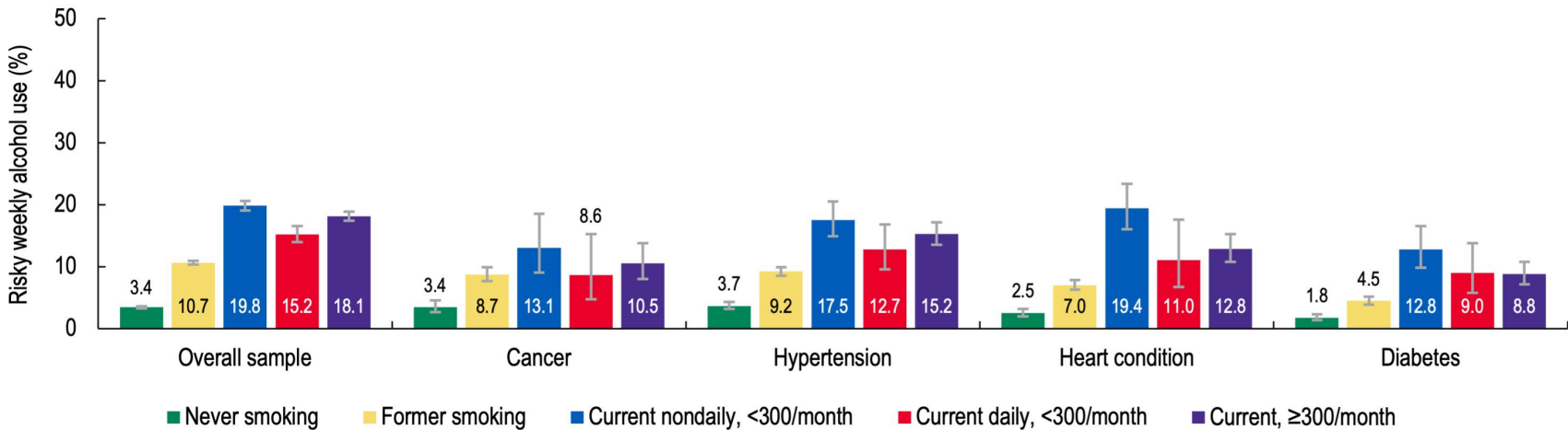
National Survey on Drug Use and Health Analysis: Co-Use by Cancer Diagnosis

Data from the 2015–2019 NSDUH were analyzed to understand alcohol use by cigarette smoking status among people with a cancer diagnosis, defined as reporting that a doctor or other health care professional had ever told participants that they had cancer. There was a statistically significant bivariate association between tobacco and alcohol use among people with a cancer diagnosis and the overall NSDUH sample ($p < .001$). As shown in Figure 3.11 (Appendix Table 3B.25), compared with the overall NSDUH sample, people with a cancer diagnosis had a lower prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly alcohol use) and a higher prevalence of former alcohol use overall and across tobacco use categories. Nonetheless, cigarette smoking was associated with alcohol use exceeding guidelines among cancer survivors. For example, among people with a cancer diagnosis, those reporting nondaily <300 cigarettes/month smoking had the highest prevalence of binge drinking without risky weekly use (20.1%, 95% CI = 14.6%–27.0%) and the highest prevalence of risky weekly alcohol use (13.1%, 95% CI = 9.0%–18.5%), compared with those who reported never smoking (6.6% [95% CI, 5.5%–8.0%] binge drinking without risky weekly use and 3.4% [95% CI = 2.6%–4.5%] risky weekly use) and former smoking (9.8% [95% CI, 8.7%–11.0%] binge drinking without risky weekly use and 8.7% [95% CI, 7.6%–9.9%] risky weekly use). An important caveat is that this analysis could not account for loss to follow-up from cancer-related mortality, which may have resulted in underestimates of substance use prevalence for people with a cancer diagnosis. Further, in the literature, prevalence of any use of alcohol is known to be similar or only slightly lower in cancer survivors than in the U.S. population.¹¹⁵⁻¹¹⁷

Figure 3.11 Past-30-Day Alcohol Use by Health Condition Status and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; $N = 210,684$)



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



Note. For full data, see Appendix Table 3B.25. *Overall* refers to the total 2015–2019 National Survey on Drug Use and Health sample. *Cancer* is defined as a doctor or other health care professional having ever told participants that they had cancer. *Current cigarette smoking* is defined as use in the past 30 days. Never and former alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as no binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking >7/14 drinks per week for women/men in the past 30 days.

Source: 2015–2019 National Survey on Drug Use and Health.

National Survey on Drug Use and Health Analysis: People with Other Chronic Health Conditions

NSDUH data also were examined to determine prevalence of alcohol use by cigarette smoking status among people who reported hypertension, a heart condition, or diabetes (Figure 3.11; Appendix Table 3B.25). There was a statistically significant bivariate association between tobacco and alcohol use among people with other health conditions and the overall NSDUH sample ($p < .001$). As was true for cancer, people with one of these three chronic health conditions had a lower prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly alcohol use) and a higher prevalence of former alcohol use than people in the overall NSDUH sample. For example, although 9.3% (95% CI, 9.2%–9.5%) of the overall NSDUH sample reported risky weekly alcohol use, only 8.1% (95% CI, 7.7%–8.6%), 6.8% (95% CI, 6.3%–7.4%), and 4.3% (95% CI, 3.9%–4.7%) of those with a history of hypertension, heart disease, or diabetes reported alcohol use exceeding guidelines, respectively. However, similar to the overall NSDUH sample, those who smoked generally had the highest frequency of binge drinking (without risky weekly use) and risky weekly alcohol use across these health conditions. Prevalence of binge drinking in the nondaily <300 cigarettes/month group was 24.0% (95% CI, 21.1%–27.2%), 19.2% (95% CI, 16.0%–22.9%), and 22.2% (95% CI, 18.8%–26.2%) among those with a history of hypertension, heart disease, and diabetes, respectively.

Co-Use Among People with Mental Health Conditions

Substantial literature demonstrates that the prevalence of tobacco use and AUDs are higher among people with mental health conditions than people without.^{4,118–121} The 2024 Surgeon General’s report concluded:

People living with any mental health condition or substance use disorder are at increased risk of tobacco use. The intersection of mental health, substance use, and sociodemographic characteristics—such as age, sex, race and/or ethnicity, sexual orientation, and socioeconomic status—adds to the risk of tobacco use.^{4,pp.10–11}

This section defines “mental health condition” to include negative affect, internalizing disorders (e.g., depression and anxiety), externalizing disorders (e.g., attention deficit disorder and antisocial personality disorder), or symptoms of mental health disorders (including severe psychiatric illness), but excludes substance use disorders. The extant literature often examines self-reported diagnoses or symptoms from screeners for mental health disorders rather than having met diagnostic criteria.

NSDUH data from 2024 show that prevalence of past-year tobacco and AUD was 30.9% and 18.1%, respectively, among adults with any mental illness, and 20.3% and 8.0%, respectively, among those without a mental illness.^{122,123} Although the prevalence and patterns of tobacco and alcohol co-use among people with mental health conditions are less well studied, the limited literature suggests that co-use in this population is common. A study using 2010–2019 NSDUH data found that “high-risk” alcohol use (>7/14 drinks per week for women/men), was more prevalent among adults with a past-year major depressive episode, and among those who reported high-risk alcohol use, a past-year major depressive episode was associated with increased odds of past-month use of both tobacco and cannabis (aOR = 1.38, 95% CI = 1.22–1.56) compared with no past-year major depressive episode.¹⁸ Several studies used 2012–2013 NESARC data to examine the relationship between co-occurring DSM-5 substance

use and psychiatric disorders and cigarette smoking. These analyses found that past-year cigarette smoking was more than twice as prevalent among respondents with co-occurring affective disorders and substance use disorders than those without a co-occurring disorder.^{120,124,125} However, AUD was not examined as the specific co-occurring disorder to an affective disorder in these analyses. In a study of 631 college students, a greater proportion of participants with mental health conditions had ever tried e-cigarettes (33.6%) compared to those without mental health conditions (19.2%), and the proportion of past-30-day use of e-cigarettes was highest among those reporting binge drinking (13.5%) compared to moderate drinking (8.4%, respectively) and abstaining (4.6%, respectively).¹²⁶ The study further examined alcohol use as a moderator of the association between mental health and e-cigarette use and observed that mental health and alcohol use were each significant predictors of ever using e-cigarettes, but there was no significant interaction between alcohol use and mental health.

A small number of studies have analyzed datasets that measure the use of tobacco, alcohol, and cannabis to investigate the association of different co-use patterns with mental health conditions.^{127,128} In one of the largest such studies, data from the 2013–2014 Wave 1 of the PATH study were analyzed to examine various patterns of current alcohol, cannabis, and tobacco product co-use among 9,112 U.S. young adults (ages 18–24) and 23,208 adults (ages 25 and older) and their association with mental health problems as measured by the Global Appraisal of Individual Needs–Short Screener, which included symptoms of internalizing and externalizing disorders.¹²⁷ In adjusted logistic regression models, mental health problems among young adults were associated with higher odds of hookah and alcohol co-use (aOR = 1.48, 95% CI = 1.03–2.13) and cigarette, alcohol, and cannabis co-use (aOR = 1.72, 95% CI = 1.19–2.48), but not with cigarette and alcohol co-use (aOR = 1.15, 95% CI = 0.87–1.54), compared to alcohol-only use. In adjusted models among older adults, mental health problems were associated with all tobacco and alcohol product co-use patterns (aORs ranging from 1.19–1.69).¹²⁷

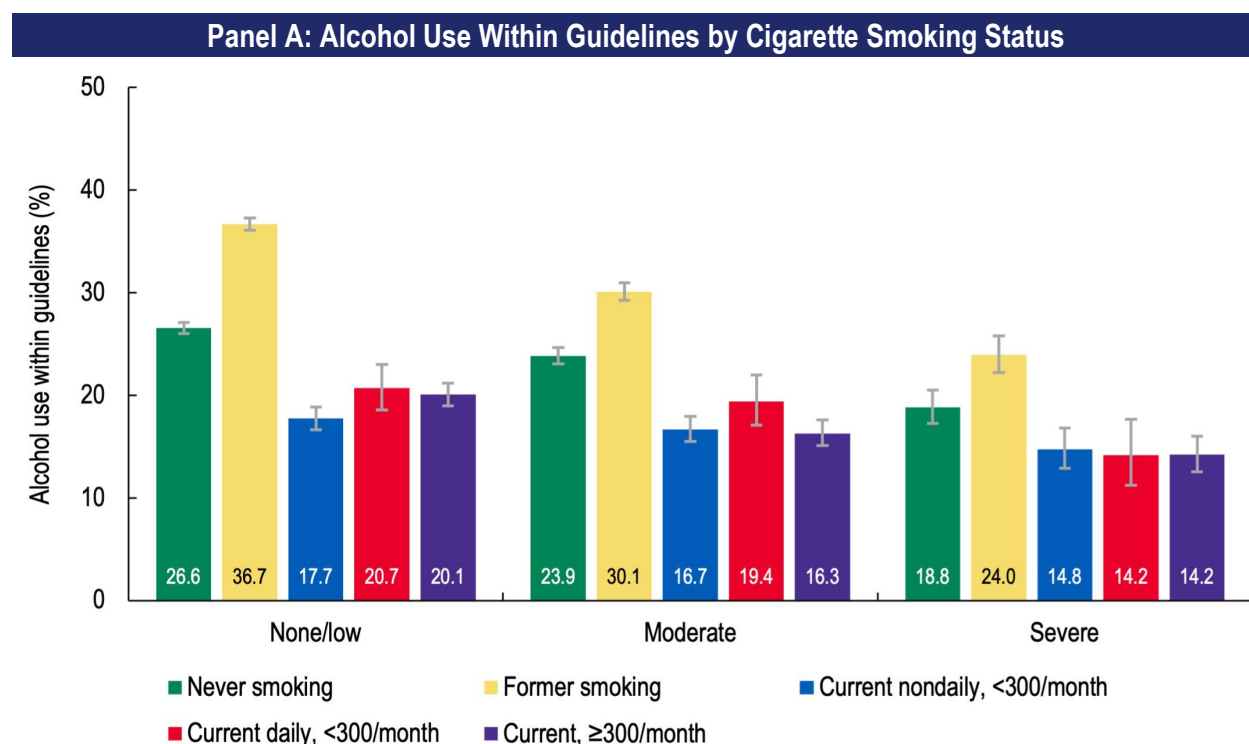
A longitudinal study investigated mental health symptoms in the transition from smoking only tobacco to dual- and polysubstance use of alcohol, cigarettes, and cannabis among 1,263 9th and 10th graders followed over a 7-year period.¹²⁸ Mental health symptoms were measured using the Center for Epidemiological Studies–Depression scale and the Mood and Affect Symptoms Questionnaire. Cigarette and alcohol co-use was the most common pattern of dual substance use observed at baseline and most follow-up assessments, accounting for around one-half of those who reported co-using any two substances at most time points. Depression and anxiety symptoms significantly predicted increased cigarette smoking frequency, alcohol use frequency, and polysubstance use over time.

National Survey on Drug Use and Health Analysis: Co-Use by Mental Distress

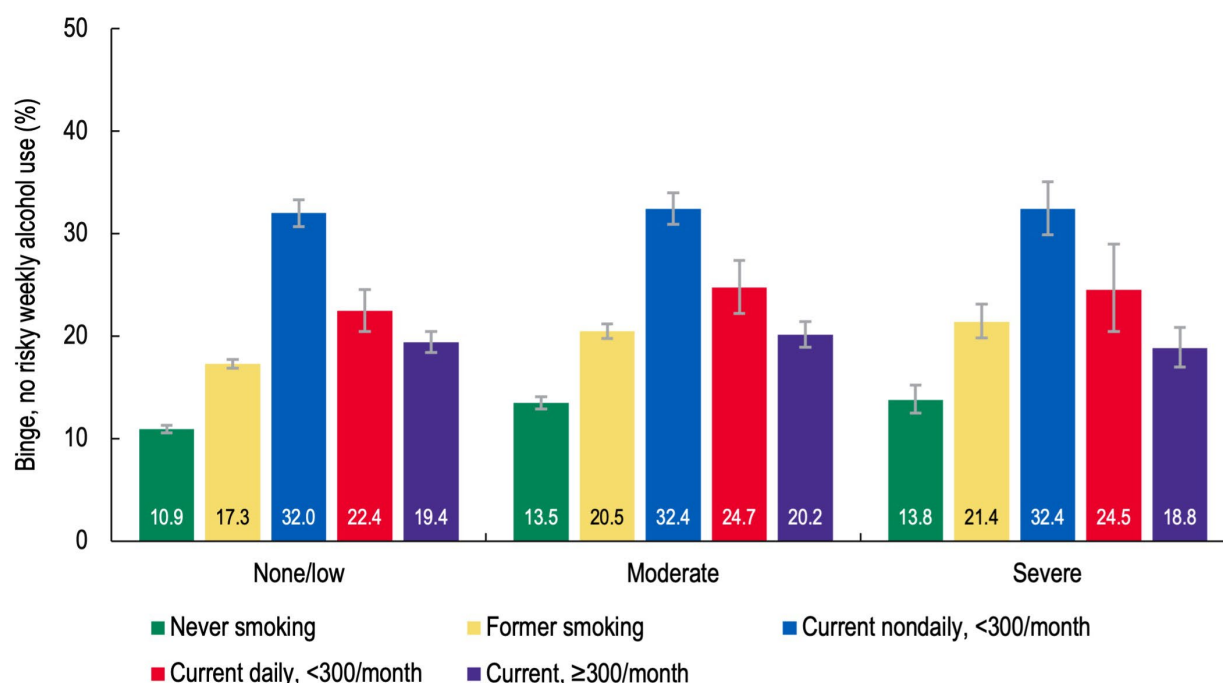
NSDUH data were analyzed to examine past-30-day alcohol use by cigarette smoking status and level of mental distress (none/low, moderate, or severe) based on scores on the Kessler Psychological Distress Scale–6 items (K6)¹²⁹ (Figure 3.12; Appendix Table 3B.26). There was a statistically significant bivariate association between tobacco and alcohol use among all categories of mental distress ($p < .001$). Overall, prevalence of past-30-day alcohol use exceeding guidelines (binge drinking and risky weekly use) was lowest among people who never smoked and highest among people who smoked in the past 30 days, particularly among people who smoked nondaily. Among people who reported past-30-day smoking, the levels of alcohol

use exceeding guidelines were generally similar across mental distress categories. For example, among those who smoked nondaily, binge drinking was 32.0% (95% CI, 30.7%–33.3%) among those with no/low mental distress, 32.4% (95% CI, 30.9%–34.0%) among those with moderate mental distress, and 32.4% (95% CI, 29.9%–35.1%) among those with severe mental distress. Among people who never or formerly smoked, alcohol use within guidelines was more prevalent among people with no/low mental distress; for example, prevalence of alcohol use within guidelines was 36.7% (95% CI, 36.1%–37.2%), among people with low/no mental distress who formerly smoked, and 24.0% (95% CI, 22.2%–25.8%) among people with severe mental distress who formerly smoked. Around 37% to 56% of people with mental distress who smoke also reported alcohol use exceeding guidelines (binge drinking and risky weekly alcohol use), similar to alcohol use exceeding guidelines among people who smoke in the overall NSDUH sample.

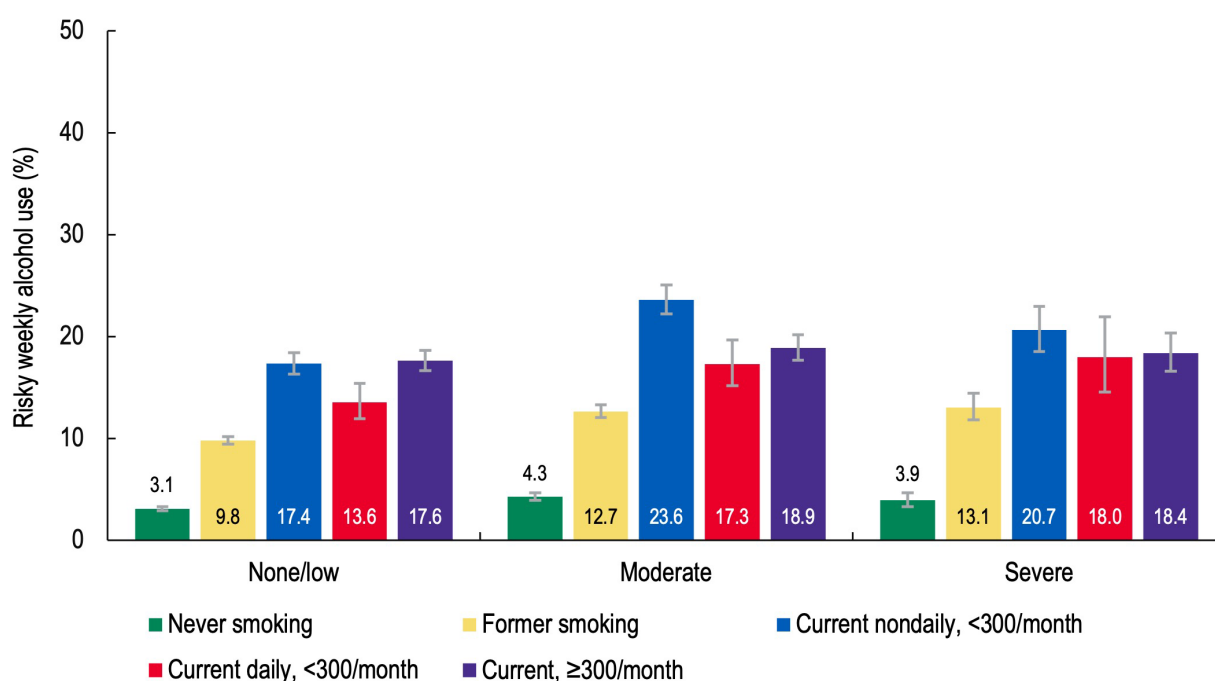
Figure 3.12 Past-30-Day Alcohol Use by Mental Distress and Past-30-Day Cigarette Smoking Status (2015–2019 National Survey on Drug Use and Health; $N = 210,684$)



Panel B: Binge Drinking (Without Risky Weekly Use) by Cigarette Smoking Status



Panel C: Risky Weekly Alcohol Use by Cigarette Smoking Status



Note. For full data, see Appendix Table 3B.26. *Mental distress* levels are based on scores on the Kessler K6 non-specific distress scale, where a score of 0–4 = none/low, 5–12 = moderate, and 13–24 = severe. *Current cigarette smoking* is defined as use in the past 30 days. *Never* and *former* alcohol use (not shown in the charts) are based on lifetime alcohol use and use in the past 30 days. *Alcohol use within guidelines* is defined as no binge drinking or risky weekly use in the past 30 days. *Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. *Risky weekly use* is defined as drinking >7/14 drinks per week for women/men in the past 30 days.

Source: 2015–2019 National Survey on Drug Use and Health.

Co-Use Among People Living with HIV

As treatment for human immunodeficiency virus (HIV) improves, people living with HIV (PLWH) are aging and, therefore, have increased likelihood of developing other health conditions, including cancer. Indeed, non-AIDS-associated cancers are a leading cause of mortality among PLWH,¹³⁰ and PLWH may more heavily engage in behaviors that contribute to these cancers than the general population.^{131,132} Although PLWH have demonstrated greater tobacco use,^{131,132} and higher prevalence of AUD compared to people without HIV,¹³³ few studies have explored the link between HIV status and co-use of tobacco and alcohol. In a nationally representative sample using data on 31,810 participants from the 2009 Medical Monitoring Project and NHIS,¹³¹ PLWH had more than double the prevalence of current smoking compared to the general population (42.4% vs. 20.6%), and the prevalence of current smoking was higher among those who engaged in past-30-day binge drinking (≥ 4 drinks per day for women/5 drinks per day for men) compared to those who did not (59.2% vs. 38.9%).

Similar findings were seen in region-specific studies that measured smoking and alcohol use among PLWH. A study examined lifetime alcohol use, measured by lifetime drinking history (measured in kilograms [kg] of alcohol consumed), among 365 PLWH currently receiving care in a Louisiana HIV clinic. Among those with a lifetime drinking history of >600 kg, or the equivalent of drinking ≥ 4 standard drinks per day for 28 years, 71.4% were currently smoking and 16.1% formerly smoked.¹³⁴ In comparison, among those with a lifetime drinking history of <100 kg, 52.3% and 14.2% were currently and formerly smoking, respectively. Similarly, in a study of 313 HIV/hepatitis C coinfecting patients under care at a university-affiliated clinic in Alabama, the prevalence of substance use disorders was found to be higher among those who currently smoked cigarettes (44% versus 29% among those who did not currently smoke cigarettes), and those who currently smoked cigarettes were also more likely to report use of both alcohol and other substances (40% versus 21% among those who did not currently smoke cigarettes).¹³⁵ Further, those who used both alcohol and other substances had more than 3 times the odds of currently smoking cigarettes (OR = 3.06, $p = .011$) compared with not using any substances. As both smoking and alcohol use are associated with adverse health consequences among people with HIV,¹³⁶⁻¹³⁸ these levels of co-use are of particular concern.

Co-Use During Pregnancy

Abstinence from tobacco and alcohol during pregnancy is important for the health of the individual and developing fetus.^{47,139} A study of co-use in a 2015–2018 NSDUH sample of pregnant girls and women ages 12–44 found that 9.8% reported drinking in the past 30 days, and 2.7% of participants reported past-30 day drinking and tobacco use.¹⁴⁰ More than one-third of participants (38.2%) who reported past-30-day drinking also reported use of another substance, with tobacco being the most commonly reported substance (28.1%). A study of 1,814 South Dakota American Indian and White mothers in 2014 did not report co-use prevalence but provided details of disparities in tobacco and alcohol use.¹⁴¹ The study found that smoking during pregnancy was reported by 10.4% of White mothers and 27.1% of American Indian mothers, and alcohol use during pregnancy was 9.5% for White mothers and 4.6% for American Indian mothers, though no differences by racial group in the odds of smoking during pregnancy were observed after adjusting for other demographic factors. In a study of 4,828 pregnant women in 3 largely rural states (Montana, South Dakota, North Dakota), current and past use of tobacco was significantly associated with alcohol use during pregnancy.¹⁴² A study of adolescent girls

and women (ages 12–44 years) in the 2005–2014 NSDUH estimated that 11.5% of pregnant adolescents and 8.7% of pregnant adults reported past-30-day alcohol use, and 23.0% of pregnant adolescents and 14.9% of pregnant adults reported past-30-day tobacco use.¹⁴³ Among those who used alcohol, more than one-half (55.8%) of pregnant adolescents and more than one-quarter (27.5%) of pregnant adults reported also using tobacco. Among those who used tobacco, 27.9% of pregnant adolescents and 16.0% of pregnant adults reported also using alcohol. It is worth noting that self-report measures may underestimate the prevalence of use and co-use of tobacco and alcohol during pregnancy; participants might fear negative consequences for reporting use because of social stigma associated with substance use during pregnancy.¹⁴⁴

Summary: Co-Use Among People with Comorbidities

Smoking is associated with alcohol use and hazardous drinking among people with comorbidities, including cancer survivors, chronic health conditions, mental health conditions, HIV, and pregnancy. In the 2015–2019 NSDUH, nondaily smoking was particularly associated with alcohol use exceeding guidelines among people with comorbidities, compared to never smoking. Past-30-day binge drinking (without risky weekly use) was reported by around 1 in 5 people who smoked nondaily and had a diagnosis of cancer, hypertension, heart disease, and diabetes. Past-30-day risky weekly alcohol use was reported by around 13% of people with diabetes or a cancer diagnosis and almost 20% of people with hypertension or a heart condition. When considering mental distress, prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) among people who reported past-30-day cigarette smoking was similar across mental distress categories.

Co-Use Among Other Populations: Unhoused or Criminal Justice-Involved Individuals and People with Disabilities

Unhoused individuals have very high prevalence of tobacco and alcohol use as well as co-use of both substances.^{145–149} In a 2004–2009 study of 754 chronically unhoused people from 11 sites, 80% reported smoking; 56% of those who smoked regularly also reported alcohol abuse or dependence (DSM-IV criteria), significantly more than the 40% of those who did not smoke.¹⁴⁸ Quitting or limiting smoking (self-reported as trying to reduce or use fewer than a certain number of cigarettes per day or week) at 12-month follow-up was associated with reduced alcohol use. Cross-sectional surveys of people experiencing homelessness in Minnesota in 2015 and 2018 found that prevalence of e-cigarette use was 11.6% in 2015 and 14.6% in 2018, and 46.9% of those who used e-cigarettes also used alcohol in 2018.¹⁴⁶ In a 2015 study of 780 female patients at Health Care Clinics for the Homeless in 9 states, current smoking was reported by 54.5% of the sample while 21% reported past year risky drinking.¹⁴⁹ Further, 17.4% reported problem-drinking, 5.5% reported DSM-IV alcohol abuse, and 11.8% reported DSM-IV alcohol dependence. In logistic regression models, cigarette smoking significantly predicted having an AUD (aOR = 1.72, 95% CI = 1.10–2.70).

Only one study was identified for co-use of tobacco and alcohol among individuals with criminal justice system involvement in the past year.¹⁵⁰ Using NSDUH data from 2008 to 2016, this study found prevalence of past-month tobacco use between 60% and 65% among individuals with a history of criminal justice involvement for each year of the study. Among those with past-month cigarette smoking, 23.7% had an AUD.

Similarly, only one study was identified for people with intellectual disabilities.¹⁵¹ This study included 122 individuals with mild to moderate intellectual disabilities and showed that people with intellectual disabilities who met criteria for misusing alcohol were more likely to smoke cigarettes than people who drank but did not misuse alcohol or who drank no alcohol use at all. No studies were identified of co-use among individuals with other types of disabilities. Additional research about co-use among unhoused individuals, individuals with criminal justice system involvement, and people with disabilities will help to better inform public health efforts to address tobacco- and alcohol-associated health disparities.

Chapter Summary

As summarized in chapter 2, survey data on tobacco and alcohol use in the United States show that individuals commonly engage in both behaviors, with co-use of both tobacco and alcohol reported by 15.6% of adults in the past year, and co-use of both cigarettes and alcohol reported by 11.8% of adults in the past 30 days. Smoking and drinking are strongly related behaviors and co-occur frequently, particularly among those drinking the heaviest and those with alcohol use disorders. This association between use of tobacco and alcohol is present in all or most demographic subgroups, reflecting genetic factors (see chapters 5 and 6), environmental factors (see chapter 9), and cultural factors. Although the prevalence of alcohol use by people who report tobacco use varies, approximately 50% or more of people in various subpopulations who report tobacco use also report risky patterns of alcohol use, and hazardous alcohol use is particularly common among people who smoke cigarettes nondaily.

This chapter presents tobacco and alcohol co-use prevalence estimates for different demographic groups, focusing on race and/or ethnicity; educational attainment; income; geographic location; sexual minority status; veteran status; and presence of comorbidities, including cancer, chronic health conditions, and mental health conditions. These estimates are obtained from bivariate analyses between a demographic variable and tobacco or alcohol use and co-use. Thus, some of the observed patterns might reflect covariation between multiple population characteristics. For example, urban-rural differences could be related to differences in age distribution or race and/or ethnic composition in urban and rural areas. Surveillance of tobacco and alcohol use among specific subgroups is important for considering population-level public health priorities, but it is also important to remain aware that there is substantial within-group heterogeneity in tobacco and alcohol use and co-use. Regardless of this heterogeneity, tobacco and alcohol co-use are a significant public health problem and greater efforts to address them concurrently are needed.

Much of the literature investigating tobacco and alcohol co-use among the different racial and/or ethnic groups that comprise the U.S. population has focused on non-Hispanic Black, Hispanic, and non-Hispanic White people. New analyses presented here of the National Alcohol Surveys and National Survey on Drug Use and Health show that hazardous alcohol use among those who use tobacco is common across racial and/or ethnic groups. Among National Alcohol Survey participants who used tobacco in the past year, more than 55% of Hispanic, Black, and White

individuals ages 18–29 and more than 35% of those ages 30–59 reported past-year alcohol use exceeding guidelines. Among National Survey on Drug Use and Health participants, around one-half of Hispanic, Black, and White individuals who reported past-30-day nondaily cigarette smoking also reported past-30-day alcohol use exceeding guidelines (binge drinking and risky weekly use).

Lower income and lower educational attainment are strongly associated with a higher prevalence of cigarette smoking compared to higher income and education. The relationship between socioeconomic status and alcohol use patterns is more complex. Higher alcohol use is observed among those with more education or higher income, but detrimental patterns of use, such as more heavy episodic drinking, are observed among those with lower income or levels of education. In the National Alcohol Survey analysis, the prevalence of past-year alcohol use exceeding guidelines is most common among those who used tobacco in the past year and had a college degree or who have some college education. This is particularly true for those younger than age 30; for example, 72.5% (95% CI, 61.5%–81.4%) of those ages 18–29 who had some college education and used tobacco in the past year reported alcohol use exceeding guidelines. In the NSDUH analysis, more than one-half of people who smoked nondaily and had some college education or a college degree reported alcohol use exceeding guidelines (binge drinking and risky weekly use).

The existing literature indicates that prevalence of tobacco and alcohol use and types of products used can vary based on geographic areas. Compared to urban areas, studies have found that people in rural areas have higher prevalence of tobacco use and lifetime abstinence from alcohol, but higher likelihood of alcohol use exceeding guidelines among people who drink. Prevalence of past-30-day alcohol use exceeding guidelines in the National Survey on Drug Use and Health was slightly higher among those in metropolitan counties (compared to nonmetropolitan counties) who smoked cigarettes or used smokeless tobacco in the past month. For example, among people who smoked cigarettes nondaily in the past 30 days, 32.9% (95% CI, 31.9%–33.9%) of those in metropolitan counties and 27.9% (95% CI, 25.8%–30.2%) of those in nonmetropolitan counties reported binge drinking (without risky weekly use).

Sexual minority populations report higher prevalence of tobacco use and alcohol use compared to heterosexual individuals. In the National Survey on Drug Use and Health, around one-third of sexual minority individuals reported past-30-day alcohol use exceeding guidelines (binge drinking and risky weekly use) compared to around one-quarter among the overall National Survey on Drug Use and Health sample. Hazardous alcohol use was highest among sexual minority individuals who smoked <300 cigarettes per month, where 33.6% (95% CI, 30.9%–36.5%) of those in this group who smoked nondaily in the past 30 days and 27.5% (95% CI, 23.3%–32.0%) of those who smoked daily also reported binge drinking (without risky weekly use).

Few studies have examined tobacco and alcohol co-use among veterans. The results of the National Survey on Drug Use and Health analysis indicate that, similar to the overall population, cigarette smoking is associated with higher prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use). For example, veterans with nondaily <300 cigarettes/

month smoking, daily <300 cigarettes/month smoking, and ≥ 300 cigarettes/month smoking had higher prevalence of risky weekly alcohol use (18.7% [95% CI, 15.3%–22.8%], 11.2% [95% CI, 7.4%–16.8%], and 18.5% [95% CI, 16.1%–21.1%], respectively) than those who reported never smoking (4.8%, 95% CI = 3.8%–6.0%). Further, a smaller proportion of veterans reported never using alcohol than the overall National Survey on Drug Use and Health sample.

As with the general population, studies show associations between the use of tobacco and alcohol among cancer survivors. Results of the National Survey on Drug Use and Health analysis indicate that people with a cancer diagnosis have a lower prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) and a higher prevalence of former alcohol use than the overall National Survey on Drug Use and Health sample. However, in the literature, prevalence of any use of alcohol is known to be similar or only slightly lower in cancer survivors than the U.S. population. Cigarette smoking is associated with alcohol use exceeding guidelines among cancer survivors; among cancer survivors who smoked nondaily in the past month, for example, 20.1% (95% CI, 14.6%–27.0%) reported binge drinking (without risky weekly use) compared to 6.6% (95% CI, 5.5%–8.0%) of those who never smoked. National Survey on Drug Use and Health participants with a history of hypertension, heart disease, or diabetes similarly had a higher prevalence of binge drinking among those who smoked nondaily.

People with mental health conditions have also been found to co-use tobacco and alcohol (particularly alcohol use exceeding guidelines) at a higher prevalence than the general population. Among National Survey on Drug Use and Health participants, around 37% to 56% of people with mental distress who smoke also reported alcohol use exceeding guidelines (binge drinking and risky weekly use), similar to people who smoke in the overall National Survey on Drug Use and Health sample. Prevalence of alcohol use exceeding guidelines was generally similar across mental distress categories among people who reported past-30-day cigarette smoking.

Research Needs

More research is needed to characterize co-use of tobacco and alcohol among specific subgroups. Groups where very few studies were found on co-use include immigrant populations, people involved in the criminal justice system, and people with intellectual and physical disabilities. In 2023, people with disabilities were formally designated by the National Institute on Minority Health and Health Disparities as a population experiencing health disparities, underscoring the need for more research.¹⁵² People with disabilities experience discrimination, stigma, and physical and mental health co-morbidities at rates higher than the general population^{153,154} and may therefore be especially vulnerable to the negative effects of tobacco and alcohol co-use.

Disaggregated data are further needed to provide a more nuanced understanding of heterogeneity in co-use patterns within demographic groups, including Asian American and other heterogeneous demographic groups. As noted in the 2024 Surgeon General’s report:

Aggregation of data on tobacco product use, disease incidence, and mortality, may mask disparities within population groups, such as within Asian American and Native Hawaiian and Other Pacific Islander groups. Disaggregation of data reporting and oversampling among disparate populations will foster greater understanding of tobacco-related health disparities.^{4,p.13}

A further challenge for research on co-use involves temporal and survey specific differences in measures of sociodemographic and other characteristics, limiting comparability across studies. Definitions and use of racial and/or ethnic groups change over time, complicating comparisons to previous research. For example, in 2024, the Office of Management and Budget revised its standards for collecting race and/or ethnicity data, adding “Middle Eastern and North African” as a category¹⁵⁵; this category was not a response option in the National Survey on Drug Use and Health surveys used for analyses in this chapter. Such changes are naturally necessary as the population characteristics of the United States change and as attention turns to health needs of understudied populations.

A more detailed understanding of co-use patterns among subpopulations is needed. There is a crucial need for basic epidemiological studies of the co-use of tobacco and alcohol in the subgroups discussed in this chapter. Measures should capture current and lifetime use patterns, simultaneous co-use patterns, and product and context details; this will provide a broad and in-depth understanding of co-use patterns in these important populations and changes over time. It is of particular importance to understanding co-use trends over time among specific subgroups that account for an increasing share of the U.S. population, such as Hispanic individuals, individuals with disabilities or mental health conditions, and sexual minority populations. Further stratified or model-based estimates of co-use of tobacco and alcohol would be useful for several demographic groups. For example, cross-tabulation of data by income or education and rurality could help further understand the distribution of risk. Also, studies are needed to analyze tobacco and alcohol use among individuals that belong to multiple subgroups that experience tobacco- and/or alcohol-related health disparities, as risks of co-use and risks of cancer and other negative health outcomes may be compounded by membership in more than one of these defined groups. There is also a critical need for more research on tobacco and alcohol co-use by geographic location to inform prevention and policy efforts, particularly to address harms from alcohol.

Model-based analysis of co-use accounting for multiple covariates is needed to better understand drivers of patterns of co-use. This chapter (and chapter 2) presents bivariate associations between multiple demographic characteristics and patterns of tobacco and alcohol co-use. Demographic and socioeconomic characteristics are correlated, and model-based analysis is needed to better understand how such are jointly associated with patterns of behavior. Such estimates could inform design of interventions, public health needs, and evaluation efforts.

Further research among cancer survivors is warranted. Among cancer survivors, the prevalence of tobacco and alcohol co-use is generally lower than the use of each substance individually. However, co-use is not uncommon and deserves more attention, considering the potential for synergistic effects on cancer outcomes.¹⁵⁶⁻¹⁵⁸ Further, the co-use of tobacco and alcohol appears to vary by cancer type and to decline post-diagnosis. This is likely due in part to whether tobacco and alcohol are known or suspected risk factors for a particular cancer, which has implications for potential differential effects of co-use by cancer type and for recommendations to limit or abstain from both substances after a cancer diagnosis.⁹⁸ Although the prevalence of tobacco and alcohol co-use per se is not always reported and differences in use measures make comparisons across studies difficult, there is clearly a positive association between using tobacco and alcohol in this population. Explicitly measuring, analyzing, and reporting co-use will allow for a better understanding of the demographics of who is engaging in co-use and refine investigations of the effect of tobacco and alcohol use on cancer-related outcomes.

Conclusions

1. **Tobacco use is positively associated with alcohol use.** Analyses of various population subgroups in the National Survey on Drug Use and Health found a statistically significant bivariate association between tobacco use and alcohol use across all subgroups, including all racial and/or ethnic groups examined.
2. **Hazardous alcohol use patterns (alcohol use exceeding guidelines, binge drinking, or risky weekly alcohol use) were most prevalent among people who used tobacco nondaily.** This association was consistent across multiple demographic groups. For example, among National Survey on Drug Use and Health participants, around one-half of Hispanic, Black, and White individuals who reported past-30-day nondaily cigarette smoking also reported past-30-day alcohol use exceeding guidelines (binge drinking and risky weekly use). Furthermore, number of drinks consumed in the past year is generally higher or much higher for people who use tobacco nondaily or daily than those who never or formerly used tobacco, particularly among Hispanic adults ages 30–59, Black adults ages 18–59, and White adults of all ages.
3. **Prevalence of tobacco use is higher in people with lower income and educational attainment, but co-use of tobacco and alcohol is more likely among people with higher incomes and educational attainment than people with lower incomes and educational attainment.** For example, alcohol use is more common among people who use tobacco and have some college education, a college degree, or income of \$50,000 or higher compared to people with lower educational attainment or lower income. Further, among people who use tobacco and have some college education or a college degree, alcohol use exceeding 2020–2025 U.S. Dietary Guidelines is reported by more than two-thirds of people ages 18–29. These countervailing trends can influence estimated prevalence of co-use depending on the distribution of income or education in a demographic or geographic group.

4. **There is geographic variation in the United States in prevalence of tobacco and alcohol use and co-use.** Compared to people in urban areas, the literature shows that people in rural areas have higher tobacco use prevalence, higher lifetime abstinence from alcohol, and higher likelihood of alcohol use exceeding guidelines among people who drink. Analysis of 2015–2019 National Survey on Drug Use and Health data finds that among people who reported current use of cigarettes or used smokeless tobacco, alcohol use exceeding guidelines (binge drinking and risky weekly use) is slightly higher among people in metropolitan counties compared to people in nonmetropolitan counties.
5. **Tobacco and alcohol co-use prevalence is higher in some sexual minority subgroups compared with the general population.** However, survey data do not always sample these populations in sufficient detail to distinguish among subsets of these demographic groups.
6. **Veterans have a higher prevalence of both tobacco use and alcohol use disorder compared to the civilian population.** Analysis of 2015–2019 National Survey on Drug Use and Health data finds that, among veterans, cigarette smoking is associated with a higher prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) compared with not smoking. Similar to the general population, the prevalence of alcohol use is particularly high among veterans who smoked nondaily.
7. **Cancer survivors who reported past-month smoking were more likely to use alcohol compared with those who did not report past-month smoking.** Overall, the prevalence of any alcohol use among cancer survivors is similar to or only a little lower than that of the general population; current alcohol use and alcohol use exceeding guidelines are common among cancer survivors. Additionally, cigarette smoking is associated with alcohol use exceeding guidelines (binge drinking and risky weekly use) among cancer survivors. Younger cancer survivors and men are more likely to engage in heavy drinking and binge drinking than other cancer survivors.
8. **People with mental health conditions have a higher prevalence of tobacco and alcohol use than the general population.** Mental distress, tobacco use, and alcohol use are interconnected. At all levels of mental distress, people who smoked cigarettes were more likely to engage in hazardous drinking behaviors than people who did not smoke. Among National Survey on Drug Use and Health participants who reported past-30-day cigarette smoking, the prevalence of alcohol use exceeding guidelines (binge drinking and risky weekly use) was similar across mental distress categories (around 37%–56%).

Appendix 3A Literature Search Strategy

The following search terms were used in PubMed, Google Scholar, Ovid, and Scopus between June 2023 and September 2024 to identify literature regarding co-use of tobacco and alcohol among specific subpopulations.

Co-use search terms:

- Alcohol, drinking, beer, wine, spirits, drinker, drinking patterns
- Tobacco, cigarette, smoking, smoker, co-use, simultaneous use, co-use, co-user, tobacco product, e-cigarette, vaping, polysubstance use

Subpopulation search terms:

- Race, ethnicity, Black, African American, Hispanic, Latino, Latina, Latinx, Asian, Indigenous, American Indian, Native American, Alaska Native, Pacific Islander
- Age, young, adolescent, youth, young adult, adult, middle age, older
- Gender, sex, men, women, male, female
- Sexual minority, LGBTQ+, gay, lesbian, bisexual, queer
- Income, poverty, socioeconomic status
- Education, high school, some college, college graduate, college
- Unhoused, homeless
- Regional, urban, state, area, rural, spatial, geospatial, location
- Pregnant, pregnancy, birthing
- Cohort, trends, trends over time, prospective, mortality, morbidity
- Cancer, cancer survivors, malignancies, cancer patients, hypertension, diabetes, heart disease, heart problems
- Mental health symptoms, mental health problems, mental health disorders, depression, depressive symptoms, anxiety, anxious symptoms, negative affect, negative mood
- HIV, people with HIV
- Disability, disabilities

Additional studies published after 2024 were incorporated into the chapter based on their relevance.

Appendix 3B National Alcohol Surveys and National Survey on Drug Use and Health Tables

Table 3B.1 Past-Year Alcohol Use by Tobacco Use Status in the 2014–2015 and 2019–2020 National Alcohol Surveys (N = 14,125), by Race and/or Ethnicity, Stratified by Age (Row Percents)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	No past-year alcohol use ^b	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value ^c	No past- year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value	No past- year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value
	Alcohol use: Weighted % (95% CI)											
Hispanic, Latino/a, or of Spanish origin												
Overall (2,656)	33.7 (28.6, 39.2)	28.2 (28.2, 33.6)	38.1 (32.7, 43.7)	<.001	33.1 (29.5, 37.0)	39.9 (36.2, 43.8)	27.0 (23.6, 30.6)	<.001	45.4 (38.3, 52.8)	38.0 (31.2, 45.2)	16.6 (12.2, 22.1)	<.001
Never (1,961)	41.0 (34.9, 47.4)	28.3 (22.9, 34.4)	30.7 (25.3, 36.7)		37.5 (33.0, 42.1)	42.4 (37.9, 47.0)	20.1 (16.6, 24.2)		56.2 (46.9, 65.1)	30.6 (23.0, 39.4)	13.2 (8.2, 20.6)	
Former (318)	*	50.6 (28.1, 73.0)	28.2 (12.2, 52.6)		24.4 (15.7, 36.0)	39.0 (28.7, 50.5)	36.5 (26.3, 48.1)		19.9 (11.4, 32.3)	58.9 (44.8, 71.7)	21.2 (12.5, 33.6)	
Current (past-year) (377)	6.8 (3.5, 13.1)	24.0 (13.1, 39.7)	69.2 (53.9, 81.2)		24.4 (16.7, 34.2)	27.7 (20.9, 35.7)	48.0 (38.9, 57.2)		48.3 (30.7, 66.4)	28.5 (15.6, 46.3)	23.2 (12.3, 39.4)	
Nondaily (132)	*	28.0 (12.8, 50.6)	61.6 (40.1, 79.3)		*	21.0 (12.2, 33.7)	66.7 (51.2, 79.3)		*	*	*	
Daily (245)	*	*	77.1 (54.1, 90.6)		28.7 (19.1, 40.8)	30.1 (21.6, 40.1)	41.2 (30.7, 52.6)		47.8 (28.8, 67.4)	28.1 (14.3, 47.9)	24.1 (12.2, 42.0)	
Black or African American												
Overall (2,937)	32.9 (27.0, 39.4)	31.2 (25.8, 37.2)	35.9 (29.9, 42.4)	.001	35.0 (31.3, 38.9)	43.0 (39.1, 47.0)	22.0 (18.8, 25.6)	<.001	55.9 (49.9, 61.6)	34.2 (28.8, 39.9)	10.0 (7.0, 14.1)	<.001
Never (1,946)	37.2 (30.4, 44.5)	30.6 (24.8, 37.2)	32.2 (26.0, 39.1)		38.6 (34.1, 43.3)	44.8 (40.1, 49.5)	16.7 (13.1, 20.9)		62.1 (54.4, 69.3)	33.4 (26.5, 41.1)	4.5 (2.8, 7.0)	
Former (415)	*	*	*		29.3 (19.7, 41.2)	48.4 (36.1, 61.0)	22.3 (12.5, 36.6)		60.8 (49.8, 70.8)	32.0 (22.7, 42.9)	7.2 (3.6, 13.8)	
Current (past-year) (576)	17.5 (8.5, 32.6)	25.0 (14.2, 40.0)	57.6 (41.1, 72.5)		27.6 (20.0, 36.8)	36.9 (28.8, 45.9)	35.5 (27.9, 43.8)		30.4 (18.6, 45.6)	40.2 (26.8, 55.2)	29.4 (17.5, 45.0)	
Nondaily (134)	*	*	60.8 (33.8, 82.5)		7.8 (3.6, 16.1)	43.4 (28.5, 59.6)	48.8 (33.1, 64.7)		*	47.6 (25.3, 71.0)	*	
Daily (442)	*	29.1 (14.9, 48.9)	56.0 (35.8, 74.4)		32.5 (23.3, 43.2)	35.3 (26.1, 45.8)	32.2 (24.1, 41.6)		31.1 (18.1, 48.1)	39.2 (24.6, 56.0)	29.7 (16.6, 47.2)	

Table 3B.1 (continued)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	No past-year alcohol use ^b	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value ^c	No past-year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value	No past-year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value
	Alcohol use: Weighted % (95% CI)											
White												
Overall (6,971)	22.2 (18.9, 26.0)	25.1 (21.5, 29.2)	52.7 (48.2, 57.0)		23.8 (21.9, 25.8)	39.2 (37.0, 41.4)	37.0 (34.8, 39.3)		36.9 (34.5, 39.3)	48.8 (46.4, 51.3)	14.3 (12.6, 16.1)	
Never (4,100)	26.0 (21.7, 30.9)	24.9 (20.6, 29.7)	49.1 (43.8, 54.4)	.08	25.8 (23.3, 28.5)	42.0 (39.2, 44.9)	32.2 (29.4, 35.1)	<.001	43.3 (39.9, 46.8)	47.0 (43.6, 50.4)	9.7 (7.9, 11.8)	<.001
Former (1,614)	*	26.2 (13.4, 45.0)	57.2 (38.9, 73.8)		20.2 (16.4, 24.8)	43.4 (38.1, 48.8)	36.4 (31.4, 41.7)		29.2 (25.8, 32.9)	53.2 (49.1, 57.3)	17.6 (14.6, 21.1)	
Current (past-year) 1,257)	14.6 (9.3, 22.1)	25.3 (18.2, 34.2)	60.1 (50.8, 68.7)		21.9 (18.3, 25.9)	29.3 (25.0, 34.0)	48.8 (43.9, 53.7)		33.4 (27.2, 40.3)	45.0 (38.1, 52.1)	21.6 (16.5, 27.8)	
Nondaily (273)	*	16.6 (8.2, 30.5)	78.5 (64.3, 88.1)		16.3 (9.8, 25.8)	27.5 (18.8, 38.3)	56.2 (45.0, 66.9)		21.7 (11.1, 38.1)	60.0 (43.3, 74.8)	18.2 (9.4, 32.4)	
Daily (984)	18.4 (11.4, 28.4)	28.9 (19.8, 40.0)	52.7 (41.7, 63.4)		23.0 (19.0, 27.6)	29.7 (24.9, 35.0)	47.3 (41.9, 52.8)		35.4 (28.5, 43.0)	42.4 (35.0, 50.1)	22.2 (16.5, 29.2)	

Note. CI = confidence interval. Black and White participants are non-Hispanic. Data are visualized in Figure 3.1.

^aTobacco use is defined as use of tobacco products other than e-cigarettes (due to survey question wording). *Current tobacco use* is defined as use in the past year. *Former tobacco use* is defined as use within lifetime but not in the past year. *Never tobacco use* is defined as never use in lifetime. ^bAlcohol use is measured in the past year. *Alcohol use exceeding guidelines* is defined as exceeding 7/14 drinks per week or drinking at least 4/5 drinks per day for women/men, per the *Dietary Guidelines for Americans, 2020–2025*²² and NIAAA's definition of heavy alcohol use.²³ ^c*p* value for bivariate association, obtained through a chi-squared test, between tobacco use categories (never, former, and current [past-year]) and alcohol use categories within each age and race and/or ethnicity group.

*Cells with *n* < 10 are suppressed.

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

Table 3B.2 Past-Year Hazardous Alcohol Use by Tobacco Use Status in the 2014–2015 and 2019–2020 National Alcohol Surveys (N = 14,125), by Race and/or Ethnicity, Stratified by Age (Row Percents)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29						Ages 30–59						Ages 60 and older					
	5+ drinking ^b			HID ^c			5+ drinking			HID			5+ drinking			HID		
	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value ^d	No past-year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value
	Alcohol use: Weighted % (95% CI)																	
Hispanic, Latino/a, or of Spanish origin																		
Overall (2,734)	70.3 (64.9, 75.1)	29.7 (24.9, 35.1)		89.2 (85.2, 92.3)	10.8 (7.7, 14.8)		79.0 (75.6, 82.1)	21.0 (17.9, 24.4)		95.2 (93.6, 96.4)	4.8 (3.6, 6.4)		91.7 (87.5, 94.6)	8.3 (5.4, 12.5)		98.6 (96.7, 99.4)	*	
Never (2,020)	77.2 (71.7, 81.9)	22.8 (18.1, 28.3)	<.001	92.9 (88.8, 95.6)	7.1 (4.4, 11.2)	<.001	84.5 (80.7, 87.8)	15.5 (12.2, 19.3)	<.001	97.2 (95.6, 98.2)	2.8 (1.8, 4.4)	<.001	92.9 (86.4, 96.4)	7.1 (3.6, 13.6)		99.6 (98.9, 99.9)	*	.02
Former (329)	78.1 (53.0, 91.9)	*		92.3 (77.1, 97.7)	*		74.5 (62.9, 83.5)	25.5 (16.5, 37.1)		96.5 (93.1, 98.3)	3.5 (1.7, 6.9)		90.9 (83.2, 95.2)	9.1 (4.8, 16.8)		98.5 (90.3, 99.8)	*	
Current (past-year) (385)	39.2 (25.6, 54.6)	60.8 (45.4, 74.4)		70.3 (54.3, 82.5)	29.7 (17.5, 45.7)		57.8 (48.4, 66.6)	42.2 (33.4, 51.6)		85.2 (78.1, 90.3)	14.8 (9.7, 21.9)		87.9 (73.8, 94.9)	12.1 (5.1, 26.2)		94.4 (82.4, 98.4)	*	
Nondaily (135)	41.0 (22.8, 61.9)	59.0 (38.1, 77.2)		89.0 (76.1, 95.4)	*		42.7 (28.5, 58.3)	57.3 (41.7, 71.5)		80.7 (64.4, 90.6)	19.3 (9.4, 35.6)		100.0	*		100.0	*	
Daily (250)	37.3 (19.1, 60.0)	62.7 (40.0, 80.9)		50.7 (29.1, 72.0)	49.3 (28.0, 70.9)		63.3 (51.9, 73.4)	36.7 (26.6, 48.1)		86.9 (78.6, 92.2)	13.1 (7.8, 21.4)		86.3 (70.7, 94.3)	13.7 (5.7, 29.3)		93.7 (80.3, 98.2)	*	
Black or African American																		
Overall (3,041)	72.2 (65.9, 77.7)	27.8 (22.3, 34.1)		90.8 (85.8, 94.1)	9.2 (5.9, 14.2)		84.8 (81.5, 87.6)	15.2 (12.4, 18.5)		96.3 (94.5, 97.5)	3.7 (2.5, 5.5)		95.8 (92.8, 97.6)	4.2 (2.4, 7.2)		99.6 (99.2, 99.9)	0.4 (0.2, 0.8)	
Never (2,014)	74.9 (68.4, 80.5)	25.1 (19.5, 31.6)	.004	93.7 (89.9, 96.2)	6.3 (3.8, 10.1)	<.001	88.5 (84.7, 91.5)	11.5 (8.5, 15.3)	.005	97.0 (94.6, 98.4)	3.0 (1.6, 5.4)	.27	98.8 (97.5, 99.5)	1.2 (0.5, 2.5)	<.001	99.5 (98.6, 99.8)	*	.68
Former (434)	97.6 (82.6, 99.7)	*		97.6 (82.6, 99.7)	*		82.9 (67.8, 91.8)	17.1 (8.2, 32.2)		96.5 (88.4, 99.0)	*		97.9 (94.1, 99.2)	*		99.8 (99.0, 100.0)	*	
Current (past-year) (593)	53.4 (36.5, 69.5)	46.6 (30.5, 63.5)		75.2 (54.8, 88.4)	24.8 (11.6, 45.2)		76.1 (68.5, 82.3)	23.9 (17.7, 31.5)		94.4 (90.5, 96.7)	5.6 (3.3, 9.5)		84.0 (70.2, 92.1)	16.0 (7.9, 29.8)		99.7 (97.7, 100.0)	*	
Nondaily (138)	54.7 (27.3, 79.6)	45.3 (20.4, 72.7)		71.5 (35.4, 92.0)	*		66.4 (50.3, 79.5)	33.6 (20.5, 49.7)		88.6 (75.2, 95.2)	*		89.2 (66.6, 97.2)	*		100.0	*	
Daily (455)	52.7 (32.3, 72.3)	47.3 (27.7, 67.7)		77.0 (51.4, 91.4)	*		78.5 (69.8, 85.2)	21.5 (14.8, 30.2)		95.8 (91.9, 97.9)	4.2 (2.1, 8.1)		83.3 (67.6, 92.2)	16.7 (7.8, 32.4)		99.6 (97.4, 100.0)	*	

Table 3B.2 (continued)

Tobacco use status ^a (unweighted n)	Ages 18–29						Ages 30–59						Ages 60 and older					
	5+ drinking ^b			HID ^c			5+ drinking			HID			5+ drinking			HID		
	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value ^d	No past- year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past- year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value
	Alcohol use: Weighted % (95% CI)																	
White																		
Overall (7,088)	56.8 (52.3, 61.1)	43.3 (38.9, 47.7)	.008	85.0 (81.6, 87.9)	15.0 (12.1, 18.4)	.005	72.2 (70.0, 74.3)	27.8 (25.8, 30.0)	<.001	92.5 (91.2, 93.7)	7.5 (6.3, 8.8)	<.001	92.5 (91.2, 93.6)	7.5 (6.4, 8.8)	<.001	98.7 (98.0, 99.1)	1.3 (1.0, 2.0)	.004
Never (4,170)	61.2 (55.9, 66.2)	38.8 (33.8, 44.1)		87.6 (83.8, 90.7)	12.4 (9.3, 16.2)		76.5 (73.8, 79.0)	23.5 (21.0, 26.2)		94.3 (92.6, 95.7)	5.7 (4.3, 7.4)		95.5 (94.0, 96.6)	4.6 (3.4, 6.0)		99.1 (98.3, 99.5)	0.9 (0.5, 1.7)	
Former (1,641)	57.7 (40.5, 73.2)	42.3 (26.9, 59.5)		91.9 (82.3, 96.5)	8.1 (3.5, 17.7)		74.1 (69.2, 78.4)	26.0 (21.6, 30.8)		95.1 (92.1, 97.0)	4.9 (3.0, 7.9)		91.5 (89.2, 93.3)	8.5 (6.7, 10.8)		99.0 (97.9, 99.5)	1.0 (0.5, 2.1)	
Current (past-year) (1,277)	45.9 (37.0, 55.1)	54.1 (44.9, 63.0)		77.5 (69.1, 84.2)	22.5 (15.8, 30.9)		60.7 (55.7, 65.4)	39.3 (34.6, 44.3)		86.5 (82.9, 89.5)	13.5 (10.5, 17.1)		85.4 (79.9, 89.6)	14.6 (10.4, 20.1)		96.5 (93.1, 98.3)	3.5 (1.7, 6.9)	
Nondaily (274)	28.1 (16.0, 44.5)	71.9 (55.5, 84.0)		76.4 (61.2, 87.0)	23.6 (13.1, 38.8)		56.8 (45.3, 67.6)	43.3 (32.4, 54.7)		87.9 (77.9, 93.8)	12.1 (6.2, 22.1)		89.2 (76.6, 95.4)	10.8 (4.6, 23.4)		98.6 (94.0, 99.7)	1.4 (0.3, 6.0)	
Daily (1,003)	53.0 (42.0, 63.6)	47.1 (36.4, 58.0)		78.0 (67.4, 85.8)	22.0 (14.2, 32.6)		61.4 (56.0, 66.6)	38.6 (33.4, 44.0)		86.2 (82.2, 89.5)	13.8 (10.5, 17.8)		84.8 (78.5, 89.4)	15.3 (10.6, 21.5)		96.2 (92.2, 98.2)	3.8 (1.8, 7.8)	

Note. CI = confidence interval; HID = high intensity drinking. Black and White participants are non-Hispanic.

^aTobacco use is defined as use of tobacco products other than e-cigarettes (due to survey question wording). *Current tobacco use* is defined as use in the past year. ^bAlcohol use is measured in the past year. 5+ drinks is defined as consuming five or more drinks in one day. ^cAlcohol use is measured within the past year. *HID* defined as drinking $\geq 8/12$ drinks in one day for women/men. ^dp value for bivariate association, obtained through a chi-squared test, between tobacco and alcohol use categories within each age and race and/or ethnicity group.

*Cells with $n < 10$ are suppressed.

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

Table 3B.3 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), by Race and/or Ethnicity (Row Percents)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
Hispanic						
Overall (36,035)	21.6 (20.9, 22.3)	32.6 (31.8, 33.4)	18.8 (18.2, 19.5)	21.2 (20.6, 21.9)	5.8 (5.4, 6.1)	<.001
Never (18,628)	36.8 (35.7, 37.9)	31.3 (30.3, 32.3)	15.8 (15.0, 16.7)	14.1 (13.3, 14.8)	2.1 (1.8, 2.4)	
Former (11,351)	5.1 (4.5, 5.9)	36.5 (35.1, 37.9)	25.5 (24.2, 26.8)	26.2 (25.0, 27.4)	6.7 (6.1, 7.4)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (3,814)	6.3 (5.2, 7.6)	24.0 (21.8, 26.2)	12.9 (11.3, 14.6)	40.9 (38.5, 43.3)	16.0 (14.4, 17.8)	
Current (past-30-day) daily smoking, <300 cigarettes/month (920)	9.3 (6.5, 13.1)	36.0 (31.4, 40.9)	17.0 (13.2, 21.7)	25.1 (21.3, 29.4)	12.6 (10.0, 15.7)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,322)	8.4 (5.8, 12.2)	34.3 (30.5, 38.3)	15.0 (12.3, 18.2)	24.5 (21.1, 28.1)	17.9 (15.0, 21.1)	
Black						
Overall (26,448)	22.5 (21.8, 23.3)	32.1 (31.2, 32.9)	21.1 (20.4, 21.8)	18.1 (17.4, 18.7)	6.3 (5.9, 6.7)	<.001
Never (14,510)	35.9 (34.7, 37.1)	29.8 (28.7, 31.0)	19.3 (18.4, 20.2)	12.6 (11.9, 13.4)	2.3 (2.0, 2.7)	
Former (6,234)	7.2 (6.4, 8.2)	39.5 (37.8, 41.3)	27.2 (25.6, 28.7)	19.4 (18.1, 20.8)	6.7 (5.9, 7.5)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (3,113)	9.8 (8.4, 11.3)	26.8 (24.7, 29.1)	16.0 (14.4, 17.7)	34.4 (32.1, 36.7)	13.1 (11.5, 14.9)	
Current (past-30-day) daily smoking, <300 cigarettes/month (1,104)	8.8 (6.7, 11.3)	28.2 (24.5, 32.1)	21.2 (18.0, 24.7)	26.3 (23.1, 29.9)	15.6 (12.9, 18.8)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,487)	8.6 (6.8, 10.8)	29.3 (26.1, 32.7)	17.4 (15.0, 20.2)	24.4 (21.8, 27.4)	20.2 (17.8, 22.9)	

Table 3B.3 (continued)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
White						
Overall (127,134)	9.1 (8.9, 9.3)	31.5 (31.1, 31.9)	31.7 (31.4, 32.1)	16.3 (16.1, 16.6)	11.4 (11.1, 11.6)	
Never (41,808)	21.4 (20.8, 21.9)	29.9 (29.2, 30.5)	32.5 (31.8, 33.2)	11.5 (11.1, 11.9)	4.8 (4.5, 5.1)	<.001
Former (54,507)	3.1 (2.9, 3.3)	31.2 (30.6, 31.7)	36.9 (36.3, 37.5)	16.8 (16.4, 17.3)	12.1 (11.7, 12.4)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (11,243)	5.1 (4.5, 5.7)	24.0 (22.8, 25.2)	18.3 (17.3, 19.4)	29.0 (27.9, 30.2)	23.7 (22.6, 24.8)	
Current (past-30-day) daily smoking, <300 cigarettes/month (3,223)	5.0 (4.0, 6.3)	37.2 (34.8, 39.6)	20.4 (18.4, 22.5)	21.8 (19.8, 23.8)	15.7 (14.1, 17.5)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (16,353)	4.4 (3.9, 4.9)	40.3 (39.2, 41.3)	18.5 (17.7, 19.4)	18.7 (17.9, 19.5)	18.1 (17.3, 18.9)	
American Indian, Alaska Native, Native Hawaiian, or Other Pacific Islander						
Overall (4,060)	22.6 (20.0, 25.5)	39.2 (36.5, 42.0)	15.1 (13.1, 17.3)	15.8 (14.1, 17.6)	7.3 (6.3, 8.6)	
Never (1,295)	45.2 (40.1, 50.4)	28.8 (24.6, 33.5)	14.1 (10.8, 18.3)	9.3 (7.3, 11.9)	2.5 (1.4, 4.3)	<.001
Former (1,305)	7.8 (4.9, 12.3)	48.7 (43.8, 53.7)	20.1 (16.5, 24.4)	16.7 (13.7, 20.1)	6.7 (5.0, 8.9)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (692)	11.4 (7.9, 16.2)	32.9 (26.9, 39.5)	10.9 (7.4, 15.7)	29.0 (23.9, 34.7)	15.8 (12.3, 20.1)	
Current (past-30-day) daily smoking, <300 cigarettes/month (239)	11.9 (4.5, 27.6)	45.4 (34.0, 57.3)	10.4 (5.3, 19.2)	17.7 (10.2, 29.0)	14.8 (7.5, 26.9)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (529)	8.6 (5.1, 14.3)	49.2 (42.2, 56.2)	9.5 (5.7, 15.4)	19.5 (14.8, 25.3)	13.2 (9.6, 17.8)	

Table 3B.3 (continued)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Asian						
Overall (10,095)	33.7 (32.2, 35.2)	26.3 (25.0, 27.6)	25.7 (24.4, 27.0)	11.2 (10.4, 12.1)	3.2 (2.7, 3.8)	<.001
Never (6,563)	46.9 (45.0, 48.8)	25.2 (23.6, 26.8)	20.7 (19.3, 22.3)	6.2 (5.5, 7.1)	1.0 (0.7, 1.3)	
Former (2,501)	7.0 (5.6, 8.7)	29.4 (26.7, 32.2)	39.4 (36.4, 42.5)	18.3 (16.3, 20.6)	5.9 (4.3, 7.9)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (625)	8.2 (5.8, 11.4)	20.4 (15.9, 25.8)	27.8 (22.9, 33.3)	31.5 (26.3, 37.1)	12.1 (9.0, 16.1)	
Current (past-30-day) daily smoking, <300 cigarettes/month (174)	10.2 (4.3, 22.3)	34.6 (23.5, 47.7)	20.9 (13.1, 31.8)	23.0 (15.6, 32.7)	11.2 (6.0, 20.1)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (232)	12.7 (7.3, 21.2)	31.9 (23.4, 41.7)	18.9 (12.4, 27.9)	24.0 (17.0, 32.6)	12.5 (8.2, 18.6)	
Multirace						
Overall (6,912)	11.2 (9.8, 12.8)	37.4 (35.3, 39.6)	25.0 (23.1, 26.9)	16.3 (14.9, 17.8)	10.1 (9.0, 11.4)	<.001
Never (2,419)	26.0 (22.6, 29.7)	33.2 (29.7, 36.8)	28.0 (24.6, 31.6)	9.6 (7.9, 11.6)	3.3 (2.5, 4.3)	
Former (2,353)	4.9 (3.2, 7.2)	42.4 (38.6, 46.2)	28.3 (25.2, 31.7)	16.4 (14.3, 18.9)	8.0 (6.5, 9.8)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (919)	6.0 (3.6, 9.7)	31.4 (26.0, 37.4)	15.4 (12.3, 19.1)	27.2 (22.5, 32.5)	20.0 (15.9, 24.8)	
Current (past-30-day) daily smoking, <300 cigarettes/month (304)	2.4 (1.2, 5.1)	34.1 (24.8, 44.8)	13.9 (9.3, 20.4)	26.3 (18.9, 35.4)	23.2 (14.7, 34.6)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (917)	3.7 (1.9, 7.0)	38.6 (33.1, 44.4)	19.8 (15.3, 25.3)	18.6 (14.7, 23.3)	19.3 (15.3, 23.9)	

Note. CI = confidence interval. Categories other than Hispanic are non-Hispanic. Multirace is defined as two or more races. American Indian, Alaska Native, Native Hawaiian, and Other Pacific Islander participants were combined due to small sample sizes and because they are indigenous populations in the United States that have similar drinking patterns. Data are visualized in Figure 3.2. ^aCurrent cigarette smoking is defined as use in the past 30 days. ^bAlcohol use is defined as use within the past year. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use. ^dBinge, no risky weekly use is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories within each race and/or ethnicity group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.4 Current (Past-30-Day) Alcohol Use by Smokeless Tobacco Use Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,931), by Race and/or Ethnicity (Row Percents)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
Hispanic						
Overall (36,074)	21.6 (20.9, 22.3)	32.6 (31.9, 33.4)	18.8 (18.1, 19.4)	21.2 (20.6, 21.9)	5.7 (5.4, 6.1)	<.001
Never (32,609)	23.4 (22.6, 24.1)	33.3 (32.5, 34.1)	18.5 (17.9, 19.2)	19.8 (19.2, 20.5)	5.0 (4.6, 5.3)	
Former (2,874)	3.1 (2.2, 4.5)	26.0 (23.5, 28.6)	22.7 (20.3, 25.2)	35.3 (32.7, 38.1)	12.9 (11.3, 14.7)	
Current (past-30-day) nondaily use (454)	7.7 (4.4, 13.2)	19.5 (14.0, 26.5)	12.1 (8.0, 17.9)	42.3 (35.1, 50.0)	18.3 (13.3, 24.7)	
Current (past-30-day) daily use (137)	*	30.4 (20.5, 42.7)	12.9 (6.9, 22.8)	28.2 (18.4, 40.7)	21.7 (13.1, 33.8)	
Black						
Overall (26,493)	22.5 (21.8, 23.3)	32.1 (31.3, 32.9)	21.0 (20.4, 21.7)	18.1 (17.4, 18.7)	6.3 (5.9, 6.7)	<.001
Never (24,574)	23.5 (22.7, 24.3)	32.1 (31.2, 32.9)	21.2 (20.5, 21.9)	17.4 (16.8, 18.1)	5.8 (5.4, 6.2)	
Former (1,566)	9.6 (7.6, 12.1)	33.0 (29.7, 36.5)	20.9 (18.4, 23.6)	24.7 (22.0, 27.6)	11.8 (9.9, 14.0)	
Current (past-30-day) nondaily use (270)	13.9 (8.9, 21.1)	29.9 (22.5, 38.6)	9.1 (5.8, 14.0)	35.9 (28.3, 44.2)	11.2 (7.2, 17.1)	
Current (past-30-day) daily use (83)	21.7 (11.0, 38.2)	31.4 (19.6, 46.2)	12.1 (5.0, 26.4)	17.4 (9.9, 28.8)	17.4 (9.9, 28.9)	
White						
Overall (127,265)	9.1 (8.9, 9.3)	31.5 (31.1, 31.9)	31.7 (31.3, 32.1)	16.3 (16.1, 16.6)	11.4 (11.1, 11.6)	<.001
Never (95,348)	11.0 (10.7, 11.3)	32.6 (32.2, 33.0)	33.1 (32.7, 33.5)	13.8 (13.5, 14.1)	9.5 (9.3, 9.8)	
Former (24,528)	1.8 (1.5, 2.0)	27.9 (27.1, 28.7)	28.6 (27.8, 29.5)	24.8 (24.0, 25.5)	17.0 (16.3, 17.6)	
Current (past-30-day) nondaily use (3,943)	5.2 (4.2, 6.6)	22.6 (20.7, 24.5)	18.3 (16.5, 20.2)	31.8 (29.9, 33.8)	22.1 (20.4, 23.9)	
Current (past-30-day) daily use (3,446)	3.2 (2.4, 4.2)	29.9 (27.8, 32.2)	19.9 (18.0, 21.9)	26.0 (24.1, 28.0)	21.0 (19.1, 23.1)	
American Indian, Alaska Native, Native Hawaiian, or Other Pacific Islander						
Overall (4,074)	22.6 (20.0, 25.5)	39.3 (36.5, 42.1)	15.0 (13.1, 17.3)	15.7 (14.1, 17.6)	7.3 (6.2, 8.6)	<.001
Never (2,877)	26.2 (23.1, 29.7)	38.2 (35.1, 41.5)	15.5 (13.2, 18.1)	14.4 (12.5, 16.5)	5.7 (4.6, 7.1)	

Table 3B.4 (continued)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Former (866)	8.1 (5.2, 12.4)	44.8 (38.9, 50.9)	13.9 (10.0, 19.1)	20.6 (16.9, 24.8)	12.6 (9.7, 16.1)	
Current (past-30-day) nondaily use (214)	13.3 (6.9, 24.3)	34.2 (23.3, 47.1)	14.2 (5.8, 30.8)	21.6 (13.9, 31.8)	16.7 (10.2, 26.2)	
Current (past-30-day) daily use (117)	12.4 (6.1, 23.5)	44.7 (29.6, 60.8)	*	21.8 (12.5, 35.2)	13.3 (5.9, 27.4)	
Asian						
Overall (10,100)	33.7 (32.2, 35.2)	26.3 (25.0, 27.6)	25.7 (24.3, 27.0)	11.2 (10.4, 12.1)	3.2 (2.7, 3.8)	<.001
Never (9,509)	35.1 (33.5, 36.6)	26.5 (25.2, 27.9)	25.4 (24.1, 26.8)	10.2 (9.4, 11.0)	2.8 (2.3, 3.5)	
Former (495)	4.7 (3.0, 7.5)	22.6 (17.1, 29.2)	30.6 (23.6, 38.7)	33.0 (26.6, 40.0)	9.1 (6.4, 13.0)	
Current (past-30-day) nondaily use (75)	29.5 (16.0, 47.8)	23.9 (11.0, 44.4)	21.7 (11.2, 37.8)	16.4 (8.4, 29.6)	8.5 (3.9, 17.7)	
Current (past-30-day) daily use (21)	*	*	*	*	*	
Multirace						
Overall (6,925)	11.3 (9.9, 12.9)	37.5 (35.3, 39.7)	24.9 (23.1, 26.9)	16.3 (14.9, 17.7)	10.1 (8.9, 11.3)	<.001
Never (5,414)	13.2 (11.5, 15.2)	38.6 (36.2, 41.1)	25.4 (23.3, 27.7)	15.1 (13.6, 16.7)	7.7 (6.6, 9.0)	
Former (1,173)	2.5 (1.1, 5.3)	33.3 (28.5, 38.5)	23.5 (19.7, 27.9)	22.4 (18.7, 26.5)	18.4 (14.9, 22.4)	
Current (past-30-day) nondaily use (211)	*	19.3 (12.6, 28.4)	20.9 (13.5, 31.0)	20.6 (14.1, 29.0)	26.2 (17.7, 37.1)	
Current (past-30-day) daily use (127)	*	45.4 (26.7, 65.5)	20.4 (11.3, 34.1)	10.8 (5.8, 19.1)	21.3 (10.1, 39.6)	

Note. CI = confidence interval. Categories other than Hispanic are non-Hispanic. Multirace is defined as two or more races. American Indian, Alaska Native, Native Hawaiian, and Other Pacific Islander participants were combined due to small sample sizes and because they are indigenous populations in the United States that have similar drinking patterns.

^aCurrent smokeless tobacco use is defined as use in the past 30 days. ^bAlcohol use is defined as use within the past year. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men. ^fp value for bivariate association, obtained through a chi-squared test, between smokeless tobacco and alcohol use categories within each race and/or ethnicity group.

*Cells with $n < 10$ are suppressed.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.5 Current (Past-30-Day) Alcohol Use by Cigar Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,958), by Race and/or Ethnicity (Row Percents)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
Hispanic						
Overall (36,089)	21.6 (21.0, 22.3)	32.6 (31.9, 33.4)	18.8 (18.2, 19.5)	21.2 (20.6, 21.9)	5.7 (5.4, 6.1)	<.001
Never (27,251)	27.4 (26.6, 28.2)	35.0 (34.1, 35.9)	16.6 (15.9, 17.3)	17.5 (16.8, 18.1)	3.6 (3.3, 3.9)	
Former (7,253)	2.9 (2.3, 3.7)	26.2 (24.7, 27.9)	27.4 (25.8, 29.0)	31.8 (30.2, 33.4)	11.7 (10.7, 12.8)	
Current (past-30-day) cigar smoking (1,585)	5.7 (4.0, 7.9)	19.4 (16.6, 22.6)	16.2 (13.5, 19.3)	41.5 (37.8, 45.2)	17.2 (14.7, 20.1)	
Black						
Overall (26,492)	22.5 (21.8, 23.3)	32.1 (31.3, 32.9)	21.0 (20.3, 21.7)	18.1 (17.5, 18.7)	6.3 (5.9, 6.7)	<.001
Never (19,507)	28.7 (27.8, 29.6)	33.6 (32.6, 34.6)	18.8 (18.1, 19.6)	14.8 (14.1, 15.5)	4.1 (3.8, 4.5)	
Former (4,346)	4.2 (3.5, 5.1)	30.7 (28.7, 32.7)	29.1 (27.3, 31.0)	24.8 (23.1, 26.6)	11.2 (10.0, 12.6)	
Current (past-30-day) cigar smoking (2,639)	4.7 (3.8, 5.8)	21.5 (19.3, 23.8)	24.5 (22.3, 26.7)	33.8 (31.4, 36.3)	15.6 (13.9, 17.6)	
White						
Overall (127,274)	9.1 (8.9, 9.3)	31.5 (31.1, 31.9)	31.7 (31.3, 32.1)	16.3 (16.1, 16.6)	11.4 (11.1, 11.6)	<.001
Never (73,986)	14.1 (13.8, 14.5)	35.4 (34.9, 35.9)	30.6 (30.2, 31.1)	12.1 (11.8, 12.4)	7.8 (7.5, 8.1)	
Former (46,022)	1.6 (1.5, 1.8)	26.7 (26.1, 27.3)	34.3 (33.7, 35.0)	21.5 (21.0, 22.0)	15.9 (15.5, 16.4)	
Current (past-30-day) cigar smoking (7,266)	2.1 (1.7, 2.7)	18.7 (17.4, 20.1)	25.3 (23.8, 26.9)	31.4 (29.9, 32.9)	22.5 (21.1, 23.9)	

Table 3B.5 (continued)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
American Indian, Alaska Native, Native Hawaiian, or Other Pacific Islander						
Overall (4,075)	22.6 (20.0, 25.5)	39.3 (36.5, 42.1)	15.0 (13.0, 17.3)	15.7 (14.1, 17.6)	7.3 (6.2, 8.6)	<.001
Never (2,869)	28.8 (25.6, 32.2)	40.7 (37.4, 44.1)	12.2 (10.1, 14.7)	13.4 (11.5, 15.4)	5.0 (3.9, 6.3)	
Former (977)	6.2 (2.8, 13.2)	37.3 (32.0, 43.0)	24.1 (19.3, 29.7)	20.3 (16.7, 24.5)	12.1 (9.3, 15.6)	
Current (past-30-day) cigar smoking (229)	9.4 (3.3, 23.7)	27.5 (19.7, 37.0)	14.0 (8.4, 22.7)	29.4 (21.0, 39.4)	19.7 (13.5, 27.9)	
Asian						
Overall (10,102)	33.7 (32.2, 35.2)	26.3 (25.0, 27.6)	25.7 (24.3, 27.0)	11.2 (10.4, 12.1)	3.2 (2.7, 3.8)	<.001
Never (8,389)	39.2 (37.6, 40.9)	27.2 (25.8, 28.7)	22.9 (21.6, 24.3)	8.8 (8.0, 9.7)	1.9 (1.4, 2.5)	
Former (1,515)	5.1 (3.6, 7.4)	22.4 (19.3, 25.7)	40.1 (36.3, 44.0)	22.9 (20.0, 26.0)	9.5 (7.8, 11.7)	
Current (past-30-day) cigar smoking (198)	4.9 (2.5, 9.2)	16.5 (8.5, 29.7)	36.9 (26.3, 49.0)	28.7 (20.5, 38.7)	13.0 (8.2, 19.9)	
Multirace						
Overall (6,926)	11.3 (9.9, 12.9)	37.4 (35.3, 39.6)	24.9 (23.0, 26.8)	16.3 (14.9, 17.7)	10.1 (9.0, 11.3)	<.001
Never (4,019)	17.5 (15.2, 20.0)	41.3 (38.3, 44.3)	24.0 (21.6, 26.6)	11.6 (10.2, 13.3)	5.6 (4.6, 6.8)	
Former (2,279)	2.2 (1.2, 3.7)	32.5 (29.1, 36.1)	27.5 (24.3, 30.9)	22.3 (19.6, 25.3)	15.6 (13.2, 18.2)	
Current (past-30-day) cigar smoking (628)	3.6 (1.5, 8.3)	28.9 (23.2, 35.4)	20.0 (15.5, 25.3)	25.9 (21.0, 31.5)	21.6 (16.4, 27.9)	

Note. CI = confidence interval. Categories other than Hispanic are non-Hispanic. Multirace is defined as two or more races. American Indian, Alaska Native, Native Hawaiian, and Other Pacific Islander participants were combined due to small sample sizes and because they are indigenous populations in the United States that have similar drinking patterns.

^aCurrent cigar smoking is defined as use in the past 30 days. ^bAlcohol use is defined as use within the past year. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigar smoking and alcohol use categories within each race and/or ethnicity group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.6 Average Past-Year Alcohol Consumption (Overall and Beverage-Specific) by Tobacco Use Status in the 2014–2015 and 2019–2020 National Alcohol Surveys (N = 14,125), by Race and/or Ethnicity, Stratified by Age

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	Alcohol type				Alcohol type				Alcohol type			
	Overall	Beer	Wine	Spirits	Overall	Beer	Wine	Spirits	Overall	Beer	Wine	Spirits
	Mean number of drinks consumed in past year (95% CI)											
Hispanic, Latino/a, or of Spanish origin												
Never (2,019)	179.8 (114.7, 244.8)	69.2 (35.1, 103.2)	45.1 (29.3, 60.8)	66.2 (38.3, 95.2)	144.9 (114.5, 175.2)	74.5 (50.2, 98.8)	37.2 (29.7, 44.7)	33.5 (24.4, 42.6)	187.0 (42.2, 331.7)	65.6 (0.8, 130.5)	72.8 (8.7, 137.0)	48.6 (-16.8, 114.0)
Former (338)	163.8 (32.0, 295.5)	97.2 (4.7, 189.8)	22.9 (4.4, 41.3)	43.7 (14.7, 72.7)	276.2* (171.7, 380.8)	130.2 (60.4, 199.9)	44.3 (26.0, 62.6)	101.9** (37.7, 166.0)	245.6 (100.9, 390.3)	87.7 (33.4, 142.0)	58.2 (25.1, 91.3)	101.4 (-13.6, 216.5)
Current (past-year) (384)	579.3** (291.3, 867.3)	210.5* (64.3, 356.7)	48.2 (24.6, 71.7)	320.6* (73.0, 568.2)	464.7** (323.3, 606.1)	266.6** (166.1, 367.1)	69.1** (37.3, 100.9)	132.0** (57.1, 206.9)	293.4 (-42.4, 629.3)	190.3 (-82.3, 462.8)	56.7 (23.6, 136.9)	46.5 (-1.4, 95.3)
Nondaily (135)	420.4* (160.3, 680.4)	136.6 (42.3, 230.9)	36.2 (16.0, 56.3)	247.6 (-26.3, 521.5)	727.8** (379.7, 1,075.8)	329.5** (159.6, 499.4)	155.5* (60.7, 250.2)	244.4* (28.2, 460.5)	59.9 (-0.6, 120.4)	25.6 (-9.7, 60.9)	14.5 (-4.5, 33.4)	19.8 (-5.3, 44.9)
Daily (249)	745.2* (213.9, 1,276.4)	287.6 (7.2, 568.1)	60.7 (18.7, 102.7)	396.8 (-27.7, 821.3)	368.4** (225.9, 510.8)	243.3** (120.3, 366.2)	37.2 (14.5, 59.9)	91.0* (28.3, 153.7)	322.7 (-54.9, 700.3)	210.9 (-95.7, 517.5)	62.0 (-28.2, 152.1)	49.8 (-4.0, 103.6)
Black or African American												
Never (2,012)	200.6 (132.7, 268.5)	56.2 (31.3, 81.2)	46.6 (31.0, 62.2)	97.8 (56.0, 139.5)	151.3 (112.7, 190.0)	39.8 (28.0, 51.7)	36.0 (27.7, 44.3)	76.3 (44.6, 107.9)	63.7 (41.2, 86.2)	21.5 (9.2, 33.7)	22.6 (13.4, 31.7)	20.8 (10.7, 30.9)
Former (435)	68.4 (-10.0, 146.7)	19.6 (-6.8, 46.1)	25.8 (-7.1, 58.7)	23.0* (-12.0, 57.8)	186.7 (89.2, 284.3)	50.0 (17.7, 82.2)	50.6 (8.9, 92.3)	87.1 (29.2, 145.0)	59.3 (37.4, 81.2)	24.5 (9.2, 39.8)	18.4 (8.0, 28.8)	16.8 (7.6, 26.1)
Current (past-year) (592)	522.2** (328.4, 716.0)	210.9** (106.1, 315.8)	91.5* (40.2, 142.8)	219.8* (108.2, 331.4)	478.2** (295.6, 660.9)	205.8** (126.7, 285.0)	42.4 (28.2, 56.6)	230.3* (105.1, 355.4)	428.3** (159.1, 697.5)	165.6** (61.2, 270.0)	101.3* (22.4, 180.1)	163.9** (51.9, 275.9)
Nondaily (138)	685.3** (354.3, 1,016.3)	333.3** (138.1, 528.6)	117.1* (54.9, 179.4)	234.9* (94.6, 375.1)	480.8* (200.3, 761.3)	147.8** (72.5, 223.1)	88.6* (39.7, 137.5)	244.3 (9.7, 479.0)	243.1* (64.8, 421.3)	85.3 (-6.8, 177.4)	106.4* (24.6, 188.1)	51.4 (3.2, 99.5)
Daily (454)	444.6* (210.7, 678.4)	152.6 (37.5, 267.7)	79.3 (10.2, 148.4)	212.6 (61.6, 363.6)	477.6** (260.8, 694.3)	220.0** (123.0, 317.1)	31.1 (18.8, 43.5)	226.8* (82.0, 371.7)	454.0** (147.5, 760.5)	176.8** (58.5, 295.0)	100.5* (11.5, 189.6)	179.8* (51.3, 208.3)
White												
Never (4,167)	241.3 (190.1, 292.4)	108.8 (80.5, 137.2)	52.3 (37.8, 66.8)	81.9 (61.5, 102.3)	237.6 (205.3, 269.9)	97.5 (83.1, 111.8)	68.0 (57.0, 79.0)	72.6 (57.4, 87.9)	137.2 (114.3, 160.0)	46.8 (33.3, 60.2)	53.4 (43.5, 63.2)	37.3 (24.8, 49.8)
Former (1,639)	555.7 (138.5, 973.0)	226.6* (56.7, 396.5)	81.6 (28.6, 134.6)	247.6* (-11.0, 506.2)	266.4 (225.2, 307.5)	100.9 (79.4, 122.4)	76.7 (59.7, 93.6)	89.1 (66.2, 112.0)	218.9** (188.3, 249.6)	61.8 (45.7, 78.0)	79.1** (64.1, 94.1)	79.3** (60.8, 97.7)
Current (past-year) (1,276)	480.4** (309.9, 651.0)	252.2** (157.5, 347.0)	66.7 (42.5, 90.8)	161.5* (71.3, 251.8)	451.5** (335.0, 568.0)	232.6** (143.3, 321.9)	54.8 (41.1, 68.4)	166.6 (105.5, 227.6)	275.8** (196.6, 355.0)	82.9* (50.2, 115.7)	72.5 (35.3, 109.6)	121.0** (65.6, 176.5)
Nondaily (274)	515.8** (318.5, 713.1)	194.7 (82.4, 306.9)	116.4** (68.0, 174.9)	204.7** (124.1, 285.3)	379.5* (255.2, 503.8)	142.6 (80.4, 204.9)	96.8 (55.5, 138.1)	142.4* (75.6, 209.3)	351.3** (203.3, 499.3)	107.1* (37.4, 176.8)	84.5 (37.2, 131.7)	160.3** (67.7, 252.9)
Daily (1,002)	466.5* (241.3, 691.6)	275.0** (151.2, 398.8)	47.0 (23.3, 70.7)	144.5 (22.4, 266.6)	465.7** (328.4, 603.1)	250.3** (144.2, 356.3)	46.4* (32.7, 60.1)	171.3** (99.4, 243.3)	263.1** (173.8, 352.4)	78.9* (42.5, 115.3)	70.4 (27.8, 113.1)	114.5** (51.6, 177.3)

Note. CI = confidence interval. Black and White participants are non-Hispanic. Data are visualized in Figure 3.3.

^aTobacco use is defined as use of tobacco products other than e-cigarettes (due to survey question wording). *Current tobacco use* is defined as daily or nondaily use in the past year. *Former tobacco use* is defined as ever use in lifetime but not in the past year. *Never tobacco use* is defined as no lifetime use of tobacco.

* $p < .1$ for association comparing alcohol consumption among tobacco use categories (referent = Never). ** $p < .05$ for association comparing alcohol consumption among tobacco use categories (referent = Never). *** $p < .01$ for association comparing alcohol consumption among tobacco use categories (referent = Never).

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

Table 3B.7 Cigarette Smoking History, Categorized by Pack Years, by Lifetime Number of 5+ Drinking Days in the 2014–2015 National Alcohol Survey (N = 5,632), by Race and/or Ethnicity, Stratified by Age (Row Percents)

Cigarette pack years (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	0	0.1–499	≥500	<i>p</i> value ^a	0	0.1–999	≥1,000	<i>p</i> value	0	0.1–999	≥1,000	<i>p</i> value
	Lifetime number of 5+ drinking days: ^b Weighted % (95% CI)											
Hispanic, Latino/a, or of Spanish origin												
0 (878)	58.8 (48.2, 68.6)	30.2 (21.7, 40.5)	11.0 (5.7, 20.1)	N/A	58.0 (50.1, 65.5)	27.4 (20.8, 35.2)	14.6 (9.9, 21.2)	<.001	85.5 (71.3, 93.4)	3.6 (1.9, 6.8)	10.9 (3.9, 26.8)	<.001
0.1–20 (242)	*	40.7 (21.5, 63.2)	43.2 (24.4, 64.2)		21.1 (12.6, 33.2)	36.0 (24.7, 49.0)	42.9 (31.4, 55.3)		46.3 (26.4, 67.5)	22.0 (7.8, 48.3)	31.7 (15.2, 54.6)	
20.1–40 (32)	*	*	*		*	*	47.7 (20.1, 76.8)		*	*	*	
≥40.1 (85)	*	68.3 (36.2, 89.1)	*		12.3 (4.3, 30.5)	23.6 (10.4, 45.0)	64.2 (40.7, 82.4)		59.6 (27.1, 85.4)	*	29.7 (9.5, 63.0)	
Black or African American												
0 (830)	62.1 (49.6, 73.2)	30.6 (20.6, 42.8)	*	N/A	70.6 (62.4, 77.6)	19.5 (13.6, 27.3)	9.9 (5.9, 16.0)	<.001	90.1 (82.1, 94.7)	4.9 (2.0, 11.6)	5.1 (2.1, 11.8)	<.001
0.1–20 (324)	40.5 (20.6, 64.0)	32.2 (14.4, 57.4)	*		40.6 (29.0, 53.4)	24.2 (14.2, 38.0)	35.3 (24.3, 48.0)		76.9 (58.8, 88.6)	6.7 (2.8, 14.9)	16.5 (6.5, 35.8)	
20.1–40 (82)	*	*	*		37.8 (10.1, 76.6)	*	57.5 (21.4, 87.1)		29.7 (14.5, 51.3)	13.7 (6.3, 27.3)	56.6 (35.2, 75.8)	
≥40.1 (116)	*	*	*		39.8 (18.7, 65.5)	*	28.6 (10.0, 59.2)		74.4 (53.0, 88.3)	12.7 (5.2, 27.7)	12.9 (4.6, 31.1)	
White												
0 (1,446)	37.8 (29.0, 47.5)	52.0 (42.3, 61.5)	10.2 (5.7, 17.7)	<.001	34.8 (30.4, 39.5)	48.4 (43.4, 53.4)	16.8 (13.2, 21.3)	<.001	74.5 (69.6, 78.8)	17.0 (13.4, 21.2)	8.6 (5.9, 12.3)	<.001
0.1–20 (591)	*	55.8 (41.8, 69.0)	35.2 (23.1, 49.6)		13.2 (9.4, 18.3)	40.8 (33.7, 48.3)	46.0 (38.6, 53.5)		59.0 (50.2, 67.4)	22.2 (15.8, 30.4)	18.7 (12.7, 26.8)	
20.1–40 (253)	*	*	*		13.7 (7.2, 24.4)	41.7 (30.0, 54.3)	44.7 (33.1, 56.9)		36.1 (26.8, 46.5)	35.6 (25.6, 47.0)	28.3 (19.1, 39.8)	
≥40.1 (398)	*	*	*		19.2 (12.3, 28.8)	39.4 (29.0, 50.8)	41.4 (30.9, 52.8)		39.3 (31.8, 47.5)	25.2 (19.0, 32.7)	35.5 (27.9, 43.8)	

Note. CI = confidence interval; N/A = not applicable. Black and White participants are non-Hispanic.

^ap value for bivariate association, obtained through a chi-squared test, between pack year and alcohol use categories within each age and race and/or ethnicity group. p value could not be calculated for groups that included categories where n = 0. ^bLifetime 5+ drinking days is defined as the number of days over lifetime in which participants reported drinking 5 or more drinks on 1 occasion.

*Cells with n < 10 are suppressed.

Source: 2014–2015 U.S. National Alcohol Survey.

Table 3B.8 Past-Year Alcohol Use by Tobacco Use Status in the 2014–2015 and 2019–2020 National Alcohol Surveys (N = 14,125), by Education, Stratified by Age (Row Percents)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	No past-year alcohol use	Past-year alcohol use within guidelines ^b	Past-year alcohol use exceeding guidelines	<i>p</i> value ^c	No past-year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value	No past- year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value
	Alcohol use: Weighted % (95% CI)											
High school or less												
Overall (3,946)	41.7 (37.0, 46.6)	26.0 (22.1, 30.4)	32.3 (27.9, 37.0)		37.5 (34.5, 40.6)	35.4 (32.4, 38.6)	27.1 (24.1, 30.3)		52.9 (49.0, 56.8)	35.1 (31.4, 39.0)	12.0 (9.6, 14.9)	
Never (2,300)	52.1 (46.4, 57.8)	25.1 (20.6, 30.1)	22.8 (18.4, 27.9)	<.001	44.4 (40.0, 48.8)	36.4 (32.2, 40.8)	19.2 (15.6, 23.4)	<.001	64.4 (58.9, 69.6)	29.2 (24.5, 34.5)	6.3 (3.9, 10.0)	<.001
Former (699)	*	*	52.0 (30.3, 73.0)		32.3 (24.9, 40.6)	43.3 (34.8, 52.2)	24.4 (17.4, 33.1)		42.3 (36.1, 48.8)	44.2 (37.6, 50.9)	13.5 (9.5, 18.8)	
Current (past-year) (947)	20.7 (13.5, 30.5)	27.5 (19.4, 37.5)	51.8 (41.5, 61.8)		29.3 (24.5, 34.7)	30.1 (25.1, 35.6)	40.6 (34.9, 46.6)		42.3 (33.4, 51.8)	33.5 (24.9, 43.4)	24.1 (17.0, 33.0)	
Nondaily (139)	*	31.8 (15.1, 55.1)	47.5 (26.4, 69.5)		25.3 (13.7, 41.9)	33.4 (19.9, 50.4)	41.3 (26.9, 57.3)		*	56.7 (27.3, 82.1)	*	
Daily (808)	20.7 (12.8, 31.8)	26.8 (18.0, 37.9)	52.5 (41.1, 63.5)		29.8 (24.6, 35.6)	29.6 (24.4, 35.5)	40.5 (34.4, 46.9)		43.8 (34.3, 53.7)	30.8 (22.3, 40.9)	25.4 (17.7, 35.1)	
Some college												
Overall (4,062)	22.2 (18.4, 26.5)	29.6 (25.1, 34.6)	48.2 (43.0, 53.4)		25.1 (22.5, 27.8)	40.6 (37.6, 43.6)	34.4 (31.4, 37.4)		36.1 (32.5, 39.8)	49.1 (45.4, 52.9)	14.8 (12.3, 17.7)	
Never (2,372)	28.5 (23.4, 34.1)	31.0 (25.6, 36.9)	40.5 (34.7, 46.6)	<.001	28.8 (25.2, 32.6)	43.9 (39.9, 48.0)	27.3 (23.6, 31.2)	<.001	43.7 (38.4, 49.1)	46.8 (41.6, 52.1)	9.5 (7.0, 12.7)	<.001
Former (804)	*	35.7 (20.6, 54.5)	39.3 (22.5, 59.1)		21.2 (15.6, 28.1)	40.3 (33.6, 47.5)	38.5 (31.6, 45.8)		28.1 (23.0, 33.8)	52.3 (46.0, 58.6)	19.6 (14.6, 25.7)	
Current (past-year) (886)	5.8 (2.7, 12.0)	21.6 (13.7, 32.5)	72.5 (61.5, 81.4)		20.0 (15.5, 25.4)	32.7 (27.0, 39.0)	47.3 (41.1, 53.6)		31.0 (22.7, 40.6)	49.2 (39.9, 58.6)	19.8 (13.6, 28.0)	
Nondaily (224)	*	14.9 (7.2, 28.2)	80.2 (66.8, 89.0)		9.2 (4.8, 17.0)	25.0 (16.1, 36.8)	65.7 (53.5, 76.2)		*	55.9 (34.3, 75.4)	*	
Daily (662)	*	28.4 (15.8, 45.7)	64.8 (47.7, 78.8)		22.5 (17.1, 28.9)	34.5 (27.9, 41.8)	43.0 (36.2, 50.1)		31.9 (22.9, 42.4)	48.3 (38.3, 58.5)	19.8 (13.1, 28.7)	

Table 3B.8 (continued)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	No past-year alcohol use	Past-year alcohol use within guidelines ^b	Past-year alcohol use exceeding guidelines	<i>p</i> value ^c	No past-year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value	No past-year alcohol use	Past-year alcohol use within guidelines	Past-year alcohol use exceeding guidelines	<i>p</i> value
	Alcohol use: Weighted % (95% CI)											
College degree												
Overall (5,516)	14.6 (11.5, 18.5)	23.0 (18.8, 27.8)	62.4 (57.1, 67.3)		20.3 (18.3, 22.4)	44.4 (41.8, 47.0)	35.4 (32.8, 38.0)		27.8 (25.1, 30.7)	55.6 (52.5, 58.7)	16.5 (14.4, 19.0)	
Never (4,1014)	16.0 (12.4, 20.4)	23.5 (18.9, 28.7)	60.6 (54.8, 66.1)	.38	22.4 (20.0, 25.0)	46.7 (43.8, 49.7)	30.9 (28.0, 33.8)	<.001	32.1 (28.4, 36.0)	54.4 (50.4, 58.4)	13.5 (11.0, 16.4)	.001
Former (960)	*	*	64.2 (33.1, 86.6)		14.1 (10.2, 19.2)	43.8 (36.7, 51.0)	42.1 (35.3, 49.3)		21.0 (17.0, 25.6)	58.5 (53.0, 63.9)	20.5 (16.3, 25.5)	
Current (past-year) (542)	*	19.1 (10.0, 33.2)	67.5 (52.1, 79.9)		14.8 (9.8, 21.8)	30.0 (22.6, 38.7)	55.2 (46.4, 63.6)		26.9 (17.6, 38.9)	50.3 (39.4, 61.2)	22.8 (15.6, 32.1)	
Nondaily (229)	*	16.3 (6.5, 35.2)	76.7 (57.0, 89.1)		10.9 (5.5, 20.3)	32.7 (21.0, 47.0)	56.4 (42.6, 69.3)		*	62.4 (45.9, 76.4)	21.1 (10.4, 38.1)	
Daily (313)	*	22.4 (8.8, 46.2)	56.8 (33.0, 77.8)		17.2 (10.3, 27.2)	28.4 (19.4, 39.6)	54.4 (43.1, 65.3)		31.6 (19.3, 47.3)	44.8 (31.3, 59.1)	23.6 (14.8, 35.3)	

Note. CI = confidence interval. Data are visualized in Figure 3.4.

^aTobacco use is defined as use of tobacco products other than e-cigarettes (due to survey question wording). *Current tobacco use* is defined as use in the past year. ^bAlcohol use is defined as use within the past year. *Alcohol use exceeding guidelines* is defined as exceeding 7/14 drinks per week or drinking at least 4/5 drinks per day for women/men, per the *Dietary Guidelines for Americans, 2020–2025*²² and NIAAA's definition of heavy alcohol use.²³ ^c*p* value for bivariate association, obtained through a chi-squared test, between tobacco and alcohol use categories within each age and education group.

*Cells with *n* < 10 are suppressed.

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

Table 3B.9 Past-Year Hazardous Alcohol Use by Tobacco Use Status in the 2014–2015 and 2019–2020 National Alcohol Surveys (N = 14,125), by Education, Stratified by Age (Row Percents)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29						Ages 30–59						Ages 60 and older					
	5+ drinking ^b			HID ^c			5+ drinking			HID			5+ drinking			HID		
	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value ^d	No past-year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value
	Alcohol use: Weighted % (95% CI)																	
High school or less																		
Overall (4,073)	75.2 (70.9, 79.2)	24.8 (20.8, 29.1)	<.001	90.5 (87.3, 93.0)	9.5 (7.0, 12.7)	<.001	79.5 (76.6, 82.2)	20.5 (17.8, 23.4)	<.001	93.5 (91.6, 95.0)	6.5 (5.0, 8.4)	<.001	92.4 (90.0, 94.3)	7.6 (5.7, 10.0)	<.001	98.5 (97.3, 99.2)	1.5 (0.8, 2.7)	<.001
Never (2,384)	83.4 (78.9, 87.1)	16.6 (12.9, 21.1)		95.4 (93.1, 97.0)	4.6 (3.0, 6.9)		85.4 (81.5, 88.6)	14.6 (11.4, 18.5)		96.2 (93.6, 97.7)	3.8 (2.3, 6.4)		97.5 (94.9, 98.8)	2.5 (1.2, 5.1)		99.8 (99.4, 99.9)	*	
Former (719)	72.2 (47.8, 88.0)	*		95.0 (81.4, 98.8)	*		83.1 (75.5, 88.6)	16.9 (11.4, 24.5)		96.1 (89.6, 98.6)	3.9 (1.4, 10.4)		90.8 (85.9, 94.1)	9.2 (5.9, 14.1)		98.6 (96.5, 99.4)	*	
Current (past-year) (970)	56.4 (46.2, 66.1)	43.6 (33.9, 53.8)		78.3 (68.6, 85.6)	21.7 (14.4, 31.4)		68.4 (62.6, 73.6)	31.6 (26.4, 37.4)		88.1 (83.8, 91.3)	11.9 (8.7, 16.2)		82.5 (74.3, 88.5)	17.5 (11.5, 25.7)		95.0 (89.2, 97.7)	5.0 (2.3, 10.8)	
Nondaily (143)	56.0 (33.5, 76.3)	44.0 (23.7, 66.5)		79.5 (48.0, 94.2)	*		65.5 (49.7, 78.5)	34.5 (21.5, 50.3)		88.6 (73.5, 95.6)	11.4 (4.4, 26.5)		100.0	*		100.0	*	
Daily (827)	56.5 (45.2, 67.1)	43.5 (32.9, 54.8)		78.1 (67.7, 85.9)	21.9 (14.1, 32.3)		68.8 (62.5, 74.4)	31.2 (25.6, 37.5)		88.0 (83.4, 91.5)	12.0 (8.5, 16.6)		80.5 (71.6, 87.1)	19.5 (12.9, 28.4)		94.4 (88.1, 97.4)	5.6 (2.6, 11.9)	
Some college																		
Overall (4,176)	59.7 (54.5, 64.7)	40.3 (35.3, 45.5)	<.001	86.3 (82.2, 89.6)	13.7 (10.4, 17.8)	<.001	74.8 (72.0, 77.5)	25.2 (22.5, 28.0)	<.001	92.8 (91.1, 94.2)	7.2 (5.8, 8.9)	.02	94.1 (92.4, 95.5)	5.9 (4.5, 7.6)	.03	99.1 (98.2, 99.5)	0.9 (0.5, 1.8)	.96
Never (2,442)	67.2 (61.2, 72.7)	32.8 (27.3, 38.8)		91.1 (86.9, 94.1)	8.9 (5.9, 13.1)		80.1 (76.5, 83.2)	19.9 (16.8, 23.5)		94.3 (92.0, 95.9)	5.7 (4.1, 8.0)		96.1 (93.8, 97.6)	3.9 (2.4, 6.2)		99.0 (97.5, 99.6)	*	
Former (829)	68.1 (48.9, 82.7)	31.9 (17.3, 51.1)		92.1 (81.6, 96.9)	*		73.2 (66.3, 79.1)	26.8 (20.9, 33.7)		94.1 (90.1, 96.6)	5.9 (3.4, 9.9)		93.2 (89.9, 95.4)	6.8 (4.6, 10.1)		99.1 (97.2, 99.7)	*	
Current (past-year) (905)	35.7 (25.5, 47.3)	64.3 (52.7, 74.5)		73.6 (62.0, 82.7)	26.4 (17.3, 38.0)		64.1 (57.9, 69.8)	35.9 (30.2, 42.1)		89.3 (85.2, 92.4)	10.7 (7.6, 14.8)		90.5 (84.3, 94.5)	9.5 (5.5, 15.7)		99.2 (97.4, 99.8)	*	
Nondaily (228)	28.6 (16.6, 44.5)	71.4 (55.5, 83.4)		80.5 (66.9, 89.4)	19.5 (10.6, 33.1)		53.8 (41.0, 66.1)	46.2 (33.9, 59.0)		87.9 (78.4, 93.5)	12.1 (6.5, 21.6)		89.1 (64.3, 97.4)	*		100.0	*	
Daily (677)	42.8 (27.6, 59.6)	57.2 (40.4, 72.4)		66.7 (48.6, 80.9)	33.3 (19.1, 51.4)		66.5 (59.6, 72.8)	33.5 (27.2, 40.4)		89.6 (84.9, 93.0)	10.4 (7.0, 15.1)		90.7 (84.0, 94.8)	9.3 (5.2, 16.0)		99.1 (97.0, 99.7)	*	

Table 3B.9 (continued)

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29						Ages 30–59						Ages 60 and older					
	5+ drinking ^b			HID ^c			5+ drinking			HID			5+ drinking			HID		
	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value ^d	No past-year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value	No past-year 5+ drinking	Past-year 5+ drinking	<i>p</i> value	No past-year HID	Past-year HID	<i>p</i> value
	Alcohol use: Weighted % (95% CI)																	
College degree																		
Overall (5,613)	51.7 (46.3, 57.1)	48.3 (42.9, 53.7)		84.9 (80.6, 88.3)	15.1 (11.7, 19.4)		73.8 (71.3, 76.2)	26.2 (23.8, 28.7)		94.8 (93.4, 95.9)	5.2 (4.1, 6.6)		91.3 (89.4, 92.8)	8.7 (7.2, 10.6)		98.9 (98.2, 99.4)	1.1 (0.6, 1.8)	
Never (4,086)	55.1 (49.1, 60.9)	44.9 (39.1, 50.9)	.11	85.1 (80.2, 89.0)	14.9 (11.0, 19.8)	.52	78.2 (75.4, 80.8)	21.8 (19.2, 24.6)	<.001	95.8 (94.1, 97.0)	4.2 (3.0, 5.9)	<.001	92.7 (90.2, 94.6)	7.3 (5.4, 9.8)	.04	98.8 (97.6, 99.4)	1.2 (0.6, 2.4)	.01
Former (980)	*	62.4 (32.4, 85.2)		89.4 (72.0, 96.5)	*		68.9 (61.8, 75.2)	31.1 (24.8, 38.2)		95.9 (92.9, 97.7)	4.1 (2.3, 7.1)		90.2 (86.7, 92.8)	9.8 (7.2, 13.3)		99.7 (99.0, 99.9)	*	
Current (past-year) (547)	37.8 (24.5, 53.3)	62.2 (46.7, 75.5)		80.2 (66.6, 89.1)	19.8 (10.9, 33.4)		51.3 (42.6, 60.0)	48.7 (40.0, 57.4)		86.1 (78.9, 91.1)	13.9 (8.9, 21.1)		85.0 (76.4, 90.9)	15.0 (9.1, 23.6)		96.9 (92.1, 98.9)	*	
Nondaily (230)	32.1 (17.0, 52.1)	67.9 (47.9, 83.0)		78.4 (60.4, 89.6)	21.6 (10.4, 39.6)		53.3 (39.5, 66.6)	46.7 (33.4, 60.5)		86.7 (71.9, 94.3)	13.3 (5.7, 28.1)		81.7 (64.0, 91.8)	*		96.6 (86.4, 99.2)	*	
Daily (317)	44.6 (23.2, 68.2)	55.4 (31.8, 76.8)		82.3 (58.7, 93.8)	*		50.2 (39.1, 61.2)	49.8 (38.8, 60.9)		85.7 (77.0, 91.5)	14.3 (8.5, 23.0)		86.6 (76.1, 92.9)	13.4 (7.1, 23.9)		97.1 (90.0, 99.2)	*	

Note. CI = confidence interval; HID = high intensity drinking.

^aTobacco use is defined as use of tobacco products other than e-cigarettes (due to survey question wording). *Current tobacco use* is defined as use in the past year. ^bAlcohol use is measured in the past year. *5+ drinks* is defined as consuming 5 or more drinks on a single occasion. ^cAlcohol use is measured in the past year. *HID* is defined as drinking $\geq 8/12$ drinks in one day for women/men. ^d*p* value for bivariate association, obtained through a chi-squared test, between tobacco and alcohol use categories within each age and education group.

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

Table 3B.10 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), by Education (Row Percents)

Cigarette smoking status ^a (unweighted n)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	p value ^f
Alcohol use: Weighted % (95% CI)						
High school or less						
Overall (82,700)	21.8 (21.4, 22.3)	37.9 (37.4, 38.4)	16.1 (15.7, 16.5)	16.5 (16.2, 16.9)	7.6 (7.4, 7.9)	<.001
Never (33,685)	42.5 (41.7, 43.3)	31.6 (30.8, 32.3)	12.8 (12.3, 13.4)	10.7 (10.2, 11.2)	2.5 (2.2, 2.8)	
Former (24,145)	7.8 (7.3, 8.4)	45.6 (44.6, 46.5)	21.9 (21.2, 22.7)	17.0 (16.4, 17.6)	7.7 (7.2, 8.2)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (9,581)	10.4 (9.5, 11.4)	32.3 (30.9, 33.7)	11.7 (10.8, 12.7)	31.9 (30.5, 33.3)	13.7 (12.7, 14.7)	
Current (past-30-day) daily smoking, <300 cigarettes/month (3,313)	9.0 (7.6, 10.6)	39.9 (37.4, 42.4)	15.0 (13.2, 16.9)	24.3 (22.2, 26.4)	11.9 (10.5, 13.6)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (11,976)	7.1 (6.3, 7.9)	40.9 (39.7, 42.2)	14.6 (13.7, 15.5)	20.2 (19.2, 21.3)	17.2 (16.3, 18.2)	
Some college						
Overall (70,884)	10.4 (10.1, 10.8)	32.0 (31.5, 32.6)	28.6 (28.1, 29.2)	18.6 (18.2, 19.0)	10.4 (10.0, 10.7)	<.001
Never (27,772)	23.8 (23.0, 24.6)	31.9 (31.0, 32.7)	26.9 (26.1, 27.7)	13.6 (13.1, 14.2)	3.8 (3.5, 4.2)	
Former (26,715)	2.8 (2.5, 3.1)	32.8 (32.0, 33.6)	33.8 (33.0, 34.7)	19.8 (19.2, 20.5)	10.8 (10.3, 11.3)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (7,230)	3.5 (2.9, 4.2)	21.0 (19.5, 22.5)	20.6 (19.2, 22.0)	31.6 (30.1, 33.1)	23.4 (22.0, 24.8)	
Current (past-30-day) daily smoking, <300 cigarettes/month (2,059)	5.0 (3.5, 7.2)	30.7 (27.9, 33.7)	23.4 (20.8, 26.2)	22.4 (20.0, 24.9)	18.5 (16.2, 21.0)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (7,108)	2.7 (2.1, 3.3)	38.3 (36.7, 39.9)	21.2 (19.8, 22.6)	19.3 (18.1, 20.5)	18.6 (17.4, 19.9)	

Table 3B.10 (continued)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
College degree						
Overall (57,100)	9.0 (8.7, 9.4)	23.8 (23.3, 24.3)	40.7 (40.1, 41.3)	16.1 (15.7, 16.5)	10.4 (10.0, 10.7)	<.001
Never (23,766)	19.8 (19.0, 20.5)	25.8 (25.0, 26.6)	39.1 (38.2, 40.0)	11.2 (10.7, 11.7)	4.2 (3.8, 4.5)	
Former (27,391)	1.6 (1.4, 1.9)	22.6 (21.9, 23.4)	44.9 (44.0, 45.7)	18.1 (17.5, 18.6)	12.8 (12.3, 13.4)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (3,595)	2.0 (1.4, 2.8)	13.9 (12.1, 15.9)	23.0 (21.1, 25.0)	33.7 (31.6, 35.9)	27.5 (25.5, 29.5)	
Current (past-30-day) daily smoking, <300 cigarettes/month (592)	2.2 (1.1, 4.2)	27.4 (22.2, 33.3)	28.5 (23.3, 34.2)	22.3 (18.0, 27.3)	19.7 (15.8, 24.2)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,756)	3.1 (2.0, 4.6)	31.7 (28.7, 34.8)	26.5 (23.7, 29.5)	17.4 (15.3, 19.8)	21.3 (18.9, 23.9)	

Note. CI = confidence interval. Data are visualized in Figure 3.5.

^aCurrent cigarette smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories within each age and education group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.11 Current (Past-30-Day) Alcohol Use by Smokeless Tobacco Use Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,931), by Education (Row Percents)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
High school or less						
Overall (82,898)	21.8 (21.4, 22.3)	38.0 (37.5, 38.5)	16.1 (15.7, 16.5)	16.5 (16.2, 16.9)	7.6 (7.4, 7.9)	<.001
Never (66,945)	25.1 (24.6, 25.6)	38.1 (37.5, 38.6)	15.7 (15.3, 16.1)	15.1 (14.8, 15.5)	6.0 (5.8, 6.3)	
Former (11,502)	4.7 (4.2, 5.4)	38.6 (37.3, 40.0)	18.9 (17.9, 20.0)	23.2 (22.1, 24.3)	14.6 (13.7, 15.5)	
Current (past-30-day) nondaily use (2,494)	10.8 (8.9, 13.1)	31.6 (28.9, 34.5)	13.5 (11.5, 15.8)	27.2 (24.8, 29.7)	16.8 (14.8, 19.1)	
Current (past-30-day) daily use (1,957)	6.6 (5.1, 8.6)	36.0 (32.9, 39.3)	16.3 (13.9, 19.0)	21.9 (19.6, 24.5)	19.2 (16.8, 21.8)	
Some college						
Overall (70,932)	10.4 (10.1, 10.8)	32.0 (31.5, 32.6)	28.6 (28.1, 29.1)	18.6 (18.2, 19.0)	10.3 (10.0, 10.7)	<.001
Never (56,484)	12.4 (12.0, 12.8)	33.3 (32.7, 33.9)	29.0 (28.4, 29.6)	16.6 (16.2, 17.0)	8.7 (8.3, 9.0)	
Former (11,242)	1.5 (1.2, 1.9)	27.6 (26.4, 28.9)	28.2 (27.0, 29.5)	26.0 (24.9, 27.2)	16.6 (15.7, 17.6)	
Current (past-30-day) nondaily use (1,779)	3.8 (2.4, 5.9)	17.8 (15.2, 20.7)	21.1 (18.3, 24.3)	34.7 (31.8, 37.9)	22.6 (20.1, 25.2)	
Current (past-30-day) daily use (1,427)	1.4 (0.5, 3.7)	26.3 (23.2, 29.7)	22.5 (19.5, 25.8)	28.5 (25.4, 31.9)	21.3 (18.4, 24.6)	

Table 3B.11 (continued)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
College degree						
Overall (57,101)	9.0 (8.7, 9.4)	23.8 (23.3, 24.4)	40.7 (40.1, 41.3)	16.1 (15.7, 16.5)	10.4 (10.0, 10.7)	<.001
Never (46,902)	10.5 (10.1, 10.9)	25.0 (24.5, 25.6)	41.9 (41.3, 42.6)	13.7 (13.3, 14.1)	8.9 (8.5, 9.3)	
Former (8,758)	1.0 (0.7, 1.4)	17.7 (16.6, 19.0)	35.8 (34.3, 37.3)	28.2 (26.9, 29.5)	17.4 (16.3, 18.4)	
Current (past-30-day) nondaily use (894)	2.4 (1.3, 4.4)	11.5 (8.6, 15.2)	19.4 (16.0, 23.3)	39.7 (35.3, 44.3)	27.0 (23.2, 31.2)	
Current (past-30-day) daily use (547)	*	21.7 (17.0, 27.3)	23.0 (18.3, 28.5)	29.4 (24.6, 34.8)	25.0 (20.0, 30.6)	

Note. CI = confidence interval.

^aCurrent smokeless tobacco use is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between smokeless tobacco and alcohol use categories within each education group.

*Cells with *n* < 10 are suppressed.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.12 Current (Past-30-Day) Alcohol Use by Cigar Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,958), by Education (Row Percents)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
High school or less						
Overall (82,910)	21.8 (21.4, 22.3)	38.0 (37.5, 38.5)	16.1 (15.7, 16.5)	16.5 (16.2, 16.9)	7.6 (7.4, 7.9)	<.001
Never (58,317)	28.6 (28.1, 29.2)	38.3 (37.7, 38.9)	14.2 (13.7, 14.6)	13.7 (13.3, 14.1)	5.2 (4.9, 5.5)	
Former (18,925)	4.2 (3.8, 4.7)	39.1 (38.0, 40.2)	21.8 (21.0, 22.8)	22.0 (21.2, 22.8)	12.9 (12.3, 13.6)	
Current (past-30-day) cigar smoking (5,668)	5.5 (4.7, 6.5)	28.0 (26.3, 29.8)	17.4 (16.0, 18.9)	31.6 (29.8, 33.4)	17.5 (16.2, 19.0)	
Some college						
Overall (70,939)	10.4 (10.1, 10.8)	32.0 (31.5, 32.6)	28.6 (28.1, 29.1)	18.6 (18.2, 19.0)	10.4 (10.0, 10.7)	<.001
Never (44,540)	15.5 (15.0, 16.0)	35.7 (35.0, 36.4)	27.4 (26.8, 28.1)	14.7 (14.2, 15.1)	6.8 (6.4, 7.1)	
Former (21,895)	1.5 (1.2, 1.7)	27.2 (26.3, 28.1)	31.5 (30.6, 32.4)	24.3 (23.5, 25.1)	15.6 (14.9, 16.3)	
Current (past-30-day) cigar smoking (4,504)	1.9 (1.4, 2.6)	16.6 (15.0, 18.3)	26.1 (24.2, 28.2)	32.2 (30.3, 34.2)	23.1 (21.4, 25.0)	
College degree						
Overall (57,109)	9.0 (8.7, 9.4)	23.8 (23.3, 24.4)	40.7 (40.1, 41.3)	16.1 (15.7, 16.5)	10.4 (10.0, 10.7)	<.001
Never (33,164)	14.3 (13.8, 14.9)	28.3 (27.6, 29.0)	39.9 (39.1, 40.6)	11.1 (10.7, 11.5)	6.4 (6.1, 6.8)	
Former (21,572)	1.1 (0.9, 1.3)	17.9 (17.1, 18.7)	42.8 (41.9, 43.8)	22.3 (21.6, 23.1)	15.9 (15.2, 16.6)	
Current (past-30-day) cigar smoking (2,373)	1.1 (0.7, 1.9)	9.3 (7.6, 11.4)	32.6 (29.8, 35.5)	36.3 (33.6, 39.0)	20.7 (18.6, 22.9)	

Note. CI = confidence interval.

^aCurrent cigar smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^fp value for bivariate association, obtained through a chi-squared test, between cigar smoking and alcohol use categories within each education group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.13 Average Past-Year Alcohol Consumption (Overall and Beverage-Specific) by Tobacco Use Status in the 2014–2015 and 2019–2020 National Alcohol Surveys (N = 14,125), by Education, Stratified by Age

Tobacco use status ^a (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	Alcohol type				Alcohol type				Alcohol type			
	Overall	Beer	Wine	Spirits	Overall	Beer	Wine	Spirits	Overall	Beer	Wine	Spirits
	Mean number of drinks consumed in past year (95% CI)											
High school or less												
Never (2,382)	156.1 (91.3, 221.0)	60.2 (31.4, 89.0)	33.4 (15.8, 50.9)	63.7 (36.4, 90.9)	154.3 (119.7, 189.0)	66.7 (46.6, 86.8)	33.6 (24.8, 42.4)	54.3 (33.3, 75.2)	62.4 (37.8, 87.0)	28.5 (10.6, 46.4)	16.0 (9.4, 22.5)	18.1 (4.5, 31.7)
Former (719)	271.9 (92.5, 451.3)	168.5* (58.0, 278.9)	53.5 (-8.2, 115.1)	49.9 (9.9, 90.0)	189.6 (128.0, 251.2)	81.2 (47.6, 114.7)	30.4 (16.0, 44.8)	78.8 (41.7, 115.8)	158.3** (110.9, 205.7)	59.7* (33.8, 85.5)	37.4* (21.1, 53.8)	63.2** (32.8, 93.5)
Current (past-year) (967)	432.7** (292.8, 572.7)	237.0** (135.0, 339.0)	43.4 (24.6, 62.2)	152.4* (74.7, 230.0)	451.1** (298.2, 604.1)	290.9** (161.1, 420.7)	34.7 (23.4, 46.0)	131.1** (77.7, 184.6)	275.2** (152.9, 397.4)	115.7** (51.5, 179.9)	44.3* (16.4, 72.1)	116.0* (30.3, 201.7)
Nondaily (143)	354.4* (147.3, 561.6)	157.2 (36.6, 277.7)	67.5 (10.0, 125.0)	129.8 (49.2, 210.4)	308.9* (163.6, 454.3)	137.1* (70.4, 203.9)	79.7* (30.9, 128.5)	92.5 (14.9, 170.0)	69.9 (3.6, 136.3)	23.4 (5.1, 41.8)	37.5 (20.5, 95.4)	9.1 (-1.5, 19.7)
Daily (824)	445.7** (286.6, 604.8)	250.2** (133.6, 366.8)	39.4 (19.7, 59.0)	156.1* (66.6, 245.6)	469.3** (298.1, 640.4)	310.8** (164.8, 456.7)	28.8 (17.9, 39.7)	136.1** (76.6, 195.6)	298.9** (163.6, 434.3)	126.4** (54.9, 197.9)	45.1* (14.7, 75.4)	128.5* (33.2, 223.7)
Some college												
Never (2,440)	180.6 (133.0, 228.1)	70.1 (42.5, 97.7)	42.5 (30.0, 55.1)	68.2 (44.7, 91.6)	185.3 (146.5, 224.1)	76.8 (60.2, 93.4)	48.5 (33.8, 63.1)	61.4 (43.7, 79.1)	135.8 (96.3, 175.4)	56.1 (28.9, 83.2)	46.2 (32.8, 59.5)	34.5 (13.6, 55.5)
Former (827)	596.5 (29.2, 1163.8)	186.5 (-40.4, 413.4)	73.1 (14.3, 131.8)	336.9 (-14.6, 688.5)	255.6* (196.1, 315.2)	105.7 (66.5, 144.8)	72.5* (50.0, 95.0)	77.5 (51.4, 103.5)	194.8* (150.3, 239.4)	57.0 (34.1, 79.9)	79.5* (54.6, 104.5)	59.3 (33.0, 85.5)
Current (past-year) (905)	598.5** (332.3, 864.8)	268.7** (142.4, 395.0)	77.3* (44.1, 110.4)	252.6* (93.4, 411.8)	381.9** (277.0, 486.9)	147.5** (108.0, 186.9)	50.7 (34.7, 66.8)	185.1** (93.0, 277.2)	282.4** (173.4, 391.3)	91.6 (45.9, 137.2)	102.9* (38.2, 167.6)	88.8* (46.1, 131.6)
Nondaily (228)	489.0** (305.5, 672.4)	181.6* (75.5, 287.4)	77.6 (35.3, 119.9)	229.8* (99.3, 360.3)	499.0** (301.3, 696.7)	204.7* (105.8, 303.6)	85.3 (41.1, 129.6)	210.0* (78.7, 341.3)	386.4* (187.6, 585.1)	143.2 (18.3, 268.1)	99.2 (27.2, 171.3)	144.0* (29.1, 258.9)
Daily (677)	709.6* (211.9, 1,207.3)	357.0* (131.8, 582.2)	76.9 (25.8, 128.0)	275.7 (-15.5, 566.8)	354.4** (233.7, 475.0)	134.0* (91.5, 176.6)	42.6 (26.0, 59.1)	179.2* (69.6, 288.8)	269.1* (149.2, 389.0)	84.9 (36.3, 133.5)	103.4 (31.0, 174.8)	81.8* (36.3, 127.3)
College degree												
Never (4,082)	294.7 (249.4, 340.1)	124.2 (94.5, 153.9)	73.2 (59.5, 86.9)	99.5 (79.8, 119.2)	243.5 (207.9, 279.2)	92.8 (77.1, 108.5)	79.0 (67.5, 90.5)	72 (55.5, 88.6)	204.7 (154.7, 254.6)	53.1 (38.1, 68.2)	95.3 (69.0, 121.6)	56.6 (32.5, 80.7)
Former (978)	419.7 (54.0, 785.5)	112.8 (42.1, 183.5)	60.3 (7.9, 112.8)	246.5 (-86.2, 579.2)	342.2** (280.9, 403.6)	119.0* (88.7, 149.2)	104.9* (75.9, 133.9)	118.9* (78.5, 159.3)	276.0* (231.4, 320.5)	55.3 (39.9, 70.6)	112.6 (90.0, 135.2)	109.1** (79.7, 138.5)
Current (past-year) (546)	520.4* (330.5, 710.4)	238.1* (138.3, 337.8)	109.8 (53.3, 166.2)	172.6* (90.0, 255.1)	500.1** (352.8, 647.3)	179.7** (127.1, 232.2)	111.2* (73.3, 149.1)	212.7** (110.8, 314.6)	339.0* (211.4, 466.6)	70.0 (29.7, 110.2)	82.2 (45.4, 119.0)	187.1** (106.9, 267.3)
Nondaily (229)	665.8* (367.8, 963.9)	254.0* (116.7, 391.2)	162.0* (66.9, 257.2)	249.8* (111.2, 388.4)	467.1* (299.6, 634.7)	149.3 (81.9, 216.6)	143.4* (79.7, 207.1)	180.2* (85.8, 274.5)	476.2* (265.1, 687.3)	119.3 (22.8, 215.8)	101.9 (49.5, 154.4)	256.4* (99.6, 413.2)
Daily (317)	348.7 (179.2, 518.1)	219.3 (76.7, 361.8)	48.1 (19.2, 77.0)	81.3 (42.0, 120.5)	519.8** (306.2, 733.3)	197.6** (123.8, 271.5)	92.1 (46.8, 137.5)	231.8* (79.3, 384.3)	277.3 (127.2, 427.3)	48 (11.9, 84.1)	73.4 (26.3, 120.4)	155.9* (67.7, 244.1)

Note. CI = confidence interval. Data are visualized in Figure 3.6.

^aTobacco use is defined as use of tobacco products other than e-cigarettes (due to survey question wording). *Current tobacco use* is defined as daily or nondaily use in the past year. *Former tobacco use* is defined as ever use in lifetime but not in the past year. *Never tobacco use* is defined as no lifetime use of tobacco.

* $p < .1$ for association comparing alcohol consumption among tobacco use categories (referent = Never). ** $p < .05$ for association comparing alcohol consumption among tobacco use categories (referent = Never). *** $p < .01$ for association comparing alcohol consumption among tobacco use categories (referent = Never).

Source: 2014–2015 and 2019–2020 U.S. National Alcohol Surveys.

Table 3B.14 Cigarette Smoking History, Categorized by Pack Years, by Lifetime Number of 5+ Drinking Days in the 2014–2015 National Alcohol Survey (N = 5,632), by Education, Stratified by Age (Row Percents)

Cigarette pack years (unweighted <i>n</i>)	Ages 18–29				Ages 30–59				Ages 60 and older			
	0	0.1–499	≥500	<i>p</i> value	0	0.1–999	≥1,000	<i>p</i> value	0	0.1–999	≥1,000	<i>p</i> value ^b
	Lifetime number of 5+ drinking days: ^a Weighted % (95% CI)											
High school or less												
0 (1,175)	73.4 (63.9, 81.0)	17.7 (11.5, 26.2)	9.0 (4.6, 16.6)	<.001	58.4 (51.0, 65.5)	30.5 (23.9, 38.0)	11.1 (7.2, 16.8)	<.001	80.8 (73.7, 86.3)	9.7 (5.9, 15.6)	9.5 (5.7, 15.4)	<.001
0.1–20 (503)	25.1 (14.7, 39.4)	37.1 (24.3, 51.9)	37.9 (24.6, 53.3)		25.6 (19.2, 33.3)	34.9 (26.6, 44.3)	39.5 (31.2, 48.3)		62.8 (51.1, 73.2)	13.0 (6.9, 23.2)	24.1 (15.5, 35.6)	
20.1–40 (163)	*	*	*		20.2 (10.3, 35.9)	29.8 (17.0, 46.8)	50.0 (34.9, 65.1)		40.9 (27.6, 55.7)	26.6 (14.0, 44.7)	32.5 (20.3, 47.5)	
≥40.1 (272)	*	61.9 (30.3, 85.9)	*		23.8 (14.4, 37.3)	25.9 (15.2, 40.4)	50.3 (36.0, 64.7)		43.3 (32.3, 55.0)	18.4 (11.7, 27.7)	38.4 (27.4, 50.7)	
Some college												
0 (820)	47.8 (37.1, 58.7)	40.1 (29.9, 51.2)	12.1 (6.5, 21.6)	<.001	40.2 (33.7, 47.2)	40.7 (33.8, 48.0)	19.1 (13.9, 25.6)	<.001	76.4 (68.6, 82.7)	16.5 (11.3, 23.4)	7.2 (3.8, 13.2)	<.001
0.1–20 (330)	*	65.4 (47.1, 80.0)	26.1 (13.5, 44.4)		16.5 (10.6, 24.8)	42.3 (32.4, 52.9)	41.2 (31.3, 51.9)		60.5 (45.4, 73.8)	18.4 (9.8, 31.7)	21.1 (10.7, 37.4)	
20.1–40 (104)	*	*	*		*	38.3 (21.9, 57.8)	51.4 (32.9, 69.5)		27.1 (15.1, 43.8)	29.3 (16.8, 45.9)	43.6 (27.1, 61.8)	
≥40.1 (183)	*	46.1 (21.5, 72.9)	*		23.7 (12.2, 41.0)	34.9 (19.9, 53.7)	41.4 (24.8, 60.1)		38.0 (26.2, 51.5)	36.6 (24.6, 50.5)	25.4 (16.2, 37.5)	
College degree												
0 (1,323)	27.0 (19.0, 36.9)	65.1 (54.8, 74.2)	7.9 (3.9, 15.2)	<.001	40.7 (35.7, 45.9)	45.7 (40.4, 51.1)	13.6 (10.0, 18.2)	<.001	73.7 (67.1, 79.5)	19.3 (14.5, 25.3)	7.0 (4.0, 11.9)	<.001
0.1–20 (369)	*	52.3 (29.4, 74.2)	47.7 (25.8, 70.6)		13.9 (8.9, 21.1)	38.5 (29.2, 48.8)	47.6 (37.4, 58.0)		47.3 (36.1, 58.8)	33.5 (22.9, 46.0)	19.3 (9.6, 35.2)	
20.1–40 (114)	*	*	*		22.0 (7.2, 50.5)	44.4 (23.8, 67.1)	33.7 (17.8, 54.4)		32.3 (19.8, 48.0)	48.4 (33.5, 63.5)	19.4 (9.6, 35.2)	
≥40.1 (170)	*	*	*		14.0 (6.0, 29.3)	54.4 (37.1, 70.6)	31.6 (18.2, 49.1)		40.9 (29.2, 53.7)	28.7 (19.4, 40.4)	30.4 (19.4, 44.2)	

Note. CI = confidence interval.

^aLifetime 5+ drinking days is defined as the number of days over lifetime in which participants reported drinking five or more drinks on one occasion. ^bp value for bivariate association, obtained through a chi-squared test, between pack year and alcohol use categories within each age and education group.

*Cells with n < 10 are suppressed.

Source: 2014–2015 U.S. National Alcohol Survey.

Table 3B.15 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), by Annual Income (Row Percents)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
<\$20,000						
Overall (41,895)	24.0 (23.3, 24.6)	37.3 (36.5, 38.0)	14.4 (13.9, 14.9)	16.7 (16.2, 17.2)	7.8 (7.4, 8.1)	<.001
Never (18,156)	44.0 (42.9, 45.2)	30.1 (29.0, 31.1)	12.3 (11.6, 13.0)	11.0 (10.4, 11.7)	2.6 (2.3, 3.0)	
Former (10,537)	9.4 (8.4, 10.4)	46.9 (45.4, 48.3)	19.1 (18.0, 20.3)	17.2 (16.3, 18.2)	7.5 (6.8, 8.2)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (5,780)	11.0 (9.7, 12.4)	31.5 (29.7, 33.4)	11.5 (10.3, 12.7)	30.6 (28.9, 32.4)	15.5 (14.2, 16.8)	
Current (past-30-day) daily smoking, <300 cigarettes/month (1,844)	9.0 (7.2, 11.2)	40.2 (36.8, 43.7)	16.3 (13.8, 19.1)	22.5 (19.8, 25.4)	12.0 (10.1, 14.3)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (5,578)	8.1 (7.0, 9.4)	43.9 (42.0, 45.8)	13.4 (12.1, 14.8)	18.7 (17.3, 20.3)	15.9 (14.6, 17.3)	
\$20,000–\$49,999						
Overall (65,577)	17.1 (16.6, 17.5)	37.1 (36.6, 37.7)	21.6 (21.2, 22.1)	16.0 (15.6, 16.4)	8.2 (7.9, 8.5)	<.001
Never (26,489)	34.5 (33.6, 35.4)	33.0 (32.1, 33.9)	18.4 (17.8, 19.1)	11.3 (10.8, 11.9)	2.8 (2.5, 3.1)	
Former (21,993)	5.5 (5.1, 6.0)	42.0 (41.0, 43.0)	27.5 (26.7, 28.4)	16.5 (15.8, 17.1)	8.5 (8.0, 9.0)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (6,836)	7.6 (6.6, 8.6)	27.5 (25.9, 29.2)	16.8 (15.5, 18.2)	30.5 (28.9, 32.2)	17.7 (16.4, 19.0)	
Current (past-30-day) daily smoking, <300 cigarettes/month (2,253)	7.0 (5.5, 9.0)	39.0 (36.0, 42.1)	17.3 (15.2, 19.7)	23.3 (21.0, 25.8)	13.3 (11.5, 15.5)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (8,006)	4.8 (4.1, 5.7)	41.4 (39.9, 43.0)	17.6 (16.5, 18.9)	18.5 (17.4, 19.7)	17.6 (16.5, 18.8)	

Table 3B.15 (continued)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
\$50,000–\$74,999						
Overall (32,987)	12.2 (11.7, 12.8)	32.3 (31.5, 33.0)	29.1 (28.3, 29.8)	17.1 (16.6, 17.7)	9.3 (8.9, 9.8)	<.001
Never (12,900)	26.7 (25.6, 27.9)	31.2 (30.0, 32.4)	27.4 (26.2, 28.5)	11.8 (11.0, 12.6)	3.0 (2.6, 3.4)	
Former (13,402)	3.3 (2.9, 3.8)	34.1 (32.9, 35.2)	34.3 (33.2, 35.5)	18.3 (17.4, 19.2)	10.1 (9.3, 10.8)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (2,806)	3.6 (2.7, 4.9)	22.4 (20.0, 24.9)	18.2 (16.3, 20.3)	32.8 (30.3, 35.3)	23.0 (20.7, 25.5)	
Current (past-30-day) daily smoking, <300 cigarettes/month (771)	6.7 (3.9, 11.2)	29.1 (24.7, 33.9)	25.0 (20.6, 30.0)	22.6 (18.7, 27.1)	16.6 (13.2, 20.7)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (3,108)	4.3 (3.2, 5.8)	36.0 (33.7, 38.4)	19.7 (17.7, 21.8)	20.2 (18.4, 22.3)	19.8 (18.0, 21.8)	
\$75,000+						
Overall (70,225)	8.8 (8.5, 9.1)	24.8 (24.3, 25.3)	37.7 (37.1, 38.2)	17.9 (17.5, 18.3)	10.9 (10.6, 11.2)	<.001
Never (27,678)	20.1 (19.4, 20.8)	26.4 (25.6, 27.2)	36.8 (36.0, 37.6)	12.2 (11.7, 12.7)	4.5 (4.1, 4.9)	
Former (32,319)	1.8 (1.6, 2.0)	23.6 (22.9, 24.3)	42.1 (41.4, 42.9)	19.6 (19.0, 20.2)	12.9 (12.4, 13.4)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (4,984)	2.1 (1.6, 2.6)	16.3 (14.8, 18.0)	21.9 (20.2, 23.6)	35.2 (33.4, 37.1)	24.5 (22.9, 26.2)	
Current (past-30-day) daily smoking, <300 cigarettes/month (1,096)	3.4 (2.1, 5.4)	25.9 (22.3, 30.0)	24.2 (20.6, 28.3)	25.0 (21.7, 28.7)	21.4 (18.3, 24.9)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (4,148)	2.9 (2.2, 3.9)	32.3 (30.3, 34.4)	22.9 (21.1, 24.8)	21.7 (20.1, 23.4)	20.2 (18.6, 21.9)	

Note. CI = confidence interval. Data are visualized in Figure 3.7.

^aCurrent cigarette smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories within each income group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.16 Current (Past-30-Day) Alcohol Use by Smokeless Tobacco Use Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,931), by Annual Income (Row Percents)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
<\$20,000						
Overall (42,012)	23.9 (23.3, 24.6)	37.3 (36.6, 38.0)	14.3 (13.8, 14.8)	16.7 (16.2, 17.2)	7.8 (7.4, 8.1)	<.001
Never (35,426)	26.5 (25.8, 27.3)	37.3 (36.5, 38.1)	14.3 (13.7, 14.8)	15.3 (14.8, 15.9)	6.6 (6.3, 7.0)	
Former (4,981)	6.1 (5.1, 7.4)	38.8 (36.6, 41.0)	16.2 (14.6, 17.8)	24.7 (23.0, 26.5)	14.2 (12.9, 15.6)	
Current (past-30-day) nondaily use (1,125)	12.1 (8.8, 16.3)	29.2 (25.1, 33.7)	7.5 (5.4, 10.2)	33.1 (29.0, 37.5)	18.2 (15.3, 21.4)	
Current (past-30-day) daily use (480)	12.5 (8.4, 18.3)	39.8 (33.1, 46.9)	13.4 (9.2, 19.1)	15.9 (12.3, 20.3)	18.5 (13.6, 24.5)	
\$20,000–\$49,999						
Overall (65,656)	17.1 (16.6, 17.5)	37.1 (36.6, 37.7)	21.6 (21.1, 22.1)	16.0 (15.7, 16.4)	8.2 (7.9, 8.5)	<.001
Never (53,968)	19.4 (18.9, 19.9)	37.4 (36.7, 38.0)	21.7 (21.2, 22.2)	14.9 (14.4, 15.3)	6.7 (6.4, 7.0)	
Former (8,959)	3.3 (2.7, 4.0)	37.1 (35.6, 38.6)	22.1 (20.8, 23.4)	22.1 (21.0, 23.3)	15.4 (14.4, 16.4)	
Current (past-30-day) nondaily use (1,536)	9.3 (7.2, 12.1)	26.0 (22.9, 29.4)	17.3 (14.7, 20.4)	26.8 (23.9, 30.0)	20.5 (17.9, 23.3)	
Current (past-30-day) daily use (1,193)	4.7 (2.9, 7.5)	35.7 (31.8, 39.8)	17.8 (14.8, 21.4)	22.9 (19.8, 26.4)	18.8 (15.9, 22.1)	

Table 3B.16 (continued)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
\$50,000–\$74,999						
Overall (33,017)	12.2 (11.7, 12.8)	32.3 (31.5, 33.0)	29.0 (28.3, 29.8)	17.1 (16.6, 17.7)	9.3 (8.9, 9.8)	<.001
Never (26,222)	14.4 (13.7, 15.0)	33.1 (32.2, 33.9)	29.9 (29.1, 30.7)	15.1 (14.5, 15.7)	7.6 (7.2, 8.1)	
Former (5,223)	2.1 (1.6, 2.9)	29.0 (27.2, 30.8)	26.4 (24.7, 28.1)	26.2 (24.5, 27.9)	16.4 (15.0, 17.8)	
Current (past-30-day) nondaily use (800)	4.8 (2.7, 8.6)	23.0 (18.9, 27.6)	18.9 (15.0, 23.5)	33.7 (29.4, 38.3)	19.7 (16.1, 23.8)	
Current (past-30-day) daily use (772)	2.4 (1.3, 4.3)	31.6 (26.8, 36.8)	19.9 (16.4, 23.9)	24.7 (20.8, 29.0)	21.5 (17.5, 26.1)	
\$75,000+						
Overall (70,246)	8.8 (8.5, 9.1)	24.8 (24.3, 25.3)	37.6 (37.1, 38.2)	17.9 (17.5, 18.3)	10.9 (10.6, 11.2)	<.001
Never (54,715)	10.6 (10.2, 11.0)	25.9 (25.4, 26.5)	39.1 (38.5, 39.7)	15.2 (14.8, 15.6)	9.2 (8.8, 9.5)	
Former (12,339)	1.0 (0.8, 1.3)	19.9 (18.9, 21.0)	34.0 (32.8, 35.3)	28.0 (26.9, 29.0)	17.1 (16.2, 18.0)	
Current (past-30-day) nondaily use (1,706)	3.1 (2.1, 4.6)	17.7 (15.1, 20.6)	21.4 (18.6, 24.4)	35.1 (32.1, 38.3)	22.7 (20.1, 25.6)	
Current (past-30-day) daily use (1,486)	1.9 (1.0, 3.4)	23.8 (20.8, 27.0)	22.0 (19.1, 25.3)	29.9 (26.9, 33.1)	22.5 (19.6, 25.7)	

Note. CI = confidence interval.

^aCurrent smokeless tobacco use is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^fp value for bivariate association, obtained through a chi-squared test, between smokeless tobacco and alcohol use categories within each income group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.17 Current (Past-30-Day) Alcohol Use by Cigar Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,958), by Annual Income (Row Percents)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
<\$20,000						
Overall (42,017)	24.0 (23.3, 24.6)	37.3 (36.6, 38.0)	14.3 (13.8, 14.8)	16.7 (16.2, 17.2)	7.8 (7.4, 8.1)	<.001
Never (29,594)	30.9 (30.1, 31.7)	38.0 (37.2, 38.9)	12.6 (12.0, 13.2)	13.4 (12.9, 14.0)	5.1 (4.7, 5.4)	
Former (9,163)	4.5 (3.8, 5.2)	37.7 (36.1, 39.2)	19.5 (18.3, 20.8)	23.7 (22.4, 24.9)	14.7 (13.7, 15.8)	
Current (past-30-day) cigar smoking (3,260)	6.1 (4.8, 7.6)	28.2 (26.0, 30.7)	17.6 (15.8, 19.6)	31.5 (29.3, 33.8)	16.6 (14.9, 18.4)	
\$20,000–\$49,999						
Overall (65,667)	17.1 (16.6, 17.5)	37.1 (36.6, 37.7)	21.6 (21.1, 22.1)	16.0 (15.7, 16.4)	8.2 (7.9, 8.5)	<.001
Never (44,442)	23.1 (22.5, 23.7)	38.5 (37.9, 39.2)	19.7 (19.1, 20.2)	13.4 (13.0, 13.9)	5.3 (5.0, 5.6)	
Former (17,309)	3.1 (2.7, 3.6)	35.3 (34.3, 36.4)	27.0 (26.0, 28.0)	20.9 (20.1, 21.8)	13.7 (13.0, 14.4)	
Current (past-30-day) cigar smoking (3,916)	3.7 (3.0, 4.6)	25.2 (23.2, 27.4)	20.9 (19.1, 22.9)	29.0 (27.0, 31.0)	21.2 (19.3, 23.1)	
\$50,000–\$74,999						
Overall (33,025)	12.2 (11.7, 12.8)	32.3 (31.5, 33.0)	29.0 (28.3, 29.8)	17.1 (16.6, 17.7)	9.3 (8.9, 9.8)	<.001
Never (20,849)	18.0 (17.2, 18.8)	35.1 (34.1, 36.0)	27.6 (26.8, 28.5)	13.2 (12.5, 13.8)	6.2 (5.7, 6.7)	
Former (10,458)	1.7 (1.3, 2.1)	28.7 (27.4, 30.0)	32.3 (31.0, 33.6)	23.0 (21.9, 24.2)	14.4 (13.5, 15.4)	
Current (past-30-day) cigar smoking (1,718)	2.5 (1.6, 4.0)	16.8 (14.2, 19.8)	26.5 (23.5, 29.8)	34.0 (30.8, 37.3)	20.2 (17.6, 23.0)	

Table 3B.17 (continued)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
\$75,000+						
Overall (70,249)	8.8 (8.5, 9.1)	24.8 (24.3, 25.3)	37.7 (37.1, 38.2)	17.9 (17.5, 18.3)	10.9 (10.6, 11.2)	<.001
Never (41,136)	14.0 (13.5, 14.5)	29.1 (28.5, 29.8)	36.8 (36.1, 37.5)	13.0 (12.6, 13.4)	7.1 (6.7, 7.5)	
Former (25,462)	1.1 (1.0, 1.3)	19.3 (18.6, 20.0)	40.0 (39.2, 40.9)	23.7 (23.0, 24.4)	15.9 (15.3, 16.5)	
Current (past-30-day) cigar smoking (3,651)	1.5 (1.0, 2.0)	11.2 (9.8, 12.8)	29.3 (27.1, 31.6)	36.4 (34.2, 38.7)	21.6 (19.8, 23.6)	

Note. CI = confidence interval.

^aCurrent cigar smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigar smoking and alcohol use categories within each income group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.18 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), by Metropolitan Status (Row Percents)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Non-metropolitan						
Overall (41,243)	14.9 (14.3, 15.5)	38.2 (37.4, 38.9)	23.0 (22.3, 23.6)	15.1 (14.6, 15.6)	8.9 (8.5, 9.3)	
Never (14,061)	32.9 (31.6, 34.1)	32.8 (31.6, 34.0)	21.0 (20.0, 22.1)	9.9 (9.2, 10.6)	3.5 (3.0, 4.0)	<.001
Former (15,603)	5.8 (5.2, 6.4)	41.2 (40.0, 42.4)	28.7 (27.7, 29.9)	15.1 (14.3, 15.9)	9.2 (8.6, 9.9)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month, (4,057)	9.2 (7.8, 10.9)	32.4 (30.1, 34.8)	14.9 (13.2, 16.7)	27.9 (25.8, 30.2)	15.5 (14.0, 17.2)	
Current (past-30-day) daily smoking, <300 cigarettes/month (1,428)	8.6 (6.3, 11.7)	40.3 (36.3, 44.3)	17.5 (14.5, 21.0)	20.5 (17.7, 23.7)	13.1 (10.7, 16.0)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (6,094)	5.7 (4.8, 6.9)	43.7 (41.9, 45.6)	15.7 (14.3, 17.1)	19.4 (18.0, 20.9)	15.5 (14.3, 16.9)	
Metropolitan						
Overall (169,441)	14.1 (13.9, 14.4)	30.5 (30.2, 30.9)	28.6 (28.3, 28.9)	17.3 (17.1, 17.6)	9.4 (9.2, 9.6)	
Never (71,162)	29.2 (28.7, 29.7)	29.3 (28.8, 29.8)	26.2 (25.7, 26.7)	11.9 (11.6, 12.3)	3.4 (3.2, 3.6)	<.001
Former (62,648)	3.5 (3.3, 3.8)	31.3 (30.8, 31.9)	35.4 (34.9, 36.0)	18.8 (18.4, 19.2)	10.9 (10.6, 11.2)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (16,349)	5.8 (5.3, 6.4)	23.4 (22.4, 24.4)	17.4 (16.6, 18.3)	32.9 (31.9, 33.9)	20.5 (19.6, 21.4)	
Current (past-30-day) daily smoking, <300 cigarettes/month (4,536)	6.3 (5.3, 7.5)	34.0 (32.0, 36.1)	20.0 (18.4, 21.8)	24.0 (22.3, 25.7)	15.6 (14.2, 17.2)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (14,746)	4.9 (4.4, 5.5)	37.7 (36.6, 38.8)	18.9 (18.0, 19.8)	19.7 (18.8, 20.5)	18.9 (18.1, 19.8)	

Note. CI = confidence interval. The 2015–2019 National Survey on Drug Use and Health categorizes participants' counties of residence as large metropolitan, small metropolitan, and nonmetropolitan based on the 2013 Rural/Urban Continuum Codes⁸¹; large and small metropolitan counties were defined as metropolitan in this analysis. Data are visualized in Figure 3.8.

^aCurrent cigarette smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^fp value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories within metropolitan status group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.19 Current (Past-30-Day) Alcohol Use by Smokeless Tobacco Use Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,931), by Metropolitan Status (Row Percents)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Non-metropolitan						
Overall (41,322)	14.9 (14.3, 15.5)	38.2 (37.5, 38.9)	22.9 (22.3, 23.6)	15.1 (14.6, 15.6)	8.9 (8.5, 9.3)	<.001
Never (29,824)	18.3 (17.6, 19.0)	39.0 (38.2, 39.9)	23.3 (22.5, 24.0)	12.6 (12.1, 13.2)	6.8 (6.4, 7.2)	
Former (8,208)	3.9 (3.2, 4.7)	36.6 (35.0, 38.2)	23.6 (22.2, 25.1)	21.5 (20.2, 22.9)	14.4 (13.4, 15.6)	
Current (past-30-day) nondaily use (1,615)	7.3 (5.2, 10.1)	29.5 (26.1, 33.1)	14.7 (12.1, 17.8)	29.5 (26.3, 32.8)	19.1 (16.5, 22.0)	
Current (past-30-day) daily use (1,675)	6.0 (4.2, 8.5)	36.0 (32.4, 39.7)	19.6 (16.8, 22.8)	23.1 (20.3, 26.1)	15.3 (13.1, 17.8)	
Metropolitan						
Overall (169,609)	14.1 (13.9, 14.4)	30.6 (30.2, 30.9)	28.6 (28.3, 28.9)	17.3 (17.1, 17.6)	9.4 (9.2, 9.6)	<.001
Never (140,507)	16.3 (16.0, 16.6)	31.4 (31.1, 31.8)	28.9 (28.6, 29.3)	15.5 (15.2, 15.7)	7.9 (7.7, 8.1)	
Former (23,294)	2.1 (1.8, 2.4)	26.3 (25.4, 27.1)	28.3 (27.5, 29.2)	26.7 (25.9, 27.5)	16.6 (15.9, 17.2)	
Current (past-30-day) nondaily use (3,552)	6.6 (5.4, 8.1)	21.0 (19.0, 23.0)	18.0 (16.2, 20.0)	33.1 (31.0, 35.3)	21.3 (19.6, 23.2)	
Current (past-30-day) daily use (2,256)	2.7 (1.9, 3.9)	27.2 (24.7, 29.9)	19.5 (17.2, 21.9)	26.7 (24.4, 29.1)	23.9 (21.4, 26.5)	

Note. CI = confidence interval. The 2015–2019 National Survey on Drug Use and Health categorizes participants' counties of residence as large metropolitan, small metropolitan, and nonmetropolitan based on the 2013 Rural/Urban Continuum Codes⁸¹; large and small metropolitan counties were defined as metropolitan in this analysis.

^aCurrent smokeless tobacco use is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^fp value for bivariate association, obtained through a chi-squared test, between smokeless tobacco and alcohol use categories within metropolitan status group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.20 Current (Past-30-Day) Alcohol Use by Cigar Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,958), by Metropolitan Status (Row Percents)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Non-metropolitan						
Overall (41,317)	14.9 (14.3, 15.5)	38.2 (37.5, 38.9)	22.9 (22.3, 23.6)	15.1 (14.6, 15.6)	8.9 (8.5, 9.3)	<.001
Never (26,094)	21.2 (20.4, 22.0)	39.8 (38.8, 40.7)	21.2 (20.5, 22.0)	11.6 (11.0, 12.1)	6.2 (5.8, 6.7)	
Former (12,896)	3.0 (2.5, 3.5)	36.6 (35.3, 37.9)	26.9 (25.7, 28.1)	20.5 (19.5, 21.6)	13.0 (12.2, 13.9)	
Current (past-30-day) cigar smoking (2,327)	4.5 (3.3, 6.1)	25.3 (22.8, 28.0)	20.7 (18.0, 23.6)	30.8 (28.1, 33.6)	18.8 (16.6, 21.2)	
Metropolitan						
Overall (169,641)	14.1 (13.9, 14.4)	30.6 (30.2, 30.9)	28.6 (28.3, 28.9)	17.3 (17.1, 17.6)	9.4 (9.2, 9.6)	<.001
Never (109,927)	20.4 (20.1, 20.8)	33.8 (33.4, 34.2)	26.3 (26.0, 26.7)	13.5 (13.2, 13.8)	6.0 (5.8, 6.2)	
Former (49,496)	1.9 (1.8, 2.1)	25.3 (24.7, 25.9)	34.2 (33.6, 34.9)	23.3 (22.8, 23.8)	15.3 (14.8, 15.7)	
Current (past-30-day) cigar smoking (10,218)	3.1 (2.6, 3.6)	18.9 (17.7, 20.0)	24.5 (23.2, 25.8)	33.2 (31.9, 34.5)	20.4 (19.3, 21.5)	

Note. CI = confidence interval. The 2015–2019 National Survey on Drug Use and Health categorizes participants' counties of residence as large metropolitan, small metropolitan, and nonmetropolitan based on the 2013 Rural/Urban Continuum Codes⁸¹; large and small metropolitan counties were defined as metropolitan in this analysis.

^aCurrent cigar smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigar smoking and alcohol use categories within each metropolitan status group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.21 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), Overall and Among Sexual Minority Adults (Row Percents)

Cigarette smoking status ^a (unweighted n)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	p value ^f
	Alcohol use: Weighted % (95% CI)					
Overall Sample						
Overall (210,684)	14.2 (14.0, 14.5)	31.6 (31.3, 31.9)	27.8 (27.5, 28.1)	17.0 (16.8, 17.2)	9.3 (9.2, 9.5)	
Never (85,223)	29.6 (29.1, 30.1)	29.7 (29.3, 30.2)	25.6 (25.1, 26.0)	11.7 (11.4, 12.0)	3.4 (3.2, 3.6)	<.001
Former (78,251)	3.9 (3.7, 4.1)	32.7 (32.3, 33.2)	34.5 (34.0, 35.0)	18.3 (17.9, 18.7)	10.7 (10.3, 11.0)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (20,406)	6.3 (5.8, 6.8)	24.6 (23.7, 25.6)	17.1 (16.3, 17.8)	32.2 (31.3, 33.1)	19.8 (19.0, 20.6)	
Current (past-30-day) daily smoking, <300 cigarettes/month (5,964)	6.7 (5.8, 7.8)	35.1 (33.3, 37.0)	19.6 (18.1, 21.2)	23.4 (21.9, 24.9)	15.2 (14.0, 16.5)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (20,840)	5.1 (4.6, 5.6)	39.0 (38.1, 40.0)	18.2 (17.4, 18.9)	19.6 (18.9, 20.3)	18.1 (17.4, 18.9)	
Sexual minority						
Overall (14,730)	9.7 (9.0, 10.5)	27.5 (26.4, 28.6)	27.1 (26.0, 28.3)	21.2 (20.3, 22.2)	14.5 (13.6, 15.4)	
Never (4,706)	24.7 (22.8, 26.7)	27.1 (25.1, 29.1)	27.4 (25.4, 29.4)	15.3 (13.9, 16.8)	5.6 (4.7, 6.8)	<.001
Former (5,117)	2.4 (1.8, 3.2)	28.0 (26.2, 30.0)	33.3 (31.3, 35.3)	21.4 (19.9, 23.1)	14.8 (13.4, 16.4)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (2,242)	3.4 (2.3, 5.0)	19.3 (17.1, 21.8)	18.1 (15.8, 20.7)	33.6 (30.9, 36.5)	25.5 (22.9, 28.3)	
Current (past-30-day) daily smoking, <300 cigarettes/month (753)	6.8 (4.3, 10.5)	27.3 (22.9, 32.1)	18.7 (15.2, 22.9)	27.5 (23.3, 32.0)	19.8 (16.3, 23.9)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,912)	3.1 (2.1, 4.5)	35.2 (32.2, 38.4)	19.6 (17.0, 22.5)	20.4 (18.0, 23.1)	21.7 (19.1, 24.4)	

Note. CI = confidence interval. *Sexual minority* is defined as participants who identified as “lesbian or gay” or “bisexual”. Data are visualized in Figure 3.9.

^aCurrent cigarette smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^fp value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.22 Current (Past-30-Day) Alcohol Use by Smokeless Tobacco Use Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,931), Overall and Among Sexual Minority Adults (Row Percents)

Smokeless tobacco use status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Overall Sample						
Overall (210,931)	14.2 (14.0, 14.5)	31.6 (31.3, 31.9)	27.8 (27.5, 28.1)	17.0 (16.8, 17.2)	9.3 (9.2, 9.5)	<.001
Never (170,331)	16.5 (16.3, 16.8)	32.4 (32.1, 32.7)	28.2 (27.9, 28.5)	15.1 (14.9, 15.3)	7.8 (7.6, 7.9)	
Former (31,502)	2.4 (2.2, 2.7)	28.2 (27.5, 29.0)	27.5 (26.7, 28.2)	25.7 (25.1, 26.4)	16.2 (15.6, 16.7)	
Current (past-30-day) nondaily use (5,167)	6.8 (5.7, 8.1)	23.0 (21.3, 24.8)	17.2 (15.7, 18.9)	32.2 (30.5, 34.1)	20.8 (19.3, 22.4)	
Current (past-30-day) daily use (3,931)	3.9 (3.0, 5.0)	30.3 (28.3, 32.5)	19.5 (17.7, 21.4)	25.4 (23.6, 27.3)	20.8 (19.1, 22.8)	
Sexual minority individuals						
Overall (14,743)	9.7 (9.0, 10.5)	27.5 (26.4, 28.6)	27.1 (26.0, 28.3)	21.2 (20.3, 22.2)	14.4 (13.6, 15.3)	<.001
Never (12,441)	10.9 (10.0, 11.8)	27.9 (26.7, 29.1)	27.6 (26.4, 28.9)	20.7 (19.7, 21.7)	13.0 (12.1, 14.0)	
Former (2,004)	1.5 (0.8, 2.7)	26.1 (23.2, 29.2)	25.4 (22.6, 28.4)	24.4 (21.9, 27.2)	22.6 (20.1, 25.4)	
Current (past-30-day) nondaily use (222)	17.2 (8.2, 32.6)	17.2 (11.5, 25.0)	13.8 (8.8, 20.9)	28.2 (20.3, 37.7)	23.6 (16.5, 32.6)	
Current (past-30-day) daily use (76)	*	33.9 (20.8, 50.2)	19.7 (11.0, 32.9)	19.2 (7.6, 40.5)	26.2 (15.4, 41.0)	

Note. CI = confidence interval. *Sexual minority* is defined as participants who identified as “lesbian or gay” or “bisexual”.

^aCurrent smokeless tobacco use is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^fp value for bivariate association, obtained through a chi-squared test, between smokeless tobacco and alcohol use categories.

*Cells with $n < 10$ are suppressed.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.23 Current (Past-30-Day) Alcohol Use by Cigar Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,958), Overall and Among Sexual Minority Adults (Row Percents)

Cigar smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Overall Sample						
Overall (210,958)	14.2 (14.0, 14.5)	31.6 (31.3, 31.9)	27.8 (27.5, 28.1)	17.0 (16.8, 17.2)	9.3 (9.2, 9.5)	<.001
Never (136,021)	20.5 (20.2, 20.8)	34.6 (34.2, 35.0)	25.6 (25.3, 26.0)	13.2 (13.0, 13.5)	6.0 (5.8, 6.2)	
Former (62,392)	2.1 (1.9, 2.3)	27.0 (26.4, 27.5)	33.2 (32.6, 33.7)	22.9 (22.4, 23.3)	14.9 (14.5, 15.3)	
Current (past-30-day) cigar smoking (12,545)	3.3 (2.8, 3.7)	19.7 (18.6, 20.8)	24.0 (22.8, 25.2)	32.9 (31.7, 34.1)	20.2 (19.2, 21.2)	
Sexual minority individuals						
Overall (14,742)	9.7 (9.0, 10.5)	27.5 (26.4, 28.6)	27.1 (26.0, 28.3)	21.2 (20.3, 22.2)	14.5 (13.6, 15.3)	<.001
Never (8,924)	15.3 (14.1, 16.5)	30.3 (28.8, 31.8)	25.9 (24.5, 27.3)	19.1 (18.0, 20.3)	9.5 (8.6, 10.5)	
Former (4,569)	1.0 (0.7, 1.4)	24.0 (22.1, 25.9)	30.1 (28.1, 32.2)	23.5 (21.9, 25.3)	21.4 (19.7, 23.2)	
Current (past-30-day) cigar smoking (1,249)	2.3 (1.3, 3.8)	20.2 (17.3, 23.5)	24.0 (20.7, 27.8)	28.8 (25.5, 32.4)	24.7 (21.3, 28.4)	

Note. CI = confidence interval. *Sexual minority* is defined as participants who identified as “lesbian or gay” or “bisexual”.

^a*Current cigar smoking* is defined as use in the past 30 days. ^b*Never* and *former alcohol use* are based on lifetime alcohol use and use in the past 30 days. ^c*Alcohol use within guidelines* is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^d*Binge, no risky weekly use* is defined as drinking $\geq 4/5$ drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^e*Risky weekly use* is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigar smoking and alcohol use categories.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.24 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), Overall and Among Veterans (Row Percents)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
Overall Sample						
Overall (210,684)	14.2 (14.0, 14.5)	31.6 (31.3, 31.9)	27.8 (27.5, 28.1)	17.0 (16.8, 17.2)	9.3 (9.2, 9.5)	<.001
Never (85,223)	29.6 (29.1, 30.1)	29.7 (29.3, 30.2)	25.6 (25.1, 26.0)	11.7 (11.4, 12.0)	3.4 (3.2, 3.6)	
Former (78,251)	3.9 (3.7, 4.1)	32.7 (32.3, 33.2)	34.5 (34.0, 35.0)	18.3 (17.9, 18.7)	10.7 (10.3, 11.0)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (20,406)	6.3 (5.8, 6.8)	24.6 (23.7, 25.6)	17.1 (16.3, 17.8)	32.2 (31.3, 33.1)	19.8 (19.0, 20.6)	
Current (past-30-day) daily smoking, <300 cigarettes/month (5,964)	6.7 (5.8, 7.8)	35.1 (33.3, 37.0)	19.6 (18.1, 21.2)	23.4 (21.9, 24.9)	15.2 (14.0, 16.5)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (20,840)	5.1 (4.6, 5.6)	39.0 (38.1, 40.0)	18.2 (17.4, 18.9)	19.6 (18.9, 20.3)	18.1 (17.4, 18.9)	
Veterans						
Overall (11,695)	6.6 (6.0, 7.2)	36.9 (35.8, 38.1)	33.8 (32.7, 35.0)	13.6 (12.8, 14.4)	9.1 (8.4, 9.8)	<.001
Never (2,654)	17.6 (15.7, 19.7)	32.9 (30.6, 35.4)	34.2 (31.8, 36.6)	10.6 (9.1, 12.2)	4.8 (3.8, 6.0)	
Former (6,289)	3.0 (2.4, 3.6)	38.8 (37.2, 40.4)	37.8 (36.2, 39.4)	12.6 (11.6, 13.7)	7.9 (7.1, 8.8)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (874)	3.7 (2.4, 5.7)	27.8 (23.6, 32.5)	21.6 (18.1, 25.6)	28.1 (24.2, 32.4)	18.7 (15.3, 22.8)	
Current (past-30-day) daily smoking, <300 cigarettes/month (283)	6.6 (3.4, 12.5)	38.3 (30.7, 46.4)	29.1 (22.0, 37.5)	14.8 (10.2, 20.9)	11.2 (7.4, 16.8)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,595)	3.7 (2.6, 5.4)	39.7 (36.5, 43.1)	20.2 (17.6, 23.1)	17.9 (15.6, 20.4)	18.5 (16.1, 21.1)	

Note. CI = confidence interval. *Veterans* are participants who indicated they are “now separated or retired from the military”. Data are visualized in Figure 3.10.

^a*Current cigarette smoking* is defined as use in the past 30 days. ^b*Never* and *former alcohol use* are based on lifetime alcohol use and use in the past 30 days. ^c*Alcohol use within guidelines* is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^d*Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^e*Risky weekly use* is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.25 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), Overall and by Health Condition (Row Percents)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Overall Sample						
Overall (210,684)	14.2 (14.0, 14.5)	31.6 (31.3, 31.9)	27.8 (27.5, 28.1)	17.0 (16.8, 17.2)	9.3 (9.2, 9.5)	<.001
Never (85,223)	29.6 (29.1, 30.1)	29.7 (29.3, 30.2)	25.6 (25.1, 26.0)	11.7 (11.4, 12.0)	3.4 (3.2, 3.6)	
Former (78,251)	3.9 (3.7, 4.1)	32.7 (32.3, 33.2)	34.5 (34.0, 35.0)	18.3 (17.9, 18.7)	10.7 (10.3, 11.0)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (20,406)	6.3 (5.8, 6.8)	24.6 (23.7, 25.6)	17.1 (16.3, 17.8)	32.2 (31.3, 33.1)	19.8 (19.0, 20.6)	
Current (past-30-day) daily smoking, <300 cigarettes/month (5,964)	6.7 (5.8, 7.8)	35.1 (33.3, 37.0)	19.6 (18.1, 21.2)	23.4 (21.9, 24.9)	15.2 (14.0, 16.5)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (20,840)	5.1 (4.6, 5.6)	39.0 (38.1, 40.0)	18.2 (17.4, 18.9)	19.6 (18.9, 20.3)	18.1 (17.4, 18.9)	
Cancer						
Overall (7,548)	9.9 (9.0, 10.8)	37.8 (36.3, 39.2)	35.9 (34.5, 37.3)	9.2 (8.4, 10.1)	7.3 (6.6, 8.1)	<.001
Never (2,370)	22.9 (20.7, 25.2)	32.5 (30.0, 35.0)	34.6 (32.1, 37.2)	6.6 (5.5, 8.0)	3.4 (2.6, 4.5)	
Former (4,015)	3.4 (2.7, 4.2)	38.3 (36.4, 40.3)	39.8 (37.9, 41.8)	9.8 (8.7, 11.0)	8.7 (7.6, 9.9)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (333)	7.4 (4.1, 12.8)	39.5 (32.3, 47.2)	20.0 (14.9, 26.4)	20.1 (14.6, 27.0)	13.1 (9.0, 18.5)	
Current (past-30-day) daily smoking, <300 cigarettes/month (143)	7.0 (3.4, 13.9)	52.8 (41.3, 63.9)	17.6 (10.1, 28.9)	14.1 (8.0, 23.5)	8.6 (4.7, 15.2)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (687)	4.1 (2.6, 6.3)	54.0 (49.0, 58.9)	20.3 (16.5, 24.7)	11.1 (8.5, 14.5)	10.5 (8.0, 13.8)	
Hypertension						
Overall (25,838)	13.2 (12.6, 13.8)	38.3 (37.5, 39.1)	29.1 (28.4, 29.9)	11.2 (10.7, 11.7)	8.1 (7.7, 8.6)	<.001
Never (8,902)	28.2 (27.0, 29.5)	34.8 (33.4, 36.1)	26.0 (24.8, 27.3)	7.3 (6.7, 8.0)	3.7 (3.1, 4.3)	
Former (12,267)	4.5 (4.0, 5.0)	39.8 (38.7, 41.0)	34.5 (33.3, 35.6)	12.0 (11.3, 12.8)	9.2 (8.5, 9.9)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (1,480)	6.5 (4.9, 8.5)	32.5 (29.2, 36.0)	19.5 (16.9, 22.4)	24.0 (21.1, 27.2)	17.5 (14.9, 20.5)	
Current (past-30-day) daily smoking, <300 cigarettes/month (560)	8.4 (5.4, 12.8)	37.9 (32.4, 43.7)	23.3 (18.4, 29.0)	17.8 (14.0, 22.3)	12.7 (9.5, 16.8)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (2,629)	5.8 (4.6, 7.4)	47.1 (44.5, 49.7)	17.0 (15.1, 19.1)	14.9 (13.1, 16.7)	15.2 (13.5, 17.2)	

Table 3B.25 (continued)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
	Alcohol use: Weighted % (95% CI)					
Heart condition						
Overall (13,958)	12.4 (11.7, 13.1)	41.5 (40.4, 42.6)	29.9 (28.9, 31.0)	9.4 (8.8, 10.0)	6.8 (6.3, 7.4)	<.001
Never (4,567)	27.5 (25.7, 29.3)	36.0 (34.0, 37.9)	27.7 (25.9, 29.6)	6.4 (5.5, 7.3)	2.5 (2.0, 3.2)	
Former (6,673)	5.2 (4.6, 5.9)	43.6 (42.1, 45.2)	34.6 (33.1, 36.1)	9.6 (8.8, 10.5)	7.0 (6.3, 7.8)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (928)	8.5 (6.3, 11.4)	36.9 (32.5, 41.5)	15.9 (13.0, 19.4)	19.2 (16.0, 22.9)	19.4 (16.0, 23.4)	
Current (past-30-day) daily smoking, <300 cigarettes/month (300)	8.8 (5.2, 14.4)	47.2 (39.4, 55.2)	16.2 (11.4, 22.6)	16.8 (11.8, 23.3)	11.0 (6.7, 17.6)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,490)	5.8 (4.3, 7.9)	49.5 (46.0, 53.1)	20.1 (17.3, 23.2)	11.7 (9.7, 14.1)	12.8 (10.8, 15.2)	
Diabetes						
Overall (14,329)	18.5 (17.6, 19.4)	44.6 (43.5, 45.7)	22.2 (21.3, 23.2)	10.4 (9.8, 11.1)	4.3 (3.9, 4.7)	<.001
Never (5,398)	36.6 (34.8, 38.4)	36.8 (35.1, 38.6)	17.3 (16.0, 18.7)	7.6 (6.7, 8.5)	1.8 (1.3, 2.3)	
Former (6,091)	6.5 (5.7, 7.4)	50.2 (48.6, 51.9)	28.1 (26.6, 29.6)	10.7 (9.8, 11.7)	4.5 (3.8, 5.2)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (933)	11.0 (8.4, 14.4)	40.3 (35.9, 44.9)	13.7 (11.1, 16.8)	22.2 (18.8, 26.2)	12.8 (9.8, 16.6)	
Current (past-30-day) daily smoking, <300 cigarettes/month (344)	11.7 (7.2, 18.3)	43.3 (36.0, 50.9)	23.8 (18.1, 30.5)	12.3 (8.8, 17.0)	9.0 (5.7, 13.8)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (1,563)	6.9 (5.2, 9.0)	52.0 (48.6, 55.4)	17.7 (15.1, 20.5)	14.7 (12.5, 17.3)	8.8 (7.1, 10.8)	

Note. CI = confidence interval. *Self-reported health conditions* are defined as a condition that a doctor or other health care professional has ever told participants that they had, including “cancer,” “any kind of heart condition or heart disease,” “diabetes or sugar diabetes,” and “hypertension, also called high blood pressure.” Data are visualized in Figure 3.11.

^a*Current cigarette smoking* is defined as use in the past 30 days. ^b*Never* and *former alcohol use* are based on lifetime alcohol use and use in the past 30 days. ^c*Alcohol use within guidelines* is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^d*Binge, no risky weekly use* is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^e*Risky weekly use* is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories within each health condition group.

Source: 2015–2019 National Survey on Drug Use and Health.

Table 3B.26 Current (Past-30-Day) Alcohol Use by Cigarette Smoking Status in the 2015–2019 National Survey on Drug Use and Health (N = 210,684), Among People with Mental Distress (Row Percents)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
None/low (Score of 0–4 on Kessler K6 non-specific distress scale)						
Overall (128,719)	15.0 (14.7, 15.2)	31.2 (30.8, 31.6)	29.8 (29.4, 30.2)	15.9 (15.6, 16.2)	8.2 (8.0, 8.4)	<.001
Never (55,297)	29.9 (29.3, 30.5)	29.5 (29.0, 30.1)	26.6 (26.0, 27.1)	10.9 (10.6, 11.3)	3.1 (2.9, 3.3)	
Former (49,707)	3.9 (3.7, 4.2)	32.3 (31.7, 32.9)	36.7 (36.1, 37.3)	17.3 (16.9, 17.8)	9.8 (9.4, 10.2)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month, (10,207)	7.3 (6.6, 8.1)	25.6 (24.3, 27.0)	17.7 (16.7, 18.9)	32.0 (30.7, 33.3)	17.4 (16.3, 18.4)	
Current (past-30-day) daily smoking, <300 cigarettes/month (3,083)	8.4 (7.0, 10.1)	34.9 (32.5, 37.4)	20.7 (18.6, 23.0)	22.4 (20.5, 24.6)	13.6 (11.9, 15.4)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (10,425)	5.8 (5.1, 6.5)	37.1 (35.8, 38.5)	20.1 (19.0, 21.2)	19.4 (18.4, 20.5)	17.6 (16.6, 18.7)	
Moderate (Score of 5–12 on Kessler K6 non-specific distress scale)						
Overall (64,921)	12.6 (12.2, 13.1)	31.8 (31.3, 32.4)	24.7 (24.2, 25.2)	19.2 (18.8, 19.7)	11.6 (11.3, 12.0)	<.001
Never (24,488)	28.7 (27.8, 29.6)	29.7 (28.8, 30.6)	23.9 (23.1, 24.7)	13.5 (12.9, 14.1)	4.3 (3.9, 4.7)	
Former (23,527)	3.6 (3.2, 4.0)	33.2 (32.3, 34.1)	30.1 (29.3, 31.0)	20.5 (19.8, 21.2)	12.7 (12.1, 13.3)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (7,406)	4.4 (3.8, 5.2)	22.8 (21.4, 24.3)	16.7 (15.5, 18.0)	32.4 (30.9, 34.0)	23.6 (22.3, 25.1)	
Current (past-30-day) daily smoking, <300 cigarettes/month (2,086)	4.4 (3.3, 5.9)	34.1 (31.1, 37.2)	19.4 (17.1, 22.0)	24.7 (22.2, 27.4)	17.3 (15.2, 19.7)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (7,414)	4.0 (3.3, 4.9)	40.6 (39.0, 42.2)	16.3 (15.1, 17.6)	20.2 (18.9, 21.4)	18.9 (17.7, 20.2)	

Table 3B.26 (continued)

Cigarette smoking status ^a (unweighted <i>n</i>)	Never alcohol use ^b	Former alcohol use	Past-30-day alcohol use within guidelines ^c	Past-30-day binge, no risky weekly use ^d	Past-30-day risky weekly use ^e	<i>p</i> value ^f
Alcohol use: Weighted % (95% CI)						
Severe (Score of 13–24 on Kessler K6 non-specific distress scale)						
Overall (17,044)	12.8 (12.0, 13.6)	35.5 (34.4, 36.6)	18.8 (17.9, 19.7)	20.3 (19.5, 21.2)	12.6 (11.9, 13.3)	<.001
Never (5,438)	30.0 (28.2, 31.9)	33.4 (31.6, 35.4)	18.8 (17.3, 20.5)	13.8 (12.5, 15.2)	3.9 (3.3, 4.7)	
Former (5,017)	4.8 (3.9, 5.9)	36.8 (34.7, 39.0)	24.0 (22.2, 25.8)	21.4 (19.8, 23.1)	13.1 (11.8, 14.4)	
Current (past-30-day) nondaily smoking, <300 cigarettes/month (2,793)	7.0 (5.6, 8.7)	25.2 (22.8, 27.6)	14.8 (12.9, 16.8)	32.4 (29.9, 35.1)	20.7 (18.6, 22.9)	
Current (past-30-day) daily smoking, <300 cigarettes/month (795)	4.2 (2.6, 6.9)	39.2 (34.1, 44.5)	14.2 (11.2, 17.7)	24.5 (20.5, 29.0)	18.0 (14.5, 22.0)	
Current (past-30-day) daily or nondaily smoking, ≥300 cigarettes/month (3,001)	5.0 (3.8, 6.6)	43.6 (41.0, 46.2)	14.2 (12.6, 16.0)	18.8 (17.0, 20.8)	18.4 (16.6, 20.4)	

Note. CI = confidence interval. *Mental distress* levels are based on scores on the Kessler K6 non-specific distress scale, where a score of 0–4 = none/low, 5–12 = moderate, and 13–24 = severe. Data are visualized in Figure 3.12.

^aCurrent cigarette smoking is defined as use in the past 30 days. ^bNever and former alcohol use are based on lifetime alcohol use and use in the past 30 days. ^cAlcohol use within guidelines is defined as alcohol use without binge drinking or risky weekly use in the past 30 days. ^dBinge, no risky weekly use is defined as drinking ≥4/5 drinks on an occasion for women/men without exceeding 7/14 drinks per week for women/men in the past 30 days. ^eRisky weekly use is defined as drinking more than 7/14 drinks per week for women/men in the past 30 days. ^f*p* value for bivariate association, obtained through a chi-squared test, between cigarette smoking and alcohol use categories within each K6 category.

Source: 2015–2019 National Survey on Drug Use and Health.

References

1. GBD 2021 Risk Factors Collaborators. Global burden and strength of evidence for 88 risk factors in 204 countries and 811 subnational locations, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021. *Lancet*. 2024;403(10440):2162-2203. doi:10.1016/s0140-6736(24)00933-4.
2. Islami F, Marlow EC, Thomson B, et al. Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States, 2019. *CA Cancer J Clin*. 2024;74(5):405-432. doi:10.3322/caac.21858.
3. Iwamoto DK, Kaya A, Grivel M, Clinton L. Under-researched demographics: heavy episodic drinking and alcohol-related problems among Asian Americans. *Alcohol Res*. 2016;38(1):17-25.
4. U.S. Department of Health and Human Services. *Eliminating Tobacco-Related Disease and Death: Addressing Disparities—A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2024.
5. Chen C, Slater ME, Castle IP, Grant BF. Alcohol use and alcohol use disorders in the United States: Main findings from the 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III) Vol. 10. 2016. Alcohol US Epidemiologic Data Reference Manual. 2016 [cited 2026 Mar 27]. Available from: <https://www.niaaa.nih.gov/sites/default/files/NESARC3DRM.pdf>.
6. Cunningham JK, Solomon TA, Muramoto ML. Alcohol use among Native Americans compared to whites: Examining the veracity of the 'Native American elevated alcohol consumption' belief. *Drug Alcohol Depend*. 2016;160:65-75. doi:10.1016/j.drugalcdep.2015.12.015.
7. Substance Abuse and Mental Health Services Administration. NSDUH 2024 detailed tables - table 2.27B – alcohol use in past month: among people aged 12 or older; by age group and demographic characteristics, percentages, 2023 and 2024. [cited 2026 Mar 27]. Available from: <https://www.samhsa.gov/data/sites/default/files/reports/rpt56484/NSDUHDetailedTabs2024/NSDUHDetailedTabs2024/2024-nsduh-detailed-tables-sect2pe.htm>.
8. Substance Abuse and Mental Health Services Administration. NSDUH 2024 detailed tables - table 2.27A – alcohol use in past month: among people aged 12 or older; by age group and demographic characteristics, numbers in thousands, 2023 and 2024. [cited 2026 Mar 27]. Available from: <https://www.samhsa.gov/data/sites/default/files/reports/rpt56484/NSDUHDetailedTabs2024/NSDUHDetailedTabs2024/2024-nsduh-detailed-tables-sect2pe.htm>.
9. Landen M, Roeber J, Naimi T, Nielsen L, Sewell M. Alcohol-attributable mortality among American Indians and Alaska Natives in the United States, 1999-2009. *Am J Public Health*. 2014;104 Suppl 3(Suppl 3):S343-9. doi:10.2105/ajph.2013.301648.
10. Naimi TS, Cobb N, Boyd D, et al. Alcohol-attributable deaths and years of potential life lost among American Indians and Alaska natives-United States, 2001-2005. *MMWR Morb Mortal Wkly Rep*. 2008;57(34):938-41.
11. Spillane S, Shiels MS, Best AF, et al. Trends in alcohol-induced deaths in the United States, 2000-2016. *JAMA Netw Open*. 2020;3(2):e1921451. doi:10.1001/jamanetworkopen.2019.21451.
12. Whitesell NR, Beals J, Crow CB, Mitchell CM, Novins DK. Epidemiology and etiology of substance use among American Indians and Alaska Natives: risk, protection, and implications for prevention. *Am J Drug Alcohol Abuse*. 2012;38(5):376-82. doi:10.3109/00952990.2012.694527.
13. UCLA Center for Health Policy Research. California Health Interview Survey (CHIS) - About CHIS [Internet]. [cited 2026 Mar 27]. Available from: <https://healthpolicy.ucla.edu/our-work/california-health-interview-survey-chis/about-chis>.
14. National Center for Health Statistics. Percentage of current cigarette smoking for adults aged 18 and over (95% confidence intervals), United States, 2019-2024. [cited 2026 Mar 27]. Available from: https://wwwn.cdc.gov/NHISDataQueryTool/SHS_adult/index.html.
15. Bandiera FC, Pérez-Stable EJ, Atem F, et al. At risk alcohol consumption with smoking by national background: results from the Hispanic community health study/study of Latinos. *Addict Behav*. 2019;99:106087. doi:10.1016/j.addbeh.2019.106087.
16. Banks DE, Rowe AT, Mpofu P, Zapolski TCB. Trends in typologies of concurrent alcohol, marijuana, and cigarette use among U.S. adolescents: an ecological examination by sex and race/ethnicity. *Drug Alcohol Depend*. 2017;179:71-77. doi:10.1016/j.drugalcdep.2017.06.026.
17. Falk DE, Yi H-y, Hiller-Sturmhöfel S. An epidemiologic analysis of co-occurring alcohol and tobacco use and disorders: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Alcohol Res Health*. 2006;29(3):162-171.

18. Pham H, Bui TC, Glass JE, Back SE, Le P. Trends in use of tobacco and cannabis across different alcohol consumption levels in the United States, 2010-19. *Alcohol*. 2024;60(1). doi:10.1093/alcalc/aga091.
19. Purcell JB, Orihuela CA, Elliott MN, Tortolero Emery S, Schuster MA, Mrug S. Examining sex and racial/ethnic differences in co-use of alcohol, cannabis, and cigarettes in a community sample of adolescents. *Subst Use Misuse*. 2021;56(1):101-110. doi:10.1080/10826084.2020.1843056.
20. Weinberger AH, Pacek LR, Giovenco D, Galea S, Zvolensky MJ, Gbedemah M, Goodwin RD. Cigarette use among individuals with alcohol use disorders in the United States, 2002 to 2016: Trends overall and by race/ethnicity. *Alcohol Clin Exp Res*. 2019;43(1):79-90. doi:10.1111/acer.13922.
21. Montgomery L, Zapolski T, Banks DE, Floyd A. Puff, puff, drink: The association between blunt and alcohol use among African American adolescents and young adults. *Am J Orthopsychiatry*. 2019;89(5):609-615. doi:10.1037/ort0000400.
22. U.S. Department of Agriculture, U.S. Department of Health and Human Services. Dietary guidelines for Americans, 2020-2025. [cited 2026 Mar 27]. Available from: https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.
23. National Institute on Alcohol Abuse and Alcoholism. Drinking levels defined [Internet]. 2023 [cited 2026 Mar 27]. Available from: <https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking>.
24. Jamal A, Park-Lee E, Birdsey J, et al. Tobacco product use among middle and high school students - National Youth Tobacco Survey, United States, 2024. *MMWR Morb Mortal Wkly Rep*. 2024;73(41):917-924. doi:10.15585/mmwr.mm7341a2.
25. Centers for Disease Control and Prevention. American Indian and Alaska native people and commercial tobacco: health disparities and ways to advance health equity [Internet]. [cited 2026 Mar 27]. Available from: <https://www.cdc.gov/tobacco-health-equity/collection/aian.html>.
26. Food and Drug Administration. Commercial tobacco use in American Indian and Alaska Native populations [Internet]. [cited 2026 Mar 27]. Available from: <https://www.fda.gov/consumers/health-education-resources/commercial-tobacco-use-american-indian-and-alaska-native-populations>.
27. Substance Abuse and Mental Health Services Administration. NSDUH 2024 detailed tables - table 2.25B – alcohol use in lifetime: among people aged 12 or older; by age group and demographic characteristics, percentages, 2023 and 2024. [cited 2026 Mar 27]. Available from: <https://www.samhsa.gov/data/sites/default/files/reports/rpt56484/NSDUHDetailedTabs2024/NSDUHDetailedTabs2024/2024-nsduh-detailed-tables-sect2pe.htm>.
28. Enoch MA, Albaugh BJ. Review: Genetic and environmental risk factors for alcohol use disorders in American Indians and Alaskan Natives. *Am J Addict*. 2017;26(5):461-468. doi:10.1111/ajad.12420.
29. Mowery PD, Dube SR, Thorne SL, Garrett BE, Homa DM, Nez Henderson P. Disparities in smoking-related mortality among American Indians/Alaska Natives. *Am J Prev Med*. 2015;49(5):738-744. doi:10.1016/j.amepre.2015.05.002.
30. Emert MB, Giano Z. A comparison of alcohol and commercial tobacco use in populous American Indian/Alaska Native states. *Drug Alcohol Depend*. 2023;251:110941. doi:10.1016/j.drugalcdep.2023.110941.
31. Redwood D, Lanier AP, Renner C, Smith J, Tom-Orme L, Slattery ML. Differences in cigarette and smokeless tobacco use among American Indian and Alaska Native people living in Alaska and the Southwest United States. *Nicotine Tob Res*. 2010;12(7):791-6. doi:10.1093/ntr/ntq087.
32. Nez Henderson P, Jacobsen C, Beals J. Correlates of cigarette smoking among selected Southwest and Northern plains tribal groups: the AI-SUPERPFP Study. *Am J Public Health*. 2005;95(5):867-72. doi:10.2105/ajph.2004.050096.
33. Cunningham JK, Ritchey J, Solomon TA, Cordova FM. Cigarette use among American Indians and Alaska Natives in metropolitan areas, rural areas, and tribal lands. *J Public Health Manag Pract*. Sep/Oct 2019;25 Suppl 5, Tribal Epidemiology Centers: Advancing Public Health in Indian Country for Over 20 Years:S11-s19. doi:10.1097/phh.0000000000001026.
34. U.S. Department of Health and Human Services. *1998 Surgeon General's Report—Tobacco Use Among U.S. Racial/Ethnic Minority Groups*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1998.

35. Fu SS, Rhodes KL, Robert C, Widome R, Forster JL, Joseph AM. Designing and evaluating culturally specific smoking cessation interventions for American Indian communities. *Nicotine Tob Res.* 2014;16(1):42-9. doi:10.1093/ntr/ntt111.
36. Rusk AM, Kanj AN, Murad MH, Hassett LC, Kennedy CC. Smoking cessation interventions in Indigenous North Americans: a meta-narrative systematic review. *Nicotine Tob Res.* 2023;25(1):3-11. doi:10.1093/ntr/ntac181.
37. Gartner DR, Wilbur RE. Exploring public health's role in addressing historical trauma among U.S. Indigenous populations. In: Barrett DH, Ortmann LW, Larson SA, editors. *Narrative Ethics in Public Health: The Value of Stories.* Springer International Publishing; 2022:113-127.
38. Lucero JE, Roubideaux Y. Holding space for all of us. *AMA J Ethics.* 2020;22(10):882-887.
39. DeLong H, Chriqui J, Leider J, Chaloupka FJ. Common state mechanisms regulating tribal tobacco taxation and sales, the USA, 2015. *Tob Control.* 2016;25(Suppl 1):i32-i37. doi:10.1136/tobaccocontrol-2016-053079.
40. Nez Henderson P, Roeseler A, Moor G, et al. Advancing smoke-free policy adoption on the Navajo Nation. *Tob Control.* 2016;25(Suppl 1):i26-i31. doi:10.1136/tobaccocontrol-2016-053109.
41. DeCicca P, Kenkel D, Liu F. Reservation prices: An economic analysis of cigarette purchases on Indian reservations. 2014 [cited 2026 Mar 27]. Available from: https://www.nber.org/system/files/working_papers/w20778/w20778.pdf.
42. DeLong HR, Leider J, Chriqui JF, Chaloupka FJ. State regulation of Tribal tobacco sales. 2016 [cited 2026 Mar 27]. Available from: https://www.economicsforhealth.org/files/research/322/tobaeconomics_tribal_template_FINAL-VERSION.pdf.
43. National Alcohol Beverage Control Association. Native American nations & state alcohol policies: an analysis. [cited 2026 Mar 27]. Available from: https://www.nabca.org/sites/default/files/assets/files/Native_American_Paper.frm_web_1.pdf.
44. Lee JP, Pagano A, Moore RS, et al. Impacts of alcohol availability on Tribal lands where alcohol is prohibited: a community-partnered qualitative investigation. *Int J Drug Policy.* 2018;54:77-86. doi:10.1016/j.drugpo.2018.01.010.
45. Becker T, Babey SH, Dorsey R, Ponce NA. Data disaggregation with American Indian/Alaska native population data. *Popul Res Policy Rev.* 2021;40(1):103-125.
46. Evans-Lomayeva G, Lee JJ, Brumfield C. Advancing American Indian & Alaska Native data equity. Georgetown Center on Poverty and Inequality. [cited 2026 Mar 27]. Available from: <https://www.georgetownpoverty.org/wp-content/uploads/2022/11/AdvancingAIANDDataEquity-Nov2022.pdf>.
47. U.S. Department of Health and Human Services. *Smoking Cessation. A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2020.
48. Cao P, Jeon J, Tam J, Fleischer NL, Levy DT, Holford TR, Meza R. Smoking disparities by level of educational attainment and birth cohort in the U.S. *Am J Prev Med.* 2023;64(4):S22-S31. doi:10.1016/j.amepre.2022.06.021.
49. Bohm MK, Liu Y, Esser MB, Mesnick JB, Lu H, Pan Y, Greenlund KJ. Binge drinking among adults, by select characteristics and state - United States, 2018. *MMWR Morb Mortal Wkly Rep.* 2021;70(41):1441-46. doi:10.15585/mmwr.mm7041a2.
50. Rosoff DB, Clarke TK, Adams MJ, McIntosh AM, Davey Smith G, Jung J, Lohoff FW. Educational attainment impacts drinking behaviors and risk for alcohol dependence: results from a two-sample Mendelian randomization study with ~780,000 participants. *Mol Psychiatry.* 2021;26(4):1119-32. doi:10.1038/s41380-019-0535-9.
51. Xu Y, Geldsetzer P, Manne-Goehler J, et al. The socioeconomic gradient of alcohol use: an analysis of nationally representative survey data from 55 low-income and middle-income countries. *Lancet Glob Health.* 2022;10(9):e1268-e1280. doi:10.1016/s2214-109x(22)00273-x.
52. Collins SE. Associations between socioeconomic factors and alcohol outcomes. *Alcohol Res.* 2016;38(1):83-94.
53. Lui CK, Kerr WC, Mulia N, Ye Y. Educational differences in alcohol consumption and heavy drinking: an age-period-cohort perspective. *Drug Alcohol Depend.* 2018;186:36-43. doi:10.1016/j.drugalcdep.2017.12.046.
54. Boyd J, Sexton O, Angus C, Meier P, Purshouse RC, Holmes J. Causal mechanisms proposed for the alcohol harm paradox-a systematic review. *Addiction.* 2022;117(1):33-56. doi:10.1111/add.15567.

55. Harrison EL, Desai RA, McKee SA. Nondaily smoking and alcohol use, hazardous drinking, and alcohol diagnoses among young adults: findings from the NESARC. *Alcohol Clin Exp Res*. 2008;32(12):2081-7. doi:10.1111/j.1530-0277.2008.00796.x.
56. Saha TD, Grant BF, Chou SP, Kerridge BT, Pickering RP, Ruan WJ. Concurrent use of alcohol with other drugs and DSM-5 alcohol use disorder comorbid with other drug use disorders: Sociodemographic characteristics, severity, and psychopathology. *Drug Alcohol Depend*. 2018;187:261-9. doi:10.1016/j.drugalcdep.2018.03.006.
57. Cerdá M, Johnson-Lawrence VD, Galea S. Lifetime income patterns and alcohol consumption: investigating the association between long- and short-term income trajectories and drinking. *Soc Sci Med*. 2011;73(8):1178-85. doi:10.1016/j.socscimed.2011.07.025.
58. Esser MB, Hedden SL, Kanny D, Brewer RD, Gfroerer JC, Naimi TS. Prevalence of alcohol dependence among U.S. adult drinkers, 2009-2011. *Prev Chronic Dis*. 2014;11:E206. doi:10.5888/pcd11.140329.
59. Brown L, Silverman D, Pottner L, et al. Adenocarcinoma of the esophagus and esophagogastric junction in white men in the United States: alcohol, tobacco, and socioeconomic factors. *Cancer Causes Control*. 1994;5(4):333-40. doi:10.1007/BF01804984.
60. Brown LM, Hoover R, Silverman D, et al. Excess incidence of squamous cell esophageal cancer among US Black men: role of social class and other risk factors. *Am J Epidemiol*. 2001;153(2):114-22. doi:10.1093/aje/153.2.114.
61. Gammon MD, Schoenberg JB, Ahsan H, et al. Tobacco, alcohol, and socioeconomic status and adenocarcinomas of the esophagus and gastric cardia. *J Natl Cancer Inst*. 1997;89(17):1277-84. doi:10.1093/jnci/89.17.1277.
62. Sheikh M, Roshandel G, McCormack V, Malekzadeh R. current status and future prospects for esophageal cancer. *Cancers (Basel)*. 2023;15(3). doi:10.3390/cancers15030765.
63. Conway DI, Brenner DR, McMahon AD, et al. Estimating and explaining the effect of education and income on head and neck cancer risk: INHANCE consortium pooled analysis of 31 case-control studies from 27 countries. *Int J Cancer*. 2015;136(5):1125-39. doi:10.1002/ijc.29063.
64. Johnson S, McDonald JT, Corsten M, Rourke R. Socio-economic status and head and neck cancer incidence in Canada: a case-control study. *Oral Oncol*. 2010;46(3):200-3. doi:10.1016/j.oraloncology.2009.12.004.
65. Boing A, Antunes J, de Carvalho M, et al. How much do smoking and alcohol consumption explain socioeconomic inequalities in head and neck cancer risk? *J Epidemiol Com Health*. 2011 Aug 2011;65(8):709-14. doi:10.1136/jech.2009.097691.
66. Bonevski B, Regan T, Paul C, Baker AL, Bisquera A. Associations between alcohol, smoking, socioeconomic status and comorbidities: evidence from the 45 and Up Study. *Drug Alcohol Rev*. 2014;33(2):169-76. doi:10.1111/dar.12104.
67. Intarut N, Pukdeesamai P. Socioeconomic inequality in concurrent tobacco and alcohol consumption. *Asian Pac J Cancer Prev*. 2017;18(7):1913-17. doi:10.22034/apjcp.2017.18.7.1913.
68. Webb M, Carey M. Tobacco smoking among low-income Black women: demographic and psychosocial correlates in a community sample. *Nicotine Tob Res*. 2008;10(1):219-29. doi:10.1080/14622200701767845.
69. Cance J, Talley A, Morgan-Lopez A, Fromme K. Longitudinal conjoint patterns of alcohol and tobacco use throughout emerging adulthood. *Subst Use Misuse*. 2017;52(3):373-82. doi:10.1080/10826084.2016.1228677.
70. Dixon MA, Chartier KG. Alcohol use patterns among urban and rural residents: demographic and social influences. *Alcohol Res*. 2016;38(1):69-77.
71. Holford TR, McKay L, Jeon J, et al. Smoking histories by state in the U.S. *Am J Prev Med*. 2023;64(4 Suppl 1):S42-s52. doi:10.1016/j.amepre.2022.08.018.
72. Truth Initiative. Tobacco nation - a call to eliminate geographic smoking disparities in the U.S. Available [cited 2026 Mar 27]. Available from: https://truthinitiative.org/sites/default/files/media/files/2023/06/Tobacco_Nation_Report_2023_FINAL.pdf.
73. Kim S, Selya A. Rural disparities in adolescent smoking prevalence. *J Rural Health*. 2022;38(2):360-3. doi:10.1111/jrh.12610.
74. Grant BF, Chou SP, Saha TD, et al. Prevalence of 12-month alcohol use, high-risk drinking, and DSM-IV alcohol use disorder in the United States, 2001-2002 to 2012-2013: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *JAMA Psychiatry*. 2017;74(9):911-23. doi:10.1001/jamapsychiatry.2017.2161.

75. Slutske WS, Deutsch AR, Piasecki TM. Neighborhood contextual factors, alcohol use, and alcohol problems in the United States: evidence from a nationally representative study of young adults. *Alcohol Clin Exp Res*. 2016;40(5):1010-9. doi:10.1111/acer.13033.
76. Friesen E, Bailey J, Hyett S, et al. Hazardous alcohol use and alcohol-related harm in rural and remote communities: a scoping review. *Lancet*. 2022;7(2):e177-e187. doi:10.1016/S2468-2667(21)00159-6.
77. Gfroerer J, Larson S, Colliver J. Drug use patterns and trends in rural communities. *J Rural Health*. 2007;23 Suppl:10-15. doi:10.1111/j.1748-0361.2007.00118.x.
78. Ritchey P, Reid G, Hasse L. The relative influence of smoking on drinking and drinking on smoking among high school students in a rural tobacco-growing county. *The J Adolesc Health*. 2001;29(6):386-394. doi:10.1016/s1054-139x(01)00260-9.
79. Miech RA, Johnston LD, Patrick ME, O'Malley PM. Monitoring the Future national survey results on drug use, 1975–2023: Overview and detailed results for secondary school students. *Monitoring the Future Monograph Series*. Ann Arbor, MI: Institute for Social Research, University of Michigan. [cited 2026 Mar 27]. Available from: <https://monitoringthefuture.org/wp-content/uploads/2024/01/mtfoverview2024.pdf>.
80. Buettner-Schmidt K, Miller DR, Maack B. Disparities in rural tobacco use, smoke-free policies, and tobacco taxes. *West J Nurs Res*. 2019;41(8):1184-1202. doi:10.1177/0193945919828061.
81. U.S. Department of Agriculture Economic Research Service. Rural-urban continuum codes. [cited 2026 Mar 27]. Available from: <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes>.
82. Meyer I. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull*. 2003;129(5):674-697. doi:10.1037/0033-2909.129.5.674.
83. Coulter RWS, Ware D, Fish JN, Plankey MW. Latent classes of polysubstance use among adolescents in the United States: intersections of sexual identity with sex, age, and race/ethnicity. *LGBT Health*. 2019;6(3):116-125. doi:10.1089/lgbt.2018.0149.
84. Dermody S. Risk of polysubstance use among sexual minority and heterosexual youth. *Drug Alcohol Depend*. 2018;192:38-44. doi:10.1016/j.drugalcdep.2018.07.030.
85. Dobrin D, Means A, Cheng C-W, et al. Concurrent hookah (waterpipe) and substance use among sexual minority adults in the United States: findings from the Population Assessment of Tobacco and Health Study. *Psychoactive*. 2022;1(2):89-101.
86. Goodwin S, Moskal D, Marks R, Clark A, Squeglia L, Roche D. A scoping review of gender, sex and sexuality differences in polysubstance use in adolescents and adults. *Alcohol Alcohol*. 2022;57(3):292-321. doi:10.1093/alcalc/agac006.
87. Hequembourg A, Blayney J, Bostwick W, Van Ryzin M. Concurrent daily alcohol and tobacco use among sexual minority and heterosexual women. *Subst Use Misuse*. 2020;55(1):66-78. doi:10.1080/10826084.2019.1656252.
88. Silveira M, Green V, Iannaccone R, Kimmel H, Conway K. Patterns and correlates of polysubstance use among US youth aged 15-17 years: wave 1 of the Population Assessment of Tobacco and Health (PATH) Study. *Addiction*. 2019;114(5):907-916. doi:10.1111/add.14547.
89. Nguyen N, McQuoid J, Neilands T, Dermody S, Holmes L, Ling P, Thrul J. Same-day use of cigarettes, alcohol, and cannabis among sexual minority and heterosexual young adult smokers. *Psychology of Addict Behav*. 2021;35(2):215-223. doi:10.1037/adb0000678.
90. Cooper M, Yaqub M, Hinds JT, Perry CL. A longitudinal analysis of tobacco use in younger and older U.S. veterans. *Preventive Medicine Reports*. 2019;16:100990. doi:10.1016/j.pmedr.2019.100990.
91. Hoggatt KJ, Lehavot K, Krennek M, Schweizer CA, Simpson T. Prevalence of substance misuse among U.S. veterans in the general population. *Am J Addict*. 2017;26(4):357-65. doi:10.1111/ajad.12534.
92. Lan CW, Fiellin DA, Barry DT, et al. The epidemiology of substance use disorders in U.S. veterans: a systematic review and analysis of assessment methods. *Am J Addict*. 2016;25(1):7-24. doi:10.1111/ajad.12319.
93. MacLean RR, Sofuoglu M, Rosenheck R. Tobacco and alcohol use disorders: Evaluating multimorbidity. *Addict Behav*. 2018;78:59-66. doi:10.1016/j.addbeh.2017.11.006.
94. Keltner CH, Kao TC, Ahmed A, Mancuso JD. E-cigarette and dual product use as an emerging health threat to the US military. *Tob Prev Cessat*. 2021;7:43. doi:10.18332/tpc/135516.
95. Williams EC, Frasco MA, Jacobson IG, et al. Risk factors for relapse to problem drinking among current and former US military personnel: a prospective study of the Millennium Cohort. *Drug Alcohol Depend*. 2015;148:93-101. doi:10.1016/j.drugalcdep.2014.12.031.

96. Vickers-Smith R, Justice AC, Becker WC, et al. Racial and ethnic bias in the diagnosis of alcohol use disorder in veterans. *Am J Psychiatry*. 2023;180(6):426-36. doi:10.1176/appi.ajp.21111097.
97. U.S. National Cancer Institute. *Treating Smoking in Cancer Patients: An Essential Component of Cancer Care*. National Cancer Institute Tobacco Control Monograph 23. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute; 2022.
98. LoConte NK, Brewster AM, Kaur JS, Merrill JK, Alberg AJ. Alcohol and cancer: a statement of the American Society of Clinical Oncology. *J Clin Oncol*. 2018;36(1):83-93. doi:10.1200/jco.2017.76.1155.
99. Asvat Y, King AC, Smith LJ, Lin X, Hedeker D, Henderson TO. Substance use behaviors in adolescent and young adult cancer patients: associations with mental and physical health. *Psycho-Oncology*. 2020;29(6):1068-76. doi:10.1002/pon.5378.
100. Fischer CM, Hamilton AS, Slaughter RI, Milam J. A cross-sectional examination of caregiver mental health and childhood cancer survivors' tobacco, alcohol, and marijuana use. *Support Care Cancer*. 2021;29(7):3649-56. doi:10.1007/s00520-020-05861-8.
101. Gonzalez BD, Li X, Martinez YC, et al. Cannabis use and patient-reported outcomes among patients at a comprehensive cancer center. *J Natl Cancer Inst Monogr*. 2024;2024(66):259-66. doi:10.1093/jncimonographs/lgae012.
102. Islam JY, Nguyen OT, Turner K, et al. Concurrent substance use among cancer patients with and without a history of cannabis use since cancer diagnosis at an NCI-Designated Cancer Center in Florida. *J Natl Cancer Inst Monogr*. 2024;2024(66):224-33. doi:10.1093/jncimonographs/lgad036.
103. Schwartz LF, Brett EI, King AC, Henderson TO. Nicotine and cannabis use in adolescent and young adult cancer survivors: a scoping review. *J Adolesc Young Adult Oncol*. 2025;14(4):299-318. doi:10.1089/jayao.2024.0143.
104. Smith DM, Kaye JT, Walters KJ, et al. Tobacco-cannabis co-use among cancer patients and survivors: findings from 2 US cancer centers. *J Natl Cancer Inst Monogr*. 15 2024;2024(66):234-43. doi:10.1093/jncimonographs/lgad035.
105. Mahurin HM, Ware OR, Coolman TD, Stevenson PA, Pergam SA, Shinohara MM. Cannabis use among patients with cutaneous lymphoma: A cross-sectional survey. *Complement Ther Med*. 2022;67:102830. doi:10.1016/j.ctim.2022.102830.
106. Pacula RL, Smart R. Medical marijuana and marijuana legalization. *Annu Rev Clin Psychol*. 2017;13:397-419. doi:10.1146/annurev-clinpsy-032816-045128.
107. Werk RS, Ford JS. Covariates of risky health behaviors in pediatric cancer survivors during adolescence. *J Psychosoc Oncol*. 2021;39(1):74-88. doi:10.1080/07347332.2020.1795779.
108. Asfar T, Dietz NA, Arheart KL, Tannenbaum SL, McClure LA, Fleming LE, Lee DJ. Smoking behavior among adult childhood cancer survivors: what are we missing? *J Cancer Surviv*. 2016;10(1):131-41. doi:10.1007/s11764-015-0459-6.
109. Kim J, Keegan TH. Characterizing risky alcohol use, cigarette smoking, e-cigarette use, and physical inactivity among cancer survivors in the USA-a cross-sectional study. *J Cancer Surviv*. 2023;17(6):1799-1812. doi:10.1007/s11764-022-01245-5.
110. Sanford NN, Sher DJ, Xu X, Ahn C, D'Amico AV, Aizer AA, Mahal BA. Alcohol use among patients with cancer and survivors in the United States, 2000-2017. *J Natl Compr Canc Netw*. 2020;18(1):69-79. doi:10.6004/jncn.2019.7341.
111. Shi M, Luo C, Oduyale OK, Zong X, LoConte NK, Cao Y. Alcohol consumption among adults with a cancer diagnosis in the All of Us research program. *JAMA Network Open*. 2023;6(8):e2328328-e2328328. doi:10.1001/jamanetworkopen.2023.28328.
112. Zeinomar N, Qin B, Amin S, et al. Association of cigarette smoking and alcohol consumption with subsequent mortality among Black breast cancer survivors in New Jersey. *JAMA Netw Open*. 2023;6(1):e2252371. doi:10.1001/jamanetworkopen.2022.52371.
113. Kosciusko R, Geller D, Kucinski B, et al. Substance use, depression, and illness perception among cancer patients. *Am J Health Behav*. 2019;43(2):287-299. doi:10.5993/AJHB.43.2.6.
114. Siegel SD, Brooks M, Ragozine-Bush HE, Schnoll RA, Curriero FC. The co-occurrence of smoking and alcohol use disorder in a hospital-based population: Applying a multimorbidity framework using geographic information system methods. *Addict Behav*. 2021;118:106883. doi:10.1016/j.addbeh.2021.106883.

115. Arem H, Mama SK, Duan X, Rowland JH, Bellizzi KM, Ehlers DK. Prevalence of healthy behaviors among cancer survivors in the United States: how far have we come? *Cancer Epidemiol Biomarkers Prev.* 2020;29(6):1179-1187. doi:10.1158/1055-9965.Epi-19-1318.
116. Heffner JL, Ton M, Jones SMW, Malen RC, Cohen SA, Newcomb PA. Prevalence and correlates of post-diagnosis alcohol use among cancer survivors. *Cancer Epidemiol Biomarkers Prev.* 2024;33(4):600-607. doi:10.1158/1055-9965.Epi-23-1155.
117. Lyu J, Kaur M, Dibble KE, Connor AE. A national study of alcohol consumption patterns among population-based U.S. cancer survivors compared with cancer-free individuals. *Cancer Epidemiol.* 2022;77:102101. doi:10.1016/j.canep.2022.102101.
118. Grant BF, Stinson FS, Dawson DA, et al. Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Arch Gen Psychiatry.* 2004;61(8):807-16. doi:10.1001/archpsyc.61.8.807.
119. Jané-Llopis E, Matytsina I. Mental health and alcohol, drugs and tobacco: a review of the comorbidity between mental disorders and the use of alcohol, tobacco and illicit drugs. *Drug Alcohol Rev.* 2006;25(6):515-36. doi:10.1080/09595230600944461.
120. Smith PH, Chhipa M, Bystrick J, Roy J, Goodwin RD, McKee SA. Cigarette smoking among those with mental disorders in the US population: 2012-2013 update. *Tob Control.* 2020;29(1):29-35. doi:10.1136/tobaccocontrol-2018-054268.
121. Zaorska J, Wojnar M. Comorbidity of alcohol use disorders with substance use disorders and psychiatric disorders. In: Mueller S, Heilig M, editors. *Alcohol and Alcohol-Related Diseases.* Springer; 2023:289-307.
122. Substance Abuse and Mental Health Services Administration. NSDUH 2024 detailed tables - table 6.50b – substance use in past year: among people aged 18 or older; by past year level of mental illness, percentages, 2023 and 2024. [cited 2026 Mar 27]. Available from: <https://www.samhsa.gov/data/sites/default/files/reports/rpt56484/NSDUHDetailedTabs2024/NSDUHDetailedTabs2024/2024-nsduh-detailed-tables-sect6pe.htm>.
123. Substance Abuse and Mental Health Services Administration. NSDUH 2024 detailed tables - table 6.17b – substance use in past year: among people aged 18 or older; by past year level of mental illness, percentages, 2023 and 2024. [cited 2026 Mar 27]. Available from: <https://www.samhsa.gov/data/sites/default/files/reports/rpt56484/NSDUHDetailedTabs2024/NSDUHDetailedTabs2024/2024-nsduh-detailed-tables-sect6pe.htm>.
124. Parker MA, Sigmon SC, Villanti AC. Higher smoking prevalence among United States adults with co-occurring affective and drug use diagnoses. *Addict Behav.* 2019;99:106112. doi:10.1016/j.addbeh.2019.106112.
125. Parker MA, Villanti AC. Relationship between comorbid drug use disorders, affective disorders, and current smoking. *Subst Use Misuse.* 2021;56(1):93-100. doi:10.1080/10826084.2020.1840591.
126. Hefner KR, Sollazzo A, Mullaney S, Coker KL, Sofuoglu M. E-cigarettes, alcohol use, and mental health: Use and perceptions of e-cigarettes among college students, by alcohol use and mental health status. *Addict Behav.* 2019;91:12-20. doi:10.1016/j.addbeh.2018.10.040.
127. Cohn AM, Johnson AL, Rose SW, Pearson JL, Villanti AC, Stanton C. Population-level patterns and mental health and substance use correlates of alcohol, marijuana, and tobacco use and co-use in U.S. young adults and adults: results from the population assessment for tobacco and health. *Am J Addict.* 2018;27(6):491-500. doi:10.1111/ajad.12766.
128. Crane NA, Langenecker SA, Mermelstein RJ. Risk factors for alcohol, marijuana, and cigarette polysubstance use during adolescence and young adulthood: a 7-year longitudinal study of youth at high risk for smoking escalation. *Addict Behav.* 2021;119:106944. doi:10.1016/j.addbeh.2021.106944.
129. Prochaska JJ, Sung HY, Max W, Shi Y, Ong M. Validity study of the K6 scale as a measure of moderate mental distress based on mental health treatment need and utilization. *Int J Methods Psychiatr Res.* 2012;21(2):88-97. doi:10.1002/mpr.1349.
130. Smith CJ, Ryom L, Weber R, et al. Trends in underlying causes of death in people with HIV from 1999 to 2011 (D:A:D): a multicohort collaboration. *Lancet.* 2014;384(9939):241-8. doi:10.1016/s0140-6736(14)60604-8.
131. Mdodo R, Frazier EL, Dube SR, Mattson CL, Sutton MY, Brooks JT, Skarbinski J. Cigarette smoking prevalence among adults with HIV compared with the general adult population in the United States: cross-sectional surveys. *Ann Intern Med.* 2015;162(5):335-44. doi:10.7326/m14-0954.

132. Park LS, Hernández-Ramírez RU, Silverberg MJ, Crothers K, Dubrow R. Prevalence of non-HIV cancer risk factors in persons living with HIV/AIDS: a meta-analysis. *AIDS*. 2016;30(2):273-91. doi:10.1097/qad.0000000000000922.
133. Duko B, Ayalew M, Ayano G. The prevalence of alcohol use disorders among people living with HIV/AIDS: a systematic review and meta-analysis. *Subst Abuse Treat Prev Policy*. 2019;14(1):52. doi:10.1186/s13011-019-0240-3.
134. Ferguson TF, Rosen E, Carr R, et al. Associations of liver disease with alcohol use among people living with HIV and the role of hepatitis C: The New Orleans Alcohol Use in HIV Study. *Alcohol Alcohol*. 2020;55(1):28-36. doi:10.1093/alcalc/agz089.
135. Sims OT, Jackson A, Guo Y, Truong DN, Odame EA, Mamudu HM. A cross-sectional analysis of tobacco use and concurrent alcohol and substance use among patients living with HIV/HCV co-infection: findings from a large urban tertiary Center. *J Clin Psychol Med Settings*. 2021;28(3):553-561. doi:10.1007/s10880-020-09744-2.
136. Justice A, Sullivan L, Fiellin D, Veterans Aging Cohort Study Project Team. HIV/AIDS, comorbidity, and alcohol: can we make a difference? *Alcohol Res Health*. 2010;33(3):258-66.
137. Rahmanian S, Wewers ME, Koletar S, Reynolds N, Ferketich A, Diaz P. Cigarette smoking in the HIV-infected population. *Proc Am Thorac Soc*. 2011;8(3):313-9. doi:10.1513/pats.201009-058WR.
138. Rehm J, Probst C, Shield KD, Shuper PA. Does alcohol use have a causal effect on HIV incidence and disease progression? A review of the literature and a modeling strategy for quantifying the effect. *Popul Health Metr*. 2017;15(1):4. doi:10.1186/s12963-017-0121-9.
139. Dejong K, Olyaei A, Lo JO. Alcohol use in pregnancy. *Clin Obstet Gynecol*. 2019;62(1):142-155. doi:10.1097/grf.0000000000000414.
140. England LJ, Bennett C, Denny CH, et al. Alcohol use and co-use of other substances among pregnant females aged 12-44 years - United States, 2015-2018. *MMWR Morb Mortal Wkly Rep*. 2020;69(31):1009-1014. doi:10.15585/mmwr.mm6931a1.
141. Specker BL, Wey HE, Minett M, Beare TM. Pregnancy survey of smoking and alcohol use in South Dakota American Indian and White mothers. *Am J Prev Med*. 2018;55(1):89-97. doi:10.1016/j.amepre.2018.03.016.
142. Leonardson GR, Loudenburg R, Struck J. Factors predictive of alcohol use during pregnancy in three rural states. *Behav Brain Funct*. 2007;3:8. doi:10.1186/1744-9081-3-8.
143. Oh S, Reingle Gonzalez JM, Salas-Wright CP, Vaughn MG, DiNitto DM. Prevalence and correlates of alcohol and tobacco use among pregnant women in the United States: evidence from the NSDUH 2005–2014. *Preventive Medicine*. 2017;97:93-99. doi:10.1016/j.ypmed.2017.01.006.
144. Weber A, Miskle B, Lynch A, Arndt S, Acion L. Substance use in pregnancy: identifying stigma and improving care. *Subst Abuse Rehabil*. 2021;12:105-121. doi:10.2147/sar.S319180.
145. Baggett TP, Lebrun-Harris LA, Rigotti NA. Homelessness, cigarette smoking and desire to quit: results from a US national study. *Addiction*. 2013;108(11):2009-18. doi:10.1111/add.12292.
146. Leavens ELS, Ford BR, Ojo-Fati O, Winkelman TNA, Vickery KD, Japuntich SJ, Busch AM. Electronic cigarette use patterns and chronic health conditions among people experiencing homelessness in MN: a statewide survey. *BMC Public Health*. 2020;20(1):1889. doi:10.1186/s12889-020-09919-4.
147. Polcin DL. Co-occurring Substance abuse and mental health problems among homeless persons: suggestions for research and practice. *J Soc Distress Homeless*. 2016;25(1):1-10. doi:10.1179/1573658x15y.0000000004.
148. Tsai J, Rosenheck RA. Smoking among chronically homeless adults: Prevalence and correlates. *Psychiatr Serv*. 2012;63(6):569-576. doi:10.1176/appi.ps.201100398.
149. Upshur CC, Jenkins D, Weinreb L, Gelberg L, Orvek EA. Prevalence and predictors of substance use disorders among homeless women seeking primary care: an 11-site survey. *Am J Addict*. 2017;26(7):680-688. doi:10.1111/ajad.12582.
150. Winkelman TNA, Vickery KD, Busch AM. Tobacco use among non-elderly adults with and without criminal justice involvement in the past year: United States, 2008–2016. *Addict Sci Clin Pract*. 2019;14(1):2. doi:10.1186/s13722-019-0131-y.
151. McGillicuddy N, Blane H. Substance use in individuals with mental retardation. *Addict Behav*. 1999;24(6):869-878. doi:10.1016/s0306-4603(99)00055-6.
152. National Institute on Minority Health and Health Disparities. Announcement of decision to designate people with disabilities as a population with health disparities. Available from: <https://web.archive.org/web/20250222163919/https://www.nimhd.nih.gov/about/directors-corner/messages/health-disparities-population-designation.html>.

153. Iezzoni LI. Eliminating health and health care disparities among the growing population of people with disabilities. *Health Aff (Millwood)*. 2011;30(10):1947-54. doi:10.1377/hlthaff.2011.0613.
154. Krahm GL, Walker DK, Correa-De-Araujo R. Persons with disabilities as an unrecognized health disparity population. *Am J Public Health*. 2015;105 Suppl 2(Suppl 2):S198-206. doi:10.2105/ajph.2014.302182.
155. United States Census Bureau. What updates to OMB's race/ethnicity standards mean for the Census Bureau. [cited 2026 Mar 27]. Available from: <https://www.census.gov/newsroom/blogs/random-samplings/2024/04/updates-race-ethnicity-standards.html>.
156. Do KA, Johnson MM, Doherty DA, et al. Second primary tumors in patients with upper aerodigestive tract cancers: joint effects of smoking and alcohol (United States). *Cancer Causes Control*. 2003;14(2):131-8. doi:10.1023/a:1023060315781.
157. Fortin A, Wang CS, Vigneault É. Influence of smoking and alcohol drinking behaviors on treatment outcomes of patients with squamous cell carcinomas of the head and neck. *Int J Radiat Oncol Biol Phys*. 2009;74(4):1062-1069. doi:10.1016/j.ijrobp.2008.09.021.
158. Howren MB, Christensen AJ, Pagedar NA. problem alcohol and tobacco use in head and neck cancer patients at diagnosis: associations with health-related quality of life. *Supportive Care Cancer*. 2022. doi:10.1007/s00520-022-07248-3.