HHS Public Access

Author manuscript

J Am Geriatr Soc. Author manuscript; available in PMC 2023 March 01.

Published in final edited form as:

J Am Geriatr Soc. 2022 March ; 70(3): 812–819. doi:10.1111/jgs.17573.

Trends in binge drinking prevalence among older U.S. men and women 2015 to 2019

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Abstract

Background: Recent literature suggests that the gap in prevalence of binge drinking between men and women is closing, but little is known about sex-specific differences in trends and correlates of binge drinking among older Americans.

Methods: A total of 18,794 adults, age ≥65, were surveyed in the 2015-2019 National Survey on Drug Use and Health. We estimated trends in prevalence of past-month binge drinking (≥5 drinks on the same occasion for men and ≥4 drinks for women), stratified by sex. Correlates of binge drinking were estimated for men and women separately, focusing on demographic characteristics, chronic diseases, past-month tobacco and cannabis use, depression, and emergency department use. Multivariable generalized linear models using Poisson and log link were used to examine associations stratified by sex.

Results: Binge drinking among older men increased from 12.8% in 2015 to 15.7% in 2019 (p=.02) but remained stable among older women (7.6% to 7.3%, p=.97). In adjusted models, having a college degree was associated with higher risk of binge drinking among women (adjusted prevalence ratio [aPR]=1.68, 95% CI: 1.13-2.50), but lower risk among men (aPR=0.69, 95%CI: 0.56-0.85). Men who are separated or divorced were also at higher risk (aPR=1.25, 95% CI: 1.04-1.50), but women were not. Both men and women reporting past-month use of tobacco (men aPR=1.87, 95% CI: 1.61-2.17, women aPR= 2.11, 95% CI: 1.71-2.60) and cannabis (men aPR=

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Author Contributions

All authors are responsible for this reported research. T. Al-Rousan, B. Han, and J. Palamar conceptualized and designed the study and J. Palamar conducted the statistical analyses. R. Ko conducted the literature review. All authors drafted the manuscript, interpreted results, and critically reviewed and revised the manuscript. All authors approved the final manuscript as submitted.

Conflicts of Interest

The authors have no conflicts of interest.

2.05, 95% CI: 1.63-2.58, women aPR= 2.77, 95% CI 2.00-3.85) were at higher risk of binge drinking.

Conclusions: Binge drinking has increased among older men while remaining stable among older women in the US. Interventions should consider that while tobacco and cannabis use is associated with an increased risk of binge drinking among both older men and women, demographic correlates tend to differ by sex.

Keywords

binge drinking; alcohol; epidemiology

INTRODUCTION

Binge drinking, defined as a pattern of alcohol consumption that brings a person's blood alcohol concentration to 0.08 g/dl or above, which typically occurs with ≥5 drinks for men and ≥4 drinks for women in about 2 hours,[1] is a common, costly, and preventable behavior that leads to many adverse health outcomes. According to the 2019 National Survey on Drug Use and Health (NSDUH), about 24% of people in the United States (US) ages 12 and older binge drank during the past month.[2] While much of the literature on binge drinking focuses on younger adults, the population of older adults is fast growing and drinking more alcohol.[3] NSDUH data from 2015 to 2017 estimated that 10.6% of adults 65 years or older binge drank in the past month.[3] Data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) III in 2012-13 suggested that 3.8% of persons age 65 years and older engaged in binge drinking at least weekly compared to 2.3% in 2001-2.[4,5] Further, a 2018 meta-analysis found average annual increases of 3.4% in binge drinking among adults age ≥65 years between 2000-2016.[6] Alcohol use among older adults has unique risks because of age-associated physiological changes that increase blood alcohol levels quicker for a given amount of alcohol, increased brain sensitivity to alcohol that may impair balance, coordination, and judgment, and increased risks for a range of adverse effects with increased comorbidity and use of medications.[7,8]

Alcohol also has differing impacts on men and women due to physiological differences that increase blood alcohol levels and the effect of alcohol among women compared to men,[9-11] including increased risks for certain diseases such as breast cancer and cirrhosis,[12,13] and differential public health outcomes including relapse and violence.[14] For example, predictors of relapse appear to differ between men and women, with women being more likely to relapse in response to interpersonal conflict and negative affect whereas men are more likely to relapse in response to isolation and both positive and negative affect.[15] Violence outcomes also differ including primarily suicide and homicide for men[16] and for women being victims of sexual assault or unintended pregnancy.[17] Additionally, there have been large differences in the prevalence of binge drinking between older men and women. An analysis of the 2005-2006 NSDUH estimated the prevalence of binge drinking among men ≥50 to be 19.6% while for women, only 6.3%.[18] More recently it appears that the difference in prevalence of binge drinking between older men and women is narrowing. A 2018 meta-analysis found increases in binge drinking prevalence for women but not men[6] and binge drinking increased 44% among women age ≥50 compared to 10% among men age ≥50 from 2005 to 2014.[19]

A few studies have examined sociodemographic and health-related correlates of binge drinking among older adults.[18-21] These studies have consistently identified age, sex, marital status, and other psychoactive substance use to be associated with binge drinking while other characteristics including income, education, race and ethnicity and presence of multiple chronic conditions have been found to be variably associated. However, only one of these studies examined these characteristics by sex.[18] To address this, in this study we examine the most current national data on binge drinking among men and women age ≥65 years to identify sociodemographic and health-related factors associated with binge drinking among both men and women.

METHODS

We analyzed data from adults age ≥65 years, surveyed in the 2015 through 2019 (n=18,794) administrations of NSDUH, an annual cross-sectional survey of noninstitutionalized individuals in the 50 US states and the District of Columbia.[22] A nationally representative probability sample of individuals is obtained each year and a multistage sampling design is utilized. A different cross-section of participants is sampled each year and thus the cohorts are independent of each other. Surveys were administered by an interviewer via computer-assisted interviewing and audio computer-assisted self-interviewing (ACASI). The weighted interview response rates were 64.9-69.3%.

Participants were asked if they engaged in alcohol use and binge drinking in the past month. NSDUH defined past month binge alcohol use based on the National Institute on Alcohol Abuse and Alcoholism's (NIAAA's) definition of consuming five or more alcoholic beverages on the same occasion for men and four or more alcoholic beverages on the same occasion for women.

Other covariates included in this analysis were demographic characteristics, including sex at birth, race/ethnicity, annual family income, education, and marital status. We also examined self-reported all-cause emergency department (ED) use in the past year and whether participants met Diagnostic and Statistical Manual-IV (DSM-IV) criteria for a major depressive episode in the past year. Participants were asked if they had ever been informed by a physician or other medical professional that they have ever had the following medical diseases: cardiovascular disease, diabetes, chronic obstructive pulmonary disease (COPD), hepatitis B or C, kidney disease, asthma, hypertension, and cancer. Participants were also asked about past-month tobacco use and cannabis use. All the aforementioned variables were included in our analyses.

We first determined if there were bivariable differences by each independent variable noted above according to whether binge drinking was reported, stratified by sex. Comparisons were made using Rao-Scott chi-square.[23] A multivariable generalized linear model using Poisson and log link was then used to examine associations between independent variables and binge drinking, resulting in adjusted prevalence ratios (aPRs) for each variable. This model was applied separately for men and women. All analyses used sample weights which were provided by NSDUH to address complex survey design, non-response, selection probability, and population distribution. Stata SE 13 was used to analyze all data and Taylor

series estimation methods were used to provide accurate standard errors.[23] This secondary data analysis was exempt from review from New York University Langone Medical Center's institutional review board.

RESULTS

Of the 18,794 respondents 65 years or older, the prevalence of past-month binge drinking among men significantly increased from 12.8% (95% confidence interval [CI]: 10.8-15.1) in 2015 to 15.7% (95% CI: 13.9-17.6) in 2019 (p=.02). A significant trend was not detected for women. Trends are depicted in Figure 1. The aggregated prevalence of binge drinking across the five years was 14.2% (95% CI: 13.3-15.2) for older men and 7.8% (95 CI: 7.1-8.6) for older women (p<0.001).

Table 1 presents the estimated prevalence of binge drinking stratified by sex. Compared to men who did not binge drink, men who engaged in binge drinking had significantly different (p=0.03) levels of education with a lower percentage with a college education or higher (31.5% vs 38.2%) and significantly different marital status (p<0.001) with a lower percentage married (68.3% vs. 72.4%). As for chronic disease, men who engaged in binge drinking had a significantly lower prevalence of heart disease (29.0% vs 34.4%; p=0.01), diabetes (18.5% vs 24.7%; p<0.001), kidney disease (2.4% vs 5.4%; p<0.001), and lower prevalence of having two or more chronic diseases (31.0% vs 36.8%, p=0.01). Men who binge drank also had a significantly higher prevalence of past-month tobacco (26.6% vs 12.9%; p<0.001) and cannabis use (8.5% vs 2.7%; p<0.001).

Among women, those who engaged in binge drinking had a higher proportion of those with incomes >$75,000 than those who did not binge drink (30.6% and 24.1%, respectively, p=0.004). Level of education was also significantly different (p<0.001) with 8.4% of those who binge drink with less than a high school education compared to 16.5%. Regarding chronic disease, women who engaged in binge drinking had a significantly lower prevalence of heart disease (14.8% vs. 23.5%; p<0.001), diabetes (13.2% vs 21.1%; p<0.001), COPD (7.9% vs 10.5%; p=0.03), kidney disease (2.6% vs 5.3%; p=0.03), and lower prevalence of having two or more chronic diseases (24.7% vs 34.4%; p<0.001). Women who binge drank also had a significantly higher prevalence of past-month tobacco (16.1% vs 8.0%; p<0.001) and cannabis use (4.7% vs 1.2%; p<0.001).

In multivariable models (Table 2), compared to women with less than a high school diploma, women with a high school diploma (aPR=1.74, 95% CI: 1.20-2.52), some college (aPR=1.86, 95% CI: 1.28-2.69), or with a college degree (aPR=1.68, 95% CI: 1.13-2.50) were at higher risk for binge drinking. Among men, however, having a college degree was associated with lower risk among men (aPR=0.69, 95% CI: 0.56-0.85). Compared to men with a family income of <$20,000, men reporting an income of $50,000-$74,999 (aPR=1.33, 95% CI: 1.03-1.71) and those reporting an income of ≥$75,000 (aPR=1.33, 95% CI: 1.01-1.74) were more likely to binge drink, but income was not significantly related to binge drinking among women. Among men, compared to those who were married, being divorced or separated was associated with higher risk of binge drinking (aPR=1.25, 95% CI: 1.04-1.50), but there were no significant associations by marital status among women.

Diabetes was associated with lower risk among both men (aPR=0.76, 95% CI: 0.62-0.94) and women (aPR=0.73, 95% CI: 0.55-0.97), and among men, those with kidney disease were at lower risk (aPR=0.54, 95% CI: 0.34-0.86) and those with hypertension were at higher risk (aPR= 1.25, 95% CI: 1.05-1.50). Finally, tobacco use was a risk factor for binge drinking among men (aPR=1.87, 95% CI: 1.61-2.17) and women (aPR=2.11, 95% CI: 1.71-2.60), and cannabis use was also a risk factor among men (aPR=2.05, 95% CI: 1.63-2.58) and women (aPR=2.77, 95% CI: 2.77, 95% CI: 2.00-3.85). Neither having a major depressive episode or using the emergency department was associated with binge drinking risk in men or women.

DISCUSSION

This study uses the most recent national data to estimate recent trends in the prevalence of binge drinking among older adults and examine patterns and correlates of binge drinking stratified by sex. Overall, the recent prevalence of binge drinking among older men continued to increase, but for older women, binge drinking remained stable. This finding differs from an earlier NSDUH study that found women age ≥50 years had a large increase in binge drinking between 2005 and 2014 compared to men[19] as well as a study among adults age ≥60 years that found that between 1997-2014, the number of women who binge-drank rose 4 percent per year, while the percentage of men who binge-drank remained steady.[24] In another study using the Behavioral Risk Factor Surveillance System (BRFSS) data between 2011 and 2017, binge drinking increased significantly among adults age ≥65 years, but this study did not stratify older adults by sex.[25] Therefore, more recent estimates of trends suggest that while overall binge drinking may be increasing among older adults, this may be driven mainly by older men.

Regarding sociodemographic correlates, our study found sex-specific differences in education and income. The 2005-2006 NSDUH study in adults age ≥50 years found associations between higher levels of income and education with binge drinking among men, while for women higher education was associated with binge drinking, but not higher incomes.[18] In our study, men and women appeared to diverge regarding educational attainment but not regarding income. Higher income was associated with binge drinking among both men and women, but higher education was significantly associated with binge drinking among women while among men it was associated with decreased odds of binge drinking. The higher income and education level associated with binge drinking among older women is consistent with other studies.[19-20, 26] Social sanctions against drinking for women still exist and may be a reason why women do not binge drink as much as men.[27] To understand how behaviors change in older age and are affected by social factors, data from the Health and Retirement Study showed that in those age ≥50, poor social support was associated with more binge drinking. Having social support and neighborhood social cohesion protect against binge drinking, especially for women.[28] Future research on risk factors, trends and prevention in older age is needed as trends are expected to continue to change.

Having diabetes or kidney disease was associated with lower risk for binge drinking while hypertension was associated with higher risk among older men, while for older women,

heart disease and diabetes were associated with lower risk for binge drinking. Consistent with many observational studies we found that older men and women who engaged in binge drinking had a lower prevalence of many chronic diseases including having two or more chronic diseases.[20] This is likely not a causal relationship, but due to selection biases common in observational studies of alcohol use as people with illness tend to stop drinking.[29] Therefore, it is difficult to deduce the association of current excess alcohol use and chronic diseases among older adults. However, counseling about alcohol use with older patients should focus on its possible role in exacerbating certain chronic diseases such as cardiovascular disease and liver disease as well as communicating sex-specific risks such as the association of alcohol use and breast cancer.[30-31]

Also consistent with previous studies is the strong relationship between tobacco and cannabis use with binge drinking among older adults.[3,18] The association between use of each substance appeared stronger for older women compared to older men. The concomitant use of psychoactive substances can have serious health consequences for older adults such as decline in functional and cognitive impairment and risk for death,[32-33] and can be particularly risky for older women due to differences in the absorption and metabolism of alcohol.[34] Heavy drinking in women is associated with more drinking-related problems, greater social and occupational impairment, and more problems related to interpersonal conflict with spouses, friends and family.[27,35-37] Although our study estimated stability or even a slight (non-significant) decrease in prevalence of binge drinking among older women, it is important to continue to monitor these patterns. Research among those with alcohol use disorders showed that women begin consuming alcohol later in life, are older at their first intoxication, have a later onset of continuous alcohol consumption, and development of an alcohol use disorder.[38]

This study has several limitations. The cross-sectional nature of the study hinders establishing any temporal relationships and therefore results are correlational. The NSDUH relies on self-report and is subject to recall and social desirability bias. The latter may be particularly true for drug and alcohol use where respondents may not report their substance use due to perceived stigma, although the survey attempts to limit this via the use of ACASI approach to limit potential social desirability bias.[39] The NSDUH also samples only the non-institutionalized US population and therefore does not include older adults living in long-term care settings or who may be experiencing homelessness, which limits generalizability to these populations. The NIAAA had previously recommended lower thresholds for adults age ≥65: no more than four drinks on any given day for both men and women.[8] Since our analysis relied on the higher cutoff for the binge drinking criteria for older adults (age ≥65), our study is likely to have underestimated the prevalence for binge drinking among older adults compared to using NIAAA cutoffs. Lastly, many other factors besides the ones examined in this study may be associated with or help explain these sex-specific differences in binge drinking. For example, exploring the differences in binge drinking by sexual orientation and gender identity, building on findings from previous work,[40] may be informative.

CONCLUSION

The risks of harms from alcohol use differ between men and women and a sex-specific lens to identifying and addressing binge drinking as a public health concern in older age is vital. Our findings add to the body of literature suggesting sex-specific vulnerabilities associated with recent, frequent binge drinking and call for the importance of sex-specific interventions and preventions strategies geared towards older adults. While binge drinking among older men continues to increase nationally, it remains stable among older women, but trends must continue to be monitored carefully. There are few studies focused on binge drinking by older adults, other than studies addressing age differences, and therefore future studies should focus on examining the interactions of gender with other demographic variables, such as race and ethnicity or sexual orientation. Differences in the correlates of binge drinking among older men and women should be considered when designing intervention and management strategies to reduce the harms of excess alcohol use. Lastly, more research is needed to evaluate the differences in the risk and protective factors as well as patterns of binge drinking in older age across all gender identities.

Sponsor's Role

Dr. Palamar has received consulting fees from Alkermes. Research reported in this publication was supported by the National Institute on Drug Abuse R01DA044207 (Palamar) and K23DA043651 (Han), National Institute of Aging P30AG059299 and P30AG062429 (Moore), and National Heart, Lung and Blood Institute K23HL14530 (Al-Rousan). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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Key points:

- Over a five-year period, binge drinking increased among older men nationally while remaining stable among older women.
- While education had disparate associations with binge drinking by sex, use of other substances increases the risk for binge drinking in both sexes.

Why does this paper matter?

Sex differences in binge drinking and correlates must be taken into consideration when designing prevention and treatment interventions.

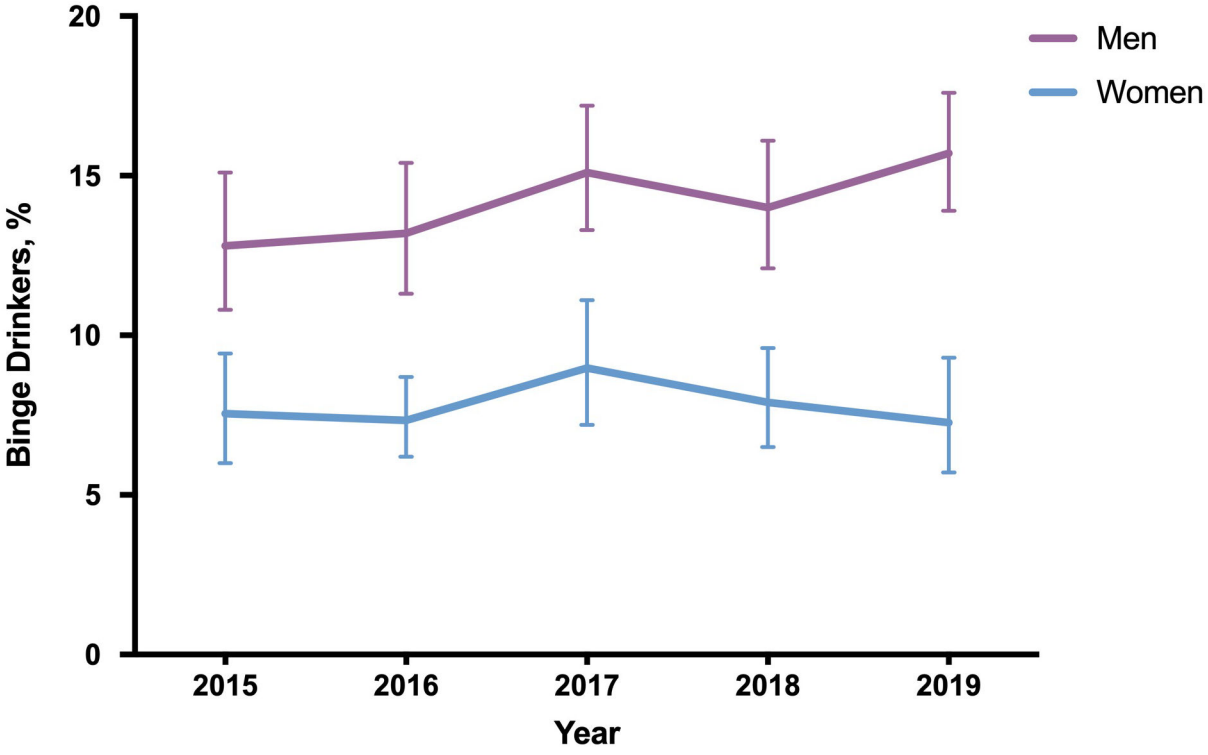

Figure 1:
National Trends of Binge Drinking Among Older Adults By Sex 2015-2019

Table 1:

Characteristics of Older Women and Men Reporting Past-Month Binge Drinking: United States 2015 to 2019

	Men			Women		
	No past-month binge drinking (n=7,253)	Past-month binge drinking (n=1,213)		No past-month binge drinking (n=9,540)	Past-month binge drinking (n=788)	
Characteristic	**% (95% CI)**	**% (95% CI)**	***P***	**% (95% CI)**	**% (95% CI)**	***P***
Race/ethnicity						
Non-Hispanic White	77.8 (76.3, 79.2)	78.9 (76.2, 81.5)	0.08	75.5 (74.2, 76.8)	80.3 (75.5, 84.4)	0.06
Non-Hispanic African American	8.0 (7.2, 8.8)	9.4 (7.6, 11.4)		9.7 (8.9, 10.5)	10.3 (7.5, 14.0)	
Hispanic	8.4 (7.5, 9.4)	6.7 (5.3, 8.5)		8.7 (7.7, 9.8)	6.4 (4.6, 8.9)	
Non-Hispanic Asian	4.0 (3.3, 4.9)	2.9 (2.0, 4.0)		3.6 (3.1, 4.2)	1.6 (0.7, 4.1)	
Other	1.8 (1.5, 2.3)	2.2 (1.5, 3.2)		2.6 (2.2, 3.0)	1.3 (0.7, 2.4)	
Total family income						
<$20,000	12.0 (11.2, 13.0)	12.3 (10.4, 14.4)	0.49	20.5 (19.4, 21.5)	16.6 (13.1, 20.8)	0.004
$20-$49,999	34.0 (32.5, 35.5)	31.9 (28.9, 34.9)		39.1 (37.9, 40.3)	33.4 (28.9, 38.3)	
$50,000-$74,999	17.9 (16.8, 19.0)	19.6 (17.2, 22.3)		16.3 (15.4, 17.2)	19.4 (15.6, 23.8)	
≥ $75,000	36.1 (34.6, 37.6)	36.2 (33.3, 39.3)		24.1 (22.9, 25.3)	30.6 (26.0, 35.5)	
Education						
<High school	13.8 (12.9, 14.7)	15.0 (12.6, 17.8)	0.003	16.5 (25.4, 17.7)	8.4 (6.3, 11.1)	<0.001
High school diploma	24.7 (23.7, 25.9)	26.1 (23.2, 29.2)		29.8 (28.6, 31.1)	31.1 (27.1, 35.4)	
Some College	23.3 (22.1, 24.5)	27.4 (24.2, 30.9)		27.3 (26.3, 28.4)	31.2 (27.4, 35.3)	
College and higher	38.2 (37.0, 39.5)	31.5 (28.6, 34.6)		26.4 (25.1, 27.6)	29.3 (25.4, 33.5)	
Marital status						
Married	72.4 (71.2, 73.6)	68.3 (65.1, 71.3)	<0.001	48.8 (47.5, 50.1)	53.9 (48.7, 59.0)	0.002
Widowed	11.0 (10.2, 11.8)	9.6 (8.0, 11.4)		30.0 (28.9, 31.1)	21.7 (18.4, 25.3)	
Divorced or separated	12.2 (11.3, 13.1)	16.6 (14.5, 19.0)		16.9 (15.8, 18.0)	19.1 (15.9, 22.8)	
Never married	4.5 (3.9, 5.1)	5.5 (4.0, 7.5)		4.3 (3.9, 4.9)	5.3 (3.8, 7.5)	
Chronic Disease						
Heart condition	34.4 (33.0, 35.9)	29.0 (25.7, 32.5)	0.01	23.5 (22.6, 24.4)	14.8 (12.2, 17.8)	<0.001
Hypertension	36.7 (35.4, 38.1)	38.7 (35.5, 42.0)	0.28	43.3 (42.0, 44.5)	40.2 (36.3, 44.1)	0.14
Diabetes	24.7 (23.5, 25.9)	18.5 (16.0, 21.4)	<0.001	21.1 (20.2, 22.1)	13.2 (10.8, 16.1)	<0.001
Cancer	18.1 (17.0, 19.3)	14.5 (12.3, 17.0)	0.01	16.5 (15.6, 17.4)	14.1 (11.2, 17.7)	0.18
COPD	8.1 (7.3, 8.9)	8.4 (6.9, 10.1)	0.79	10.5 (9.8, 11.3)	7.9 (6.2, 10.1)	0.03
Asthma	6.0 (5.3, 6.7)	5.1 (3.8, 6.8)	0.35	9.2 (8.5, 10.0)	9.8 (7.3, 12.9)	0.71
Kidney disease	5.4 (4.7, 6.1)	2.4 (1.5, 3.8)	<0.001	5.3 (4.8, 6.0)	2.6 (1.4, 5.0)	0.03
Hepatitis B or C	2.4 (2.0, 3.0)	2.4 (1.5, 4.0)	0.99	1.4 (1.1, 1.8)	1.3 (0.7, 2.4)	0.81
2+ chronic disease	36.8 (35.5, 38.1)	31.0 (27.5, 34.8)	0.01	34.4 (33.4, 35.4)	24.7 (21.4, 28.2)	<0.001
Substance use (past-month)						
Tobacco	12.9 (12.0, 13.9)	26.6 (23.9, 29.6)	<0.001	8.0 (7.4, 8.6)	16.1 (13.4, 19.2)	<0.001
Cannabis	2.7 (2.3, 3.2)	8.5 (6.7, 10.8)	<0.001	1.2 (0.9, 1.5)	4.7 (3.2, 6.9)	<0.001

Characteristic	Men			Women		
	No past-month binge drinking (n=7,253)	Past-month binge drinking (n=1,213)		No past-month binge drinking (n=9,540)	Past-month binge drinking (n=788)	
	% (95% CI)	% (95% CI)	*P*	% (95% CI)	% (95% CI)	*P*
Mental Illness (past-year)						
Major depressive episode	2.3 (2.0, 2.8)	2.2 (1.4, 3.4)	0.73	3.6 (3.1, 4.1)	5.0 (3.3, 7.4)	0.13
Health care utilization						
All-cause emergency department use	28.1 (26.8, 29.4)	28.0 (24.6, 31.7)	0.98	30.0 (28.7, 31.3)	27.7 (24.2, 31.6)	0.28

Table 2:

Factors Associated with Past-Month Binge Drinking Among Older Women and Men: United States, 2015 to 2019

Characteristic	Men Adjusted prevalence ratio (95% CI)[a]	Women Adjusted prevalence ratio (95% CI)[a]
Race/ethnicity		
Non-Hispanic White	1.00	1.00
Non-Hispanic African American	0.99 (0.79, 1.23)	1.13 (0.79, 1.61)
Hispanic	0.83 (0.62, 1.10)	1.02 (0.68, 1.52)
Non-Hispanic Asian	0.87 (0.58, 1.29)	0.45 (0.19, 1.11)
Other	1.12 (0.82, 1.54)	0.54 (0.28, 1.05)
Education		
<High school	1.00	1.00
High school diploma	0.89 (0.72, 1.11)	1.74 (1.20, 2.52)
Some College	0.93 (0.75, 1.16)	1.86 (1.28, 2.69)
College and higher	0.69 (0.56, 0.85)	1.68 (1.13, 2.50)
Total family income		
<$20,000	1.00	1.00
$20-$49,999	1.09 (0.87, 1.35)	1.00 (0.74, 1.36)
$50,000-$74,999	1.33 (1.03, 1.71)	1.23 (0.91, 1.67)
≥ $75,000	1.33 (1.01, 1.74)	1.37 (1.00, 1.88)
Marital status		
Married	1.00	1.00
Widowed	0.93 (0.77, 1.13)	0.81 (0.64, 1.03)
Divorced or separated	1.25 (1.05, 1.50)	1.00 (0.75, 1.33)
Never married	1.22 (0.94, 1.58)	1.12 (0.80, 1.56)
Chronic Disease		
Heart condition	0.88 (0.73, 1.04)	0.68 (0.53, 0.87)
Diabetes	0.76 (0.62, 0.94)	0.73 (0.55, 0.97)
COPD	0.99 (0.78, 1.26)	0.75 (0.56, 1.00)
Hepatitis B or C	1.02 (0.64, 1.62)	0.94 (0.52, 1.69)
Kidney disease	0.54 (0.34, 0.86)	0.66 (0.34, 1.26)
Asthma	0.93 (0.68, 1.26)	1.25 (0.90, 1.74)
Hypertension	1.25 (1.05, 1.49)	1.04 (0.85, 1.27)
Cancer	0.87 (0.71, 1.07)	0.87 (0.64, 1.18)
2+ chronic disease	0.97 (0.75, 1.26)	0.90 (0.62, 1.30)
Substance use (past-month)		
Tobacco	1.87 (1.61, 2.17)	2.11 (1.71, 2.60)
Cannabis	2.05 (1.63, 2.58)	2.77 (2.00, 3.85)

Characteristic	Men Adjusted prevalence ratio (95% CI)[a]	Women Adjusted prevalence ratio (95% CI)[a]
Mental Health (past-year)		
Major depressive episode	0.91 (0.59, 1.41)	1.28 (0.86, 1.93)
Health care utilization		
All-cause emergency department use	1.06 (0.90, 1.26)	1.01 (0.83, 1.23)

[a]Models adjusted for all characteristics reported in the table, including survey year, to adjust for potential secular trends in use over time.