Distribution of Drinks Consumed by U.S. Adults by Average Daily Alcohol Consumption: A Comparison of Two Nationwide Surveys

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Abstract

Introduction: Studies have shown that estimates of alcohol consumption in the Behavioral Risk Factor Surveillance System (BRFSS) are lower than those in other surveys of U.S. adults, potentially underestimating the public health impact of excessive drinking and related harms. This study compared estimates of adults' drinking patterns and the distribution of drinks consumed by average daily alcohol consumption from the BRFSS and another nationwide telephone survey.

Methods: The 2014–2015 National Alcohol Survey (NAS, N=7,067) and the 2015 BRFSS (N=408,069) were used to assess alcohol consumption among adults (18 years), analyzed in 2019. The weighted prevalence of binge-level drinking and the distribution of drinks consumed by average daily alcohol consumption (low, medium, high) were assessed for the previous 12-months using NAS and the previous 30-days using BRFSS, stratified by respondents' characteristics.

Results: The prevalence of binge-level drinking in a day was 26.1% (CI=24.4–27.8) for the NAS; and the binge drinking prevalence was 17.4% (CI=17.1–17.6) for the BRFSS. The prevalence of high average daily alcohol consumption among current drinkers was 8.2% for the NAS, accounting for 51.0% of total drinks consumed; and 3.3% for the BRFSS, accounting for 27.7% of total drinks consumed.

Conclusions: NAS yearly prevalence estimates of binge-level drinking in a day and high average daily consumption were consistently higher than BRFSS monthly binge drinking and high average daily consumption prevalence estimates. When planning and evaluating prevention

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strategies, the impact of different survey designs and methods on estimates of excessive drinking and related harms is important to consider.

Introduction

Excessive alcohol use is associated with 88,000 deaths in the U.S. each year,[1] and cost $249 billion ($2.05 per drink) in 2010, including healthcare, lost productivity and criminal justice costs.[2] Excessive alcohol use, including binge drinking (i.e., the consumption of 4 drinks for women or 5 drinks for men, per occasion), also is associated with adverse health outcomes, including cancer, liver cirrhosis, violence, and injuries.[3]

Population-based surveys are used for the surveillance of drinking patterns and to assess differences by socio-demographic characteristics, which is not possible using more general measures of alcohol consumption, such as per capita alcohol sales.[4,5] The Behavioral Risk Factor Surveillance System (BRFSS), and several other health surveys (e.g., the National Survey on Drug Use and Health), assess average daily alcohol consumption using a quantity-frequency approach. In this methodology, respondents are asked how often they consumed an alcoholic beverage during a defined recall period, and the average or usual number of drinks consumed per drinking occasion.[6,7] Previous studies have shown that BRFSS estimates of alcohol consumption are substantially lower than those in other surveys, [8,9] and that the BRFSS accounts for a median of 22%–32% of per capita alcohol sales in states.[10]

An alternative method is the graduated-frequency approach, used in the National Alcohol Survey (NAS).[11] In this methodology, respondents are asked to report the largest number of drinks consumed on any drinking occasion during a specified time period (e.g., previous 12 months). They are then asked about the number of times they consumed alcohol at decreasing levels of consumption, beginning with the largest number of drinks consumed. This approach has been shown to improve the reporting of higher levels of alcohol consumption by eliminating the need for respondents to estimate the average number of drinks they consumed across all drinking occasions, including during binge drinking episodes.[6] Previous studies have shown that the NAS accounts for about 50% of per capita alcohol sales.[12]

Although the graduated-frequency approach appears to be a more sensitive methodology for estimating per capita alcohol consumption than the quantity-frequency approach, there is limited information on the comparability of specific drinking measures across surveys of U.S. adults that use these two approaches. Although individual-level approaches to measuring alcohol consumption exist (e.g., the 'yesterday' method or drinking diaries), the graduated-frequency and quantity-frequency approaches are the dominant methods for assessing drinking patterns on a population basis.[13,14] Greater awareness of the comparability of alcohol measures generated using these two methodologies could also help improve public health surveillance of excessive alcohol consumption and related harms, the assessment of associations between alcohol consumption and other risk behaviors (e.g., opioid misuse), and the planning and implementation of strategies for preventing excessive alcohol consumption.[15,16]

Methods

Study Sample

This study compares alcohol consumption data from two telephone surveys of U.S. adults. The National Alcohol Survey (NAS) was selected because it uses the graduated-frequency approach to assess alcohol consumption; it is widely used in alcohol research; and previous studies have shown that NAS estimates of alcohol consumption account for a relatively high proportion of per capita alcohol sales.[12] The BRFSS was selected because it uses a quantity-frequency approach to assess alcohol consumption; it is the only state-based survey of alcohol consumption that is used throughout the U.S.; and it is widely used by public health practitioners to inform the development and implementation of strategies to improve public health.[17]

National Alcohol Survey—The NAS is a national, random-digit-dial landline and cellular telephone survey of non-institutionalized, civilian U.S. adults (aged 18 years) in 50 states and Washington DC, administered every five years by the Alcohol Research Group of the Public Health Institute in California. The survey collects detailed information on alcohol consumption, including consumption patterns and the effects of alcohol consumption on drinkers and on others around them. Studies have documented the reliability and validity of NAS measures of alcohol consumption, and NAS estimates are highly-correlated with data from daily drinking diaries.[14] The NAS also identifies when participants report inconsistent levels of alcohol consumption, and then prompts interviewers to ask participants to resolve these inconsistencies, improving the reliability of the data. Respondents also receive either $10 (landline respondents) or $20 (cellphone respondents) as an incentive for completing the interview. The NAS takes about 45 minutes to complete. A detailed description of the NAS methodology has been published elsewhere.[18] The most recent NAS was conducted in 2014–2015 by ICF Macro, Inc. (Fairfax, VA), and had an overall response rate of 43.4%. The survey included targeted oversamples of Black, non-Hispanic adults and Hispanic adults. After excluding four respondents with incomplete information on alcohol consumption, the total NAS sample population included was 7,067.

Behavioral Risk Factor Surveillance System—The BRFSS is a state-based, random-digit-dial landline and cellular telephone survey of non-institutionalized, U.S. adults aged 18 years that is conducted monthly in all states, the District of Columbia, and U.S. territories. A detailed description of the BRFSS methodology has been published elsewhere.[17] The BRFSS collects data on a range of health conditions and risk behaviors, including alcohol consumption. Studies have found that BRFSS data are reliable and valid for measuring several health conditions and health risks, at both the state and national levels.[19] The BRFSS does not identify internal inconsistencies in the reporting of alcohol information, nor provide financial incentives for survey participation. The core section of the BRFSS questionnaire takes about 14 minutes to complete. The 2015 BRFSS survey used in this study had a median response rate for the combined landline and cellphone samples of 47.1%. After excluding people with missing information on alcohol consumption and respondents from U.S. territories (n=7,074), the total BRFSS sample population included was 408,069.[17]

Measures—The NAS includes >20 questions on alcohol consumption, with the exact number of questions asked varying based on individual responses (e.g., questions on beer or liquor would only be asked of persons who reported drinking these beverages); all are based on alcohol consumption during the previous 12 months. Among these, the NAS includes seven questions assessing the graduated-frequency of alcohol consumption within specified ranges (Supplemental Table A).[20] To briefly explain the methodology, respondents are asked about the largest number of drinks they consumed on any day during the previous 12 months. Respondents are then asked to report the number of days that they consumed a range of drinks/day (e.g., 12, 8 to <12 drinks, 5 to 7 drinks, 3 to 4 drinks [assessed with separate questions for women], 2 drinks, 1 drink), beginning with the drinking category that included their self-reported largest number of drinks consumed, and continuing through the subsequent drinking categories. For this study, the number of drinking days per year at each level of consumption on the graduated-frequency scale (capped at a total of 365 days) was multiplied by the midpoint of each drinking category, and the product was summed to calculate the number of drinks consumed by each drinker during the previous year. Non-drinking was defined as not consuming any alcoholic drinks in the previous 12 months. Current/non-binge level drinking in a day was defined as consuming 1 drink, but <4 drinks (for women) or <5 drinks (for men), on any day during the previous 12 months. Binge-level drinking in a day was defined as consuming 4 drinks (for women) or 5 drinks (for men) on 1 day during the previous 12 months. Average daily alcohol consumption was calculated by dividing the total annual number of drinks consumed by 365 days. In this study, low average daily alcohol consumption was defined as consuming >0 but 1 drink/day (for women) or 2 drinks/day (for men) on average. Medium average daily alcohol consumption was defined as consuming >1 to 2 drinks/day (for women) or >2 to 4 drinks/day (for men) on average. High average daily alcohol consumption was defined as consuming >2 drinks/day (for women) or >4 drinks/day (for men) on average.

The BRFSS includes four questions on alcohol consumption, all of which are based on alcohol consumption during the previous 30-days, and three of these questions were used in this study (Supplemental Table A). Non-drinking was defined as not consuming any alcoholic drinks during the previous 30-days. Current/non-binge drinking was defined as consuming 1 drink, but <4 drinks (for women) or <5 drinks (for men), on any occasion during the previous 30-days. Binge drinking was defined as consuming 4 drinks (for women) or 5 drinks (for men) on 1 occasion. The total annual number of drinks consumed was calculated by determining the proportion of the previous 30-days that were drinking days, and then multiplying this proportion by the average self-reported number of drinks consumed on drinking days during the previous 30-days. This product was then multiplied by 365 days to obtain annual estimates. Average daily alcohol consumption was calculated for the three levels of drinking described above (i.e., low, medium, and high) by multiplying the number of drinking days per month, as reported by each drinker, by the average number of drinks consumed per drinking day by each drinker; and then dividing the average total number of drinks consumed by all drinkers by 30 days.

Analysis—For both the NAS and the BRFSS, weighted prevalence estimates and 95% confidence intervals (CI) for drinking patterns and average daily alcohol consumption were

calculated overall and for groups defined by socio-demographic characteristics (i.e., sex, age group, race/ethnicity, education, employment status, marital status). In addition, the weighted prevalence of average daily alcohol consumption among drinkers and the weighted percentage of drinks consumed by level of average daily alcohol consumption were calculated overall and by sex and age group. Weighted estimates are provided so that the results reflect the U.S. adult population. All analyses were conducted using SAS version 9.4, in 2019. The 95% CIs were calculated using SAS PROC SURVEYFREQ, which accounts for each survey's sampling and non-response weights.

Results

In the NAS, the prevalence of past 12-month non-drinking was 35.2%, current/non-binge level drinking in a day was 38.7%, and binge-level drinking in a day was 26.1% (Table 1). In the BRFSS, the prevalence of past 30-day non-drinking was 48.0%, current/non-binge drinking was 34.6%, and binge drinking was 17.4%. Across all socio-demographic groups, the prevalence of non-drinking was consistently higher in the BRFSS than the NAS. In contrast, the prevalence of binge-level drinking in a day was substantially higher in the NAS than the prevalence of binge drinking in the BRFSS among most socio-demographic groups.

Overall and by socio-demographic characteristics, the prevalence estimates for each level of average daily alcohol consumption (low, medium, and high) were also consistently higher in the NAS than in the BRFSS (Table 2). The overall prevalence of low average daily alcohol consumption was 54.2% in the NAS and 46.2% in the BRFSS; medium average daily alcohol consumption was 5.3% in the NAS and 4.0% in the BRFSS; and high average daily alcohol consumption was 5.3% in the NAS and 1.7% in the BRFSS. The largest percentage point differences in the prevalence of high average daily alcohol consumption between the NAS and BRFSS were among respondents who were aged 18–24 years (9.5% in the NAS and 2.1% in the BRFSS); 25–34 years (8.3% in the NAS and 2.1% in the BRFSS); Black, non-Hispanic adults (9.0% in the NAS and 1.6% in the BRFSS); and those with some college education (6.6% in the NAS and 1.6% in the BRFSS).

When limited to current drinkers, the overall prevalence of low average daily alcohol consumption was consistently smaller in the NAS than in the BRFSS, but the prevalence of high average daily alcohol consumption was consistently larger in the NAS than in the BRFSS (Table 3, Figure 1). Specifically, the prevalence of low average daily alcohol consumption among current drinkers was 83.7% in the NAS, accounting for 31.0% of the 51,323,923,107 total estimated annual drinks consumed by the weighted estimate of about 152 million total drinkers; and 88.9% in the BRFSS, accounting for 50.1% of the 34,982,649,345 total estimated annual drinks consumed by the weighted estimate of about 119.5 million total drinkers. Conversely, the prevalence of high average daily alcohol consumption among current drinkers was 8.2% in the NAS, accounting for 51.0% of the total estimated drinks consumed; and 3.3% in the BRFSS, accounting for 27.7% of the total estimated drinks consumed.

When stratified by sex and age, the percentage of drinks consumed by drinkers in the low average daily alcohol consumption category was consistently smaller in the NAS than in the

BRFSS, and consistently larger by drinkers in the high average daily alcohol consumption category in the NAS compared with the BRFSS, across all age and sex groups (Table 3, Figure 1). For example, men aged 18–44 years who reported high average daily alcohol consumption accounted for 56.6% of the drinks consumed by all drinkers in this sex and age group in the NAS but for only 30.8% of the drinks consumed in the BRFSS. The overall average annual number of drinks per drinker was also higher in the NAS (337.5 drinks) than in the BRFSS (292.8 drinks) (data not shown).

Discussion

This comparison of two nationwide telephone surveys shows that the NAS estimates of higher levels of alcohol consumption were consistently greater than the BRFSS estimates. Furthermore, among current adult drinkers, the overall distribution of the total drinks consumed in the NAS and BRFSS by average daily alcohol consumption were almost mirror images of one another, with those reporting high average daily alcohol consumption accounting for about half of the total drinks consumed in the NAS, but less than one-third in the BRFSS; and those reporting low average daily alcohol consumption accounting for about one-third of the total drinks consumed in the NAS, and about half of the total drinks consumed in the BRFSS.

The findings of this study are consistent with an analysis of 2000 NAS data, which showed that those who were in the top 10% of all drinkers, based on average daily alcohol consumption, were responsible for more than half (55.3%) of the total drinks consumed.[12] They are also consistent with a study that compared estimates of alcohol consumption among survey respondents using the quantity-frequency and graduated-frequency methods, and found that estimates of higher levels of drinking were consistently larger using the graduated-frequency method than the quantity-frequency method.[6]

The higher prevalence of binge-level drinking in a day and high average daily alcohol consumption in the NAS relative to the corresponding measures in the BRFSS may be due to several factors. First, the NAS is a specialty survey that is designed to focus on alcohol consumption and related harms, whereas the BRFSS is designed to assess a variety of health risk behaviors and health outcomes to provide state-level estimates. Previous studies have shown that asking a larger number of alcohol questions and obtaining more detailed information on alcohol consumption (e.g., beverage-specific consumption) in surveys can result in higher estimates of alcohol consumption,[21] bringing the estimates closer to per capita alcohol sales.[12] Second, as previously noted, the NAS uses a graduated-frequency approach to assess alcohol consumption, and previous studies have shown that this methodology is more sensitive than the quantity-frequency method for measuring higher levels of alcohol consumption.[6] Third, the NAS uses a 12-month recall period, while the BRFSS uses a 30-day recall period, and previous studies have shown that surveys that use a longer recall period tend to identify respondents who drink less frequently, resulting in higher overall estimates of current drinking and binge drinking than surveys that use shorter recall periods.[20,22] However, binge drinkers tend to do so about once a week[5] and the estimated number of drinks consumed per year has not been found to vary based on the different recall periods.[20] Fourth, while the financial incentive offered to respondents for

completing the NAS could have slightly increased survey participation rates, it is unlikely that they changed the composition of the study sample or biased it toward excessive drinkers.[23] Finally, the NAS includes an internal feedback loop that alerts interviewers when participants report inconsistent levels of alcohol consumption, while the BRFSS does not, which may lead respondents to modify how they report their alcohol consumption in the NAS relative to the BRFSS.

This study has limitations. First, NAS and BRFSS data are self-reported, and alcohol consumption, particularly drinking at higher levels, is generally under-reported in surveys due to recall and social desirability biases.[24,25] NAS respondents also may be more vulnerable to recall biases than BRFSS respondents because of the longer recall period that is used in this survey (i.e., 12-months versus 30-days). Second, both surveys had moderately low response rates relative to other public health surveys conducted using other modalities (e.g., face-to-face interviews), which could increase the chances of nonresponse bias; however, response rates alone cannot be used to determine the quality or representativeness of survey data.[26] Third, the wording of the questions on alcohol consumption in the NAS and BRFSS differ, and thus, the estimates are not directly comparable, including the measures of binge-level drinking. For example, the NAS measure of binge-level drinking in a day is based on the reported largest number of drinks consumed in a day, while the BRFSS measure is based on the number of drinks consumed on an occasion (e.g., within 2–3 hours). However, the NAS estimate of daily binge-level alcohol consumption has been shown to correlate with self-reports of drinking to get drunk, suggesting that a substantial proportion of the respondents who reported binge-level alcohol consumption in the NAS may have consumed these drinks within a short period of time.[27]

Conclusions

Public health surveillance of alcohol consumption is crucial for monitoring excessive alcohol use and alcohol-related harms. This study shows that the graduated-frequency approach used in the NAS is a more sensitive method for measuring higher levels of alcohol consumption than the quantity-frequency approach used in the BRFSS. Thus, in addition to underestimating total alcohol consumption based on alcohol sales,[10] the BRFSS specifically underestimates the contribution of higher levels of drinking to total alcohol consumption. Future research could assess how these findings might be used to obtain more sensitive estimates of excessive drinking in the BRFSS, despite inherent differences between these two surveys. Widespread use of evidence-based strategies for preventing excessive drinking, such as those recommended by the Community Preventive Services Task Force (e.g., increasing alcohol taxes and regulating alcohol outlet density), could also help reduce excessive drinking and related harms.[28]

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

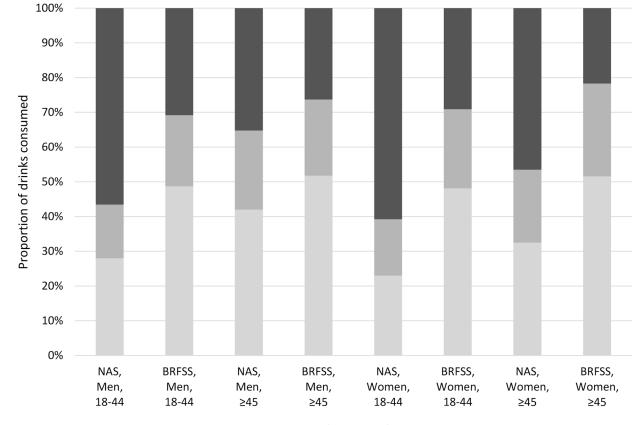## References

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Figure 1.
Distribution of drinks consumed among adult current drinkers in each demographic group by level of average daily alcohol consumption[a] and survey
BRFSS: Behavioral Risk Factor Surveillance System; NAS: National Alcohol Survey
[a] Low average daily alcohol consumption was defined as >0- 1 drink of alcohol (women) or >0- 2 drinks (men); medium average daily alcohol consumption was defined as >1- 2 drinks of alcohol (women) or >2- 4 drinks (men); and high average daily alcohol consumption was defined as >2 drinks of alcohol (women) or >4 drinks (men).

Table 1.

Prevalence of drinking patterns among adults by selected socio-demographic characteristics, 2014–2015 National Alcohol Survey and 2015 BRFSS, United States

Characteristic	2014–2015 National Alcohol Survey				2015 BRFSS			
	Overall	Non-drinking, past 12 months[a]	Current/non-binge drinking, past 12 months[b]	Binge drinking, past 12 months[c]	Overall	Non-drinking, past 30 days[d]	Current/non-binge drinking, past 30 days[e]	Binge drinking, past 30 days[f]
	n	Weighted % (95% confidence interval)			n	Weighted % (95% confidence interval)		
Overall	7,067	35.2 (33.5, 36.9)	38.7 (37.0, 40.4)	26.1 (24.4, 27.8)	408,069	48.0 (47.7, 48.3)	34.6 (34.3, 34.9)	17.4 (17.1, 17.6)
Sex								
Men	2,899	30.2 (27.8, 32.5)	38.8 (36.2, 41.3)	31.1 (28.5, 33.7)	171,928	41.5 (41.1, 42.0)	35.6 (35.2, 36.1)	22.9 (22.5, 23.3)
Women	4,168	39.9 (37.6, 42.2)	38.6 (36.3, 40.9)	21.5 (19.4, 23.6)	236,141	54.1 (53.7, 54.5)	33.7 (33.3, 34.1)	12.3 (12.0, 12.5)
Age group, years								
18–24	477	27.9 (22.7, 33.2)	24.4 (19.2, 29.6)	47.7 (41.6, 53.7)	21,740	49.8 (48.8, 50.9)	24.0 (23.1, 25.0)	26.1 (25.2, 27.1)
25–34	887	24.6 (20.7, 28.4)	32.6 (28.2, 36.9)	42.9 (38.2, 47.5)	38,847	38.8 (38.0, 39.6)	34.2 (33.4, 35.0)	27.0 (26.3, 27.7)
35–44	973	28.6 (24.5, 32.8)	38.1 (33.6, 42.5)	33.3 (28.8, 37.7)	46,634	43.3 (42.5, 44.2)	36.0 (35.3, 36.8)	20.6 (20.0, 21.3)
45–54	1,220	34.5 (30.4, 38.6)	44.5 (40.3, 48.8)	21.0 (17.4, 24.5)	66,238	45.0 (44.3, 45.7)	37.7 (37.1, 38.4)	17.2 (16.7, 17.8)
55–64	1,435	39.9 (36.0, 43.8)	46.1 (42.1, 50.2)	13.9 (11.2, 16.7)	91,795	50.3 (49.6, 50.9)	37.6 (37.0, 38.2)	12.1 (11.7, 12.5)
65	1,950	52.2 (48.9, 55.5)	42.0 (38.8, 45.3)	5.8 (4.1, 7.5)	142,815	59.3 (58.8, 59.8)	35.4 (34.9, 35.9)	5.4 (5.1, 5.6)
Race/Ethnicity								
White, non-Hispanic	3,325	31.2 (29.2, 33.3)	40.0 (37.8, 42.3)	28.7 (26.5, 30.9)	318,556	43.8 (43.5, 44.1)	38.3 (37.9, 38.6)	17.9 (17.6, 18.2)
Black, non-Hispanic	1,762	42.2 (38.0, 46.4)	37.8 (33.7, 41.9)	20.0 (16.3, 23.8)	31,262	55.8 (54.7, 56.8)	30.2 (29.3, 31.2)	14.0 (13.3, 14.8)
Hispanic	1,622	42.4 (38.4, 46.5)	32.8 (28.8, 36.7)	24.8 (21.1, 28.4)	27,613	55.7 (54.7, 56.7)	24.9 (24.0, 25.8)	19.4 (18.6, 20.2)
Other	358	43.6 (36.6, 50.6)	40.0 (33.0, 47.0)	16.4 (11.4, 21.4)	24,411	55.2 (53.8, 56.6)	30.0 (28.8, 31.2)	14.8 (13.8, 15.8)
Education								
Less than high school	911	58.7 (53.3, 64.1)	25.2 (20.4, 30.0)	16.1 (11.8, 20.3)	30,137	68.6 (67.6, 69.6)	17.1 (16.3, 17.9)	14.3 (13.5, 15.1)
High school graduate	1,889	43.5 (40.1, 46.9)	36.2 (32.9, 39.5)	20.3 (17.3, 23.3)	112,700	55.1 (54.5, 55.7)	27.6 (27.1, 28.1)	17.3 (16.8, 17.7)
Some college	1,831	31.8 (28.8, 34.9)	39.8 (36.6, 43.0)	28.4 (25.2, 31.4)	112,231	44.9 (44.3, 45.5)	36.8 (36.3, 37.4)	18.3 (17.8, 18.7)
College graduate	2,412	21.0 (18.7, 23.3)	45.7 (42.7, 48.7)	33.3 (30.2, 36.3)	151,750	33.3 (32.8, 33.8)	48.5 (48.1, 49.0)	18.2 (17.8, 18.5)
Employment status								

Characteristic	2014–2015 National Alcohol Survey					2015 BRFSS			
	Overall	Non-drinking, past 12 months[a]	Current/non-binge drinking, past 12 months[b]	Binge drinking, past 12 months[c]	Overall	Non-drinking, past 30 days[d]	Current/non-binge drinking, past 30 days[e]	Binge drinking, past 30 days[f]	
	n	Weighted % (95% confidence interval)			n	Weighted % (95% confidence interval)			
Employed	3,599	25.4 (23.4, 27.5)	40.1 (37.7, 42.4)	34.5 (32.2, 36.9)	200,231	38.7 (38.3, 39.1)	38.9 (38.5, 39.3)	22.4 (22.0, 22.7)	
Unemployed	3,437	50.1 (47.4, 52.7)	36.6 (34.1, 39.1)	13.3 (11.4, 15.3)	205,202	59.9 (59.4, 60.3)	29.2 (28.8, 29.6)	10.9 (10.6, 11.2)	
Marital status									
Married	3,690	33.1 (30.9, 35.3)	42.3 (40.0, 44.6)	24.6 (22.4, 26.7)	228,722	45.7 (45.3, 46.1)	38.9 (38.5, 39.3)	15.4 (15.2, 15.7)	
Not married (divorced, widowed, never married)	3,351	37.9 (35.3, 40.5)	33.7(31.2, 36.3)	28.3 (25.7, 31.0)	177,056	50.8 (50.3, 51.3)	29.3 (28.9, 29.7)	19.9 (19.5, 20.3)	

BRFSS: Behavioral Risk Factor Surveillance System

[a]Did not consume a drink of alcohol on any occasion during the previous 12 months, including lifetime abstainers.

[b]Consumed ≥1 drink, but <4 drinks, on any day during the previous 12 months (women); or consumed at least ≥1 drink, but <5 drinks, on any day in the last 12 months (men).

[c]Consumed ≥4 drinks of alcohol (women), or ≥5 drinks (men), on one or more days during the previous 12 months.

[d]Did not consume a drink of alcohol on any occasion during the previous 30 days, including lifetime abstainers.

[e]Consumed ≥1 drink, but <4 drinks, on any occasion during the previous 30 days (women); or consumed at least ≥1 drink, but <5 drinks, on any occasion during the previous 30 days (men).

[f]Consumed ≥4 drinks of alcohol (women), or ≥5 drinks (men), on one or more occasions during the previous 30 days.

Table 2.

Prevalence of levels of average daily alcohol consumption among adults by selected socio-demographic characteristics, 2014–2015 National Alcohol Survey and 2015 BRFSS, United States

Characteristic	2014–2015 National Alcohol Survey			2015 BRFSS		
	Low[a]	Medium[b]	High[c]	Low[a]	Medium[b]	High[c]
	Weighted % (95% confidence interval)			Weighted % (95% confidence interval)		
Overall	54.2 (52.4, 56.0)	5.3 (4.5, 6.1)	5.3 (4.4, 6.1)	46.2 (45.9, 46.5)	4.0 (3.9, 4.2)	1.7 (1.6, 1.8)
Sex						
Men	58.8 (56.2, 61.4)	5.3 (4.1, 6.6)	5.7 (4.4, 7.0)	52.1 (51.6, 52.6)	4.3 (4.1, 4.5)	2.1 (2.0, 2.2)
Women	50.0 (47.6, 52.3)	5.2 (4.1, 6.4)	4.9 (3.8, 6.0)	40.7 (40.3, 41.2)	3.8 (3.7, 4.0)	1.4 (1.3, 1.5)
Age group, years						
18–24	55.4 (49.4, 61.3)	7.2 (4.1, 10.3)	9.5 (5.9, 13.1)	43.5 (42.4, 44.5)	4.5 (4.1, 5.0)	2.1 (1.8, 2.5)
25–34	60.5 (55.9, 65.0)	6.7 (4.2, 9.1)	8.3 (5.7, 11.0)	54.5 (53.7, 55.3)	4.6 (4.2, 4.9)	2.1 (1.9, 2.4)
35–44	60.3 (55.8, 64.8)	5.5 (3.3, 7.8)	5.5 (3.5, 7.5)	50.7 (49.9, 51.5)	4.0 (3.7, 4.3)	2.0 (1.7, 2.2)
45–54	55.8 (51.5, 60.0)	5.4 (3.4, 7.4)	4.3 (2.6, 6.0)	48.7 (47.9, 49.4)	4.3 (4.0, 4.5)	2.0 (1.8, 2.2)
55–64	51.1 (47.1, 55.2)	5.0 (3.3, 6.6)	4.0 (2.4, 5.5)	44.1 (43.4, 44.7)	4.1 (3.9, 4.4)	1.5 (1.3, 1.6)
65	42.9 (39.6, 46.2)	3.0 (2.0, 4.1)	1.9 (0.9, 2.8)	36.9 (36.4, 37.4)	3.0 (2.9, 3.2)	0.8 (0.7, 0.9)
Race/Ethnicity						
White, non-Hispanic	57.9 (55.6, 60.1)	5.9 (4.8, 7.0)	5.0 (3.9, 6.0)	49.6 (49.3, 49.9)	4.8 (4.6, 4.9)	1.8 (1.7, 1.9)
Black, non-Hispanic	45.6 (41.4, 49.9)	3.2 (1.6, 4.7)	9.0 (6.0, 12.0)	39.9 (38.9, 40.9)	2.8 (2.4, 3.1)	1.6 (1.3, 1.9)
Hispanic	47.8 (43.6, 51.9)	4.3 (2.6, 6.1)	5.5 (3.6, 7.4)	40.1 (39.1, 41.1)	2.6 (2.3, 2.9)	1.6 (1.3, 1.8)
Other	49.2 (42.1, 56.2)	5.2 (2.2, 8.2)	2.0 (0.2, 3.9)	40.6 (39.2, 41.9)	3.0 (2.5, 3.4)	1.3 (1.0, 1.6)
Education						
Less than high school	32.2 (27.0, 37.4)	3.6 (1.5, 5.6)	5.5 (2.9, 8.1)	26.7 (25.8, 27.6)	2.4 (2.1, 2.7)	2.3 (1.9, 2.7)
High school graduate	46.3 (42.9, 49.8)	4.6 (3.0, 6.3)	5.5 (3.8, 7.2)	39.0 (38.4, 39.5)	3.8 (3.6, 4.0)	2.1 (1.9, 2.2)
Some college	57.5 (54.2, 60.7)	4.1 (2.8, 5.4)	6.6 (4.8, 8.3)	49.1 (48.5, 49.7)	4.4 (4.1, 4.6)	1.6 (1.5, 1.8)
College graduate	67.4 (64.6, 70.2)	7.9 (6.1, 9.8)	3.6 (2.5, 4.8)	60.7 (60.3, 61.2)	4.8 (4.6, 5.0)	1.2 (1.0, 1.3)
Employment status						
Employed	61.9 (59.5, 64.2)	6.4 (5.1, 7.6)	6.4 (5.1, 7.6)	54.5 (54.0, 54.9)	4.8 (4.6, 5.0)	2.1 (1.9, 2.2)

Characteristic	2014–2015 National Alcohol Survey			2015 BRFSS		
	Low[a]	Medium[b]	High[c]	Low[a]	Medium[b]	High[c]
	Weighted % (95% confidence interval)			Weighted % (95% confidence interval)		
Unemployed	42.6 (40.0, 45.2)	3.7 (2.7, 4.7)	3.7 (2.7, 4.6)	35.7 (35.3, 36.1)	3.1 (3.0, 3.3)	1.3 (1.2, 1.4)
Marital status						
Married	57.3 (55.0, 59.6)	5.0 (4.0, 6.1)	4.5 (3.5, 5.5)	49.2 (48.8, 49.6)	3.7 (3.6, 3.9)	1.4 (1.3, 1.5)
Not married (divorced, widowed, never married)	50.1 (47.3, 52.8)	5.7 (4.3, 7.0)	6.3 (4.9, 7.8)	42.6 (42.1, 43.1)	4.5 (4.3, 4.7)	2.1 (2.0, 2.3)

BRFSS: Behavioral Risk Factor Surveillance System

[a] Consumed a daily average of >0- 1 drink of alcohol (women) or >0- 2 drinks (men)

[b] Consumed a daily average of >1- 2 drinks of alcohol (women) or >2- 4 drinks (men)

[c] Consumed a daily average of >2 drinks of alcohol (women) or >4 drinks (men)

Table 3.

Prevalence and distribution of drinks consumed among adult current drinkers overall and in each demographic group, 2014–2015 National Alcohol Survey and 2015 BRFSS, United States

Average daily alcohol consumption level[a]	2014–2015 National Alcohol Survey		2015 BRFSS	
	Weighted % (95% CI) of average daily alcohol consumption among current drinkers (n=4,075 drinkers)	Percent of drinks consumed, overall[b] and among drinkers in each demographic group	Weighted % (95% CI) of average daily alcohol consumption among current drinkers (n=204,518 drinkers)	Percent of drinks consumed, overall[c] and among drinkers in each demographic group
Overall	100.0	100.0%	100.0	100.0%
Low	83.7 (82.0, 85.4)	31.0%	88.9 (88.6, 89.2)	50.1%
Medium	8.2 (6.9, 9.4)	18.0%	7.8 (7.6, 8.0)	22.3%
High	8.2 (6.9, 9.4)	51.0%	3.3 (3.2, 3.5)	27.7%
Men				
Low	84.2 (81.8, 86.6)	33.2%	89.1 (88.7, 89.4)	50.2%
Medium	7.7 (5.9, 9.4)	18.0%	7.3 (7.0, 7.7)	21.2%
High	8.2 (6.3, 10.0)	48.8%	3.6 (3.4, 3.8)	28.7%
Women				
Low	83.1 (80.7, 85.5)	26.9%	88.7 (88.3, 89.1)	49.9%
Medium	8.7 (6.9, 10.5)	17.8%	8.3 (8.0, 8.6)	24.8%
High	8.2 (6.4, 10.0)	55.3%	3.0 (2.8, 3.2)	25.3%
18–44 years				
Low	80.8 (78.1, 83.6)	26.3%	88.6 (88.2, 89.1)	48.5%
Medium	8.7 (6.8, 10.7)	15.7%	7.7 (7.4, 8.1)	21.2%
High	10.4 (8.3, 12.5)	58.0%	3.7 (3.4, 3.9)	30.3%
45 years				
Low	86.5 (84.4, 88.5)	38.7%	89.2 (88.9, 89.5)	51.7%
Medium	7.7 (6.1, 9.3)	22.2%	7.9 (7.6, 8.1)	23.4%
High	5.8 (4.4, 7.2)	39.1%	3.0 (2.8, 3.1)	24.9%
Men, 18–44 years				
Low	80.8 (76.9, 84.7)	28.0%	88.7 (88.1, 89.3)	48.7%
Medium	7.9 (5.3, 10.6)	15.5%	7.4 (6.9, 7.8)	20.5%

Average daily alcohol consumption level[a]	2014–2015 National Alcohol Survey		2015 BRFSS	
	Weighted % (95% CI) of average daily alcohol consumption among current drinkers (n=4,075 drinkers)	Percent of drinks consumed, overall[b] and among drinkers in each demographic group	Weighted % (95% CI) of average daily alcohol consumption among current drinkers (n=204,518 drinkers)	Percent of drinks consumed, overall[c] and among drinkers in each demographic group
High	11.3 (8.2, 14.4)	56.6%	3.9 (3.5, 4.3)	30.8%
Men, 45 years				
Low	87.9 (85.1, 90.7)	42.0%	89.4 (89.0, 89.9)	51.8%
Medium	7.4 (5.1, 9.8)	22.8%	7.3 (6.9, 7.7)	21.9%
High	4.7 (2.9, 6.4)	35.2%	3.2 (3.0, 3.5)	26.3%
Women, 18–44 years				
Low	80.9 (77.1, 84.8)	23.0%	88.5 (87.9, 89.1)	48.2%
Medium	9.6 (6.7, 12.6)	16.2%	8.2 (7.6, 8.7)	22.8%
High	9.4 (6.6, 12.2)	60.8%	3.3 (3.0, 3.7)	29.1%
Women, 45 years				
Low	85.0 (82.0, 87.9)	32.5%	88.9 (88.4, 89.3)	51.6%
Medium	8.0 (5.8, 10.2)	21.0%	8.5 (8.1, 8.8)	26.7%
High	7.0 (4.8, 9.2)	46.5%	2.6 (2.4, 2.9)	21.7%

BRFSS: Behavioral Risk Factor Surveillance System, CI: Confidence interval

[a] Low average daily alcohol consumption was defined as >0– 1 drink of alcohol (women) or >0– 2 drinks (men); medium average daily alcohol consumption was defined as >1– 2 drinks of alcohol (women) or >2– 4 drinks (men); and high average daily alcohol consumption was defined as >2 drinks of alcohol (women) or >4 drinks (men).

[b] Among the weighted estimate of about 152 million current drinkers, the total estimated annual drinks consumed in the NAS was 51,323,923,107 drinks.

[c] Among the weighted estimate of about 119.5 million current drinkers, the total estimated annual drinks consumed in the BRFSS was 34,982,649,345 drinks.