

# Associations Between Feelings of Sadness and Current Binge Drinking Among Youth Using the Youth Risk Behavior Survey (2017, 2019, 2021)



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## Introduction

Historically, youth drink less frequently than adults but can be at higher risk of binge drinking. Binge drinking among youth poses many risks. Youth who binge drink are at higher risk for motor vehicle accidents, alcohol poisoning, falls, burns, drowning, and suicide.<sup>1,2</sup> In addition to increased risk for acute injury, there are increased risks for long term alcohol dependence and abuse as adults.

Substance use and mental health are both complex issues that can coexist in adolescent populations. According to the National Youth Risk Behavior Survey (YRBS), in 2021 42% of high school students felt so sad or hopeless almost every day for at least two weeks in a row that they stopped doing their usual activities, with female students being more likely than male students to experience persistent feelings of sadness or hopelessness.<sup>3</sup> Overall, there has been an increase from 2011 to 2021 of the percentage of female and male students that reported feelings of sadness.<sup>3</sup>

Using the Texas YRBS, we aim to assess the association between reported feelings of sadness and current binge drinking among a representative sample of youth in Texas.

## Methods

The YRBS is a two-stage cluster sample design that provides a representative sample of students in grades 9-12. Data is weighted in order to adjust for school and student nonresponse. These weights are applied based on student sex, grade, and race/ethnicity, overall providing a representative sample of students in Texas. Data was pooled from the 2017, 2019, and 2021 YRBS datasets and the study population was restricted to students that answered “yes” or “no” to the question “During the past 12 months, did you ever feel sad or hopeless almost every day or for two weeks or more in a row that you stopped doing some usual activities?”.

Binge drinking was classified by those who answered “yes” to having four or more drinks of alcohol in a row if they were female or five or more drinks of alcohol in a row if they were male, within a couple of hours on at least one day in the past 30 days prior to survey administration. Weighted logistic regression analysis was used to assess the association between feelings of sadness and current binge drinking while adjusting for age, sex, grade in school, and race/ethnicity. All analyses were conducted using SAS 9.4.

## Results

Overall, 39.2% of students reported feelings of sadness, with 65.5% being female and 34.5% male. The weighted percentage of binge drinking overall was 12.2%, with 52.0% being female and 48.0% male. Among those that reported current binge drinking, 37.0% were in 12th grade, 27.1% in 10th grade, 24.1% in 11th grade, and 11.8% in 9th grade.

Table 1: Study Population Characteristics YRBS (2017, 2019, 2021)

Variable	Study Population (n(%))	Binge Drinking	
		Yes	No
<b>Total</b>	5,747	625 (12.17)	4,597 (87.83)
<b>Sex</b>			
Male	2,978 (49.05)	342 (52.02)	2,381 (48.92)
Female	2,744 (50.95)	282 (47.98)	2,200 (51.08)
<b>Age Group</b>			
<= 14	708 (12.14)	33 (4.93)	622 (13.41)
15	1,552 (25.60)	123 (18.61)	1,295 (26.76)
16	1,407 (25.08)	156 (25.94)	1,126 (25.03)
17	1,321 (23.84)	181 (29.12)	1,011 (22.92)
18 or older	752 (13.34)	132 (21.40)	537 (11.87)
<b>Race/Ethnicity</b>			
NH White	1,262 (29.13)	192 (38.61)	977 (28.24)
NH Black	609 (12.44)	35 (6.57)	516 (13.09)
Hispanic <sup>†</sup>	3,335 (51.42)	359 (50.11)	2,651 (51.19)
NH Other <sup>‡</sup>	417 (7.01)	31 (4.70)	358 (7.48)
<b>Grade</b>			
9 <sup>th</sup>	1,694 (27.77)	85 (11.82)	1,456 (30.15)
10 <sup>th</sup>	1,521 (25.95)	164 (27.06)	1,228 (25.93)
11 <sup>th</sup>	1,253 (23.98)	143 (24.01)	991 (23.85)
12 <sup>th</sup>	1,235 (22.29)	227 (37.11)	888 (20.07)
<b>Feelings of Sadness</b>			
Yes	2,248 (39.24)	360 (58.55)	1,611 (34.95)
No	3,499 (60.77)	265 (41.45)	2,986 (65.05)

<sup>†</sup>Hispanic: Includes individuals of Hispanic origin and may be of any race(s)

<sup>‡</sup>NH Other: Includes individuals who identified as American Indian, Alaska Native, Asian, Native Hawaiian, and Other Pacific Islander

Compared to those who answered “no”, participants that reported “yes” to feelings of sadness (AOR: 2.71, 95% CI: 2.19-3.35) were more likely to report current binge drinking. Compared to non-Hispanic whites, non-Hispanic blacks (AOR: 0.37, 95% CI: 0.19-0.68), Hispanics (AOR: 0.67, 95% CI: 0.49-0.92), and non-Hispanic other (AOR: 0.42, 95% CI: 0.23, 0.75) were less likely to report binge drinking. Compared to students in 9th grade, those in 12th grade (AOR: 4.92, 95% CI: 2.27, 10.65), 11th grade (AOR: 2.56, 95% CI: 1.34, 4.88), and 10th grade (AOR: 2.33, 95% CI: 1.29, 4.20) were more likely to report binge drinking. Results for age group and sex were not significant across all categories. Unweighted frequencies and weighted percentages are reported in Table 1.

Table 2: Logistic Regression Results

Variable	Adjusted Odds Ratio (95% Confidence Interval)
<b>Race/Ethnicity</b>	
NH White	Ref
NH Black	0.37 (0.19, 0.68)
Hispanic <sup>†</sup>	0.67 (0.49, 0.92)
NH Other <sup>‡</sup>	0.42 (0.23, 0.75)
<b>Grade</b>	
9 <sup>th</sup>	Ref
10 <sup>th</sup>	2.33 (1.29, 4.20)
11 <sup>th</sup>	2.56 (1.34, 4.88)
12 <sup>th</sup>	4.92 (2.27, 10.65)
<b>Feelings of Sadness</b>	
No	Ref
Yes	2.71 (2.19, 3.35)

## Conclusions

Findings highlight the importance of policies and interventions that promote mental health to help mitigate adverse alcohol use related outcomes among adolescents. Further investigation is necessary to better understand the intricate relationship between mental health and alcohol use disorders, such as binge drinking in adolescents.

### References:

- National Institute on Alcohol Abuse and Alcoholism. (2023). Understanding Binge Drinking. [https://www.niaaa.nih.gov/sites/default/files/publications/NIAAA\\_Binge\\_Drinking\\_3.pdf](https://www.niaaa.nih.gov/sites/default/files/publications/NIAAA_Binge_Drinking_3.pdf)
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- Centers for Disease Control and Prevention. (2022). [https://www.cdc.gov/healthyyouth/data/yrbs/pdf/yrbs\\_data-summary-trends\\_report2023\\_508.pdf](https://www.cdc.gov/healthyyouth/data/yrbs/pdf/yrbs_data-summary-trends_report2023_508.pdf)