



The Association between Gambling Behavior and Alcohol Use Disorder



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Introduction

- Gambling addiction and Alcohol Use Disorder (AUD) are significant health problems that often co-occur. This co-occurrence can lead to ruined relationships, mental suffering, and financial ruin
- The diagnostic overlap is due to shared psychological mechanisms, such as difficulties with emotional regulation (Oginska-Bulik, 2014). Both behaviors are used to elicit positive emotions or to relax (Sinclair et al., 2025).
- The issue is magnified by the rapid growth of online sports betting from \$4.9 billion in 2014 to \$150 billion in 2024, yet the specific connection between clinical AUD and its effect on gambling behavior remains unknown.
- The analysis aims to 1. establish the relationship between gambling and AUD and 2. determine if participants with AUD use gambling as a coping mechanism. This will guide targeted harm-reduction strategies

Research Questions

- What is the relationship between gambling behavior and Alcohol Use Disorder (AUD)?
- Do participants diagnosed with AUD tend to gamble more than those who gamble without being diagnosed with AUD?
- Does this relationship differ between males and females?

Methods

Sample: The sample from the first wave of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) represents the civilian, non-institutionalized adult population of the United States. The NESARC is designed to be a representation of the entire United States population. It surveyed 43,093 participants, 18 years old and older. The goal of this survey was to understand the common alcohol and substance disorders in the United States.

Measures

- Ever Gambled (EG) is measured by a binary indicator assessing whether the participant had “ever gambled 5+ times in a year.”
- Recent Gambling Behavior measures whether the participant had “gambled in the past 12 months.”
- To improve mood and to forget problems were measured by a binary response to “Ever gamble to get out of a bad mood” and “Ever gamble to forget your problems.”

Results

Bivariate

- Chi-Square analysis showed that the interaction between Alcohol Use Disorder (ALCD) and Ever Gambled (EG) is highly statistically significant.
- The odds of gambling conferred by an AUD diagnosis were found to be proportionally greater for females, suggesting that AUD increases gambling likelihood more steeply for women compared to men.

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data: myData$EG and myData$ALCD
X-squared = 398.43, df = 1, p-value < 2.2e-16

> myChi_EG$observed
myData$ALCD
myData$EG    0    1
0 28991 1894
1  9813 1340

> prop.table(myChi_EG$observed, 2)
myData$ALCD
myData$EG    0    1
0 0.7471137 0.5856524
1 0.2528863 0.4143476

> prop.table(myChi_EG$observed, 1)
myData$ALCD
myData$EG    0    1
0 0.93867573 0.06132427
1 0.87985295 0.12014705

>
```

Figure 1: Pearson's Chi-squared test with Yates' continuity correction

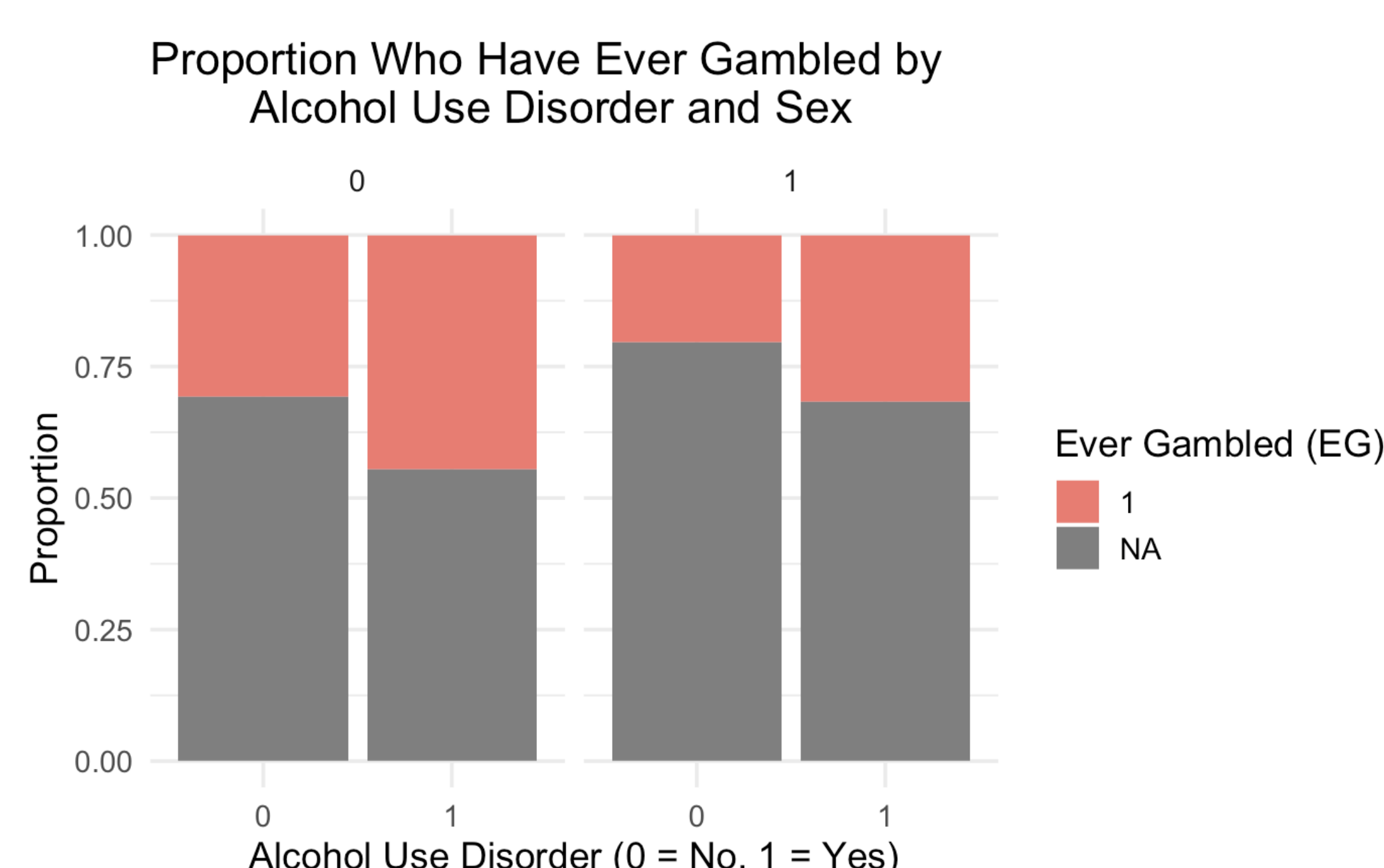


Figure 2: Proportion of Participants Who Have Ever Gambled by Alcohol Use Disorder Status and Sex

Discussion

- The bivariate Chi-Square test showed a strong association between the two variables: AUD and gambling behavior. However, in the multivariate model, these effects failed to reach significance. Such a discrepancy suggests that missing data and limited variation of predictors weaken the logistic regression model.
- Descriptive patterns suggested that women with AUD might exhibit a more rapid increase in gambling over time compared with men (Fig. 2), but this pattern was not statistically reliable in the adjusted model. Thus, apparent sex differences should be interpreted with caution.
- Overall, the findings suggest that the association of AUD and gambling behavior can be quite complex and may be influenced by other unmeasured variables, such as age, socioeconomic status, mental health, or gambling severity. Controlling for other covariates may provide a clearer indication of whether AUD independently influences gambling behavior or if both behaviors emanate from a common risk factor.
- Future research is needed that can account for missingness, include additional predictors, and test potential mechanisms underlying the co-occurring behaviors of alcohol use and gambling in order to understand how these behaviors develop together.

References

- Oginska-Bulik, N. (2014). *Alcoholism and drug addiction = Alkoholizm i narkomania: An*. Elsevier.
- Sinclair, E. S.-L. L., Gray, H. M., & Petry, N. M. (2025). Who engages in simultaneous gambling and alcohol use, and why? A mixed-method study. *Journal of Gambling Studies*, 41(1), 123–140. <https://link.springer.com/article/10.1007/s10899-025-10378-y>