



The Association between Alcohol Use, Education, and Depression Outcomes among U.S. Adults

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Introduction

- Alcohol use and depression are both widespread in the U.S., and prior research suggests they are linked. However, this relationship is complex and may be shaped by broader social factors such as education.
- This study examines whether alcohol consumption is associated with depression, and whether education helps contextualize that relationship.

Sample & Measures

- Data:** 2024 National Survey on Drug Use and Health (NSDUH)
- Sample:** U.S. adults ($n = 22,966$)
- Alcohol use:** Number of drinks consumed on last drinking occasion
- Depression:** Reported being depressed for several days (yes/no)
- Education:** <HS, HS graduate, Some college, College graduate

Research Questions

- Is alcohol use associated with depression among U.S. adults?
- Does the probability of reporting depression increase with higher alcohol consumption?
- Does education help explain variation in this relationship?

Methods

- Alcohol consumption grouped into: **1–2, 3–4, 5+ drinks**
- Depression analyzed as a **binary outcome**
- Chi-square test of independence** examined the association between alcohol use and depression
- Logistic regression** models estimated the likelihood of depression:
 - Model 1: Alcohol use predicting depression
 - Model 2: Alcohol use + education predicting depression

Results

- The proportion reporting depression increases across drinking categories: **36.7%** among those reporting 1–2 drinks, **39.4%** among 3–4 drinks, and **42.3%** among 5+ drinks ($\chi^2 = 37.96, p < .001$).
- Logistic regression results show that alcohol use remains significantly associated with depression; each additional drink is associated with about a **2% increase in the odds of reporting depression (OR $\approx 1.02, p < .001$)**, controlling for education.
- The predicted probability plot (*Figure 1*) shows that this positive relationship between alcohol use and depression is **consistent across all education levels**, with higher drinking levels associated with higher predicted probabilities of depression in every group.
- Although predicted probabilities overlap across education groups, the overall pattern remains consistent, indicating that the association between alcohol use and depression is not driven by a single education category.

Predicted Probability of Depression by Alcohol Consumption and Education Level

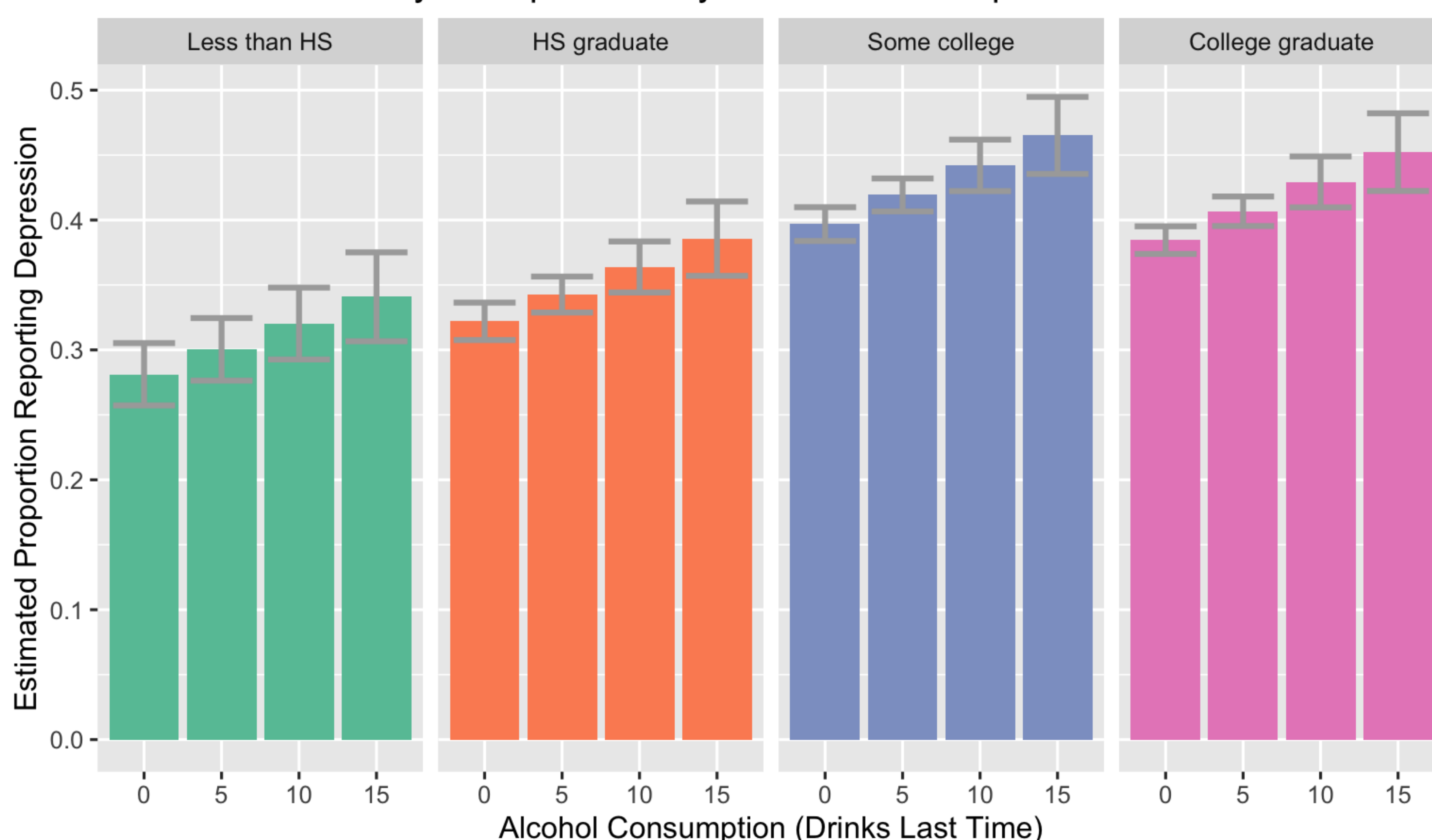


Figure 1. Predicted probability of reporting depression by alcohol consumption across education levels. Across all education groups, higher alcohol consumption is associated with higher predicted probabilities of depression. This indicates that the relationship persists even when accounting for educational attainment.

References

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Discussion

- Alcohol use is consistently associated with depression across both descriptive and regression analyses.
- This relationship persists after adjusting for education, suggesting a robust link between drinking behavior and mental health.
- Education highlights the role of broader social context in shaping depression.
- These findings suggest both behavioral and structural factors should be considered when addressing mental health outcomes.