



# Drunken Tragedy



## Association between drinking and suicidal tendencies

Drew Olsen, QAC, Wesleyan University

### Introduction

- Alcohol use and suicide are closely linked and can result in deadly outcomes if not studied
- The local drinking culture affects if high alcohol use will be positively or negatively correlated, with higher average consumption being linked with negative correlations (Miller, 2022)
- Cultures that primarily drink spirits have higher positive correlations between alcohol use and suicide than cultures that primarily consume other types of drinks (Landberg, 2008)
- Long-term alcohol use has a positive effect on suicide rates
- Even one or two drinks is noted with large increase in chances of suicide (Borges, 2017)
- The correlation between feelings of worthlessness and alcohol use are unknown

### Methods

- Using National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) data, relevant variables were pulled directly or constructed from multiple sub-variables
- The survey was taken in 2006 and has 43,093 entries, making data found very representative of the overall population
- Black people, Hispanic people, and young people (18-24) were all oversampled
- People in multiple types of housing were surveyed to get accurate results

### Measures

- DrinkMax - Quantitative variable for the highest amount of drinks consumed in one night. 0-4 drinks per night, with 4 being coded as 4 or more drinks.
- Suicidal tendencies - A categorical summary variable showing if a person has either attempted suicide, had suicidal ideation, or wanting to die
- Worthless - A categorical variable showing feelings of worthlessness
- Energy - A categorical variable showing if someone has excessive energy to the point of being uncomfortable
- Conflict - A categorical variable showing if someone is having a conflict with a friend or family member for 2+ weeks

### Research Question

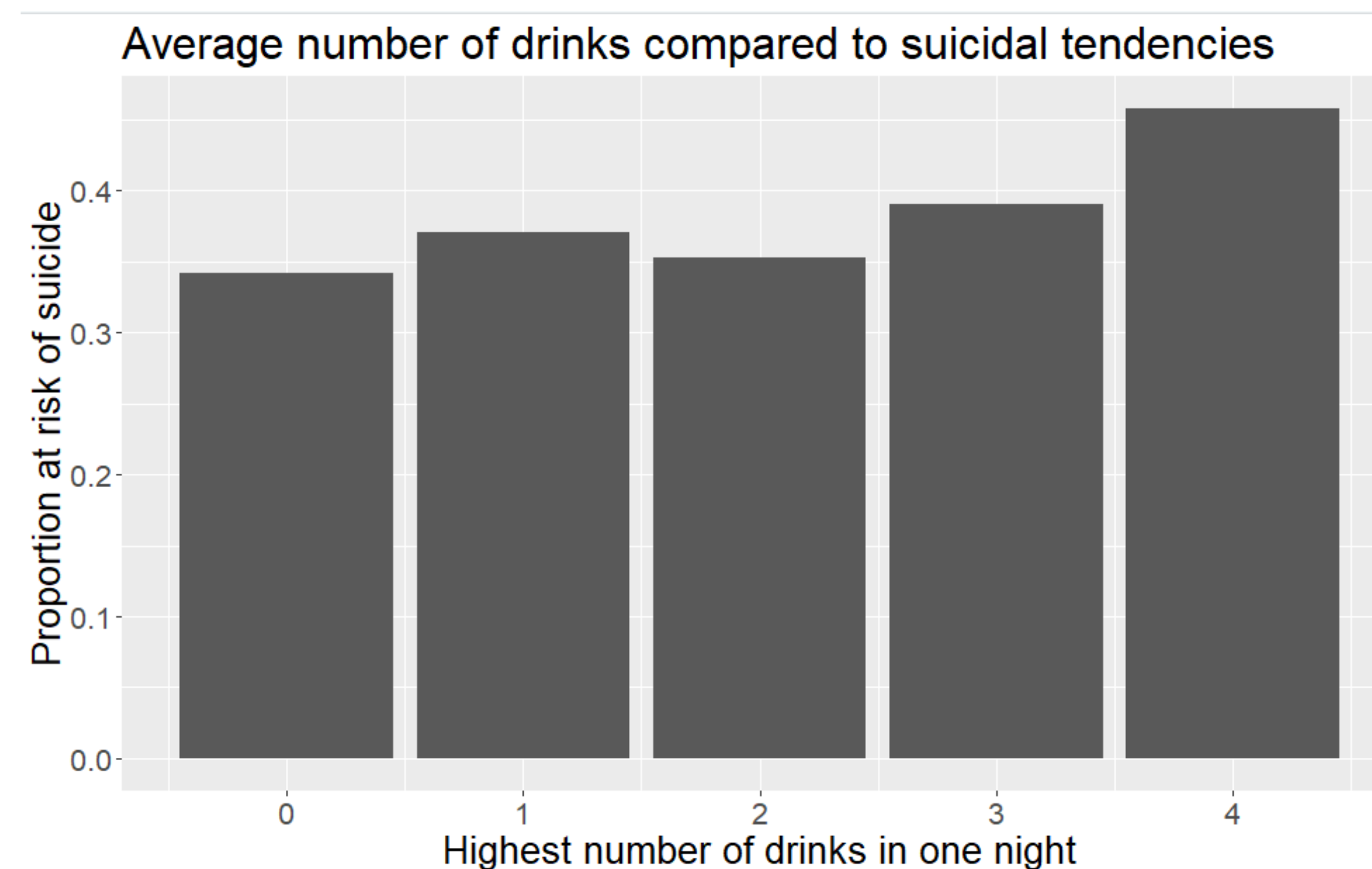
How are the maximum number of drinks and suicidal tendencies related?

### Results

- A multiple logistic regression was ran to find the significance between Suicidal Tendencies, and Drinking.
- Three other variables were included as possible confounding variables

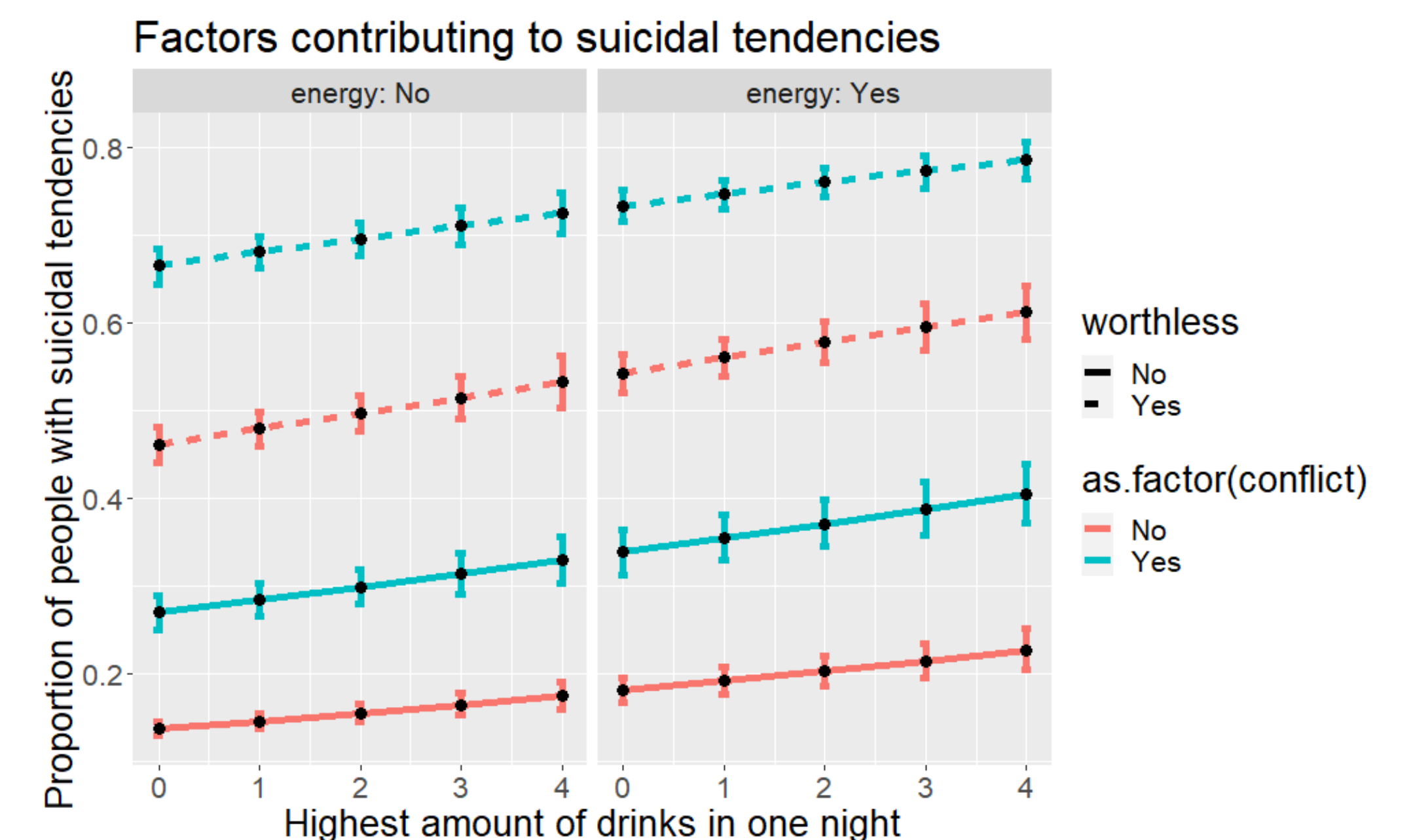
#### Bivariate

- Using a chi-sq test, DrinkMax was shown to be significant at a 1% significance level ( $\chi^2 = 72.47$ ,  $df = 4$ ,  $p\text{-value} < 0.001$ ).
- As the number of drinks consumed in one night, the proportion of people with suicidal tendencies also increased.



#### Multi-Variate

- After controlling for possible confounding factors, drinking was shown to be one of the least significant factors for suicidal tendencies
- After a multiple logistic regression, feelings of worthlessness were found to be the most significant factors (OR: 5.37, CI: 4.9-5.8). This can be seen by comparing the dotted line to the solid line in Graph 2
- The other confounding variables, energy and conflict were both shown to be statistically significant as well, having ORs of 1.3 and 2.3 as well as CIs of 1.2-1.5 and 2.1-2.5 respectively



- People who were found to have all of the possible factors (4+ drinks, feelings of worthlessness, excessive energy, and extended conflict) were found to be almost 8 more likely to have suicidal tendencies, compared to people with none of the factors (0.8 vs 0.1).

### Discussion

- There are a lot of confounding factors that can make suicidal tendencies much more likely.
- Of those factors, drinking exacerbates all of them.
- For people who do not have confounding factors, drinking a lot is relatively safe, but for people with lots of confounding factors drinking can quickly turn high risk.
- While policy changes may not be possible, keeping an eye on friends who are drinking too much should be encouraged.
- Remember, cutting a friend off once they have had too much is acceptable and encouraged

### References

Miller, M., Anderson-Luxford, D., Mojica-Perez, Y., Sjödin, L., Room, R., & Jiang, H. (2022). A time-series analysis of the association between alcohol and suicide in Australia. *Drug and alcohol dependence*, 231, 109203-109203. <https://doi.org/10.1016/j.drugalcdep.2021.109203>

Landberg, J. (2008). Alcohol and suicide in eastern Europe. *Drug and alcohol review*, 27(4), 361-373. <https://doi.org/10.1080/09595230802093778>

Borges, G., Cherpitel, C. J., Orozco, R., Ye, Y., Monteiro, M., Hao, W., & Benegal, V. (2017). A dose-response estimate for acute alcohol use and risk of suicide attempt: Alcohol and suicide attempt. *Addiction biology*, 22(6), 1554-1561. <https://doi.org/10.1111/adb.12439>