Spring 4-29-2021

# Air Pollution and Alcoholism: Evidence from BRFSS Dataset

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This paper examines the effect of air pollution on alcohol consumption. The CDC lists heavy drinking and binge drinking in its definition of excessive alcohol consumption. Studies such as **Fischer, Paul H., Marten Marra(2015)** have shown that higher levels of air pollution have detrimental effects on health such as liver-related morbidity and the function of the neural system. According to **Block and Calderon-Garciduenas(2009)** and **Rao, Shilpa (2012),** communities with higher levels of exposure to air pollution, such as Particular Matter and Nitrous Oxide, have been reported to experience higher morbidity rates. In addition to health impacts, **Strak, Maciej, Nicole Janssen(2017)** have successfully connected air pollution to individual lifestyle factors, including smoking habits, alcohol consumption, physical activity, and BMI. They concluded that individual lifestyle-related risk factors were weakly associated with long-term exposure to air pollution. These negative effects of air pollution on health impacts would potentially induce economic stress, such as high health expenditures, low labor productivity, and even unemployment. **Peirce, Robert S(1996)** have also shown that binge drinking and heavy drinking behaviors are exacerbated by economic stressors, such as severe economic loss and economic uncertainty, as well as heightened psychological anxiety. Our study estimates the effect of air pollution on alcoholism through its impact on economic outcome. The first aim of our study is to estimate the effect of air pollution on economic factors, including employment status, income and health expenditure. The second aim is to include the alcohol consumption variables to check the effects of air pollution on alcohol consumption. The third aim is to assess whether the associations between air pollution and alcohol consumption are sensitive to adjustment for sex, age, and economic factors. Health and

socioeconomic information, such as health condition, alcohol consumption, health expenditure, income, and employment status are obtained from the **2002-2019 Behavioral Risk Factor Surveillance System Annual Survey Data** for the fifty states of the United States. Our measure of pollution includes the annual average concentrations of PM2.5, PM10, Nitrous Oxide, and Lead from various monitoring stations of the **Outdoor Air Quality data** of the EPA. To empirically estimate the effect of each pollutant, we use the Ordinary Least Squares regression and logistic regression. At the current stage of our research, we expect to find that a higher level of PM2.5 could significantly increase the probability of being a heavy drinker and the average number of drinks per day. We also expect to find that sex and employment status play a big part in this research problem. Men or people who are unemployed are more sensitive to the effect of PM2.5 on alcohol problems compared to others.

Key Words: Heavy drinking, Air pollution, BRFSS survey data

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