



RESEARCH SUMMARY
Date Compiled: December 2022

Key takeaways from included research:

- A Finnish study assessed predictive associations of age of first drink, first intoxication, frequency of intoxication, and self-reported alcohol tolerance at age 15-16 with self-harm requiring medical attention or suicide by age 33. They found high alcohol tolerance, age of onset, and frequency of intoxication to be significant predictors of self-harm and suicide.
- Researchers in California examined estimated levels of total alcohol use per capita and how this compares to child abuse and neglect. They determined that higher estimated volume of alcohol use among young adults (age 18-29) was related to more children being entered into foster care resulting from alcohol-related concerns. They emphasized that reducing alcohol availability by decreasing outlet density could reduce child abuse and neglect in neighborhoods.
- A study was conducted to examine the association between implementation of state recreational cannabis laws (RCLs) and alcohol use among adults. They concluded that there may be an association in the US between recreational cannabis laws and increased alcohol use, particularly among younger adults and men.
- A study of US women assessed effects of different pandemic-related concerns and increased alcohol use. Researchers found concerns about isolation, job/finances, and concerns about the government to be significantly related to reporting increased alcohol use. Studies like this can be utilized to prepare advanced public health interventions to minimize alcohol-related harm among women.
- Due to limited understanding of alcohol policies on lifetime abstinence, a study was conducted to assess the association of International Alcohol Control (IAC) policies and lifetime abstinence. The assessment results suggested that restricting alcohol marketing could be a key policy for to protect alcohol abstinence in high- and middle-income countries.
- Researchers assessed electronic medical records of individuals who reported having alcohol dependence, nicotine dependence, or both (co-users) and how this affected health outcomes following COVID-19 infection. They found that risk for requiring ventilation, developing pneumonia, and mortality within 30 days of diagnosis increased with any substance use history. This study builds upon previous research indicating increased risk of disease following COVID-19 infection as a result of substance use.

ASSOCIATIONS OF ADOLESCENT ALCOHOL USE AND SELF-REPORTED ALCOHOL TOLERANCE WITH RISK OF SELF-HARM AND SUICIDE IN EARLY ADULTHOOD: A BIRTH-COHORT STUDY
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Objective: We aimed to assess the predictive associations of age at first drink (AFD), age at first intoxication (AFI), frequency of intoxication, and self-reported alcohol tolerance at age 15-16 to self-harm requiring medical attention or suicide death by age 33.

Method: In an ongoing follow-up study, the Northern Finland Birth Cohort 1986, a total of 7,735 individuals were included at age 15-16. Information on alcohol and other substance use was assessed via questionnaires. Information on self-harm or suicide was collected from national registers until the participants were 33 years of age. Baseline psychiatric symptomatology measured with the Youth Self-Report questionnaire and socio-demographic background variables were controlled for in multivariable analyses using Cox regression analyses.

Results: Male gender and psychiatric symptoms at age 15-16 were consistently associated with greater risk of self-harm and suicide death. When baseline psychiatric symptomatology and other background variables were adjusted for, younger AFI (Hazard Ratio, HR, 2.28, 95% CI 1.16-4.47) and high inherent alcohol tolerance (HR 3.76, 95% CI 1.55-9.08) were associated with self-harm. Furthermore, frequent alcohol intoxication (HR 5.39, 95% CI 1.44-20.23) and high inherent alcohol tolerance (HR 6.20, 95% CI 1.18-32.45) were associated with suicide death by age 33.

Conclusions: High alcohol tolerance, age of onset and frequency of alcohol intoxication in adolescence, appear to be significant predictors of self-harm and suicide in early adulthood. Self-reported alcohol tolerance in adolescence is a novel empirical approach to assess adolescent alcohol use associating with subsequent harms.

Source: Levola, J., Denisoff, A., Mustonen, A., Alakokkare, A. E., Miettunen, J., Bramness, J. G., & Niemelä, S. (2022). Associations of adolescent alcohol use and self-reported alcohol tolerance with risk of self-harm and suicide in early adulthood: a birth-cohort study. *Journal of Studies on Alcohol and Drugs*, jsad-22. <https://doi.org/10.15288/jsad.22-00055>

NEIGHBORHOOD MARKET POTENTIALS FOR ALCOHOL USE AND RATES OF CHILD ABUSE AND NEGLECT
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Background: Alcohol use can lead to child abuse and neglect even if the person using alcohol does not use heavily. Yet relatively few measures that reflect alcohol use are available at smaller geographic units. We assess whether the estimated level of total alcohol use per capita is related to measures of child abuse and neglect that include substantiated reports of maltreatment, total entries into foster care, and alcohol-related entries into foster care.

Methods: Our sample consists of 326 Census block groups in Sacramento, California over three time points (978 space-time units). Administrative data for substantiations of child abuse and neglect and foster care entries are our outcomes. We create market potentials for alcohol use among 18- to 29-year-olds as our primary independent variable. Data are analyzed using Bayesian conditionally autoregressive spatio-temporal models.

Results: Higher alcohol use potentials (as measured by total volume per capita of 18- to 29-year olds) are related to more children entering foster care due to drinking-related concerns by a parent or caregiver (RR = 1.032, 95% CI = [1.013, 1.051]), but not total substantiations for foster care entries. Neighborhoods with higher total volume of alcohol per 18- to 29-year-olds had more foster care

entries when we used number of substantiations as the denominator (RR = 1.012, 95% CI = [1.0001, 1.023]) but were not related to foster care entries with alcohol misuse as a concern as a subset of all foster care entries.

Conclusions: Higher estimated volume of alcohol use per capita among young adults (aged 18 to 29) was related to more children entering foster care due to alcohol-related concerns. Reducing alcohol supply in alcohol outlets, specifically through off-premise establishments, might reduce rates for all entries into foster care or other out-of-home placement and substantiated child abuse and neglect.

Source: Freisthler, B., Kranich, C., Price Wolf, J., Boyd, R. & Gruenewald, P.J. (2022) Neighborhood market potentials for alcohol use and rates of child abuse and neglect. *Alcoholism: Clinical and Experimental Research*, 00, 1– 12. <https://doi.org/10.1111/acer.14975>

ASSOCIATION OF RECREATIONAL CANNABIS LEGALIZATION WITH ALCOHOL USE AMONG ADULTS IN THE US, 2010 TO 2019 **November 2022**

Importance: In the US, cannabis use has nearly doubled during the past decade, in part because states have implemented recreational cannabis laws (RCLs). However, it is unclear how legalization of adult-use cannabis may affect alcohol consumption.

Objective: To estimate the association between implementation of state RCLs and alcohol use among adults in the US.

Design, Settings, and Participants: This was a cross-sectional study of 4.2 million individuals who responded to the Behavioral Risk Factor Surveillance System in 2010 to 2019. A difference-in-differences approach with demographic and policy controls was used to estimate the association between RCLs and alcohol use, overall and by age, sex, race and ethnicity, and educational level. Data analyses were performed from June 2021 to March 2022.

Exposures: States with RCLs, as reported by the RAND–University of Southern California Schaeffer Opioid Policy Tools and Information Center.

Main Outcomes and Measures: Past-month alcohol use, binge drinking, and heavy drinking.

Results: Of 4.2 million respondents (median age group, 50-64 years; 2 476 984 [51.7%] women; 2 978 467 [58.3%] non-Hispanic White individuals) in 2010 through 2019, 321 921 individuals lived in state-years with recreational cannabis laws. Recreational cannabis laws were associated with a 0.9 percentage point (95% CI, 0.1-1.7; P = .02) increase in any alcohol drinking but were not significantly associated with binge or heavy drinking. Increases in any alcohol use were primarily among younger adults (18-24 years) and men, as well as among non-Hispanic White respondents and those without any college education. A 1.4 percentage point increase (95% CI, 0.4-2.3; P = .006) in binge drinking was also observed among men, although this association diminished over time.

Conclusions and Relevance: This cross-sectional study and difference-in-differences analysis found that recreational cannabis laws in the US may be associated with increased alcohol use, primarily among younger adults and men.

Source: Macha, V., Abouk, R., & Drake, C. (2022). Association of recreational cannabis legalization with alcohol use among adults in the US, 2010 to 2019. In *JAMA health forum* (Vol. 3, No. 11, pp. e224069-e224069). American Medical Association. <https://doi.org/10.1001/jamahealthforum.2022.4069>

COVID-19 CONCERNS, PERCEIVED STRESS, AND INCREASED ALCOHOL USE AMONG ADULT WOMEN IN THE UNITED STATES

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Abstract: The objective of this study was to assess the direct and indirect (via perceived stress) effects of different types of pandemic-related concerns and increased alcohol use among adult women in the United States (US). We conducted a secondary analysis of cross-sectional survey data from April 2020 for adult females in the US who use alcohol (n = 1,089). The indirect effect model accounted for 19% of the variance in perceived stress and 8% of the variance in reporting increased alcohol use compared to no change or decreased use. Path analysis results indicated that concerns about isolation (odds ratio [OR] = 1.027, 95% confidence interval [CI] = 1.013–1.046), job/finances (OR = 1.025, 95% CI = 1.007–1.065), basic needs (OR = 1.021, 95% CI = 1.008–1.047), and concerns about government (OR = 1.038, 95% CI = 1.014–1.179) were significantly related to reporting increased alcohol use through perceived stress. These findings can inform timely public health interventions to minimize alcohol-related harm among women.

Source: Grigsby, T. J., Howard, K., Howard, J. T., & Perrotte, J. (2022). COVID-19 Concerns, Perceived Stress, and Increased Alcohol Use Among Adult Women in the United States. *Clinical Nursing Research*, 10547738221136678. <https://doi.org/10.1177/10547738221136678>

EFFECTIVE ALCOHOL POLICIES AND LIFETIME ABSTINENCE: AN ANALYSIS OF THE INTERNATIONAL ALCOHOL CONTROL POLICY INDEX

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Introduction: Alcohol abstinence remains common among adults globally, although low and middle-income countries are experiencing declines in abstinence. The effect of alcohol policies on lifetime abstinence is poorly understood. The International Alcohol Control (IAC) policy index was developed to benchmark and monitor the uptake of effective alcohol policies and has shown strong associations with alcohol per capita consumption and drinking patterns. Uniquely, the index incorporates both policy 'stringency' and 'impact', reflecting policy implementation and enforcement, across effective policies. Here we assessed the association of the IAC policy index with lifetime abstinence in a diverse sample of jurisdictions.

Methods: We conducted a cross-sectional analysis of the relationship between the IAC policy index score, and its components, and lifetime abstinence among adults (15+ years) in 13 high and middle-income jurisdictions. We examined the correlations for each component of the index and stringency and impact separately.

Results: Overall, the total IAC policy index scores were positively correlated with lifetime abstinence (r = 0.76), as were both the stringency (r = 0.62) and impact (r = 0.82) scores. Marketing restrictions showed higher correlations with lifetime abstinence than other policy domains (r = 0.80), including restrictions on physical availability, pricing policies and drink-driving prevention.

Discussion and Conclusion: Our findings suggest that restricting alcohol marketing could be an important policy for the protection of alcohol abstinence. The IAC policy index may be a useful tool to benchmark the performance of alcohol policy in supporting alcohol abstinence in high and middle-income countries.

Source: Leung J, Casswell S, Parker K, Huckle T, Romeo J, Graydon-Guy T, et al. Effective alcohol policies and lifetime abstinence: An analysis of the International Alcohol Control policy index. *Drug Alcohol Rev.* 2022. <https://doi.org/10.1111/dar.13582>

ALCOHOL, NICOTINE, AND COVID-19: A RETROSPECTIVE STUDY OF HEALTH OUTCOMES IN CENTRAL PENNSYLVANIA
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Abstract: Individuals with substance abuse disorder are at increased risk for the development of severe disease following COVID-19 infection. Furthermore, individuals in rural populations where access to healthcare is limited and rates of substance abuse tend to be higher are at increased risk compared to other regions. The Penn State Health Network serves 29 counties in central Pennsylvania that are largely rural. The current study assessed the electronic medical records for individuals in this population that were reported as having alcohol dependence, nicotine dependence or both (co-users) in addition to individuals with no history of drug use and the rate of developing primary and secondary health outcomes following COVID-19 infection. All patients in this study were determined to be COVID+ while in care. We found that overall, risk for requiring ventilation, developing pneumonia, and mortality within 30 days of diagnosis all increased with any substance use history, across both males and females and across all age groups. Moreover, rates of these outcomes were considerably higher in patients that were both alcohol and nicotine dependent suggesting additive effects of co-use. Rates of secondary effects also increased substantially across all use categories with these patients showing greater risk of developing liver, kidney, and pancreas maladies compared to patients with no history of substance use. Taken together, these findings reinforce previous studies showing that substance use increases the risks of significant disease following COVID-19 infection, giving insights into the health disparities that exist in rural populations.

Source: Xu, K. L., & Randall, P. A. (2022). Alcohol, nicotine, and COVID-19: A retrospective study of health outcomes in central Pennsylvania. *Brain Research Bulletin*.
<https://doi.org/10.1016/j.brainresbull.2022.11.009>