



RESEARCH SUMMARY
Date Compiled: December 2023

Key takeaways from included research:

- A study was conducted to examine whether home delivery and to-go alcohol purchases were associated with context- and beverage-specific increased consumption volumes during the first year of the COVID-19 pandemic. Researchers found that on average, participants who had alcohol delivered reported consuming larger volumes overall, of wine, spirits, and at home. While people who purchased alcohol to-go reported larger volumes of wine, at home, and in bar consumption.
- Researchers wanted to determine whether drowsiness and alcohol consumption predict motor vehicle crashes. They observed a significantly higher risk of crash during the night vs. day when the individual's blood alcohol concentration was between 0.04 and 0.12 g/dl. Therefore, concluding that the risk of a crash at night was 3x the risk of crash during the day.
- Researchers assessed the association between alcohol-related public health policies (PHP) and alcohol-related health consequences. They determined that the alcohol preparedness index (API) scores were inversely associated with alcohol use disorder prevalence, meaning those countries with higher scores had a lower prevalence of alcohol use disorder (AUD), alcohol-associated liver disease (ALD) mortality, neoplasms, alcohol-attributable hepatocellular carcinoma, and cardiovascular diseases. These results encourage the development and strengthening of alcohol-related policies across the world.
- Alcohol intoxication has been shown to be a contributable factor in firearm-involved suicide, therefore researchers evaluated the sex- and age group-specific relationship between intoxication and firearm-involved suicide. They concluded that alcohol intoxication (BAC of 0.08 or more) was significantly associated with firearm use in suicide attempts among 18–34-year-old and 35–64-year-old females, but not among older females. Whereas for men, the association was significant for all ages. To reduce suicide mortality rates, researchers suggest interventions targeting excessive alcohol consumption.
- A study examined how legalizing alcohol sales on Sundays relates to attitudes toward Sunday sales and how both attitudes and consumption patterns relate to purchasing alcohol on Sundays. This Minnesota study found that people were more likely to support alcohol sales on Sunday if they reported binge drinking. They also concluded that legalizing the sale of alcohol on Sunday, may have increased alcohol access for individuals with more unhealthy drinking patterns.

BEVERAGE- AND CONTEXT-SPECIFIC ALCOHOL CONSUMPTION DURING COVID-19 IN THE UNITED STATES: THE ROLE OF ALCOHOL TO-GO AND DELIVERY PURCHASES

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Objective: Alcohol delivery and to-go sales may contribute to changes in drinking patterns, including where and what people drink. This study tested whether home delivery and to-go alcohol purchases were associated with context- and beverage-specific consumption volumes during the first year of the COVID-19 pandemic after adjusting for pre-pandemic consumption volumes.

Method: Data from a pre-pandemic panel were compared to a during-pandemic panel of the National Alcohol Survey (n = 1,150 adult drinkers, 52.7% female). Outcomes were past-year alcohol consumption volumes in standard drinks (overall, by beverage type, and by location). Independent variables included past-year alcohol delivery and to-go purchases (separately). Covariates comprised baseline beverage- or context-specific volume, demographics, COVID-19 impacts, and drinking motivations. Negative binomial regression tested associations between alcohol purchases and change in overall, beverage-, and context-specific consumption.

Results: On average, respondents who had alcohol delivered (vs. not) reported consuming larger volumes overall (incidence rate ratio [IRR] = 1.58, 95% CI [1.07, 2.32], p = .02), of wine (IRR = 2.90, 95% CI [1.50, 5.63], p < .04), of spirits (IRR = 1.59, 95% CI [1.03, 2.44], p = .04), and at home (IRR = 1.59, 95% CI [1.10, 2.31], p = .01). People who bought alcohol to go (vs. not) reported larger volumes of wine (IRR = 1.41, 95% CI [1.02, 1.96], p = .04), at home (IRR = 1.60, 95% CI [1.10, 2.32], p = .01), and in bars (IRR = 4.55, 95% CI [2.55, 8.11], p < .001). Finally, people who had alcohol delivered reported drinking smaller volumes in bars (IRR = 0.49, 95% CI [0.24, 0.98], p = .04).

Conclusions: During the first year of the pandemic, adults who had alcohol delivered or bought it to go reported larger volumes for several locations and beverage types.

Source: Trangenstein, P. J., Greenfield, T. K., Karriker-Jaffe, K. J., & Kerr, W. C. (2023). Beverage- and Context-Specific Alcohol Consumption During COVID-19 in the United States: The Role of Alcohol To-Go and Delivery Purchases. *Journal of Studies on Alcohol and Drugs*, 84(6), 842-851. <https://doi.org/10.15288/jsad.22-00408>

THE RELATIVE RISK OF ALCOHOL-INVOLVED CRASHES AS A FUNCTION OF TIME OF DAY

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Objective: Epidemiological research has repeatedly found that alcohol-impaired driving is associated with elevated risk of crash involvement in a dose-response fashion. While experimental studies show that alcohol impairment of cognitive and psychomotor driving skills is exacerbated by sleep deprivation, there is less evidence that the combination of drowsiness and alcohol predicts actual motor vehicle crashes.

Method: We explored this by reanalyzing data from the National Highway Traffic Safety Administration (NHTSA) Drug and Alcohol Crash Risk Study, constructing separate risk curves for daytime and nighttime hours.

Results: Controlling for driver demographics and driving exposure, and excluding other impairing drugs, we observed significantly greater risk of crash during the night versus the day at blood alcohol concentrations (BACs) between approximately .04 and .12 g/dl. Based on fitted point estimates, at .08 g/dl, the risk of crash at night was 3x the risk of crash during the day.

Conclusions: The association between BACs and crash risk was markedly different during daytime versus nighttime hours. Increased daytime risk was not observed until BACs exceeded the .08 g/dl

per se legal limit. Results are interpreted as emphasizing the sedating role of alcohol. Implications are discussed.

Source: Johnson, M. B. (2023). The relative risk of alcohol-involved crashes as a function of time of day. *Journal of studies on alcohol and drugs*, jsad-23. <https://doi.org/10.15288/jsad.23-00163>

ASSOCIATION BETWEEN PUBLIC HEALTH POLICIES ON ALCOHOL AND WORLDWIDE CANCER, LIVER DISEASE AND CARDIOVASCULAR DISEASE OUTCOMES

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Background & Aims: The long-term impact of alcohol-related public health policies (PHP) on disease burden is unclear. We aimed to assess the association between alcohol-related PHP and alcohol-related health consequences.

Methods: Ecological multi-national study including 169 countries. We collected data on alcohol-related PHP from the WHO Global Information System of Alcohol and Health 2010. Data on alcohol-related health consequences between 2010–2019 were obtained from the Global Burden of Disease database. We classified PHP into five items, including criteria for low, moderate, and strong PHP establishment. We estimated an alcohol preparedness index (API) using multiple correspondence analysis (0 lowest and 100 highest establishment). We estimated an incidence rate ratio (IRR) for outcomes according to API using adjusted multilevel generalized linear models with a Poisson family distribution.

Results: The median API in the 169 countries was 54 [IQR:34.9–76.8]. The API was inversely associated with alcohol use disorder prevalence (AUD)(IRR:0.13, 95%CI:0.03–0.60; p=0.010), alcohol-associated liver disease (ALD) mortality (IRR:0.14 95%CI:0.03–0.79; p=0.025), mortality due to neoplasms (IRR:0.09, 95%CI:0.02–0.40; p=0.002), alcohol-attributable hepatocellular carcinoma (HCC) (IRR:0.13, 95%CI:0.02–0.65; p=0.014), and cardiovascular diseases (IRR:0.09, 95%CI:0.02–0.41; p=0.002). The highest associations were observed in the Americas, Africa, and Europe. These associations became stronger over time, and AUD prevalence was significantly lower after 2 years, while ALD mortality and alcohol-attributable HCC incidence decreased after 4 and 8 years from baseline API assessment, respectively (p<0.05).

Conclusions: The API is a valuable instrument to quantify the robustness of alcohol-related PHP establishment. Those countries with a higher API were associated with lower AUD prevalence, ALD mortality, neoplasms, alcohol-attributable HCC, and cardiovascular diseases. Our results encourage the development and strengthening of alcohol-related policies worldwide.

Source: Díaz, L. A., Fuentes-López, E., Idalsoaga, F., Ayares, G., Corsi, O., Arnold, J., ... & Arab, J. P. (2023). Association between public health policies on alcohol and worldwide cancer, liver disease and cardiovascular disease outcomes. *Journal of Hepatology*. <https://doi.org/10.1016/j.jhep.2023.11.006>

RELATIONSHIP BETWEEN ALCOHOL USE AND FIREARM-INVOLVED SUICIDE: FINDINGS FROM THE NATIONAL VIOLENT DEATH REPORTING SYSTEM, 2003-2020

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Introduction: Acute alcohol intoxication is a contributing factor in firearm-involved suicides. However, knowledge of the relationship between alcohol intoxication and firearm-involved suicide by age and sex is limited. The purpose of the current study was to evaluate the sex- and age group-specific relationship between alcohol intoxication and firearm-involved suicide.

Methods: Data from the National Violent Death Reporting System, 2003-2020, on suicide decedents (18+ years of age) were utilized. Age-group- and sex-specific multivariate binary logistic regression analyses were conducted. Statistical analyses were performed in 2023.

Results: Alcohol intoxication (i.e., having a blood alcohol concentration of 0.08 g/dL or more) was significantly associated with using a firearm as the method of suicide for young (18–34 years; relative risk (RR)=1.31, 95% CI: 1.22-1.40) and middle-aged (35–64 years; RR=1.34, 95% CI: 1.27-1.39) females but not among older females (65+ years; RR=1.01, 95% CI: 0.87-1.17). Among males, the association was significant for all age-groups (young: RR=1.28, 95% CI: 1.25-1.30; middle-aged: RR=1.17, 95% CI: 1.15-1.19; and older: RR=1.04, 95% CI: 1.01-1.07).

Conclusions: Among males of all ages and young and middle-aged females, alcohol intoxication was associated with increased risk of suicide by firearm—an extremely lethal method that accounts for a majority of suicides in the US—compared to their non-intoxicated counterparts. Interventions targeting excessive alcohol consumption may be effective in reducing suicide mortality rates.

Source: Kim, K. V., Rehm, J., Kaplan, M. S., & Lange, S. (2023). Relationship between alcohol use and firearm-involved suicide: findings from the National Violent Death Reporting System, 2003-2020. *American journal of preventive medicine*. <https://doi.org/10.1016/j.amepre.2023.11.019>

EFFECTS OF SUNDAY LIQUOR SALES LEGALIZATION ON ALCOHOL POLICY ATTITUDES AND ALCOHOL PURCHASING BEHAVIOR **November 2023**

Abstract

We examined how legalization of Sunday alcohol sales relates to attitudes towards Sunday sales, and how both attitudes and alcohol consumption patterns relate to Sunday alcohol purchasing. A total of 1,384 adults of legal drinking age completed a survey one year post-legalization of Sunday sales. A majority of respondents (51%) were supportive of Sunday sales legalization both before and after legalization. People were more likely to support Sunday sales legalization if they reported binge drinking (PR: 2.19; CI: 1.51 3.18). Following Sunday sales legalization, 59% of participants reported purchasing alcohol in Minnesota on Sunday. Binge drinking (PR: 1.39; CI: 1.27, 1.52) or supporting Sunday sales legalization (PR: 1.85; CI: 1.56, 2.17) were associated with higher likelihood of purchasing alcohol on Sunday. Legalizing Sunday sales may have increased access to alcohol for people with more unhealthy drinking behaviors.

Source: Calvert, C., Jones-Webb, R., Erickson, D., Lenk, K., Toomey, T., & Nelson, T. (2023). Effects of Sunday Liquor Sales Legalization on Alcohol Policy Attitudes and Alcohol Purchasing Behavior. *Journal of Drug Education*, 0(0). <https://doi.org/10.1177/00472379231217846>