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PREVENTING ALCOHOL-RELATED HARM

RESEARCH SUMMARY
Date Compiled: January 2020

Key takeaways from included research:

- Strengthening alcohol policies is a promising prevention strategy for alcohol-related cancer.

- Although 4.7% of the U.S. population aged ≥16 years reported driving under the influence of marijuana and 0.9% reported driving under the influence of illicit drugs other than marijuana, these estimates are lower than the 8.0% (20.5 million) who reported driving under the influence of alcohol in 2018.

- In Japan, even light to moderate alcohol consumption appears to be associated with elevated cancer risks.

- Heavy alcohol drinking has an adverse effect on cardiac structure and function

- Men who are dependent on alcohol or other drugs are up to seven times more likely to be involved in domestic abuse against women than others.

ALCOHOL POLICIES AND ALCOHOL-ATTRIBUTABLE CANCER MORTALITY IN U.S. STATES
January 2020

Abstract

Background: Although more restrictive alcohol control policies (e.g., higher alcohol taxes) are related to lower levels of alcohol consumption, little is known about the relationship between alcohol policies and rates of alcohol-attributable cancer.

Methods: State alcohol policy restrictiveness, as measured by a validated policy scale, were related to state rates of six alcohol attributable cancers in the U.S. from 2006 to 2010 in a lagged, cross-sectional linear regression that controlled for a variety of state-level factors. Cancer mortality rates were from the Center for Disease Control and Prevention's Alcohol-Related Disease Impact application, which uses population-attributable fraction methodology to calculate mortality from cancers of the esophagus, larynx, liver, oropharynx, prostate (male only) and breast (female only).

Results: More restrictive state alcohol policies were associated with lower cancer mortality rates for the six cancer types overall (beta [β] −0.33; 95% confidence interval [CI] −0.59, −0.07), and among men (β −0.45; 95% CI -0.81, −0.10) and women (β −0.21; 95% CI -0.40, −0.02). A 10% increase in the restrictiveness of alcohol policies (based on the mean APS among states) was associated with an 8.5% decrease in rates of combined alcohol-attributable cancers. In all analyses stratified by cancer subtype and sex, the associations were in the hypothesized direction (i.e., more restrictive state policy environments were associated with lower rates of alcohol-attributable cancers), with the exception of laryngeal cancer among women.

Conclusion: Strengthening alcohol policies is a promising prevention strategy for alcohol-related cancer.

Source: Alattas, M., Ross, C., Henehan, E.R., & Naimi, T.S. (2020). Alcohol policies and alcohol-attributable cancer mortality in U.S. States. *Chemico-Biological Interactions*, 315.
https://www.sciencedirect.com/science/article/pii/S0009279719313158

DRIVING UNDER THE INFLUENCE OF MARIJUANA AND ILLICIT DRUGS AMONG PERSONS AGED ≥16 YEARS — UNITED STATES, 2018
December 2019

Extract

Although 4.7% of the U.S. population aged ≥16 years reported driving under the influence of marijuana and 0.9% reported driving under the influence of illicit drugs other than marijuana, these estimates are lower than the 8.0% (20.5 million) who reported driving under the influence of alcohol in 2018 (NSDUH, unpublished data, 2019). The highest prevalence of driving under the influence of marijuana was among persons aged 21–25 years. The second highest was among the youngest drivers (those aged 16–20 years), who already have a heightened crash risk because of inexperience[¶]; thus, their substance use is of special concern. In a study of injured drivers aged 16–20 years evaluated at level 1 trauma centers in Arizona during 2008–2014 (*3*), 10% of tested drivers were simultaneously positive for both alcohol and tetrahydrocannabinol, the main psychoactive component of marijuana. Data from the 2018 NSDUH indicate a high prevalence (34.8%) of past-year marijuana use among young adults aged 18–25 years (*4*).

Studies have reported that marijuana use among teenagers and young adults might alter perception, judgement, short-term memory, and cognitive abilities (*5*). Given these findings, states could consider

developing, implementing, and evaluating targeted strategies to reduce marijuana use and potential subsequent impaired driving, especially among teenagers and young adults.

Source: Azofeifa, A., Rexach-Guzmán, B., Hagemeyer, A., Rudd, R., & Sauber-Schatz, E. (2019). Driving under the influence of marijuana and illicit drugs among persons aged ≥16 years — United States, 2018. *Morbidity and Mortality Weekly Report*, 68(50);1153–1157. https://www.cdc.gov/mmwr/volumes/68/wr/mm6850a1.htm#suggestedcitation

LIGHT TO MODERATE AMOUNT OF LIFETIME ALCOHOL CONSUMPTION AND RISK OF CANCER IN JAPAN
December 2019

Abstract

Background: Even light to moderate alcohol consumption has been shown to increase cancer incidence. However, this association has not been well characterized in Japan.

Methods: Based on a nationwide, hospital-based data set (2005-2016), a multicenter case-control study was conducted (63,232 cancer cases and 63,232 controls matched for sex, age, admission date, and admitting hospital). The total amount of lifetime alcohol consumption (drink-years) was recalled for each patient by multiplication of the daily amount of standardized alcohol use (drinks per day) and the duration of drinking (years). Odds ratios (ORs) were estimated for overall and specific cancer sites via conditional logistic regression with restricted cubic splines, with adjustments made for smoking, occupational class, and comorbidities. Lifetime abstainers served as the reference group.

Results: Spline curves showed a dose-response association with overall cancer risk: the minimum risk was at 0 drink-years, and the OR at 10 drink-years was 1.05 (95% confidence interval [CI], 1.04-1.06). In comparison with lifetime abstainers, the OR for >0 to 20 drink-years was 1.06 (95% CI, 1.01-1.11). Those who drank 2 drinks or fewer per day had elevated odds for overall cancer risk across all duration-of-drinking categories. The same patterns were observed at light to moderate levels of drinking for most gastrointestinal/aerodigestive cancers as well as breast and prostate cancers. Analyses stratified by sex, different drinking/smoking behaviors, and occupational class mostly showed the same patterns for overall cancer incidence associated with light to moderate levels of drinking.

Conclusions: In Japan, even light to moderate alcohol consumption appears to be associated with elevated cancer risks.

Source: Zaitsu, M., Takeuchi, T., Kobayashi, Y., & Kawachi, I. (2019). Light to moderate amount of lifetime alcohol consumption and risk of cancer in Japan**.** *Cancer*, 2019. https://acsjournals.onlinelibrary.wiley.com/doi/full/10.1002/cncr.32590

EVIDENCE FOR A DIRECT HARMFUL EFFECT OF ALCOHOL ON MYOCARDIAL HEALTH: A LARGE CROSS-SECTIONAL STUDY OF CONSUMPTION PATTERNS AND CARDIOVASCULAR DISEASE RISK BIOMARKERS FROM NORTHWEST RUSSIA, 2015 TO 2017
December 2019

Abstract

Background: Alcohol drinking is an increasingly recognized risk factor for cardiovascular disease. However, there are few studies of the impact of harmful and hazardous drinking on biomarkers of myocardial health. We conducted a study in Russia to investigate the impact of heavy drinking on biomarkers of cardiac damage and inflammation.

Methods and Results: The Know Your Heart study recruited a random sample of 2479 participants from the population of northwest Russia (general population) plus 278 patients (narcology clinic subsample) with alcohol problems. The general population sample was categorized into harmful drinkers, hazardous drinkers, nonproblem drinkers, and nondrinkers, according to self-reported level of alcohol consumption, whereas the narcology clinic sample was treated as the separate group in the analysis. Measurements were made of the following: (1) high-sensitivity cardiac troponin T, (2) NT-proBNP (N-terminal pro-B-type natriuretic peptide), and (3) hsCRP (high-sensitivity C-reactive protein). The narcology clinic subsample had the most extreme drinking pattern and the highest levels of all 3 biomarkers relative to nonproblem drinkers in the general population: high-sensitivity cardiac troponin T was elevated by 10.3% (95% CI, 3.7%–17.4%), NT-proBNP by 46.7% (95% CI, 26.8%–69.8%), and hsCRP by 69.2% (95% CI, 43%–100%). In the general population sample, NT-proBNP was 31.5% (95% CI, 3.4%–67.2%) higher among harmful drinkers compared with nonproblem drinkers. Overall, NT-proBNP and hsCRP increased with increasing intensity of alcohol exposure (test of trend $P<0.001$).
Conclusions: These results support the hypothesis that heavy alcohol drinking has an adverse effect on cardiac structure and function that may not be driven by atherosclerosis.

MENTAL DISORDERS AND INTIMATE PARTNER VIOLENCE PERPETRATED BY MEN TOWARDS WOMEN: A SWEDISH POPULATION-BASED LONGITUDINAL STUDY
December 2019

Abstract

Background: Intimate partner violence (IPV) against women is associated with a wide range of adverse outcomes. Although mental disorders have been linked to an increased risk of perpetrating IPV against women, the direction and magnitude of the association remain uncertain. In a longitudinal design, we examined the association between mental disorders and IPV perpetrated by men towards women in a population-based sample and used sibling comparisons to control for factors shared by siblings, such as genetic and early family environmental factors.

Methods and findings: Using Swedish nationwide registries, we identified men from 9 diagnostic groups over 1998–2013, with sample sizes ranging from 9,529 with autism to 88,182 with depressive disorder. We matched individuals by age and sex to general population controls (ranging from 186,017 to 1,719,318 controls), and calculated the hazard ratios of IPV against women. We also

estimated the hazard ratios of IPV against women in unaffected full siblings (ranging from 4,818 to 37,885 individuals) compared with the population controls. Afterwards, we compared the hazard ratios for individuals with psychiatric diagnoses with those for siblings using the ratio of hazard ratios (RHR). In sensitivity analyses, we examined the contribution of previous IPV against women and common psychiatric comorbidities, substance use disorders and personality disorders. The average follow-up time across diagnoses ranged from 3.4 to 4.8 years. In comparison to general population controls, all psychiatric diagnoses studied except autism were associated with an increased risk of IPV against women in men, with hazard ratios ranging from 1.5 (95% CI 1.3–1.7) to 7.7 (7.2–8.3) (p-values < 0.001). In sibling analyses, we found that men with depressive disorder, anxiety disorder, alcohol use disorder, drug use disorder, attention deficit hyperactivity disorder, and personality disorders had a higher risk of IPV against women than their unaffected siblings, with RHR values ranging from 1.7 (1.3–2.1) to 4.4 (3.7–5.2) (p-values < 0.001). Sensitivity analyses showed higher risk of IPV against women in men when comorbid substance use disorders and personality disorders were present, compared to risk when these comorbidities were absent. In addition, increased IPV risk was also found in those without previous IPV against women. The absolute rates of IPV against women ranged from 0.1% to 2.1% across diagnoses over 3.4 to 4.8 years. Individuals with alcohol use disorders (1.7%, 1,406/82,731) and drug use disorders (2.1%, 1,216/57,901) had the highest rates. Our analyses were restricted to IPV leading to arrest, suggesting that the applicability of our results may be limited to more severe forms of IPV perpetration.

Conclusions: Our results indicate that most of the studied mental disorders are associated with an increased risk of perpetrating IPV towards women, and that substance use disorders, as principal or comorbid diagnoses, have the highest absolute and relative risks. The findings support the development of IPV risk identification and prevention services among men with substance use disorders as an approach to reduce the prevalence of IPV.

Source: Yu, R., Nevado-Holgado, A.J., Molero, Y., D'Onofrio, B.M., Larsson, H., Howard, L.M., et al. (2019). Mental disorders and intimate partner violence perpetrated by men towards women: A Swedish population-based longitudinal study. *PLoS Med*, 16(12). https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002995

Media: https://www.bbc.com/news/uk-50887893