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PREVENTING ALCOHOL-RELATED HARM

RESEARCH SUMMARY
Date Compiled: March 2020

Key takeaways from included research:

- Twelfth-grade binge drinking is a robust predictor of early adulthood DWI, RWI, blackout, extreme binge drinking, and risky driving.
- Few states have restrictive policy environments. While states adopted policies targeting impaired driving during a given study period, there was no change in policies to reduce excessive drinking.
- The effects of beverage-specific taxes and alcohol availability policies may vary across subgroups, highlighting the importance of considering differential policy impacts.
- Large increases in alcohol-induced death rates are observed across age and racial/ethnic subgroups of the US population and have accelerated over recent years.
- Among three periods studied in Russia, 1965–1984 was a period of gradual life expectancy (LE) decline; 1984–2003 was a period of massive LE fluctuations; and 2003–2017, a period of LE improvement. The strongest negative correlation between changes in LE and alcohol poisonings was found in 1984–2003.
- The association between alcohol marketing and drinking among (underage) young persons is causal.

LONGITUDINAL ASSOCIATIONS OF 12TH-GRADE BINGE DRINKING WITH RISKY DRIVING AND HIGH-RISK DRINKING

February 2020

Abstract

Objective: To study the longitudinal associations of 12th-grade binge drinking with driving while impaired (DWI), riding with an impaired driver (RWI), blackouts, extreme binge drinking, and risky driving (self-reported Checkpoints Risky Driving Scale) among emerging adults up to 4 years after leaving high school.

Methods: The data were all 7 waves (W 1 to W 7 of the NEXT Generation Health Study; a US nationally representative study (*N* = 2785) with a probability cohort of 10th-graders (mean age = 16.2 years; SE = 0.03) starting in the 2009–2010 year. Binary and ordinal logistic regressions were used for the analysis.

Results: Binge drinking prevalence in W1 to W3 was 27.2%, 23.8%, and 26.8%, respectively. Twelfth-grade binge drinking was associated with a higher likelihood of DWI, RWI, blackouts, and risky driving in W4 to W7 and extreme binge drinking in W7. Adolescents who binged ≥3 times in high school were more likely to DWI, RWI, blackout (W4 to W7), be involved in extreme binge drinking (W7), and report riskier driving several years after high school. In some waves, parental practices appeared to have enduring effects in protecting against DWI, RWI, and blackouts.

Conclusions: Twelfth-grade binge drinking is a robust predictor of early adulthood DWI, RWI, blackout, extreme binge drinking, and risky driving. Our study suggests that ongoing parental practices could be protective against DWI, RWI, and blackouts once adolescents transition from high school into early adulthood. Prevention programs that incorporate binge drinking–focused screening and bolster parental practices may reduce the likelihood of later major alcohol-related health-risk behaviors and consequences in emerging adults.

Source: Vaca, F.E., Li, K., Luk, J.W., Hingson, R.W., Haynie, D.L., & Simons-Morton, B.G. (2020). Longitudinal associations of 12th-grade binge drinking with risky driving and high-risk drinking. *Pediatrics,* 145(2): e20184095.
https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/Binge-Drinking-in-12th-Grade-a-Strong-Predictor-of-Driving-While-Intoxicated-Later.aspx

ALCOHOL POLICIES IN U.S. STATES, 1999–2018

February 2020

Abstract

Objective: U.S. policymakers and public health practitioners lack composite indicators (indices) to assess and compare the restrictiveness of state-level alcohol policy environments, conceptualized as the presence of multiple policies in effect in a particular place and time. The purposes of this study were to characterize the alcohol policy environment in each U.S. state and Washington, DC, in 2018, and to examine changes during the past 20 years.

Method: State-specific Alcohol Policy Scale (APS) scores from 1999 to 2018 were based on 29 policies, after weighting each present policy by its efficacy and degree of implementation. Modified APS scores were also calculated on the basis of two sets of mutually exclusive policy subgroups.

Results: APS scores in 2018 varied considerably between states, ranging from 25.6 to 67.9 on a theoretical scale of 0 to 100; the median score was 43.5 (based on a 0–100 range), and 43 states had scores less than 50. The median change in state APS scores from 1999 to 2018 was positive (+4.9, range: -7.4 to +10.3), indicating increases in the restrictiveness of policy environments, with decreases in only five states. The increases in APS scores were primarily attributable to the implementation of stronger impaired-driving laws, whereas policies to reduce excessive drinking were unchanged. There was no correlation between states' excessive drinking policy scores and their impaired-driving scores (r = .05, p = .74).

Conclusions: Based on this policy scale, few states have restrictive policy environments. Although states adopted policies targeting impaired driving during the study period, there was no change in policies to reduce excessive drinking.

Source: Blanchette, J.D., Lira, M.C., Heeren, T.C., & Naimi, T.S. (2020). Alcohol policies in U.S. States, 1999–2018. *Journal of Studies on Alcohol and Drugs*, 81(1), 58–67. https://www.jsad.com/doi/abs/10.15288/jsad.2020.81.58

RELATIONSHIPS BETWEEN US STATE ALCOHOL POLICIES AND ALCOHOL OUTCOMES: DIFFERENCES BY GENDER AND RACE/ETHNICITY

February 2020

Abstract

Background and Aims: Alcohol taxation and availability restrictions are among the most effective methods for reducing alcohol use and problems, yet may affect demographic subgroups differently. Understanding who responds to specific policies can inform approaches for reducing disparities. We examined how state-level beverage-specific taxes and availability restrictions in the United States are associated with consumption and alcohol-related problems across subgroups defined by gender and race/ethnicity.

Design, Setting and Participants: Data came from the 2000–15 National Alcohol Surveys (n = 28 251), computer-assisted telephone cross-sectional surveys of United States residents aged 18+. African Americans and Hispanics were oversampled.

Measurements: Primary outcomes were beverage-specific (beer, wine, spirits and total) volume, DSM-IV alcohol dependence and alcohol-related consequences. Analyses entailed survey-weighted log–log and logistic regressions adjusting for state-level beer tax, spirits tax, government-controlled spirits sales and sales tax; respondent ZIP-code-level density of off-premise beer outlets, off-premise spirits outlets and on-premise bars; respondent individual-level age, marital status, education, employment and income; and fixed effects for wet/moderate/dry US region and year.
Findings: Higher beer tax was significantly (P < 0.05) associated with lower odds of any drinking among white women [odds ratio (OR) = 0.98] and lower beer volume (price-elasticity = −0.40), total volume (price-elasticity = −0.50) and odds of alcohol-related consequences (OR = 0.84) among African American women. Higher spirits tax was significantly (P < 0.05) associated with both lower beer and total volume among Hispanic women (price-elasticities = −0.73 and − 1.04, respectively) and men (price-elasticities = −1.19 and − 0.92, respectively) and decreased wine volume among Hispanic women (price-elasticity = −0.62). Apparent protective effects of living in a state with government-controlled spirits sales or a neighborhood with lower bar density was greater among white men than other groups.

Conclusions: The effects of beverage-specific taxes and alcohol availability policies may vary across subgroups, highlighting the importance of considering differential policy impacts in future research and intervention.

Source: Subbaraman, M., Mulia, N., Kerr, W.C., Patterson, D., Karriker-Jaffe, K., & Greenfield, T.K. (2020). Relationships between US state alcohol policies and alcohol outcomes: differences by gender and race/ethnicity. *Alcoholism: Clinical and Experimental Research*. https://onlinelibrary.wiley.com/doi/abs/10.1111/add.14937

TRENDS IN ALCOHOL-INDUCED DEATHS IN THE UNITED STATES, 2000-2016
February 2020

Abstract

Importance: Notable increases in mortality from alcohol-induced causes over the past 2 decades in the United States have been reported. However, comprehensive assessments of trends in alcohol-induced mortality by sex, age, race/ethnicity, and social and geographic factors are lacking.

Objective: To examine trends in alcohol-induced mortality rates from 2000 to 2016, comparing results by demographic characteristics including sex, race/ethnicity, age, county-level socioeconomic status, and geographic location.

Design, Setting, and Participants: This serial cross-sectional study used US national vital statistics data for years 2000 to 2016 for all US residents older than 15 years. Data analysis was conducted from January to September 2019.

Exposures: Trends in alcohol-induced mortality by sex, race/ethnicity, age, county-level socioeconomic status (ie, median income, percentage of unemployed residents, percentage of residents with a bachelor's degree), rurality level, and US state.

Main Outcomes and Measures: Alcohol-induced mortality, ie, deaths for which alcohol holds a population-attributable fraction of 1. Deaths were expressed per 100 000 residents as absolute and age-standardized rates. Mortality trends were measured as average annual percentage changes (AAPCs) for the entire period (ie, 2000-2016) and annual percentage changes (APCs) for individual periods of change within the study period.

Results: A total of 425 045 alcohol-induced deaths were identified from 2000 to 2016 (2000: 19 627 deaths; 14 979 [76.3%] men; 2016: 34 857 deaths; 25 213 [73.3%] men). The rate of alcohol-induced deaths increased substantially among men (AAPC, 1.4%; 95% CI, 1.0% to 1.8%) and women (AAPC, 3.1%; 95% CI, 2.6% to 3.6%) and accelerated recently (men, 2012-2016: APC, 4.2%; 95% CI, 3.1% to 5.3%; women, 2013-2016: APC, 7.1%; 95% CI, 5.1% to 9.1%). The largest increases by race/ethnicity were observed among American Indian and Alaska Native men (AAPC, 3.3%; 95% CI, 2.6% to 4.0%), American Indian and Alaska Native women (AAPC, 4.2%; 95% CI, 3.8% to 4.6%), and white women (AAPC, 4.1%; 95% CI, 3.6% to 4.7%). Despite initial declines among black women, black men, and Latino men (eg, Latino men, 2000-2003: APC, −5.1%; 95% CI, −9.8% to −0.1%; 2003-2013: APC, −0.6%; 95% CI, −1.4% to 0.2%), increases occurred later in the study period (eg, Latino men, 2013-2016: APC, 4.1%; 95% CI, 0.3% to 8.1%). The rates of increase varied by age group and in turn by racial/ethnic group. Among white individuals, large absolute increases occurred in midlife (eg, men aged 55-59 years, 2000-2003: 25.5 deaths per 100 000 residents; 2013-2016: 43.3 deaths per 100 000 residents; women aged 50-54 years, 2000-2003: 7.4 deaths per 100 000 residents; 2013-2016: 16.5 deaths per 100 000 residents), although APCs were also large for ages 25 to 34 years, ranging from 4.6% to 6.9% per year among men and from 7.3% to 12.0% among women.

Among American Indian and Alaska Native individuals, increases throughout the age range were observed, with the largest absolute increase occurring for ages 45 to 49 years among men (2000-2013: 113.6 deaths per 100 000 residents; 2013-2016: 193.1 deaths per 100 000 residents) and for ages 50 to 54 among women (2000-2013: from 56.1 deaths per 100 000 residents; 2013-2016: 105.1 deaths per 100 000 residents).

Conclusions and Relevance: This study found large increases in alcohol-induced death rates across age and racial/ethnic subgroups of the US population, which have accelerated over recent years. Large increases in alcohol-induced deaths among younger age groups may be associated with future increases in alcohol-related disease.

Source: Spillane, S., Shiels, M.S., Best, A.F., Haozous, E.A., Withrow, D.R., Chen, Y., de González, A.B., & Freedman, N.D. (2020). Trends in alcohol-induced deaths in the United States: 2000-2016. *JAMA Network Open* 2020; 3(2): e1921451.
https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2761545?resultClick=3

THE CHANGING RELATION BETWEEN ALCOHOL AND LIFE EXPECTANCY IN RUSSIA IN 1965–2017

January 2020

Abstract

Introduction and Aims: In the 1990s, a strong inverse relationship between life expectancy (LE) in Russia and mortality from alcohol poisoning was observed. This association is remarkable as this cause accounts for less than 2% of deaths each year. It can be explained by treating the alcohol poisoning mortality as the best available measure in Russia of the population prevalence of harmful drinking in any year which in turn associated with mortality from a wide range of causes. This study analyses the evolving relationship of LE with this mortality-based measure of harmful drinking since 1965, and places it in a policy context.

Design and Methods: We examine three periods: 1965–1984, a period of gradual LE decline; 1984–2003, a period of massive LE fluctuations; and 2003–2017, a period of LE improvement. Pearson's correlation coefficients and a linear relationship between annual changes in LE and alcohol poisoning were estimated for each period.

Results: The strongest negative correlation between changes in LE and alcohol poisonings was found in 1984–2003. Over the period 2003–2017 a consistent positive LE trend emerged that was statistically independent of alcohol poisoning.

Discussion and Conclusions: These results suggest that in the period from the mid-2000s a growth of LE in Russia was to a large extent independent of changes in the population prevalence of harmful drinking. While there has been a reduction in mortality at ages 15–64, at older ages mortality reduction unrelated to alcohol has become an increasingly important driver of overall mortality improvements.

Source: Danilova, I. Shkolnikov, V.M., Andreev, E., & Leon, D.A. (2020). The changing relation between alcohol and life expectancy in Russia in 1965–2017. *Drug and Alcohol Review.*
https://onlinelibrary.wiley.com/doi/full/10.1111/dar.13034

THE RELATIONSHIP BETWEEN EXPOSURE TO ALCOHOL MARKETING AND UNDERAGE DRINKING IS CAUSAL

December 2019

Abstract

Objective: This article summarizes the findings of narrative and systematic literature reviews focused on the relationship between exposure to alcohol marketing and youth drinking, viewed in context of criteria for causality. We also consider the implications of this proposition for alcohol policy and public health.

Method: Our descriptive synthesis of findings is from 11 narrative and systematic reviews using the nine Bradford Hill causality criteria: (a) strength of association, (b) consistency, (c) specificity of association, (d) temporality, (e) biological gradient, (f) biological plausibility, (g) coherence, (h) experimental evidence, and (i) analogy.

Results: Evidence of causality for all nine of the Bradford Hill criteria was found across the review articles commissioned for this supplement and in other previously published reviews. In some reviews, multiple Bradford Hill criteria were met. The reviews document that a substantial amount of empirical research has been conducted in a variety of countries using different but complementary research designs.

Conclusions: The research literature available today is consistent with the judgment that the association between alcohol marketing and drinking among young persons is causal.

Source: Sargent, J.D. & Babor, T.F. (2019). The relationship between exposure to alcohol marketing and underage drinking Is causal. *Journal of Studies on Alcohol and Drugs, Supplement,* (s19), 113–124. https://www.jsad.com/doi/full/10.15288/jsads.2020.s19.113