



RESEARCH SUMMARY
Date Compiled: September 2023

Key takeaways from included research:

- Researchers examined the gender differences in the burden and trends of alcohol-related mortality in the US. Looking at data from 1999 to 2020, they found that there has been a significantly higher rate of increase in deaths among women. The age-adjusted mortality rate increased by 12.5% among males while among females it increased by 14.7% in the same timeframe.
- Research studies continue to be conducted to better understand the relationship between alcohol consumption and the COVID-19 pandemic. Researchers wanted to assess positive screens for problem drinking during the pandemic as compared to pre-pandemic. They found an overall increase in patients screening positive for problem drinking, alcohol misuse, and acute intoxication. Although overall emergency department (ED) visits decreased, alcohol-related instances as a percentage of total visits increased during the early part of the pandemic.
- A new study examined the link between drinking motives, alcohol company alcohol-related content (ARC), celebrity ARC, and alcohol-related problems among college students. Results showed that celebrity ARC was linked to coping, enhancement, and conformity motives, and peak drinks among college students. They suggest interventions targeting alcohol recognition cognitions ought to assess engagement with and exposure to varying sources of ARC.
- Alcohol use and carrying a handgun is a prevalent occurrence which could lead to individual and community harm. Researchers looked at the association between alcohol use and handgun carrying in rural areas among adolescents and young adults. They found that adolescents (ages 12-18) who drank heavily were 1.43 times more likely to subsequently carry a handgun. Associations of alcohol use and handgun carrying in young adulthood (ages 19-26) were similar to adolescence in people in rural areas.

TRENDS IN ALCOHOL-RELATED DEATHS BY SEX IN THE US, 1999-2020

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Importance: Alcohol consumption rates have been increasing among women in the US, which may affect mortality rates and sex gaps. Therefore, conducting a comprehensive assessment of sex differences in alcohol-related deaths is essential to inform targeted interventions and policies aimed at reducing the burden of alcohol-related harm among the population.

Objective: To examine sex differences in the burden and trends of alcohol-related mortality in the US from 1999 to 2020.

Design, Setting, and Participants: This cross-sectional time series study used Centers for Disease Control and Prevention Wide-Ranging Online Data for Epidemiologic Research data on alcohol-related deaths from 1999 to 2020. Alcohol-related deaths were identified from the underlying cause of death files using International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, codes, including alcohol-related poisoning, liver disease, gastritis, cardiomyopathy, myopathy, polyneuropathy, and pseudo-Cushing syndrome, among others.

Main Outcomes and Measures: Age-adjusted mortality rates (AAMRs) were analyzed by sex and substratified by race and ethnicity, age, and census region. Rate ratios and 95% CIs calculated by Taylor series were used to assess sex differences in mortality burden. Joinpoint regression was used to assess temporal trends.

Results: A total of 605 948 alcohol-attributed deaths were identified in the US from 1999 through 2020 (AAMR, 8.3 per 100 000 persons; 95% CI, 8.3-8.3 per 100 000 persons). The mortality burden was higher among male individuals than female individuals, with male individuals being 2.88 (95% CI, 2.86-2.89) times more likely to die compared with female individuals. However, temporal trends showed an increase in alcohol-related deaths for both male and female individuals in recent years, with higher rates of increase among female individuals relative to male individuals. The AAMR increased by 12.5% (95% CI, 6.4%-19.1%) per year among male individuals from 2018 to 2020 but increased by 14.7% (95% CI, 9.1%-20.5%) per year among female individuals during the same period. Trend differences were observed across subtypes of age, race and ethnicity, cause, and region.

Conclusions and Relevance: This study of alcohol-related mortality in the US suggests there has been a significantly higher rate of increase in deaths among female individuals in recent years. These findings underscore the need for further research to understand the specific factors associated with this trend. The development of targeted interventions and evidence-based treatments for alcohol use among female individuals becomes imperative in effectively addressing the increasing rates of alcohol-related deaths.

Source: Karaye, I. M., Maleki, N., Hassan, N., & Yunusa, I. (2023). Trends in alcohol-related deaths by sex in the US, 1999-2020. *JAMA network open*, 6(7), e2326346-e2326346.
<https://doi.org/10.1001/jamanetworkopen.2023.26346>

In the News: Linda Carroll. (2023, July 28). More women in the U.S. are drinking themselves to death, research finds. *NBC News*. <https://www.nbcnews.com/health/womens-health/women-us-are-drinking-death-research-finds-rcna96848>

IMPACT OF THE COVID-19 PANDEMIC ON EMERGENCY DEPARTMENT ALCOHOL INTOXICATION PRESENTATIONS AND POSITIVE SCREENS FOR PROBLEM DRINKING

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Abstract: Our aim was to assess the changes in patients presenting with acute alcohol intoxications or positive screens for problem drinking during the COVID-19 pandemic compared to before the pandemic in a seven-hospital health system. A retrospective chart review of emergency department (ED) visits from seven hospitals in the Washington, DC/Baltimore, and MD area from January 2019 to June 2021 is provided. The health system utilizes a validated system for Screening, Brief Intervention, and Referral to Treatment (SBIRT) for ED patients. We evaluated trends in patients who had a positive SBIRT screen for problem drinking (AUDIT-C score ≥ 3 in women, 4 in men), alcohol misuse (≥ 5), and those presenting with acute alcohol intoxication before March 2020 and during the early COVID pandemic period. There were 510 648 patients who were screened, ranging from ages of 16 to 95 years during the study period. There was an overall increase in patients who screened positive for problem drinking, alcohol misuse, and acute intoxications. While there was an overall decrease in the total number of ED visits during the start of the pandemic, which later increased near prepandemic levels, alcohol-related presentations as a percentage of total visits increased during the early pandemic period. There was an overall decrease in ED visits during the COVID-19 pandemic study period; problem drinking and acute intoxication presentation held steady, leading to an overall increase in proportion compared to pre-COVID-19 levels. Future research should focus on lessons learned during this time and should navigate the postpandemic care of patients with AUD. There was an increase in the proportion of ED visits for alcohol intoxications and positive screens for problem drinking during the COVID-19 pandemic in our seven-hospital system.

Source: Sutariya R, Hamzeh M, Desale S, Mete M, Mazer-Amirshahi M, & Nelson LS. (2023). Impact of the COVID-19 pandemic on emergency department alcohol intoxication presentations and positive screens for problem drinking. *Alcohol and Alcoholism*. <https://doi.org/10.1093/alcalc/agad053>

DO YOU 'LIKE' PROBLEMS? THE LINKAGE BETWEEN COLLEGE STUDENTS' INTERACTIONS WITH ALCOHOL-RELATED CONTENT ON SOCIAL MEDIA AND THEIR ALCOHOL-RELATED PROBLEMS

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Introduction: Alcohol-related content (ARC) on social media and drinking motives impact college students' drinking. Most studies have examined peer-generated ARC on drinking outcomes but have yet to extend this relationship to other sources of influence. The current study explores the link between drinking motives, alcohol company ARC, celebrity ARC, and alcohol-related problems among college students.

Methods: Students (N = 454) from two US universities completed a cross-sectional online survey assessing demographics; drinking motives (Drinking Motives Questionnaire-Revised; Cooper, Psychol Assess. 1994;6:117–28); following/awareness of alcohol company ARC; engagement with celebrity ARC; peak drinks (most drinks consumed on one occasion); and alcohol-related problems (e.g., passed out).

Results: Greater celebrity ARC was linked to coping, enhancement, and conformity motives, and peak drinks. Frequent engagement with celebrity ARC was associated with higher problems. Positive indirect effects were observed from celebrity ARC to problems through coping and conformity motives, and peak drinks. After having adjusted for the influence of celebrity ARC, no significant pathways were found between alcohol company ARC and any of the drinking motives, peak drinks, or problems, nor were there any indirect effects between alcohol company ARC and problems.

Discussion and Conclusions: Results revealed that a possible explanation for why students who engaged with celebrity ARC experience problems was due to coping and conformity motives as well

as peak drinks. Interventions targeting alcohol cognitions might assess engagement with and exposure to different sources of ARC given their potential to influence problems.

Source: Steers, M. L. N., Strowger, M., Tanygin, A. B., & Ward, R. M. (2023). Do you 'like' problems? The linkage between college students' interactions with alcohol-related content on social media and their alcohol-related problems. *Drug and alcohol review*. <https://doi.org/10.1111/dar.13729>

THE ASSOCIATION OF ALCOHOL USE AND HEAVY DRINKING WITH SUBSEQUENT HANDGUN CARRYING AMONG YOUTH FROM RURAL AREAS

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Purpose: Alcohol use and handgun carrying are more prevalent among youth in rural than urban areas and their association may be stronger among rural adolescents. Alcohol use may be modifiable with implications for reducing handgun carrying and firearm-related harm. We examined the association between lagged alcohol use and subsequent handgun carrying in rural areas and examined variation in the association by developmental stages, hypothesizing that it would be stronger among adolescents than youth adults.

Methods: We used a longitudinal sample of 2,002 adolescents from ages 12 to 26 growing up in 12 rural communities in 7 states with surveys collected from 2004 to 2019. We estimated the association of lagged past-month alcohol use on handgun carrying in the subsequent 12 months using population-average generalized estimating equations with logistic regression on multiply imputed data.

Findings: During adolescence (ages 12-18), those who drank heavily had 1.43 times the odds (95% CI = [1.01, 2.03]) of subsequent handgun carrying compared to those who did not drink alcohol, and those who consumed alcohol but did not drink heavily had 1.30 times the odds of subsequent handgun carrying compared to those who did not drink (95% CI = [0.98, 1.71]). During young adulthood (ages 19-26), associations of alcohol use (OR = 1.28; 95% CI = [0.94, 1.63]) and heavy drinking (OR = 1.38; 95% CI = [1.08, 1.68]) were similar to adolescence.

Conclusions: Alcohol use and subsequent handgun carrying were positively associated during adolescence and young adulthood among individuals who grew up in rural areas, similar to findings in urban areas. Reducing alcohol use may be an important strategy to prevent handgun carrying and firearm-related harm among young people in rural areas.

Source: Ellyson, A. M., Schleimer, J. P., Dalve, K., Gause, E., Weybright, E. H., Kuklinski, M. R., ... & Rowhani-Rahbar, A. (2023). The association of alcohol use and heavy drinking with subsequent handgun carrying among youth from rural areas. *The Journal of Rural Health*. <https://doi.org/10.1111/jrh.12789>