



RESEARCH SUMMARY
Date Compiled: November 2024

Key takeaways from included research:

- A research team in England examined time trends in alcohol expenditure among risky drinkers 2014-2023 to determine whether trends are impacted by changes in prices paid or volumes purchased. They found that the average expenditure on alcohol each week fluctuated with a notable decrease around the beginning of the COVID-19 pandemic in 2020 and an increase when restrictions were lifted. Patterns were driven by changes in price paid rather than consumption changes.
- A previous study found that cognitive behavioral therapy for insomnia (CBT-I) reduced alcohol-related problems among veterans. This follow-up study tested whether changes in negative emotionality could explain how improvements in insomnia symptoms led to better alcohol-related outcomes. They found that CBT-I did not improve negative emotionality, however both treatment conditions decreased insomnia symptoms which predicted decreases in alcohol cravings and heavy drinking.
- A new study assessed the relationship between mobile health (mHealth) technology use frequency and alcohol use outcomes. They found that participants used mHealth technologies (breathalyzer device/app, blood alcohol content estimator app, drink counting via text message) on 68% of drinking days. Analysis revealed that a higher percentage of study days with mHealth technology use was related to higher average weekly drinks, however a higher percentage of drinking days with mHealth technology use was related to lower average weekly drinks, percent of heavy and high intensity drinking days, and negative consequences. Researchers concluded that normalizing mHealth technology use could help curb the public health crisis around harmful alcohol use.
- A research team evaluated the incidence and proportional incidence of hospitalizations involving alcohol withdrawal syndrome (AWS) in adult primary care populations. They found the incidence of hospitalizations involving AWS was 169 per 100,000 person-enrolled-years overall, but as high as 15,347 per 100,000 in patients with other alcohol-attributable diagnoses. AWS hospitalizations were especially common in male patients, younger age groups, and individuals with high-risk alcohol use.
- A longitudinal study examined racial/ethnic differences in association of drinking firsts at home and with parental knowledge with alcohol use outcomes among underage youth. Researchers determined that drinking at home and with parental knowledge were negatively associated with all outcomes and with no differences by race/ethnicity. However, for first heavy episodic drinking (HED), drinking at home was positively associated with drinking frequency, especially for Black youth, parental knowledge of the first HED experience was significantly associated with greater alcohol use frequency and quantity later in life.

TRENDS IN ALCOHOL EXPENDITURE AMONG RISKY DRINKERS: A POPULATION STUDY IN ENGLAND, 2014–2023

November 2024

Background: This study aimed to estimate time trends in alcohol expenditure among risky drinkers in England over the past decade, to understand whether these trends are driven by changes in prices paid or volumes purchased, and to explore differences between population subgroups.

Methods: Nationally-representative monthly cross-sectional survey. Participants were 44,382 adults (≥ 18 y) drinking at risky levels (AUDIT-C ≥ 5 ; 'risky drinkers'). Linear regression modelled trends between March-2014 and October-2023 in (i) mean weekly inflation-adjusted expenditure on alcohol, (ii) mean weekly alcohol consumption in units, and (iii) mean inflation-adjusted expenditure per unit of alcohol, overall and by age, gender, social grade, region, and smoking status.

Results: There was an uncertain decrease in mean weekly expenditure from £18.90 [95 %CI=£18.30-£19.50] in March-2014 to £17.90 [£17.60-£18.30] in May-2016, then an uncertain increase to £18.60 [£18.30-£18.90] between May-2016 and June-2018. This was followed by a further decline to £16.90 [£16.60-£17.30] by April-2021 and subsequent rise to £18.60 [£17.90-£19.40] by October-2023. Changes in weekly alcohol expenditure were more closely mirrored by changes in mean expenditure per unit of alcohol than by changes in mean weekly alcohol consumption in units. Notable subgroup differences included sharp rises in weekly alcohol expenditure since 2021 among younger ages (driven by a rise in expenditure per unit of alcohol) and current smokers (driven by a rise in weekly units of alcohol consumed).

Conclusions: In England, the average amount adult risky drinkers reported spending on alcohol each week has fluctuated since 2014, with a notable decrease around the start of the COVID-19 pandemic in 2020 and a subsequent rise since restrictions were lifted and since the cost-of-living crisis has led to high rates of inflation. Except for current smokers, this pattern appears to have been driven predominantly by changes in the price paid per unit rather than changes in consumption.

Source: Jackson, S., Oldham, M., Angus, C., Garnett, C., Wilson, L., Holmes, J., & Brown, J. (2024). Trends in alcohol expenditure among risky drinkers: A population study in England, 2014–2023. *International Journal of Drug Policy*, 133, 104615. <https://doi.org/10.1016/j.drugpo.2024.104615>

INSOMNIA TREATMENT EFFECTS ON NEGATIVE EMOTIONALITY AMONG VETERANS IN TREATMENT FOR ALCOHOL USE DISORDER

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Background: Insomnia symptoms are pervasive and persistent in alcohol use disorder (AUD), though little is known about the mechanisms that underlie this association. We previously found that cognitive behavioral therapy for insomnia (CBT-I) reduced alcohol-related problems among veterans by improving insomnia severity (NCT03806491). In this planned secondary analysis of the same clinical trial data, we tested negative emotionality as one potential mechanism to explain this effect. Specifically, we tested the change in negative emotionality as a mediator of the association between change in insomnia symptoms and alcohol-related outcomes (craving, heavy drinking frequency, and alcohol-related problems).

Methods: Participants were 67 veterans in treatment for AUD who also met the criteria for insomnia disorder (91% male, 84% White, average age = 46.3 years). Participants were randomized to five sessions of CBT-I or a single-session sleep hygiene control. Assessments occurred at baseline, immediately posttreatment (~6 weeks after baseline), and at 6-week follow-up. Measures included the Insomnia Severity Index, Penn Alcohol Craving Scale, Timeline Followback, and Short Inventory of Problems. We created a latent negative emotionality indicator based on five validated and reliable measures of negative emotionality.

Results: Contrary to hypotheses, CBT-I did not improve negative emotionality relative to sleep hygiene control. However, across both treatment conditions, decreases in insomnia symptoms from baseline to posttreatment were associated with concurrent decreases in negative emotionality, which in turn predicted reductions in alcohol craving and heavy drinking.

Conclusion: Negative emotionality may help explain links between insomnia symptoms and alcohol-related outcomes.

Source: Miller, M. B., Carpenter, R. W., Nance, M., Freeman, L. K., Metrik, J., Borsari, B., ... & McGeary, J. E. Insomnia treatment effects on negative emotionality among veterans in treatment for alcohol use disorder. *Alcohol: Clinical and Experimental Research*. <https://doi.org/10.1111/acer.15436>

EXPLORATORY ANALYSIS OF BLOOD ALCOHOL CONCENTRATION-RELATED TECHNOLOGY USE AND DRINKING OUTCOMES AMONG YOUNG ADULTS **September 2024**

Background: Mobile health (mHealth) technology use may reduce alcohol use and related negative consequences; however, little is known about its efficacy without prompting from researchers or pay-per-use. This exploratory analysis assessed relationships between mHealth technology use frequency and alcohol-use outcomes.

Methods: Young adults who drink heavily (N = 97, Mage = 23, 51% male, 64% non-Hispanic White, Mdrinks/week = 21) had the option to use three mHealth technologies (breathalyzer device/app, blood alcohol content estimator app, drink counting via text message) while drinking for 2 weeks. Relationships between alcohol-related outcomes and any, multiple, and specific mHealth technology use across study days and drinking days were evaluated via bivariate correlations and multiple regressions.

Results: Participants used one or more mHealth technologies on approximately 68% of drinking days (33% of field days), with multiple technologies used on 34% of drinking days. Bivariate correlations revealed that a higher percentage of study days with any mHealth technology use was related to higher mean weekly drinks. However, a higher percentage of drinking days with any mHealth technology use was related to lower mean weekly drinks, percent of heavy and high-intensity drinking days, and negative consequences. There were several significant, inverse correlations between alcohol variables and using the mHealth technologies that provided personalized feedback. Multiple regression analyses (holding sex and baseline alcohol variables constant) indicated that a higher percentage of drinking days with any mHealth technology use was related to lower mean weekly drinks and lower percentage of heavy drinking days.

Conclusions: Using mHealth technologies to moderate drinking without direct prompting from the research team or per-use incentives was related to less overall alcohol use and heavy drinking. This indicates potential real-world engagement with mHealth apps to assist with in-the-moment drinking. Normalizing mHealth technology use during drinking could help curb the public health crisis around harmful alcohol use in young adult populations.

Source: Wilson, S. E., Lavoie, H. A., Berey, B. L., Frohe, T., Rowland, B. H., Hone, L. S., & Leeman, R. F. (2024). Exploratory analysis of blood alcohol concentration-related technology use and drinking outcomes among young adults. *Alcohol: Clinical and Experimental Research*. <https://doi.org/10.1111/acer.15455>

INCIDENCE OF HOSPITALIZATIONS INVOLVING ALCOHOL WITHDRAWAL SYNDROME IN A PRIMARY CARE POPULATION

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Importance: Alcohol withdrawal syndrome (AWS) is an important cause and complication of hospitalizations. Although common and preventable, the incidence of AWS during hospitalizations is poorly described.

Objective: To evaluate the incidence and proportional incidence of hospitalizations involving AWS in an adult primary care population overall and across patient characteristics.

Design, Setting, and Participants: This retrospective cohort study used electronic health records and insurance claims from Kaiser Permanente Washington (KPWA) between July 1, 2018, and June 30, 2022. The study included adults with 1 or more primary care visits during this period or the year prior, where primary care included annual standardized alcohol screening using the Alcohol Use Disorders Identification Test–Consumption (AUDIT-C).

Exposures: Age, sex, race, Hispanic ethnicity, AUDIT-C scores, and comorbid diagnoses.

Main Outcome and Measures: Hospitalizations involving AWS were defined by diagnosis codes documented during hospitalizations (incidence numerator). Time enrolled in KPWA determined person-enrolled-years (incidence denominator). Proportional incidence was calculated as the incidence of hospitalizations involving AWS divided by the incidence of all-cause hospitalizations. Proportional incidence was also estimated for hospitalizations involving other common chronic conditions (chronic obstructive pulmonary disease, diabetes, heart failure, and hypertension), which were also defined using hospital diagnosis codes.

Results: Among 544 825 adults engaged in primary care (mean [SD] age, 47.0 [17.9] years; 310 069 [56.9%] female; 3656 [0.7%] American Indian or Alaska Native, 55 206 [10.1%] Asian, 25 406 [4.7%] Black, 5204 [1.0%] Native Hawaiian or Other Pacific Islander, 365 780 [67.1%] White, 19 791 [3.6%] multiracial, 15 963 [2.9%] other races, and 53 819 [9.9%] unknown race; 33 987 [6.2%] Hispanic, 414 269 [76.0%] not Hispanic, and 96 569 [17.7%] unknown ethnicity), incidence of hospitalizations involving AWS was 169 (95% CI, 159-179) per 100 000 person-enrolled-years overall but as high as 15 347 (95% CI, 13 502-17 331) in patients with other alcohol-attributable diagnoses. The proportional incidence of hospitalizations involving AWS was 2.3% overall, with variation by age, sex, and AUDIT-C scores (eg, 9%-11% in male patients aged 30-49 years and 23%-44% in patients with high-risk AUDIT-C scores of 7-12 points). In most cases, among adults younger than 60 years, proportional incidence of hospitalizations involving AWS matched or surpassed that of other common chronic conditions (chronic obstructive pulmonary disease, diabetes, heart failure, and hypertension).

Conclusions and Relevance: In this cohort study of a large primary care population served by an integrated health system, AWS hospitalizations were common, especially in male patients, younger age groups, and individuals with high-risk alcohol use. During hospitalizations, the burden of AWS was similar to or exceeded complications of other chronic diseases that receive greater medical attention.

Source: Steel, T. L., Matson, T. E., Hallgren, K. A., Oliver, M., Jack, H. E., Berger, D., & Bradley, K. A. (2024). Incidence of Hospitalizations Involving Alcohol Withdrawal Syndrome in a Primary Care Population. *JAMA Network Open*, 7(10), e2438128-e2438128.

<https://doi.org/10.1001/jamanetworkopen.2024.38128>

DRINKING FIRSTS AT HOME AND WITH PARENTAL KNOWLEDGE: RACIAL/ETHNIC DIFFERENCES IN ASSOCIATIONS WITH LATER ALCOHOL OUTCOMES AMONG UNDERAGE YOUTH

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Background: Prior research has shown that early alcohol experiences, such as age of initiation and speed of progression between drinking milestones, vary across racial/ethnic groups. To inform culturally tailored prevention efforts, this longitudinal study examined racial/ethnic differences in the associations of drinking firsts at home and with parental knowledge with alcohol use outcomes among underage youth.

Methods: The study included baseline and five follow-up surveys, collected every 6 months, from California adolescents (ages 12–16 years at baseline). The analytic sample was composed of the 689 adolescents who reported lifetime alcohol use at baseline or a follow-up survey (5% Black, 37% Latinx, 46% White, and 12% other/mixed racial/ethnic group; 54% female). Participants who reported consumption of a full drink, intoxication, or heavy episodic drinking (HED) were asked ages and contexts of these drinking firsts, including whether the initiation was at their own home and whether their parents/guardians knew about this drinking event. Outcomes included past-6-month alcohol frequency, alcohol quantity, and number of alcohol-related problems. Multilevel negative binomial regression analyses were conducted, controlling for demographics and age of initiation by type of drinking behavior. Moderation analyses examined racial/ethnic differences.

Results: For consumption of the first full drink, both drinking at home and parental knowledge were negatively associated with all outcomes; associations did not vary by race/ethnicity. First intoxication at own home was negatively associated with the number of drinks for Latinx youth and with the number of problems for Black youth. For first HED, drinking at own home was positively associated with drinking frequency across groups, and for Black youth specifically, parental knowledge of their first HED experience was significantly associated with greater later alcohol frequency and quantity.

Conclusions: Results suggest that the association of family contexts of drinking first with later alcohol outcomes among underage youth varied by stage of alcohol use and race/ethnicity.

Source: Lipperman-Kreda, S., Wharton, K., Chung, T., Sartor, C. E., Jackson, K. M., & Slade, T. (2024). Drinking firsts at home and with parental knowledge: Racial/ethnic differences in associations with later alcohol outcomes among underage youth. *Alcohol: Clinical and Experimental Research*. <https://doi.org/10.1111/acer.15471>