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Corresponding Author:	Mika Kivimaki, PhD, FMedSci UCL: University College London London, UNITED KINGDOM
First Author:	Mika Kivimaki, PhD, FMedSci
Order of Authors:	Mika Kivimaki, PhD, FMedSci G. David Batty
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Author Comments:	Dear Editor, We are pleased to submit a Correspondence manuscript on the following paper: GBD 2020 Alcohol Collaborators. Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020. Lancet 2022; 400: 185–235. Kind regards, Prof. Mika Kivimaki, FMedSci

CORRESPONDENCE

Variation in the health effects of alcohol use by location

The Global Burden of Disease (GBD) project is a comprehensive observational study which has been central to understanding health challenges worldwide. A recent GBD paper concluded that the optimal level of alcohol consumption for health varies significantly by location.¹ This variation could be real or ascribed to the limitations in GBD data.

While non-drinkers were treated as a single group in the GBD analysis, they in fact comprise individuals who are life-long teetotallers and those who are former drinkers. Former drinkers experience elevated rates of diseases including alcohol poisonings, suggesting relapse.² As such, just as non-smokers are separated into never and former smokers, it is also necessary to dichotomise non-drinkers.

Drinking data were based on overall alcohol consumption rather than bingeing, perhaps owing to mixed availability of these data across countries.¹ Characterised by high alcohol use over a short period of time, binge drinking results in a rise in blood alcohol concentration too great for the liver to effectively detoxify. Independently of overall alcohol consumption, binge drinking increases risk of injuries, illness, and death.²⁻⁵ Moreover, people who consume alcohol moderately but are also binge drinkers tend to lose more disease-free years than those with high alcohol consumption but no binge drinking habit.²

In conclusion, the GBD analysis¹ omitted crucial population-level information on alcohol use. As a result, part of the apparent geographical variation in the health consequences of alcohol use is unlikely to be real but generated by lack of consideration of the important roles of drinking history and pattern.

Kivimäki is one of the over 400 GBD 2020 Alcohol Collaborators. Batty declares no competing interests.

*Mika Kivimäki, G. David Batty

m.kivimaki@ucl.ac.uk

Department of Epidemiology and Public Health, University College London, UK (MK, GDB);
Clinicum, Faculty of Medicine, University of Helsinki, Finland (MK).

References

1. GBD 2020 Alcohol Collaborators. Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020. *Lancet* 2022; 400: 185–235.
2. Nyberg ST, Batty GD, Pentti J, et al. Association of alcohol use with years lived without major chronic diseases: a multicohort study from the IPD-Work consortium and UK Biobank. *Lancet Reg Health Eur* 2022; 19: 100417.
3. Cherpitel CJ, Bond J, Ye Y, et al. A cross-national meta-analysis of alcohol and injury: data from the Emergency Room Collaborative Alcohol Analysis Project (ERCAAP). *Addiction* 2003; 98: 1277-86.
4. Roerecke M, Rehm J. Irregular heavy drinking occasions and risk of ischemic heart disease: a systematic review and meta-analysis. *Am J Epidemiol* 2010; 171: 633-44.
5. Kivimäki M, Singh-Manoux A, Batty GD, et al. Association of alcohol-induced loss of consciousness and overall alcohol consumption with risk for dementia. *JAMA Netw Open* 2020; 3: e2016084.