Alcohol and dementia: a complex relationship with potential Qa () for dementia prevention





The relationship between alcohol and dementia prevention has been widely studied, but most studies have focused on the potential for modest alcohol consumption to reduce the risk of dementia. These, primarily cohort, studies have varied in terms of the types of alcohol and thresholds of consumption assessed and have typically used self-reported consumption. Nonetheless, a J-shaped relationship has been fairly consistently reported between alcohol consumption and dementia risk, with moderate consumption associated with better outcomes than heavy consumption or nonconsumption, although for non-drinkers there might be other confounders.1,2

Published studies are interesting and pose questions such as whether modest consumption of red wine could be protective as part of a Mediterranean diet.3 However, the potential for substantial alcohol consumption, equivalent to 7-8 units a day for men and 5 units a day for women in most studies, to be a substantial risk factor for dementia is often overlooked.⁴⁵ The effect of alcohol use disorders specifically on dementia has received very little attention, although an association with an increased risk of cognitive decline has been suggested.⁶

In The Lancet Public Health, Michaël Schwarzinger and colleagues⁷ present their findings from a large retrospective study of data from over 31 million people aged at least 20 years from the French National Hospital Discharge database, including over 1 million people with an International Classification of Diseases, tenth revision (ICD-10) diagnosis of some form of dementia. Alcoholrelated brain damage or alcohol use disorders based on ICD-10 codes were recorded in more than 85000 of those who developed dementia, with a hazard ratio greater than 3 for the association between alcohol use disorders and dementia for both sexes (3.34, 95% CI 3.28-3.41 for women and 3.36, 3.31-3.41 for men). The importance of alcohol use disorders was particularly striking in people with early-onset dementia: 57% of people with a diagnosis of early-onset dementia also had an alcohol use disorder. Schwarzinger and colleagues modelled the importance of alcohol use disorders and suggested their effect might be greater than that of recognised risk factors such as smoking, depression, and hypertension. Their study is immensely important and highlights the potential of alcohol use disorders, and possibly alcohol consumption, as modifiable risk factors for dementia prevention.

Schwarzinger and colleagues discuss potential mechanisms, including a direct neurotoxic effect of ethanol and metabolites; thiamine deficiency; consequences of heavy alcohol use such as hepatic encephalopathy, epilepsy, and head injury; and increased occurrence of comorbid medical and lifestyle risk factors for dementia.^{4,8} An important caveat is that people with Down's syndrome and other learning disabilities—a group at major risk of early-onset dementias—were excluded from the study.

Many reports addressing dementia risk, such as the Lancet Commission on dementia prevention, intervention, and care,8 have not highlighted alcohol use disorders as a substantial attributable risk factor for dementia. The focus on the potential protective effects of modest alcohol use has probably complicated the analysis and interpretation of previous findings, and the potential importance and effect of heavy alcohol use as a modifiable risk factor for dementia has probably been overlooked.

Several issues still need to be addressed. One is the relationship between alcohol use disorders and related comorbidities. Alcohol use disorders are probably associated with poor diet and lifestyle, smoking, cardiovascular comorbidity, lower adherence to medical treatments, depression, and potentially social isolation. Schwarzinger and colleagues⁷ used a crude, area-based measure of socioeconomic status, and exploration of this aspect of the relationship between alcohol use disorders and dementia in more detail will be important. Understanding the significance of these risk factors, and the pathways of risk impact in people with alcohol use disorders, will help us to model the attributable risk more accurately and to develop better prevention strategies for people with alcohol use disorders.

Additional guestions relate to the threshold of alcohol consumption and potential cross-cultural differences. In the study by Schwarzinger and colleagues, the focus was on a diagnosis of alcohol use disorders rather than

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a threshold of alcohol consumption: individuals with alcohol use disorders had this information captured in a hospital database, having been identified as having problems related to their alcohol use. Alcohol use disorders and alcohol consumption volumes are related but distinct, and work is needed to clarify whether there is an association of similar magnitude between alcohol consumption volumes and dementia or whether associated problems and medical and psychiatric comorbidity drive the risk. A related question is whether the importance of alcohol consumption and alcohol use disorders as a risk factor varies depending on national mean alcohol consumption; for example, France consumes 12.2 L per person per year, much higher than Italy (6.7 L per person per year) and India (4.3 L per person per year).9

Although many questions remain, several can be answered using existing data, which would provide an opportunity to refine our understanding of the pathways of modifiable risk and develop optimal prevention strategies. In our view, this evidence is robust and we should move forward with clear public health messages about the relationship between both alcohol use disorders and alcohol consumption, respectively, and dementia. Following the Rose population principle, 10 we might want to consider the extent to which the growing prevalence of dementia worldwide might be curbed by reductions in population-level alcohol consumption.

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