Alcohol burden in low-income and middle-income countries

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Alcohol use contributes to roughly 4% of the global burden of disease.[1] Episodic (binge) drinking and high average volume consumed both contribute to this burden in complex ways.[1] Episodic drinking increases risks of injury and cardiovascular disease; cancer risk increases with average volume; and low–moderate alcohol use is associated with a reduced risk of death from cardiovascular diseases.[2,3] A major limitation of the evidence is that most epidemiological studies of alcohol have been done in high-income and middle-income countries. Good epidemiological data for patterns of alcohol use and health outcomes among adults do not exist in low-income and middle-income countries, in which alcohol use is increasing as a result of growing affluence and increased promotional activities of the alcohol beverage industry.

In *The Lancet*, Andrew Smyth and colleagues[4] begin to fill this gap by reporting from a large multinational prospective study, PURE, on associations between patterns of alcohol use and cardiovascular health, cancer, injury, admission to hospital, and mortality in 114 970 people in 12 high-income, middle-income, and low-income countries who have been followed up for a median of 4·3 years (IQR 3·0–6·0). Standardised measures of alcohol consumption were used at baseline, and the same health outcomes were used in all settings. People with a history of heart disease, stroke, or cancer were excluded. Extensive data were collected for potential confounders, including: age, sex, serum high-density lipoprotein, body-mass index, ethnicity, education level, diabetes, hypertension, hepatitis, jaundice, medications to reduce cardiovascular events, physical activity, diet, and smoking. A composite measure of health outcomes summarised overall health.

Patterns of alcohol use differed between low-income, middle-income, and high-income countries. Alcohol was consumed by most middle-aged men and women in high-income countries, but by fewer adults in middle-income and low-income countries, who were predominantly men. Larger sex differences in alcohol use and health outcomes were therefore identified in middle-income and low-income countries than in high-income countries.

Alcohol consumption had a net association with mortality in high-income and middle-income countries in Smyth and colleagues' study.[4] Any reduced risk of fatal myocardial infarction and admissions to hospital among moderate alcohol users in these countries was more than offset by the increased mortality and morbidity from alcohol-related injury in younger drinkers, and higher risks of cancer in older adults. The apparently protective effect of moderate alcohol use against cardiovascular disease was not clearly seen in low-income and middle-income countries, although statistical power was low.

Binge drinking increased mortality and injury in all countries. Alcohol use might have been less common in middle-income and low-income countries, but its risks were more pronounced because adults in such countries who drank were more likely to engage in the riskiest pattern of drinking: infrequent consumption of large quantities of spirits. This pattern is much more harmful to health than is more frequent consumption of smaller quantities of wine, the pattern that is most common among middle-aged men in high-income countries.[5]

Smyth and colleagues' study[4] had several limitations that are acknowledged by the authors. First, quantity and frequency of alcohol use were only assessed at baseline; subsequent assessments only categorised later drinking into never, former, and current (with one in 13 of the sample changing drinking status during the study). Recent alcohol use is likely to be a stronger predictor of injury and cardiovascular events than the pattern of drinking at the baseline assessment. The second limitation was that former drinkers had poorer outcomes on all health indices, but no information was collected about how much such people drank before they stopped drinking. These limitations probably introduced some measurement error into the alcohol use assessment, which might have attenuated associations between alcohol use and adverse health outcomes.

	Evidence strength	Approach
Pricing and taxation	High	Increased taxes on alcohol and other price controls
Minimum purchase age	High	Legal purchase age of 20 years or 21 years
Hours and days of sales	Moderate	Restrict trading hours
Density of outlets	Moderate	Limit outlet density
Drink driving countermeasures	High	Driving blood alcohol concentration limit of ≤0·05
Restrictions on advertising and sponsorship	Moderate	Legal restrictions on exposure

Table: **Effective public health approaches to reduce alcohol-related burden**

A third limitation was the fairly short follow-up and, as a result, the small number of incident adverse events—eg, fewer than 70 cases for each outcome to assess the association between moderate drinking and myocardial infarction, stroke, cancer, and injury. This small number of adverse events limited the study's statistical power. The PURE study's value will greatly increase as the number of adverse health outcomes accumulates with longer follow-up of the cohort.

In the meantime, we should not delay action. More than sufficient evidence[1] is available for governments to give increased public health priority to reducing alcohol-related disease burden in low-income and middle-income countries. This should be done by implementing the most effective population policies to discourage harmful drinking—namely, increasing the price of alcohol and reducing its availability, especially to younger drinkers, and preventing the alcohol industry from promotion of frequent drinking to intoxication (table).[6,7]

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