Alcohol as a public health risk: New evidence demands a stronger global response

Commentary

Abstract

Alcohol ranks third as a risk factor for health in the Comparative Risk Assessment (CRA) in the Global Burden of Disease analyses for 2010. New analyses of alcohol's role in tuberculosis and in the course of HIV/AIDS add diseases especially important in low- and middle-income countries to the picture. A meta-analysis of price elasticity of alcohol in such countries draws together evidence relevant to a policy response, while illuminating how few the analyses are for much of the world. Alcohol is arguably the most complex risk factor, with links to more than 200 ICD codes. The abundance of alcohol references in the report of the CRA study reflects the strength and breadth of the findings on alcohol's adverse effects on health. The CRA findings point to the need for a stronger global public health response on alcohol issues.

Key words: Comparative Risk Assessment (CRA); Global Burden of Disease (GBD); risk factor; alcohol; alcohol policy

What has become the Comparative Risk Assessment (CRA) started out as more or less an afterthought to the analyses of the Global Burden of Disease (GBD). From a public health policy perspective, however, it can be argued that it has turned out to be the project's most important component, since it points to and ranks the potential means of diminishing the burden. Recognizing this, the triple issue of The Lancet which carries the results of the latest round of GBD estimates includes a comment entitled "Should the GBD risk factor rankings be used to guide policy?" (Watts & Cairncross, 2012).

The policy significance of the CRA results is amply illustrated by the case of alcohol. Alcohol actually figures in the Global Burden of Disease in two roles: as the basis of a set of disorders (e.g., alcohol dependence), and as a risk factor. It is in the latter role that it makes by far the bigger splash. It ranks third globally among 67 risk factors in the 2010 rankings, and first among people aged 15 to 49. It also ranks first in five of the 21 subregions into which the analysis divides the world—Tropical, Central and Andean Latin America, Eastern Europe, and Southern sub-Saharan Africa (Lim et al., 2012). The high ranking of alcohol among risk factors already in the rankings for 2000 (Ezzati, Lopez, Rodgers, Vander Hoorn, & Murray, 2002)

contributed substantially to the renewed attention paid to alcohol by the World Health Organization (WHO) in recent years, marked by the adoption in 2010 of a Global Strategy to Reduce the Harmful Effects of Alcohol (WHO, 2010), and by the inclusion of alcohol as one of the primary targets in current international moves to strengthen efforts to reduce Non-Communicable Diseases (NCDs) (Bennett, 2012).

Alcohol is arguably the most complex risk factor included in the CRA, as can be seen from Figures 1 and 2 in the new CRA study (Lim et al., 2012). It is causally linked to more than 200 ICD codes (Rehm, Mathers et al., 2009), although for various reasons, as outlined by Rehm et al. (2013) in this issue, not all of these connections have yet been included in GBD analyses. The processes underlying inclusion can be seen in action in two of the other papers in this issue. As Shield, Samokhvalov, and Rehm (2013) note, the links between heavy drinking and tuberculosis had already been observed more than two centuries ago, but it is only recently that sufficient good-quality epidemiological studies accumulated and were meta-analyzed to assign alcohol-attributable fractions of the disease burden. In addition, plausible biological pathways had to be established, and it had to be shown that the effect of alcohol is independent of tobacco (Gajalakshmi & Peto, 2009; Rehm, Samokhvalov et al., 2009). For the links between alcohol and HIV/AIDS, only the link reflecting the disruption by alcohol intoxication of the medication regime for those with HIV infection has reached the standards of proof required for inclusion in a CRA analysis (Shield, Shuper, Gmel, & Rehm, 2013), and this analysis came too late to be included in the CRA analysis for 2010. The specific topic in the HIV analysis, effects of drinking in disrupting the medication regime, is also a reminder that the effects of alcohol are not limited to the incidence of disease or injury—that alcohol often also adversely affects the course of, and recovery from, a condition. More attention needs to be paid to this aspect of alcohol's effect on the burden of other diseases, as well.

The figures showing rates by global subregion in both the tuberculosis and the HIV/AIDS papers give a clue to why epidemiological data on the alcohol connection that is sufficient for inclusion in the CRA analyses is coming so much later than for other health conditions. The figures

show that where the alcohol connection really matters for HIV/AIDS is in Latin America and sub-Saharan Africa. With the addition of Eastern Europe, the same is largely true for tuberculosis, reflecting that tuberculosis was largely wiped out in high-income parts of the world decades ago, as part of the process of development. The potential alcohol connections with these diseases have thus drawn only limited research attention and have not been given a high priority in the countries and subregions which are the powerhouses of medical and epidemiological research.

Much the same geographic imbalance can be seen also in other kinds of public health research on alcohol. For instance, there is a well-developed literature on price elasticity of alcoholic beverages, with several meta-analyses available (e.g., Wagenaar, Salois, & Komro, 2009). But this literature is dominated by studies from high-income societies, and there is good reason to suspect that the results may differ in low- and middle-income societies. The paper by Sornpaisarn, Shield, Cohen, Schwartz, and Rehm (2013) in this issue is the first meta-analysis to address this question. Yet the roster of countries for which the authors were able to find multiple estimates is very small: China, India, Kenya, Russia, and Thailand. For all but one of the estimates for 19 other countries, the meta-analysis is reliant on a single estimate from a series of studies with common authorship (Selvanathan & Selvanathan, 2005). The main result of the analysis by Sornpaisarn et al. (2013), the finding that the average elasticity for low- and middle-income countries does not appear to differ much from the elasticity for high-income countries, is interesting and somewhat surprising. But, as the authors emphasize, it should be regarded as a spur to further research, rather than a settled finding. More generally, the situation concerning alcohol epidemiology and policy studies in developing societies remains much as it was a decade ago, when a group of investigators reviewing the relevant literature found that the best evidence available was often from descriptive case studies, rather than quantitative analyses and evaluations (Room et al., 2002).

The empirical papers in this thematic section also exemplify another dimension of the effort to determine the role of alcohol in the Global Burden of Disease. There are more references—17—concerning alcohol epidemiology cited in the 2010 CRA analysis than for any other risk factor, and they point to the wide range of nationalities of scholars who have been involved in building this literature. The work in alcohol epidemiology has benefited from a tradition of collaborative work across institutions and national borders, and also from strong leadership—leadership operating by example and with a sense of strategic priorities. For more than a decade now, the primary leader in the measurement of alcohol's role in the GBD has been Jürgen Rehm. His clear sense of what is needed in summarizing and modeling on the basis of the existing literature, and in identifying gaps in the empirical data and how to fill them, has become a primary force in driving a generation of work in alcohol epidemiology from a global perspective.

The answer that Watts and Cairncross (2012) offer to the question "Should the GBD risk factor rankings be used to guide policy?" is curiously muted. In the foreground, in their view, are "the methodological issues that require further attention." It is true that, despite the huge effort that went into the 2010 GBD estimates, the risk factor estimates will undoubtedly be improved on in future years. In the meantime, however, in their main outlines the CRA findings offer a guide to setting priorities in public health policies and their implementation. In particular, the new estimates underline the importance of alcohol consumption in the global burden of disease. In this context, it is highly anomalous that alcohol is the only major psychoactive substance not subject to international controls (Room, 2013), that alcohol programming has meager resources in WHO budget expenditures, and that, for instance, appropriate alcohol targets and indicators are a contested issue in the international negotiations over NCDs (O'Brien, 2011; WHO, 2012). The papers in this thematic section underline the relevance of alcohol for the burden of disease in lower- as well as higher-income countries, and suggest that measures to reduce alcohol-related harm can be as effective in lower- as in higher-income countries. The findings on the Global Burden of Disease 2010 point to the need for a stronger global public health response on alcohol issues.

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