Author's response to reviews

Title: Global burden of injuries attributable to alcohol consumption in 2004

Authors:

Kevin D Shield (kevin.shield@utoronto.ca)
Gerrit Gmel (gerrit.gmel@gmail.com)
Jayadeep Patra (jaydeep.patra@gmail.com)
Jürgen Rehm (jtrehm@aol.com)

Version: 2 Date: 21 December 2011

Author's response to reviews: see over
December 20, 2011

Kevin D. Shield
CAMH
33 Russell Street
Toronto, Ontario, Canada M5S 2S1
E-mail: kevin.shield@utoronto.ca
Telephone: +1 647 971 6175

Population Health Metrics
Attn: Kate Muller

Dear Dr. Muller,

Thank you for your efforts in reviewing the manuscript entitled “Global burden of injuries attributable to alcohol consumption in 2004”. (MS: 8141530845663680).

Please find attached for your consideration, in accordance with your e-mail dated August 19 2011, a revised version of this research manuscript. I am also attaching detailed responses to the reviewers’ comments, which I have completed in boldface type.

Please note that we have changed the methods used to calculate the alcohol-attributable burden of injuries in order to include the burden of injuries attributable to the drinking of others.

We have also reviewed the authorship criteria, and have decided to change the authorship of the manuscript to Kevin D Shield, Gerrit Gmel, Jayadeep Patra and Jürgen Rehm as indicated on the title page.

Sincerely,

[Signature]

Signature of corresponding author on behalf of all authors
Editors Comments:

The Editors find the comments extremely relevant (especially those of Referee 3), and would like them addressed. Among them, please ensure that the original studies have clearly distinguished between alcohol-related and alcohol-attributable, or please use a process such as that in the Mexico and US CRA papers, of one of which you are co-authors.

To address this comment we have revised our methods so that they are now based on drinking occasions, reflecting alcohol-attributable fractions.

We also performed a sensitivity analysis using the relative risk functions from the Grand Rapids study (a study with good control yielding alcohol-attributable fractions, which was used in the studies mentioned in your comments above to correct the alcohol-related burden downwards) to calculate AAFs for North America (high income) and found no difference in these calculated AAFs from our AAFs.

This analysis will be part of a future paper where we will compare AAFs for all alcohol-related causes of death/morbidity using relative risks from different studies.

Also, the Editors saw no reason why with a highly non-linear dose-response (exponential of square term) you would need separate assessments of binging and average. The appropriate approach would be to convert population into a different exposure metric based on drinking occasions, but only if the original epi studies had used such a metric. In general, given that time-at-risk doesn’t appear in the RR relationship, it brings up questions about whether the correction is necessary, or there is a more fundamental issue.

We agree with this comment, and have revised our methods so that they are now based on drinking occasions. We have also clarified the RR functions in terms of the studies upon which they were based.
Reviewer: Kerianne Watt

Reviewer's report:

The authors have mentioned the limitations of the alcohol measures given that the data are obtained from surveys. However, they have not mentioned the limitations of the measure used – that one standard drink is equivalent to 12g of alcohol. This is not an international standard. Therefore, one standard drink in one country (eg – Australia) is not equivalent to one standard drink in another (eg – UK). This is a measurement bias associated with the measurement of alcohol consumption in this study, which assumes that all units are equivalent. The authors need to acknowledge this limitation and describe the effect this bias would have on the results (taking into account the countries included in the study and the overall effect, on balance).

We have now described that the binge drinking data used in our analysis were collected at an international level in grams per occasion.

For the purposes of this article we summarized these data in standard drinks per occasion.
Reviewer: Roderick McClure

Reviewer's report:
This is a well conceived, carefully conducted study in an area of major public health importance. The analysis, interpretation and reporting of the study findings reflect a thorough knowledge of the literature and contemporary methods. The methods and measures used in this paper are, as the authors suggest, an important refinement on those previously used to establish the global burden of alcohol-related injuries. The data used by the authors for risk ratios are drawn from studies recognised to be the leading papers in the field. The statistical analyses are sound and appropriate.

The manuscript is carefully considered, well structure and clearly written. The discussion of the paper appropriately acknowledges the limitations inherent in estimated measures of global burden. The conclusions of the paper are consistent with the study methods and results. This is a substantial piece of work, and provides the basis for policy development and subsequent monitoring.

It is rare that papers are as meticulously presented as this is. The authors are to be congratulated for this important contribution to knowledge.

Thanks!
Version: 1 Date: 18 August 2011
Reviewer: Gretchen Stevens
Reviewer’s report:
- Major Compulsory Revisions

1. Overall, the paper is of interest. However, the methods are not easy to follow. They need a careful editorial reading for clarity.

The methods have been revised, and are hopefully clearer now.

2. Although the risk relations on p. 7 are published elsewhere, I think it is important to clearly describe them here. Two equations are listed, without describing the terms. I could not find what x2 referred to (presumably alcohol consumption level? In what units?). x appears again in the equations on page 8, but it is still not clear what the categories of consumption are -- presumably they are different for binge drinking?

We now state that “x” in the RR formulas stands for drinks per drinking occasion, and that the RR function is the same for binge drinking occasions and average drinking occasions.

3. It’s very difficult to judge whether the methods are appropriate without also reviewing references 6 and 10. In particular, it is not clear that using an RR for binge drinking and another for average consumption would not double-count the attributable burden. Whether this is appropriate depends on the RRs published elsewhere. Please briefly justify this here.

The methods have been revised accordingly.

- Minor Essential Revisions

1. Please remove URLs from the text, instead put them in references

The URLs have been removed from the text.

2. ’GBD code’ (p. 7) is not really a technical term -- please use a more general, descriptive term.

GBD is no longer used as a technical term in the manuscript.

3. p. 10, ref 25-26: please cite the 2008 WHO report as the source of 2004 DALYs. Current citations are for previous GBD iterations.

The 2008 WHO report is now cited as a source of the 2004 deaths, PYLL, YLD, and DALYs.
- Discretionary Revisions
1. p. 14: I think this statement: "some countries, such as Indonesia, do not have available information on numerous causes of death" may understate the lack of cause-of-death data. There are many countries (all but one in SS Africa) for which no usable data were incorporated into the 2004 GBD.

We have included an acknowledgment of the limitations of the mortality and morbidity data.