Reviewer’s report

Title: How much more harmful is the Russian style of drinking? A methodology for calculating harms attributable to alcohol in Russia

Version: 2 Date: 2 January 2015

Reviewer: Thor Norstrom

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Major Compulsory Revisions

1. These sentences are a bit unclear: “this paper presents an overview of the method used to calculate the alcohol Population-Attributable Fractions (PAFs) for Russia based on Russia-specific alcohol RR functions. In addition, this paper describes the alcohol-attributable burden of disease using Russia-specific alcohol RR, and compares these estimates to the alcohol-attributable burden of disease estimated using alcohol RR derived from meta-analyses which used data from studies from around the world.”

2. Formula 1 for PAF. I trust this formula is correct, but why can’t a standard Formula for multiple exposures be applied (Hanley 2001, JECH). In particular it’s unclear why the prevalence of lifetime abstainers is included in the formula; I’ve never seen a formula including the prevalence of unexposed. All this could be clarified in Supp 1.

3. To calculate PAF, one needs, in addition to RR, an estimation of the distribution of alcohol consumption. The description in Indicators of alcohol consumption of how the latter was obtained is not crystal clear. In particular, the role of Formulas 2 and 3 is unclear. They seem to be based mostly on non-Russian data, and their relevance for estimating the distribution of drinking in Russia is unclear. Why not assess the distribution of alcohol consumption directly from Russian survey data?

4. The section Risk Relations could be clearer. I read the first para several times, but it’s still unclear what the various sets of RR refer to. As I understand it, to calculate the PAFs one needs the distribution on the consumption categories that are actually used (that is (1) greater than a half but less than one bottle, etc.). It’s not clear how this info was obtained, and if and how Formula 2-3 were used here.

5. “…this paper found that the alcohol-attributable burden of transport injuries would be moderately overestimated if non-Russia-specific alcohol RR were used…” Could this difference be due to different kinds of RR being used? In Supp2, I don’t find any source for RR for motor vehicle accidents, but I figure estimates from BAC-readings (Grand Rapids, Zador) would be more appropriate, and give higher PAF, than using average consumption (as in the Russia-specific RR). In Russia, heavy drinkers may be more marginalized, and hence drive less than in
Western countries.

6. In the Discussion it’s common to compare findings with those from other studies. The authors could compare and discuss the difference with the PAF reported by Leon et al, Lancet 2007, which was 43% for men aged 25–54.

7. Limitations should also discuss the accuracy of the consumption data used by Zaridze et al 2009. These data are based on proxy interviews where e.g. the spouse of the deceased reported the drinking habits of the latter for a time period that was typically many years back.

Supp 1.

8. The formula for PAFs for harms caused to others is hard to grasp.

9. Unclear sentences: $\text{PAF}_{\text{assaultagecountryi}}$ is the alcohol PAF for deaths or injuries caused by assaults for an age group, $\text{PAF}_{\text{assaultcountryi}}$ is the alcohol PAF for deaths or injuries caused by assaults for an entire country.

**Level of interest:** An article whose findings are important to those with closely related research interests.

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.