Reviewer's report

Title: A comparison of gender-linked population cancer risks between alcohol and tobacco: how many cigarettes are there in a bottle of wine?

Version: 0 Date: 10 Sep 2018

Reviewer: Freddy Sitas

Reviewer's report:

This is an interesting analogy attempting to created a common currency of absolute risks between smoking and alcohol consumption in the UK.

I think the authors need to make it absolutely clear that they are describing increases in absolute risks in the population for cancers only and not relative risks. There is no doubt that public health campaigns for reductions in alcohol need to be better resourced and taken more seriously. But care needs to be taken in the (mis)interpretation of these results. There is a likelihood that the hazard of smoking will be trivialized. By equating the hazard of smoking to one bottle a week many (normal) people may use this as an excuse start smoking, or not to stop! Cancer deaths are a fraction of the total numbers of deaths caused by smoking and alcohol. Rough calculations: long term current smokers of 10 cigarettes a day double their risk of (overall) death. This is in no way equivalent to a bottle of wine a week - that's more equivalent to a bottle a day. See (Zaridze et al - Studies from Russia). Some commentary is needed.

Clarity is needed to ensure the authors are talking about absolute numbers attributed to each exposure (described as absolute / lifetime risks) and not the relative risk between the two exposures. For example the abstract refers to three different terms 'the cancer risk' (that can be misinterpreted as a relative risk) attributed fractions and absolute risks. This is very confusing. The terminology needs to be made more consistent across the document. Cancer risk / absolute risk of xx related cancer / etc. High absolute risks / attributable fractions are dependent on the prevalence of the exposure and its relative risk. A statement around that (smoking: high risk & lower prevalence vs alcohol low risk & higher prevalence) needs to be added. A stronger statement needs to focus this message to policy makers, followed by a careful interpretation for public consumption.

Here is a suggestion how to reword the abstract.

"In contrast to our knowledge about the number of cancer deaths attributed to smoking, the number of cancer deaths attributed to alcohol is poorly understood by the public. We estimate the increase in absolute risk of cancer (number of deaths per 1000) attributed to moderate levels of alcohol, and compare these to the absolute risk of cancer attributed to low levels of smoking, creating a 'cigarette-equivalent of population cancer harm'. "

Small comments. Figure 3, Fix spelling on y axis.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?
If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal