Author's response to reviews

Title: The contribution of leading diseases and risk factors to excess losses of healthy life in eastern Europe: burden of disease study

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Version: 2 Date: 12 September 2005

Author's response to reviews: see over
Response to reviewers

Reviewer: Thomas Novotny

Reviewer's report:

General
1. This is an article of general interest that addresses health disparities across Europe (from East to West). Although it focuses on risk factors quite well, given the paucity of data, it neglects sufficient attention to socioeconomic factors, political changes, and psychosocial determinants of both risk factor prevalence and disease outcome. It also has only modest attention paid to health systems factors (e.g., those which could, through adequate secondary prevention, affect risk factor prevalence). The Methods are sound in general, and well published in previous studies, however. The writing is in general very clear. The tables and graphs, with the exception noted below, are clear and helpful.

Response
The limitation of scope to the more proximal determinants of health is deliberate. It is not possible in one paper to cover everything and it seems best to start from where knowledge is most secure and quantitative analyses most feasible. We have added the following to the end of the introduction to make this limitation of scope more explicit:

'In analyzing the causes of the marked differences in health levels across Europe, we have deliberately restricted our scope to the more proximal determinants ('risk factors'), because knowledge of their role is more secure and lends itself more readily to quantitative analysis.'

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
2. A major organizational problem with the paper is that there is much discussion and interpretation in the RESULTS section; this should be moved to the DISCUSSION section. Results should simply report data and findings. For example, the discussion at the bottom of page six on drugs, alcohol, and smoking is really part of discussion. In addition, I would delete the comment about Muslim states unless there are previous publications to support this conjecture. On page seven, much of the this page is for the discussion section.

Response
We have currently organized the manuscript so that any reference to individual numbers regarding specific disease or risk factor epidemiology is included in the results section, and those describing multi-disease or multi-risk-factor patterns and their implications in the discussion section. We welcome suggestions from the Editor on further re-organization.

The point about the 'dilution' of the effect of alcohol in Europe B is now supported as follows:

Alcohol's contribution in Europe B is likely reduced by the proportion living in predominantly Muslim states (Turkey and Uzbekistan alone account for more than a third of the population of Europe B and both are low alcohol consumers[18]).

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

3. Abstract: Three 'subregions' for Europe are denoted in the methods section. However, populations are provided for only two of these, and one looks for the third
population figure. In addition, these categories are referred to as 'Subregions' which denotes to this reviewer a geographical proximity. Since the countries selected for each category are all over the map and are selected on the basis of health indicators, I suggest using the term 'category' instead of subregion. In the conclusion section of the abstract, '..and injury control strategies eg for road traffic injuries.' should be reworded: 'and injury control strategies (for example for road traffic injuries).'

Response

Populations were provided for all 3 subregions in the abstract (‘with populations in 2000 of 412, 218 and 243 millions respectively’). However, we agree that the term ‘sub-region’ could mislead and have added a new section at the beginning of Methods as follows:

**Populations**

Following the Burden of Disease protocols, the WHO region for Europe (which extends to Israel, Turkey and the former Soviet republics of central Asia) is divided into 3 'sub-regions' on the basis of child and adult mortality levels — Europe A (very low child; very low adult mortality) with a population in 2000 of 412 millions, Europe B (low child, low adult mortality) population 218 millions and Europe C (low child and high adult mortality) with a population of 243 millions. These 'subregions' are neither contiguous nor culturally homogeneous and correspond only approximately to western Europe, Eastern Europe and the successor states to the Soviet Union. Box 1 lists the countries within each subregion.

The suggested change relating to traffic injury control has been made.

4. Background: wording in first sentence is awkward. Suggest: 'The evolving picture of East-West disparities in health indicators across Europe have been described in terms of....'. In the next sentence, '...and distribution of diseases and injuries, and their causes' should be '...and their risk factors,' Risk factors are associative and not necessarily causal unless subject to strict causal criteria. Later, 'the attribution of such losses either to diseases or injuries or to the risk factor FOR those diseases and injuries.' Later: We use the databases....to EVALUATE (not illuminate) the nature and REASONS for the health disparities across Europe. Again, substitute CATEGORIES for SUBREGIONS.

Response

The suggested changes to the text of the first para have been made … with the partial exception that ‘subregion’ is retained to maintain consistency with the source literature. We believe that we have dealt adequately with this point above.

5. Page 11. Instead of 'drink driving' I suggest using 'driving under the influence of alcohol,'

Response

Done

6. Table 1. I would order the ten leading risk factors from highest attributable risk down to lowest. However, 'unsafe sex' with an attributable proportion of 6.3% is number one on the list, and this is simply not believable. If this figure depends on HIV for most of the DALYS, the prevalences throughout the region are still quite low, with only a few concentrated epidemics. Clearly, tobacco and alcohol must contribute far
more to the GBD than unsafe sex in Europe. This really needs an explanation, and it is not even addressed in the text.

Response

The risk factors are ordered by their total contribution in the European region. The last column originally gave their percentage contribution in the global population. It has been edited to give contributions to total DALYs in Europe.

Discretionary Revisions (which the author can choose to ignore)

7. Data may not be available on socioeconomic determinants. However there are published articles on psychosocial, policy, and other deficiencies leading to health disparities across the former soviet union that could be cited in the discussion. There really should be some attention paid to these as well as to health systems determinants. Given the disruption in health investments and financing, there is a specific contribution beyond risk factors falling generally under health system failings that should be discussed.

Response

We agree that the large scale social-institutional determinants of these health trends – including the ineffectiveness of the formal medical services in preventing chronic diseases – are very important. We have commented in the discussion on what we believe is one of the most important of these institutional weaknesses – lack of investment in the public health sciences relevant to the prevention of chronic diseases in general and of vascular disease in particular. But the scope of our paper is deliberately restricted to influences that can be subject to quantitative analysis.

8. On Page 10, a citation to Jha and Chaloupka’s World Bank Report on Tobacco Control in Developing Countries would be suitable at the end of the last full paragraph.

Response

Done

What next?: Reject because too small an advance to publish

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes

Declaration of competing interests:

I declare that I have no competing interests.
Response to Bobak
Discretionary Revisions (which the author can choose to ignore)

One minor comment relates to use of the term “interaction” (e.g. pages 7 and 9). I agree that the impact of different risk factors depends on the background risk but I think that the right term for what the authors actually meant is “combination” (probably including risk factors not covered by the exercise). As far as I am aware, an interaction (as most epidemiologists see it, i.e. that the combined effect is larger than the multiplication of individual effects) has not been consistently demonstrated for conventional risk factors and CVD. Perhaps this could amended in the manuscript.

Response
We agree and have amended accordingly.
Response to Boffetta

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Readers might not be familiar with the classification of WHO subregions, which might complicate the interpretation of the results. For example, in the paragraph on results east-west differences are mentioned, but in the preceding paragraph there is no mention to the geographic coverage of the three subregions. Similarly, more details should be provided on the GBD and the CRA projects and the ways DALYs are attributed to diseases (figure 2) and risk factors (figure 3).

Response
The point about the WHO subregions has been dealt with above. We are inclined to stay with our minimalist account of GBD methodology and rely on the supporting references. We would be happy to accept editorial guidance on this point.