Reviewer's report

Title: National and Subnational mortality effects of metabolic risk factors and smoking in Iran: comparative risk assessment

Version: 1 Date: 17 May 2011

Reviewer: John Powles

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Farzadfar et al, Pop Health Metrics

Overall

This is an excellent paper.
The topic is of wide interest – not least in the context of the forthcoming UN high level meeting on NCD control.
There is a dearth of studies of this quality on attributable burdens of NCDs from middle income countries.
An array of appropriate methods to deal with data limitations have been used and clearly described.
The discussion and conclusions are balanced and appropriate.

Minor essential revisions

1. Clarification of role of smoking prevalence data

There is scope for confusion when these are discussed as the methods state that smoking effects were estimated using the Peto Lopez method. Eg at p 13, 3rd para might be reworded along the following lines:

‘…the highest reported prevalence of recent smoking, the age-standardised mortality attributable to this risk factor (calculated using lung cancer mortality to estimate exposure) was largest …’

2. Clarification of the correlation coefficients for the mortality completeness estimates.

Does rSEG refer to the correlation between the 2 completeness estimates when each are estimated using the SEG method … or when using SEG for adults and the sources noted in the next sentence for the under 5 mortality? In either case is a coefficient as low as 0.16 satisfactory?

Typographical

Abstract

Methods second last word: ‘to risk’ has no space (?could be a pdf artefact).
P 8, 2nd para, 2nd sentence: second and third words suggest a typo here.
P 9, 2nd para, 4th line: ‘epidemiological’

Some of the citations are defective:
Eg 34, 38 (lacks year etc), 40, ‘Bank’.

Discretionary revisions
1. A little detail on the methodology of the sbp measurements
Although the interested reader could theoretically pursue the cited primary sources it would be helpful to have just a little information on the protocol for sbp measurement in the risk factor surveys as the sbp data play such an important role in the analyses and may be subject to substantial measurement artefacts in a middle income country with a continental climate. This should include whether the surveys were conducted on a comparable round the year basis in all regions, and if not whether seasonal variation (and/or variation in ambient temperatures) may be adding ‘noise’ to the blood pressure estimates.

2. Would the confidence intervals be more appropriately described as ‘uncertainty intervals’ given their method of estimation?

3. Table and figure captions should be more informative.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I have ongoing collaboration with 2 of the authors (on different, though related topics) but believe I have exercised independent professional judgement in my assessment of the paper.