Reviewer's report

Title: A comparison of self reported air pollution problems and GIS-modelled levels of air pollution in people with and without chronic diseases

Version: 1 Date: 12 September 2007

Reviewer: Bin Jalaludin

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General
This paper by Piro et al. aims to explore: 1. the association between self reported air pollution problems and GIS-modelled air pollution; 2. whether those with respiratory and other chronic diseases tend to over report air pollution problems; and 3. to what extent self reported and modelled air pollution are associated. The study uses cross-sectional data from the Oslo Health Study conducted in 2001.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Measurement of air pollution problems. The question that the authors have used asks whether the participant has been troubled by air pollution from traffic. I am not sure whether this question is asking about the participant’s perception of traffic related air pollution levels or about the effect of traffic related air pollution on the participant’s health or both. It is very important that this is made clear because it is the central outcome measure. This issue needs to be clarified in the manuscript.

2. Measurement of pollution from factories. In the question that was asked, participants were asked to report whether they were “troubled by pollution from factories/firewood/oil furnace, etc” In the manuscript, the authors usually only report about pollution from factories. How can the authors be certain that a response to this question was related to pollution from factories rather than from firewood or oil furnace? Also, a description should be give of what is meant by the terms firewood and oil furnaces. Again it is unclear what is meant by ‘troubled’ – see comment above.

3. I do not think that the authors have reported data on their third aim, that is, to what extent self reported and modelled air pollution are associated.

4. Would it have been better to use a validated tool to measure depression. How certain are the authors that their single question on depression is adequate?

5. The question on bad indoor climate is unvalidated and I am not sure exactly what it may be measuring.

6. In the analyses, logistic regression is also conducted after removing the
pollution from factories, depression and housing conditions one by one (eg. columns c, d and e in table 3) – what is the rationale for this?

7. Can the authors offer an explanation for why there was no association between air pollution problems and diabetes whereas they found an association with the other chronic diseases?

8. In view of the response rates, there may also be issues around potential for selection bias and this should be discussed.

9. The question around air pollution problems relates to traffic related air pollution. The modelled air pollution proxy is NO2. There should be some discussion around why NO2 was chosen as the proxy (it is probably because it is considered that NO2 is a good marker for traffic related air pollution).

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

1. The age groups should be specified, for example, 30-39 years, etc. It is not clear to me what the five age groups are.

2. What was the response rate to the supplementary questionnaire?

3. The authors should report on the test they used to determine correlation coefficients.

4. In tables 2 and 3, the initial and full models should be described in a footnote to the tables. Also state what SRH is in the footnote. In tables 1 and 2, it may be also useful to indicate which quintiles are ‘high’ and which ones are ‘low’.

5. Please briefly describe fibromyalgia – the readers may not be familiar with this term.

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Needs some language corrections before being published

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