Reviewer's report

Title: Young adolescents’ independent mobility - Related factors and association with transport to school. A cross-sectional study.

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Reviewer: Esther van Sluijs

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BMC PH review 16/03/10

This paper describes cross-sectional analyses related to Swedish adolescents’ independent mobility. Independent mobility has been shown to be associated with active travel and physical activity and with that, is of public health concern. However, as the authors already state in their introduction, independent mobility is generally high in 13-14 year olds and the relevance of the questions posed in this paper is therefore unclear. I also have trouble understanding why the particular statistical techniques applied were used and what it adds to our current knowledge, although this may in part due to my inexperience with this particular technique. Other major concerns include the justification of the research questions, the justification for the data analyzed and the discussion of the results.

Major issues

1. The introduction is currently not very coherently written and lacks a proper justification for the research questions. Although it gives an overview of the research performed to date, I feel it doesn’t clearly identify the knowledge gaps and how this study will and will not contribute to that (i.e. the authors suggest that there may be differences between urban and rural areas, but this is not addressed in their study).

2. On p6 the authors mention that they present ‘selected’ data. It is unclear what this means and on what basis the data was selected. In addition, very little information is provided on the development and validity/reliability of the measures and whether they have been used previously.

3. The description of the clustering technique applied is extensive but it leaves me with the question whether this is the most appropriate way to address the research questions posed. It may be helpful to introduce the statistical technique briefly in the introduction and state how this will contribute to our existing knowledge. The authors do refer to ‘significant overrepresentation’ (p8) and ‘more than expected by chance’ (p11) but no statistical data is presented, was any additional statistical testing performed?

4. Did the authors consider studying the correlation between the variables before including them in the analyses? Some of the conclusions are based around variables that I presume are highly correlated (such as parents not from Sweden, living in an apartment and having no car) and I am unsure if this is a correct
representation of the data.

5. The results section is currently very long and appears to be a repeat of the tables. Moreover, the discussion does seem to simply repeat many of the results as well and I miss a reflection on how these analyses fit in with and add to the current literature and how to move forward from here.

Minor issues:
- The results and discussion section of the abstract currently both seem to present results. Please re-write.
- p5: it is unclear what the authors mean by ‘mobility in the traffic environment’.
- p5: did all 1009 students provide full data (the tables describe 1008 participants) or was data imputed?
- discussion: please include some comments about the representativeness of the sample.
- could it be that cluster 5 consists of adolescents who were not very interested in completing the questionnaires (i.e. missing answers, incoherent responses). Seeing that this is an adolescent population, I would expect some degree of disinterest even in those who do participate.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests