Reviewer’s report

**Title:** Environmental mobility barriers and walking for errands among older people who live alone vs. with others

**Version:** 1  **Date:** 9 September 2013

**Reviewer:** Thorlene Egerton

**Reviewer’s report:**

- **Major Compulsory Revisions**

The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

1. Please comment on what is known about validity and reliability of your measures of ‘walking for errands’ and ‘environmental barriers’. If there have been no studies evaluating the validity or reliability of the measurement tools, please state this in the methods and refer to this as a limitation in the discussion and comment on how the results may be affected. For example are there big differences in ‘walking for errands’ and overall activity levels or exercise participation levels?

2. The authors state in methods (lines 148-150) “We observed a significant interaction between living arrangements and environmental mobility barriers for the odds of low walking activity (p<0.001). Therefore, we stratified the participants according to living arrangements.” Given the title of the paper and the stated aim of the study I think separating the participants by living arrangement is essential to answer the research question. These findings can be reported in the results section. Can you please re-word your description of the data analysis you carried out, so that it more clearly describes how it will answer your research question? It is quite confusing to read. There seems to be one research question but multiple statistical analyses.

3. Line 173 “Distances as an environmental mobility barrier correlated with low walking activity...” I think this statement was based on the findings of the Chi square test (Table 1 data) so I found it confusing that you used the word ‘correlated’.

4. Line 181-184. It is not clear what you mean by ‘interaction’ or which of your analyses this statement resulted from. Again, the analysis section needs to more clearly relate to your research question(s) and your results should be organised in the same way as your proposed analysis to make it easier for readers to follow. Perhaps you can consider including only those analyses that answer your research question as there is currently a lot of data presented in tables.

5. Lines 188-189 “...some environmental mobility barriers seemed to lower the
odds for low walking activity. However, the associations were not statistically significant. If the associations weren’t statistically significantly different that means they probably weren’t different. Please consider altering the sentence so it does not suggest that the odds were lower for some barriers?

6. Lines 238-240 “Consequently, older people living alone may be at a lower risk for functional decline in the future compared to those living with others. However, this needs to be confirmed in future studies.” I consider it not reasonable to suggest that living alone reduces risk of functional decline based on your study data. You did not measure functional decline and the relationship between walking for errands and functional decline is likely to be extremely complex and has not been specifically established. I suggest this section is reworded to better reflect what can be reasonably deduced from your findings.

7. Lines 248-248 “In addition, we were able to adjust our models for walking speed, a valid and objective indicator of the functional status of older people [27, 28].” In the methods section there is no mention of adjustment for walking speed in any of the analyses. Again, I suggest the analysis section be re-written to be clearer, more complete, and to better reflect the research question(s).

8. Lines 252-254 “Most of the participants were living in condominiums and some in detached houses within a radius of approximately 5 km in the same urban area.” I think this is important information for interpreting the generalisability of your results and also for understanding the findings and could be made clearer earlier in the paper. Given all the participants lived in a relatively small area, more information about the actual traffic and terrain aspects of the area would be helpful.

9. Lines 273-275. Further to previous suggestion, you correctly report the association as those living alone had increased likelihood of reporting barriers rather than reporting that those living alone tended to encounter more barriers. And given that the participants all lived in the same area and therefore may have had relatively similar exposure to certain features of ‘environmental barriers’, I’m not sure that you should conclude that the environment needs to be changed. I wonder if perhaps you should consider the perception of barriers as the problem, rather than the barriers themselves.

10. I think your data nicely highlights the complexity of these relationships and I was disappointed to read your simplified conclusions which focussed on changing the environment. I don’t feel your conclusions adequately reflect the aim of the study which was much more complex.

11. (Reviewers question: Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Reviewer’s opinion: No) Overall I think the paper would benefit from stronger links to the existing knowledge on the topic. It is a complex problem and there has been a substantial body of literature looking at the associations between environment and physical activity.
- Minor Essential Revisions

The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

- Discretionary Revisions

These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

Please note that both the comments entered here and answers to the questions below constitute the report, bearing your name, that will be forwarded to the authors and published on the site if the article is accepted.

1. Line 66-67. “..engaging in community walking is an important prerequisite for social participation [4]” Can this be reworded? It implies that social participation can only occur if one walks in the community. There are many ways to be social.

2. The proposed results of the study (Lines 85-87) seem a little overstated. Can this study really achieve these things?

3. Line 109. Suggest changing sentence to: “Participants were informed about the research before signing a consent form.” Or something similar.

4. The paragraph (lines 142-147) is difficult to follow. Can you try and re-word it for better clarity for readers. It would help if you use exactly the same terms for your outcome measures every time you mention them (eg. Walking for errands vs walking activity) throughout the paper.

5. Lines 232-237 “It is a reasonable assumption that people living alone more often need to negotiate the Entrance barriers by themselves.” While this may be true, it may also be worth commenting on the slower walking speed (walking speed is related to health status and functional ability) and the nearly significantly larger number of people reporting health problems in the living alone group. These factors may also explain the reason for entrances being a problem.

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

Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests.