Reviewer's report

**Title:** Assessment of physical activity in older adults: validity and reliability of the International Physical Activity Questionnaire (IPAQ), long interview version

**Version:** 2

**Date:** 20 February 2015

**Reviewer:** Barbara Jefferis

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"Assessment of physical activity in older adults: validity and reliability of IPAQ long interview version"

Van Holle et al

This study addresses an interesting subject area the validity of a widely used physical activity questionnaire among a population of older adults. Given that older adults have the lowest physical activity levels of any age group and that it has proved hard to increase physical activity in this age group, studies which aid us to understand how to accurately quantify activity levels are a very useful for situations where objective measurements of physical activity are not possible. This paper therefore has the potential to make a very useful contribution to monitoring physical activity in this highly inactive sub-population.

**Major Compulsory Revisions**

1. The paper is well written on the whole. I think it would be useful to clarify in the title, abstract and introduction that the authors are testing a modified version of the IPAQ which combines vigorous activity with moderate, adds in gait speed and adds in cycling, - this is essential when considering the wider applicability of these results.

2. Page 6 is the response rate really 508/1135, surely it should be 508/1750 as these were the people who were originally selected for the study.

3. Page nine line 5, did the authors test different windows of continuous zeros? Is 60 minutes long enough for this population? Would it be appropriate to consider longer sedentary bouts eg a TV program might last one hour, and it is plausible that people in this age group might sit for more than one hour at a time.

4. Page nine line 9-10, when making the dichotomy, did the authors insist on >=150 mins/week in bouts of >=10 minutes or just >=150 mins/week in total? Please clarify.

5. Page nine line 12, the two definition of MVPA based on Copeland and Freedson is entirely appropriate as it is explained that Freedson was developed for middle age and is widely used but probably not as appropriate as Copeland which is developed for older adults. However I do not understand why the cut point for SB would vary according to whether Copeland or Freedson is used to define MVPA- I have not seen this approach taken anywhere else. Surely we are
trying to make the best possible estimate of the behaviour, I cannot see why SB criteria should be dependent on the MVPA criteria. I would favour doing some work to evaluate whether 50 or 100 is the better cut point in this dataset and then using one or other. 100 is commonly used in studies of older adults.

6. Page 13, line 15, why is it questionable given the prevalence of overweight? Isn’t it likely that the authors have not calculate meeting 150 min/week in bouts of >=10 minutes - if this was done (the questionnaire specifies that only activities lasting >10 minutes are reported), then I suspect that the estimated of meeting guidelines based on accelerometer data would be vastly different and the conclusions in this section might also change.

7. P 16 line 21- did you test for interviewer effects- did some interviewers prompt the participants more than others and consistently end up with higher self reported PA levels than other interviewers? If so, this should be controlled in the analyses.

Minor revisions

8. Page 6 line 11, please state if the monitor was worn during waking hours or for 24 hours?

9. Page eight line 20, 60" epochs were used, presumably this means 60 seconds. Please use the SI unit s for seconds to avoid confusion

10. Page eight line 21, the reference to the actigraph website is very vague, please either provide a specific url with a link to the exact page, or better still, a link to a published paper.

11. Footnote for table 1 should clarify that total PA is eg 100-1952 or 50-1040 cpm

12. Page 12, line 19- is psychometrics really the right term here?

13. Page 13, line 13 spell out PHR

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

Declaration of competing interests:

I have no competing interests