Reviewer's report

Title: Older adults' reporting of specific sedentary behaviors: validity and reliability

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Reviewer: Yvette Miller

Reviewer's report:

This paper reports on the criterion validity and test-retest reliability of a self-report measure of sedentary activity across multiple domains in older adults. This work is a useful response to emerging needs in the epidemiology and (evaluation of) interventions for sedentary behavior. There are a number of additions suggested to increase the usefulness of this work.

Major compulsory revisions:

1. In the Methods, several references are made to the development of the measure as assessing the range of sedentary behaviours relevant to older adults. How was this established? What formative work was conducted to determine the domains that should be assessed, and the optimal order in which to ask the items to limit duplicate reporting across domains/types?

2. Is there any evidence to support your decision to use ‘last seven days’ recall rather than ‘usual week’ (i.e., what evidence did you refer to or collect in formative research for deciding that this format results in easier recall)?

3. Were the items pilot tested and refined prior to the validity and reliability testing reported here? A brief description of such processes would be useful for highlighting broader issues in assessment of sedentary activity for older adults and how they relate to the strengths of your measure.

4. Given the uniqueness of measuring specific types of sedentary activity in this study, it would be of interest to include the descriptive data for the amount of sedentary time reported for each type.

5. Sub-group analysis for the validity and reliability findings would be a worthwhile addition, and make the findings here more comparable with findings from other studies of validity and reliability of self-reported measures of sedentary behavior. It would also offer some evidence for the assertions made in the Discussion about possible effects of education (for example) on valid reporting. Were there variations in validity for those with higher and lower levels of educational attainment, by gender, etc.?

6. Please justify in the Background/Methods why you chose to use accelerometer data as your sole criterion measure for assessing validity.

7. Please justify why you imposed the exclusion of those limited by their health to walk a couple of 100 metres. It’s not clear why this sub-group would be excluded from a study to measure the validity of sedentary behavior, given they are most likely to be engaged in high levels overall and the attribution of domain-specific
sedentary activity to their overall levels of sedentariness could offer insight into potential for decreasing certain types of sedentary behavior. What are the implications of this for the generalizability of your findings to assessment in older adults?

8. You need to be clear that the validity and reliability reported here is restricted to administration of the questions by interview, and may not be extrapolated to self-completion. Some comment on the likely impact of administration methods on validity and reliability, with reference to other evidence, would be useful for potential users of these measures.

9. Reference to ‘activPAL’ first appears in the Discussion, with no explanation of what it is. Can you explain this and identify how it differs from accelerometer assessment?

10. Is there likely to be a practice effect of having previously (and so recently) completing the survey, which may affect your test-retest reliability assessment? Is there evidence for the amount of difference attributable to practice effects alone (and over different test-retest intervals)?

11. Why was criterion validity assessed against the initial self-report assessment rather than at the second assessment (when the recall period would have overlapped with the accelerometer assessment period)? Although the protocol cannot be changed, some justification for this (over the alternative possible protocol) is needed.

Minor editorial comments:

12. Specify your definition of ‘older adults’ (i.e., >65 years old) in the abstract.

13. Findings of validity of self-report measures in older populations from other studies are reported in hours/day in your Background. Can you please convert to mins/day for easier comparability between these findings and yours?

14. Some of the written language could be improved, e.g., “with 81.88 minutes/day for a mean average” could be re-written as “BY 81.88 minutes/day RELATIVE TO the mean average of the two measurements”. Similar examples are throughout and should be re-worded for clarity.

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.

Declaration of competing interests:

I declare that I have no competing interests