**Reviewer’s report**

**Title:** Test-retest reliability of adolescents' self-reported physical activity item in two consecutive surveys

**Version:** 0  **Date:** 18 Sep 2018

**Reviewer:** Louise Thoma

**Reviewer's report:**

This manuscript describes a study to evaluate the reliability of a self-report measure of MVPA in adolescents. This is potentially an important question for PA surveillance in adolescents. Please consider the following concerns:

General comments:

* What is the meaning for the word "subsequent" in the title?
* Specify in the aims that the reliability is "test-retest reliability". Further, consider the phrasing of the third aim. Currently, it reads as if the reliability of the adolescents is being tested. However, from my understanding of the methods, it is the reliability of the responses when reclassified that is being tested. The adolescents did not complete the measure that has less categories.
* Consider a diagram to describe Line 113-118 regarding initial sample to analytical sample.
* Please describe why the Kappa statistic and ICCs were used to evaluate reliability. It seems it may be related to whether a categorical or continuous version of MVPA was evaluated, however it is unclear in the methods.
* The manuscript is general well written. However, throughout the manuscript, there are several opportunities to be more succinct and direct regarding the purpose, results, and implications of the findings. The introduction and discussion would be easier to read if more succinct and direct.
* In the introduction, the authors review results of similar test-retest reliability studies in and highlight the study design limitations that are may reduced reliability. Further, the authors suggest that the same-say design in this study may improve reliability. However the coefficients reported in the results of this manuscript are generally, and sometimes considerably, lower than the previous studies. Should this MVPA question be considered reliable in adolescents, as the conclusion suggests?
* In the discussion, the authors highlight that reclassifying the response into two categories improves the kappa statistic. While this is true, the kappa statistic remains "moderate".
* Consider being direct with the limitations of this manuscript in the limitations section. It seems that the limitations primarily discuss methods to overcome limitations in the future, rather than describing what the limitations of this analysis are, directly.

Line-by-line comments:

* Line 76-94: Consider making this section more succinct. What are the critical arguments to make and support for this manuscript?
* Line 116: Is this meant to say "after removal of participants with missing data"?
* Line 125: Missing word between "a brief" and "to"?
* Line 151-155: Was this introductory text included prior to the MVPA question in both questionnaires?
* Line 181: What is meant by the sentence "the reliability of [the] MVPA item was examined by [a] correlation matrix"?
* Line 226-227: Refers to "earlier literature" with no reference.
* Line 237-239: What is meant by this sentence?
* Line 249-257: Unclear what the authors are trying to convey in this paragraph.
* Line 259-270: Seems redundant with information in the introduction. Consider consolidating to use in just one of the two sections.
* Line 207-283: Please condense to the critical discussion related to this manuscript
* Line 291-298: The authors discuss the accuracy of light intensity measurement, which is beyond the scope of this study. Please review the discussion to ensure that the topic relate to the aims of this study.
* Line 308-317: Unclear what is meant in the first sentence. Consider making the argument in this paragraph more succinct.
* Line 319-333: This paragraph is primarily regarding the benefits and limitations of objective PA monitoring. Since objective monitoring is not the purpose of this manuscript, it may be excessive to dedicate a whole paragraph to this discussion. Perhaps a sentence or two to address the limitation of self-report is sufficient.
* Line 334-345: Again, the critical argument from this paragraph can likely be condensed into 1-2 sentences. Some of these details have been described earlier in the manuscript.
* Line 347-354: Redundant with information already presented earlier in the manuscript.
* Line 355-365: It seems that this is describing a strength of the study, and not a limitation? i.e. testing same day reduces the chance of behavioral change influencing the reliability. This information is generally covered earlier in the manuscript, and may not be needed or appropriate here.
Level of interest
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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Please complete a declaration of competing interests, considering the following questions:

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