Author’s response to reviews

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

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Version: 1 Date: 29 Oct 2018

Author’s response to reviews:

26th October 2018

Dear Reviewers and editors

Thank you for your time to review the manuscript titled; “Test-retest reliability of adolescents' self-reported physical activity item in two subsequent surveys” and provide suggestions to improve the quality of the paper. We have included point-by-point responses to the points raised by the reviewers.

Kind regards

Authors

encls.

Section Reviewer

Thank you for managing the reviewing process for our manuscript. We have followed up with your suggestion to use the GRRAS checklist and is included as an additional file.
Reviewer 1

Thank you for the constructive comments provided by this reviewer. We are encouraged by the remarks about the discussion section between lines 334-345. We apologies for the lack of editing prior to submissions. The paper has now been examined closely for stylistic and grammatical errors in the background, discussion and ‘instruments and variables’ section. In addition, as requested by the reviewer, we have

- Included reference #32 in the paper
- Spelt out ICC the first time in line 78
- Removed Aim 1908/1400 (line 217)

Reviewer 2

We would like to thank reviewer two to provide constructive feedback to improve the quality of this scientific paper. We have included a point by point response to each comment that star key * with an asterisk and our response starting with the hash key #.

General comments:

* What is the meaning for the word "subsequent" in the title?

# We have changed the term to ‘consecutive’. The dictionary definition of ‘consecutive’, Consecutive events, numbers, etc. follow one after another without an interruption:

* 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.

# The aims now specifically state ‘test-retest reliability’ and we have modified the sentence of the third aim.

* Consider a diagram to describe Line 113-118 regarding initial sample to analytical sample.

# A figure is now included to demonstrate the way cases were removed from the original file to the final 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.

# We have included information about the use of Kappa and ICCs based on categorical and continuous versions of MVPA variable.
* The manuscript is generally 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 made more succinct and direct.

# We have made several edits to the text to make it more succinct and direct. Examples of these can be found from the text with the highlighted changes.

* 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?

# We highlighted the limitations to prior test-retest reliability studies and this led up to our study design and to test the measure after removing this known limitation. Our discussion is based on the three aims of the study and the evidence suggests support for the notion that this single item question has, according to the interpretation of Kappa, almost good reliability as a measure for monitoring physical activity levels based on two categories (the physical activity recommendations). We have included some lines in the discussion of how the results compare with the results reported in previous studies. However, the conclusion that we gave remains unaltered.

* 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".

# We have modified the sentence to include ‘remained 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.

# we have modified the limitations to reflect more on the interpretation of the study rather than overcoming the limitations in the future

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?

# We modified the text so it is more concise and focused on the main arguments for the study design.

* Line 116: Is this meant to say "after removal of participants with missing data"?


# we modified the sentence

* Line 125: Missing word between "a brief" and "to"?

# this has been modified to the term ‘instructions’

* Line 151-155: Was this introductory text included prior to the MVPA question in both questionnaires?

# we have explicated stated that the text was in both questions.

* Line 181: What is meant by the sentence "the reliability of [the] MVPA item was examined by [a] correlation matrix"?

# This sentence was added in error during earlier drafts and has now been removed.

* Line 226-227: Refers to "earlier literature" with no reference.

# We have condensed the discussion, and removed this bridging sentence.

* Line 237-239: What is meant by this sentence?

# we have modified this sentence to make it more readable.

* Line 249-257: Unclear what the authors are trying to convey in this paragraph.

# this paragraph has been edited to follow with our discussions and with other literature.

* Line 259-270: Seems redundant with information in the introduction. Consider consolidating to use in just one of the two sections.

# the information is used to describe how our findings can be compared with previous studies and puts a question about the rationale of the study. We do not want to contribute towards the known reporting bias by describing only significant results, hence we believe this is still an important study to carry out and therefore publish.

* Line 207-283: Please condense to the critical discussion related to this manuscript

# this section has been condensed into areas which are more closely linked with the literature.

* 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.

# we have taken that section out and focus on discussing the study itself.

# we have taken note from the reviewer

* Line 308-317: Unclear what is meant in the first sentence. Consider making the argument in this paragraph more succinct.

# the first sentence has been restricted and the rest of the discussion is now 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.

# we believe this point of discussion is still a valid one to include and in addition to making it more concise, we expand on it to make it clearer why we need to have this type of debate and why this type of study has been carried out.

* 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.

# we have taken note from the reviewer to make it more condense and remove the repeated material

* Line 347-354: Redundant with information already presented earlier in the manuscript.

# The lines suggested have been refined.

* 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.

# these lines have been refined.