Author’s response to reviews

Title: Development and evaluation of the Andhra Pradesh Children and Parent Study Physical Activity Questionnaire (APCAPS-PAQ): a cross-sectional study

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Version: 4 Date: 10 December 2015

Author’s response to reviews: see over
Thank you for reviewing the revised draft. We have made additional changes accordingly. Our response to the reviewer's comments are written in bold letters below.

Reviewer's report

Title: Development and evaluation of the Andhra Pradesh Children and Parent Study Physical Activity Questionnaire (APCAPS-PAQ): a cross-sectional study

Version: 3

Date: 10 November 2015

Reviewer: Alberto Soriano-Maldonado

Reviewer's report:

Comments to the authors:

The authors have improved the quality of the manuscript. As a quick note, however, it was very difficult to review the revised version of the manuscript as the changes were not highlighted in yellow background or similar. Below are some additional comments that need to be addressed.

**We have highlighted the substantive change in yellow for this version.**

Major Compulsory Revisions

I still have a major concern related to the stability analyses. To me, this information does not provide useful information for the purpose of this study. The results do no refer to the same time points and, more important, they do not provide information about the characteristics of the instrument as a measure of physical activity. The authors state in their answer to the reviewers that their aim was to assess reliability but they did not have the data. Therefore, I recommend to completely remove the information regarding stability, and focus the paper on construct validity, which is sufficiently important to warrant a manuscript.

**We have removed the sections and table related to stability analysis.**

Also, clearly state in the limitations of the study that the reliability of the questionnaire is unknown, which warrants further research.

**We have included that the reliability of the questionnaire is unknown in the limitation.**

The discussion is rather short. Please do not miss the opportunity to discuss with previous literature, and interpret further, the results of the validity results. There is a large window for further discussion. For instance, on potential implications for the implementation of the instrument in future research.

**We have made additional points in the discussion to connect with previous literature and interpret key findings in our study.**
Minor Essential Revisions

Additional file 1 is not a flowchart of participants. Please provide the correct file.

** We have added the correct file as Supplemental Information S1.

STATA should be Stata.

** We have changed all instances of STATA to Stata.

The results clearly identified that the questionnaire overestimates MVPA and this issue should be discussed further, since it will have to be considered in the future when the instrument will be used.

** As suggested, we have discussed further on the overestimation issue with MVPA (Line 393-399).

Discussion:

The authors answered my question in my first review on what is meant by “fair” validity, but did not include the information in the text (below the authors answer):

“Fair stability was defined as 0.2 to 0.4 kappa, based on Landis and Koch (1). We expected to see similar variation and levels of correlations for construct validity as PAQs used in LMIC settings such as IPAQ. A validation study for IPAQ showed similar correlations to our PAQ (# = 0.09 to 0.27) (2).”

** We have added this explanation to define “fair” validity in the discussion for criterion validity (Line 367-368).

Conclusions: please remove the first sentence. In conclusions the authors need to only answer the study objective and perhaps a brief perspective.

** We have removed the first sentence.

Table 2: Please specify in the title that this data is from the questionnaire. Please discuss further on the differences between men and women in regards to the validity scores (correlations) and potential implications. For instance, the was no association at all for light PA in men, while in women it was one of the highest. This needs to be discussed.

** We have changed the title of the figure accordingly. We have also further discussed the difference between men and women in the discussion.
Figure 2: There is a large difference on BMI and percent body fat between participants with low and high PA levels. This is suspicious of potential confounding. Since the authors are providing unadjusted results, I would suggest providing the estimates adjusted for age and sex.

** We have included the results from the regression models adjusting for age and sex in Supplemental Information S4. While it is true that this adjustment attenuates the association, the negative association between PA level and percent body fat largely remains, supporting construct validity.

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