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:** 2  
**Date:** 17 March 2015

**Reviewer:** Alberto Soriano-Maldonado

**Reviewer's report:**

Comments to the authors,

The authors present an interesting article about the development, validity and stability of a context-specific self-reported questionnaire to be used as an estimate of physical activity in Indian population. There are, however, a number of issues that need to be addressed. The authors should consider the low-moderate criterion validity and moderate stability values obtained and report conclusions accordingly. Below the authors can find several specific comments intended to improve the quality of the work.

- **Major Compulsory Revisions**

**DISCUSSION**

Line 413: Please specify what the meaning of “fair” is.

With regards to stability, what levels of ICC or Kappa were you expecting? To me, it is more interesting to assess the reliability (e.g. one week separation between measures) than the stability. Also, stability in this context might not be providing much information about the questionnaire itself, but about different physical activities undertaken of the people answering it (even one year later). Therefore, I have some reservations to what extent this information is useful for the study purposes. Please make sure that the reasons why the stability parameters are important in this study are clearly explained in the introduction and discussion sections.

In addition, you dedicate an entire paragraph to stability, when this is probably the least important aspect of the study.

It is imperative to me that a much broader discussion needs to be conducted relative to the criterion-related validity in the discussion section. The reasons for the low correlations and the potential ways to improve the questionnaire need to be discussed.

Line 421 onwards: I do not completely agree with this sentence “Our study showed that test-retest stability of this new questionnaire was fair to very good, with ICC ranging from 0.33 to 0.98 (p <0.001)”. Although it is not completely incorrect, you must bear in mind that most of the ICC values were <0.50, with the exception of TV viewing. That means that most activity levels had a low-to-moderate stability, but TV viewing had an almost perfect stability.

**CONCLUSIONS**
The authors should be careful with their conclusion stating that the questionnaire is a “valid and reliable tool for ranking individuals based on reported physical activity”. Considering the low-to-moderate criterion validity, I would recommend to interpret the results with more caution. Also, the authors have NOT assessed reliability. Therefore, this word needs to be removed from the conclusions.

The authors should reconsider the extent to which the questionnaire might be useful in real settings, especially considering the obtained results, and describe the potential uses of this tool in the future.

- Minor Essential Revisions

General comment on the MATERIALS AND METHODS section: In my opinion, this entire section should be reorganized in three clearly distinct sections: Study design, Measurements, Statistical Analysis. In its current form, the validity and stability information seems to be repeated to some extent in both the measurement and the statistical analysis sections. For each measurement method, you should specify the procedure you undertook to carry out the evaluation, specific sample size or sub-samples used when necessary, etc. The statistical analysis section should describe any data combination and the statistical methods used to analyze the data.

Methods: Please state clearly what the inclusion/exclusion criteria for participation in this study were.

Line 95: I would suggest you entitle this section “Study design” instead of “Hyderabad DXA Study (HDS) design”. Also, please explain (or present a flow chart of participants) how the sample was recruited.

Lines 95-127: In general, I find these 3-4 paragraphs difficult to follow. Please re-write in a more summarized manner, highlighting only the most important information that the reader needs to know about the context of the study and where the sample for each study aim comes from.

Line 105 and 106: Does this mean that the APCAPS is part of the Hyderabad Nutrition Trial? Is the Hyderabad Nutrition Trial also part of the HDS? Please clarify.

Line 107: What is the meaning of “index children”?

Line 135: Please include “the”: in “the” following main domains…

Line 172: Please provide information about the Seca model used.

Line 186: Please change “body percentage fat” for “body fat percentage”.

Line 206: A combined “index/measure”? It seems that a word is missing. Please check.

Line 244-247: Please explain with further detail how was PAEE calculated. It is not clear to the reader and it is difficult to evaluate this section without a more precise explanation. An example might be useful.

Line 262: Reporting geometric mean is appropriate for positively skewed distributions. If this was the case, please report this information.

Line 264: “Stability was examined through the intraclass correlation coefficient
(ICC)"

Line 264-265: Please discuss the reasons you used Kappa coefficient or "Weighted" Kappa coefficient. Weighted Kappa is recommended when ordered categorical data is available (this is perhaps the case; e.g. sedentary, light, and MVPA).


Comments to the Authors:

Line 264: What information is the result of the ICC providing here? Is it the agreement between two measures separated by up to one year? Why is this information important?

Line 276: Please remove “extent of”

Lines 273-277: I cannot see a clear difference between the two first sentences in this paragraph. Perhaps you could clarify.

RESULTS

Line 326-327: Please provide numbers. I would suggest avoiding terms "low" or "high" in the results section. You can appraise this in the discussion.

Line 346-347: Please give numbers for "weak" and for "very strong".

Line 348: Please modify "when participants seen at less than one month from initial test" for "when participants who performed the retest earlier than one month after initial evaluation"... Also, start a new sentence afterwards. "However, the low statistical power...

Line 372: “showed”

Line 392: “had 0.89% lower body fat”. Please modify similarly in the next lines (e.g. line 397).

Line 395: associated with.

Line 406: Please change “increased” for “higher”. Also in line 407

Table 6:

Line 596: With regards to this statement: "2 Categories reflect increasing time spent in specific activity intensity with category 1 as baseline (least time).”

It is not clear to this reviewer how much increasing time the authors refer to. As tables must be self-explanatory without referring to the text, please clarify this for the reader to understand, for instance, what is the difference (in terms of time spent in MVPA) between MVPA Activity 2 and MVPA Activity 3).

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