Reviewer's report

Title: Development of the European Health Interview Survey - Physical Activity Questionnaire (EHIS-PAQ) to monitor physical activity in the European Union

Version: 1
Date: 17 July 2015

Reviewer: Herman Van Oyen

Reviewer's report:

I congratulate the authors for this well done paper. This is a very interesting paper on an important and difficult topic. However I think the paper can be improved if the authors would consider to add following information and reflect on some of the comments.

Major compulsory revision:

• a conceptual framework presented in a graph of what is expected of the instrument
• contrary to the IPAQ instrument, the proposed instrument is setting specific. As this a major difference, the reasons for taking this option should be clarified, including strength and limitations of the approach. Further, can the information obtained been translated to a metabolic equivalent (from table 1, this is only done for transport related PA)? If not, is this considered to be a limitation / strength?

Minor Essential Revisions:

Methods section
1. page 6: can information on the literature search been specified including information on the key words used and a prisma chart (as supplementary file)
2. instrument review: it is unclear what was done:
   a. was it structured with a predefined instrument
   b. was there a link with a conceptual frame work to be analysed
   c. …
3. Fig 2:
   a. unit in the instrument is different for transport (minutes per day) compared to leisure (minutes per week). Is this not confusing for the interviewee?
   b. Q8: no time spend is added: why?. This typical activity may already be included in Q6/Q7 as stated in the intro to Q8. Is there a link to an ECHI indicator?
4. Table 1: why a binary approach for work-related PA as you can at least a difference moderate and heavy. This is also in contrast to the transport related PA for which you proposes quintiles.
5. Table 1 Transport related PA. Quintiles boundaries are always population specific (in case of EU: member states, gender, age categories). How will this be tackled?

6. Table 1 and related text: Is there a reference that will be used to define the met / define the intensity related to walking / cycling in order to standardize the calculation?

7. Discussion: you may make add information on additional validation work going on, such as validation against objective measures in the 2014 nutrition survey in Belgium

Discretionary Revisions:
1. page 5, line 3: GPAQ is too long. In order to appreciate please give an indication on the length of the instrument (e.g. by stating the number of questions)
2. page 5, line 7: the first use of the IPAQ-SF was a modified version. The critique of PA experts was that deviation of the original version was the main cause of problems encountered. Can both versions be presented in a table as supplementary information.
3. page 5, paragraph 3: IPAQ-SF was cognitively tested in 3 countries. However the authors do not make reference to the (grey ?) literature as I expect that in the process of the development of the IPAQ-SF, cognitive testing have been done.
4. page 6, line 1. 3 standalone indicators
   a. does this mean that there is not information on total PA?
   b. is there an age range considered (younger bound, older bound)
   c. is there an indicator of lack of PA
   see comment on conceptual model to specify this.
5. pag 6: please provide a reference to the results of phase 1.
6. page 7, 2nd paragraph line 6: the amount of questionnaires => the amount of instruments

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
Do you have any non-financial competing interests in relation to this paper?