Author's response to reviews

Title: Awareness of moderate-to-vigorous physical activity: Can information on guidelines prevent overestimation?

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Author's response to reviews: see over
Dear the editor,

We have read through the two expert reviews provided for our manuscript: ‘Awareness of moderate-to-vigorous physical activity: Can information on guidelines prevent overestimation?’ We thank the reviewers for lending their time and expertise to critically read our paper and provide their insights. We believe this work has been improved as a result. We have considered every comment and in most cases made the recommended changes. On the few occasions in which we have not enacted the changes as suggested we have provided our reasons for not doing so and have attempted to add clarity within the manuscript where required. Please find our point by point response below. Many thanks.

Reviewer 1

Comment: Methods, measures: The question around knowledge of MVPA seems incomplete, there are many different PA guidelines (e.g. for weight loss, fitness, colon cancer prevention)....

Response: The question adopted was intentionally vague in order to capture unprompted knowledge of guidelines however we recognise that the point raised above is a limitation of this measure. We have now included this acknowledgement on lines 270-271.

Comment: Methods, measures: Please clarify, people could not see the awareness questions when answering the knowledge questions?...

The authors also refer to ‘sufficient’ activity levels in that same paragraph, though the question itself does not refer to sufficient or insufficient...there seems to be a mismatch here!

Further, what is the validity of the 1 question item to assess current level of physical activity? Is a one-item questionnaire really sufficient to assess activity levels?

Response: We can confirm that participants could not see these two questions at the same time. This is now stated on lines 144-145.
Sufficient was the midpoint of the very low and very high scale (i.e. number 3 of the 5 point scale was labelled as sufficient). This is now stated on line 141.

The single-item PA measure has been validated. This reference has now been added on lines 136-137. The limitations of self-reported PA are discussed in the limitations section.

**Comment:** Statistics: why were two logistic models run, why wasn’t walking pace in the same model as all the other variables predicting correctly assessing PA levels?...

**Response:** We included perceived walking pace in a separate model because it is an entirely novel variable for which there is no directional hypothesis and so the limit for entry into the model was set at alpha=0.05. For both perceived health and subjective norms we were testing a specific directional hypothesis and so the limit for entry into the model was set and alpha =0.1. We have tried to make this reasoning more explicit in the manuscript. We agree that the sentence on lines 194-196 was redundant as the decisions to have two models was not based on a lack of associations between the variables. We have therefore changed this sentence.

**Comment:** Results: how do the authors know that the demographics of those who answered the questionnaire were similar to those who didn’t?

**Response:** Lines 174-175 state ‘These individuals did not differ demographically from those who did not complete the survey’. Demographics were the first questions on the survey and the majority of the ~600 participants who started but did not finish the survey provided this information. We were therefore able to compare between completers and non-completers.

**Comment:** Discussion: Can the authors report what level of knowledge and awareness were reported in study [26]? So the readers can judge for themselves if there has been no progress at all in the last 3 years.

**Response:** The paper cited in reference 26 (now reference 27) compared the knowledge data reported here with knowledge data from 2011 statistically and found no difference. We have reworded this sentence to make this fact more clear.

**Comment:** Discussion: The authors should acknowledge the evidence that shows that even slow walking results in some health benefits; anything is better than nothing.
Response: This is a good point and we recognise that walking is a positive and healthful behaviour even if it does not accumulate MVPA. We have therefore reworded lines 272-273 to acknowledge this point made by the reviewer.

Reviewer 2

Comment: 1. Please modify the aim of the study given in the abstract similar as stated in the manuscript.

Response: The abstract has been modified as suggested.

Comment: 2. I recommend to present OR with 95% CI also in the abstract. Present give exact p-values with 2-3 decimals, not only “p<0.005”, throughout the abstract and manuscript. We have also changed the p-values as requested.

Response: We agree that this would be useful for the reader and have so added the OR and CI both in the abstract and throughout the manuscript.

Comment: 3. Please give reference (Haskell et al. 2007) on page 3, line 60, “…150 minutes week of…”.

Response: This line is merely summarising the five guidelines which are cited in the previous sentence. As these are the most recent national guidelines for the four most relevant English speaking countries and the WHO guidelines we do not believe this additional reference is necessary.

Comment: 4. The term “accurate awareness” seems odd to me.

Response: This term is in keeping with the existing literature based on awareness of physical activity behaviour.

Comment: 5. There are some studies published concluding that believing themselves being inactive may reduce the motivation for MVPA…

Response: The research significantly suggests that overestimating MVPA is associated with reduced motivation for MVPA with little focus on underestimation and so we have focused our study on overestimation. We are happy to include any
references suggesting the underestimation can also reduce the motivation for MVPA should the reviewer believe them to be of high importance.

Comment: 6. The definition of “accurate awareness”, how was accurate response defined, only when “5” on the five-point scale and 30 min MVPA seven days a week?

Response: Lines 138-140; ‘Individuals were labelled as being accurate if their responses to these two items matched i.e. they reported engaging in MVPA on less than five days and described their activity as being less than sufficient’, describe how accurate awareness was defined. The clause on line 140 ‘(3 on the Likert scale)’ has been added for more clarity.

Comment: 7. Please give more information with respect to reference 23.

Response: The additional detail has been added. Please note this is now reference 24.

Comment: 8. Please use similar number of decimals in table 1 and 2.

Response: The tables have been checked and the decimals are now all to 2 dp.