Author's response to reviews

Title: Joint association of physical activity and body weight with subsequent physical and mental functioning: a follow-up study

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Author's response to reviews: see over
**Response Reviewer 1**

Version: 3 Date: 11 February 2013

**Reviewer:** Cindy Gray

**Reviewer's report:**

I think the authors have done a very good job addressing the points I made. However, there is still one clarification with regard to my points that I think should be made. See below:

**My original point:** P13, Line 8 most studies that I am aware of do find that people overestimate their height and underestimate their weight so I am not convinced by this argument.

**Response:** We agree that people usually overestimate their height and physical activity while they underestimate their weight. However, the referred study (Lang, Guralnik et.al. Physical activity in middle-aged adults reduces risks of functional impairment independent of its effect on weight, J Am Geriatr Soc) found that such overestimation and underestimation did not change the main outcomes of the study. The focus of the study was on the association between physical activity and subsequent physical functioning in middle-aged adults across a range of BMI categories. Both self-reported and measured height and weight data were used and the results were in broad agreement: “In this study, both measured and self-reported performance was assessed, and the outcomes suggest they were in broad agreement.” In a study on different measures of body weight as predictors of sickness absence on the present data (Korpela K et al. Different measures of body weight as predictors of sickness absence. Scand J Public Health. 2012) it was shown that self-reported BMI performed equally well as measured BMI. We have now revised the sentence to be clearer. We have also added that people usually overestimate their height. “The limitations include self-reported measures. These might cause overestimation of physical activity, overestimation of height and underestimation of weight [37]. However, it has been shown [24] that self-reported and measured weight and height outcomes are broadly in agreement.” (Page 14, line 7).

**My current point:** I accept the authors’ argument as laid out in their response. However, I still think there is room for confusion in the paper, and it should be made clearer that they are not suggesting that self-reported and measured height and weight are usually the same, rather that self-report vs. measured have been shown to have no impact on the outcomes of interest (if I understand what they have said in the response correctly?)

**Response:** The manuscript is now revised, as suggested, page 13, line 22-24(added text is shown using red font).

“However, it has been shown [24] that the self-reported and measured weight and height predict health outcomes broadly in a similar way are broadly in agreement.”

**Additional points**

P3 lines 12-13 – the added text is not good English and should be rephrased

P4 line 16 “whereas the effects of low-intensity exercise are unknown” – do they mean low and moderate intensity?
P5 line 6 – I think less active is fine here

There is at least one occasion where the units for BMI have been omitted. This should be rectified.

P10 line 19-21 Is the following all about overweight people? Is so can this be made clearer?

“The mental functioning was poorer among the overweight inactive participants, while the mental functioning among the moderately and highly active participants was approximately the same.”

P11 (bottom of page) This sentence doesn’t read very well. “Maintaining normal weight may also prevent several diseases [4] and mobility disabilities [34] owed to overweight which both contribute to physical functioning.”

P14 (end of Conclusions) “Efforts should be made to emphasize people to engage in physical activity regardless of their body weight” does not make sense semantically.

Response: These sentences are now revised as suggested.

Table 2 and 3 – why are the percentages not given to one decimal point, when differences are?

Response: The percentages in the tables are given without decimals, to condense the information. Instead the differences are given with one decimal point since, particularly in mental functioning, the estimates are low.

P7 line 12-15 I am not sure exactly what the following means? “The follow-up cut-off point for the lowest quartile was also applied at baseline to clarify the differences between baseline and follow-up functioning.”

Response: We are referring to the cut-off point used for the lowest quartile of health functioning. Since the functional status changes over the follow-up (for example the physical functioning declines) we had to choose between using the baseline or the follow-up cut-off point. Using separate cut-off points for baseline and follow-up would mislead the percentage differences. We have revised the text to clarify these issues, page 7, line 10-12.

“The follow-up cut-off point for the lowest quartile of functioning was also applied at baseline. This helps compare to clarify the differences between baseline and follow-up functioning.”

Finally, there are a number of typos, instances of poor punctuation (e.g. missing commas) and grammatical and semantic errors. I think this is an important paper that should be published, but the manuscript should be carefully re-read to eliminate these errors to ensure that the points that are being made are clear.

Response: The paper is now carefully re-read and the language is corrected (shown using red font).
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
'I declare that I have no competing interests

Response Reviewer 2

Version: 3  Date: 3 February 2013

Reviewer: Gavin Turrell

Reviewer's report:
I am satisfied with the authors response to the reviewers concerns

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'