Reviewer’s report

Title: Concurrent validity of the Fitbit for assessing sedentary behavior and moderate-to-vigorous physical activity

Version: 1 Date: 29 Oct 2018

Reviewer: Reviewer 2

Reviewer's report:

"REVISION ASSESSMENT FROM THE ACADEMIC PEER REVIEWER:

Has the author addressed your concerns sufficiently for you to now recommend the work as a technically sound contribution?

Yes

Reviewer comments: Dear Authors,

Firstly let me commend you on your amendments to the manuscript.

I particularly like that you have added additional statistical analyses (MAPE and equivalence testing) as suggested to provide a deeper context for your results. Equivalency testing is recommended by experts in the field of physical activity monitoring (I have had requests for this statistic on numerous prior manuscript submissions myself). Therefore it is encouraging that you've made extensive edits to your manuscript to incorporate this.

It is good to see that you have provided additional details in the Methods section regarding the devices and how the data was handled. This is particularly useful for readers to understand the device components, decisions around anatomical wear location and transparency with the statistical processing/data handling.

I understand that it is not always possible to validate against a criterion measure. Given that you have expanded on this in the manuscript I think the concurrent validity approach is adequate. Perhaps you could emphasise the Actigraph GT3X+ is a 'research-grade' monitor. This terminology has been used before for the Actiheart and SenseWear Armband for comparison against consumer wearable devices.

I am not precious about you including more information regarding the non-wear time description, this is at least referenced. Thank you for considering my prior comment and providing a detailed and open explanation for why you did not feel this information was necessary.
While the study design itself has not changed, the additional statistical analyses added allow you to more deeply describe your findings in the context of concurrent validity. You have also addressed some of my concerns as limitations which is pleasing as the reader can now consider these when interpreting your data. Therefore, I recommend this manuscript for publication.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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