Reviewer’s report

Title: Reference data on hand grip and lower limb strength using the Nintendo Wii Balance Board: A cross-sectional study of 354 subjects from 20 to 99 years of age

Version: 0 Date: 06 Nov 2018

Reviewer: Paul Comfort

Reviewer's report:

This is an interesting and generally well written manuscript, which highlights some key flaws with strength testing procedures commonly adopted in older and clinical populations. As a result, this research could help to enhance such testing within these populations and therefore enhance the future research within this field. There are, however three key areas which need to be addressed:

Have these testing measures been validated and compared to currently used methods and / or the 'gold standard' methods which the authors refer to within the Introduction. This should be explored in more detail within the Introduction and Discussion, especially relating to areas of future research.

Much greater detail is required within the methods regarding postures that were adopted during testing and the analysis of the force-time data. Why only use peak force and not force at specific time points, which may be more important in the case of falls prevention and arresting motion in the case of a fall. For the leg strength measure, was the same process adopted as that reported for the hand grip, whereby an additional trial was performed if the coefficient of variation was >10%? Was any familiarization performed to aid in the reduction of the variation?

In addition, it would also be better to ratio scale (provide the values relative to body mass) the strength values, as this provides a fairer comparison between sexes. The effect of body size / mass on strength is included within the discussion, so it is important to provide the data in this format. If word count / formatting permits, providing both absolute and ratio scaled values would be advantageous, if this is not possible, ratio scaled values would be preferable to absolute values.

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

No

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.

I am able to assess the statistics

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

Acceptable

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