Reviewer’s report

Title: Test–retest reliability of tip, key, and palmar pinch force sense in healthy adults

Version: 1 Date: 14 Nov 2019

Reviewer: Ruud W. Selles

Reviewer's report:

This study describes the reliability of tip, key, and palmar pinch force sense in healthy adults by measuring force sense with a one-week interval. The study shows that the reliability is fair to excellent and provides a detailed account of the measurement error.

Although potentially an interesting concept, force sense does not seem to be commonly used as a measure in clinical or experimental studies. Overall, this relatively small scale study reporting only reliability seems well-performed, clearly analyzed with appropriate methods as far as I am aware of and clearly written. However, I do have a number of specific comments and concerns.

Force sense is not a very well-used concept although previously reported. It would help if in the introduction the authors would precisely define what it is and describe how it is measured, for example summarizing the protocols in the studies mentioned in line 49-50.

Line 3: "quantification of manual function is the evaluation of a subject's maximum gripping and/or pinching strength." I think "function" is too broad a concept. Maximum strength is a measure of muscle function, while manual function could encompass other things such as, for example, what kind of grips someone can make.

Line 35: "It may be that the pinch force sense is more important than maximal pinch strength in the performance of daily manual activities such as holding a knife, fork, or spoon, using chopsticks, clipping ails, holding a pencil, opening food packages, and turning a key in a lock [5-8]." From looking at the abstracts of these 4 papers, I do not understand how all four (if any) really support the statement that force sense is more important that maximum strength. Which findings support this? This statement needs to be further clarified or omitted.

Line 140: It is not clear which the 95% CI refers to. Readers may mistake this for the 95% LOA.

The Table legends need some further detailing of what could be seen in the Tables, including a specification of the abbreviations. Throughout tables and text, it is important to add measurement units. In addition, Tables and text report more decimals than the actual measurement accuracy would allow for. Reducing this will also increase the readability.

The Tables are very difficult to read in the current format although this may potentially be solved in typesetting the manuscript and be removing decimals.

Some of the text in the results could be placed in another table or maybe omitted. Presently the text is difficult to read with some many outcomes reported in detail.
Discussion
First sentence: I do not understand this very general statement. Please specify.

Overall, I think for this relatively small and focused research question, the length of the discussion could be strongly reduced by just summarizing the findings, relating them to other literature and discussion the limitations.

Figure 2: I do not understand why each step has the same distance on the screen while step from 0 to 10% is smaller than from 10-30%. Was the force not linear?

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.

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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