Reviewer's report

Title: Universal goniometer and electro-goniometer intra-examiner reliability in measuring the knee range of motion during active knee extension test in patients with chronic low back pain with short hamstring muscle

Version: 1 Date: 26 Oct 2018

Reviewer: John Dixon

Reviewer's report:

I thank the authors for revising this manuscript. Some of my comments have been addressed. However there are still some issues, and some issues have become clear in the revised manuscript that were not clear before.

KEY POINTS - study design and precise methods:

Firstly this is labelled as Inter-rater reliability. Inter-rater reliability is the level of agreement between raters or judges. That does not seem to be what is in this study. I cannot see that there was more than one rater (or if so how many there were). Note the newly added text at the end of the Discussion (page??) shed some light on this; but this needs to be clearer in the Methods and it indicates there is a possible misunderstanding about the meaning of inter-rater reliability.

Secondly, in the methods section, it is not quite clear at how many time points the measurements were taken (my original query/point 2). The design and statistical analysis set out in the Methods does not seem replicable to me. Again the newly added text at the end of the Discussion (page??) shed some light on this - that this was all within one single session. But this needs to be clearer in the Methods.

Note that Table 2 seems to suggest to me that this study used 3 measurements in a single session to determine the within-session reliability of both methods. However I am not sure from the written text if this is the case; the written manuscript needs clarifying. Apologies if this sounds pedantic but, as written, it is not clear enough to the reader.
ABSTRACT:
Linked to the above, the abstract needs revising and should include the time points of the reliability measurements.

BACKGROUND:
Page 1 last para: clarify why AKE is "better".
In this section you should summarise the findings of previous studies that have examined the reliability of hamstring length, and clarify what gap in knowledge you are addressing. This will add a rationale for your study.

METHODS:
Sentence 1 (highlighted) - please clarify the detail of the study design and analysis here. As stated above Table 2 seems to suggest to me that this study used 3 measurements in a single session to determine the within-session reliability of both methods. However I am not sure from the written text if this is the case; the written manuscript needs clarifying.

The data analysis section needs clarifying also to make clear precisely how the analysis was done.

DISCUSSION
This section needs revising because, as written, I do not believe you have measured Inter-rater reliability. It looks to me that you assessed the within-session reliability of measurements in two methods (but note you only descriptively compared between the two methods).

Overall, this section is largely descriptive.

Please also discuss why you have markedly different mean (SD) results from the 2 methods used. This is important as it goes to validity and could be a very important finding.

OVERALL - the written scientific English could still be better in places. This can lead to a lack of precision at points.
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:

Needs some language corrections before being published

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