Reviewer’s report

Title: The iPhone Measure App level function as a measuring device for the weight bearing lunge test in adults. A reliability study

Version: 0 Date: 07 Apr 2019

Reviewer: Ian Mathieson

Reviewer's report:

Thank you for submitting this article. I have a number of comments for attention;

- In the abstract, background, an additional sentence could be included between the first and second sentences related to the (putative) link between ankle joint range of motion and pathology. E.g. 'Ankle joint range of motion is frequently assessed by health care clinicians who manage lower limb pathologies due to a perceived...'
- Line 3, background. ‘...known negative impact'. Again, the putative, complex nature of the link could perhaps be acknowledged.
- Line 12, background. 'Reassessment of measures used to determine success'. Maybe, but more likely to be pain and/or functional limitation - patient-oriented outcomes. Discriminating between patient-oriented and clinician focused outcomes would help balance the article.
- Line 28. Use of term 'precision'. In the abstract the terms reliability and validity are used. Stick to a consistent technical language.
- Line 22, Methods. Terminology - leg straight and knee bent; knee flexed and extended would be better, as is used later on.
- Line 24, Methods. Define concurrent validity either here or earlier. Generally, provide referenced technical definitions for key terms. In the discussion there may be room for some discussion of this class of validity and other forms that may warrant investigating in the context of this type of study.
- Use of two raters with post-graduate research training who use the WBL routinely during clinical practice. Implications for external validity - does this provide a representative insight to the potential that the measurement technique has for the wider body of clinicians in practice?
- More information on protocol refinement process would be useful. Common errors? Issues identified? Changes made?
- I can see that there were 21 subjects, and 2 clinicians. I can also see that there was a preconditioning step, whereby subjects held the WBL positions for 30 seconds, 3 times. I can also see that there were a total of 168 measurements. However, I can't seem to find the number of repeat measures conducted by each rater on each subject, how this links to intra- and inter-rater reliability assessment. More information - a simple flow chart - would help clarify this.
- Blinding raters to the subjects is a useful technique for increasing the quality of measurements - internal validity.
- Statistical analysis is appropriate.
- In the discussion there is acknowledgement of the limitation incurred by using experienced raters
and not including a novice for comparison. This is a very important point, and impacts significantly on external validity, compromising the conclusions that can be drawn. It may be more appropriate to state that this is an initial exploratory proof of concept study to determine whether clinically acceptable levels of intra- and inter-rater reliability can be achieved by experienced clinicians prior to wider evaluation of how this reliability transfers to the wider population of clinicians.

- 2nd page of discussion, final paragraph line 53. 'Suggested' would be a better word than 'promoted'.

- Final sentence of discussion. 'Appropriability' is an unusual word. I couldn't find a definition in the Oxford English dictionary, but did find a definition through a general web search. In relation to economics: 'The environmental factors that govern and innovators ability to capture profits generated by an innovation'. I think appropriateness would be better, and think this is your intended usage.

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An article of limited interest

**Quality of written English**
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