Reviewer’s report

**Title:** Reliability and Validity of a Novel Kinect-based Software Program for Measuring Posture, Balance and Side-bending

**Version:** 1  **Date:** 13 Nov 2017

**Reviewer:** Patrick Pabian

**Reviewer's report:**

Thank you for this submission. I enjoyed reviewing and appreciated the rigor and considerations that went into this study. I feel that this study adds to the body of literature and will be useful to researchers who are considering or using the instrumentation involved. I have some small edits and questions that I would like to interject for your consideration.

Abstract:

Background: "systems are expensive and impractical" & "is an easy to use clinical measurement system" - this statement is being delivered in a manner stating fact, when it appears to be the opinion of the authors. This sentiment is echoed in the background section later as well. Please revise or appropriately cite..

Results: "p=.000" should be edited due to lack of ability for the authors to distinctively specify this exact p value. The more appropriate reporting should be written as p<.05 or .001, whichever the author chooses, in my opinion.

Background:

As above, 3-D systems are expensive and impractical for everyday use. This statement should be cited or revised as it appears to be stating an opinion of the authors in a manner that is simply to be accepted by the reader.

Why did the authors choose to assess balance, posture, and sidebending? No rationale is stated.

Internal consistency of the Qinematic? Was a factor analysis conducted to justify combining the scores? What was the influence of using Movement #1 in both Posture, and Balance domains?

Are there implications of Movement #1 being located in two different domains (both posture & movement)?
Why is there no internal consistency statistics reported (cronbach's alpha) for the variables that are being combined into or considered within a single domain?

BTS Elite System - are there previous studies reporting the validity and reliability of this apparatus and/or the methods used?

Validity section - pg 19 citation needs to be edited in line 403, same of pg 22, line 467, and again two more instances.

Very good information and rationale in regard to the use of nonparametric statistics. Also, a very good discussion section interpreting the data in consideration of other studies. Once completed, this should be a very valuable contribution to the literature.

**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:

Needs some language corrections before being published

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