Author's response to reviews

Title: Reliability, construct and discriminative validity of clinical testing in subjects with and without chronic neck pain

Authors:

René Jørgensen RJ (rejo@ucsyd.dk)
Inge Hansen IR (iris@health.sdu.dk)
Deborah Falla DF (deborah.falla@bccn.uni-goettingen.uni.de)
Birgit J Kristensen BJK (bjuul-kristensen@health.sdu.dk)

Version: 4 Date: 13 November 2014

Author's response to reviews: see over
Dear all,

Thank you for your comments
Find below a point-by-point description of the changes made in the revised manuscript based on comment from the two reviewers.

A sentence has been added as a footnote under table 1 covering the origin of the images used. “The pictures were produced for the purposes of this study. The subjects appearing in the pictures have provided consent to publish”

Kind regards
René

Reviewer’s report
Title: Reliability, construct and discriminative validity of clinical testing in subjects with and without chronic neck pain
Version: 3 Date: 11 October 2014
Reviewer: David Walton

Reviewer's report:
Congratulations to the authors on a job well-done with this revision. My comments below are discretionary only, I feel confident that the authors and associate editor can address these without requiring further review.

Thank you very much for your comments. They have now been answered in the following.

Pg. 5, line 111: I get the point, but I would argue PPT at least is a psychophysical measure with a high degree of subjectivity (i.e. is this painful or not?), so might want to soften this statement a bit.

Answer: Sentence line 112 has been rephrased

Action: “, which are two fairly objective tests, thus limiting potential bias”

Pg. 10 Line 229: In order for construct validity to be interpretable, you should provide some a priori estimates of magnitude (strong, moderate, weak, none) and direction (positive, negative) as hypotheses, then you can relate back to those hypotheses in the results/discussion to indicate whether they were supported by the data.

Answer: Since the literature on the area of construct validity of these clinical tests is limited, we found it difficult to describe more specific hypotheses on magnitude and directions on this area. Therefore, in order to interpret the magnitude we have chosen the scale of correlations from a similar scale (ICC). Since interpretation from the spearman is known to be difficult, we also included statistical significance testing.

Action pg. 10 ll.230-237
“Correlations were interpreted as for the ICC: 1.00-0.76 (strong), 0.75-0.41 (moderate), and 0.40-0.00 (weak). Positive correlation coefficients indicate positive associations, negative indicate negative associations. Since interpretation from the spearman is known to be difficult, statistical significance testing was included.”

Pg. 11 Line 267: Remove the word 'significantly' since this isn't an inferential test. I might suggest something like "...the mean differences between cases and controls fell within the respective MDC on all tests."

Answer: This has now been performed.
Action: Significantly has been removed from the sentence and sentence has been rephrased in pg 11 ll. 269-70.
“…however, the mean differences between cases and controls fell within the respective MDC on all tests.”

Pg. 12 Line 292 and others: The first sentence under each of the test subheadings in your discussion is fairly redundant with what was presented in the results so could be removed for readability. E.g., here you could start with 'This is the first study to examine the reliability of...'"n

Answer: Thank you for your comment. We would very much like to keep this to increase readability, since the readers don’t have to go back to the results section or tables for the information.

Action: None is performed

Pg. 13, Line 318: I appreciate the test descriptions in the Appendix, but I still feel that the main text of the manuscript should stand on its own. The description of the laser as 'behind the subject' vs. 'attached to the head' is not clear (until I saw your picture I thought 'behind the subject' meant the laser was attached to the head but projecting backwards rather than forwards). Any way to revise this slightly so that it's more clear the laser device was separate from the subject, measuring distance between point a (presumably the laser) and point b, which appears to be on a headband but I can't tell exactly what it is.

Answer: This has now been changed as suggested.

Action: Sentence rephrased in pg. 7 ll. 167-70.

“JPE was examined following return from active rotation, flexion, and extension movements by measuring the reposition error. A laser beam was positioned 1 meter behind the subject, and the laser was projected to a cm ruler attached to a cap which the subjects wore. Data was registered in millimetres (mm)."
Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests: I declare that I have no competing interests

Dear authors,
I think the changes based on the reviewers’ comments add to the readability of the manuscript. Most comments are answered sufficiently, however three questions remain unanswered:

Thank you very much for your comments. They have now been answered in the following.

1. I refer to point 1 in my previous report.

   a. I do not see the changes in the title of table 3. You can even consider an extra subheading in your table with ‘clinical tests’ and ‘performance tests’. Furthermore, table 7 and 8 have long titles. I would suggest to use a title as intended in table 3 instead of naming all separate tests. Also, I would recommend to use the same order of tests in those tables, where possible.

   Answer: Thank you for your comment. The words: Clinical and performance tests have been added to Tables 3, 7 and 8, and the titles have been shortened.

   Action: Title names have been changed, now including both clinical and performance tests. Further, title names have been shortened, and the same order of the tests in Table 3 as in tables 7+8 have been used.

   b. I was not only talking about the tables, but also about the text. For example in the methods section under clinical tests, you also describe performance tests. Furthermore, in both discussion and conclusion you name only clinical tests but you also report on performance tests.

   Action: The order of tests have now been changed so it is the same order throughout the text (methods, discussion and conclusion) as described in Table 3. The words ‘clinical’ and ‘performance tests’ have also been inserted to highlight which are clinical tests and which are performance tests.

2. I refer to point 2 in my previous report. I was looking for an explanation why it is allowed to use whole-group results, because reliability numbers rely on population characteristics. The discussion reveals that you do so, because there is no systematic bias for any of the tests (between groups) as revealed by Bland Altman plots. Is that correct? If I understand this correctly I was looking for this comment in the statistical analysis section.

   Answer: This has now been clarified in the statistical analysis section.

   Action: A comment has been added in the statistical analysis section pg. 9 l. 225
“Whole group results will be displayed if there is no systematic bias for cases or controls”

3. I refer to point 7 in my previous report. The flowchart really helps out, however I’m still not able to reproduce your study protocol. Is it somehow possible to provide the flowchart with time intervals for intra- and interreliability testing?

Answer: Please see below.

Action: The flowchart has been provided with a time interval for both intra and inter-reliability testing (see below.

Furthermore, I found two small inconsequentials:

4. Table 2, subheading: you should use SF36-PCS and SF36-MCS instead of PCS and MCS.
   Answer: This has now been corrected

5. Table 6 has .. at the end of the title.
Answer: This has now been corrected