Reviewer's report

Title: Inter- and intra-observer reliability of clinical movement-control tests for marines

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Reviewer: Hannu Luomajoki

Reviewer's report:

General

The paper is well organised and written. The topic has actuality. Although similar studies have been published (and they are acknowledged in referencing), there have been no papers on high load tests and on soldiers or sports people (which might be similar on their loading levels). However, I would like to address some critical points and help to improve the paper.

Major Essential Revisions

1. You call this test battery “movement control tests of lumbar spine and lower limb”. However, I can see only one test regarding lower extremity SLKB + LL. And also by this test, it seems that only the alignment of the lower back is controlled. So, I do not think there is much of movement control tested of the lower extremity. If so, I would like to see the lunging from front and assess whether an adduction of the knee is happening and whether the pelvis stays in horizontal etc. And of course tests like one leg standing knee bending, squatting and some jumping would be more adequate for movement control of the legs.

2. I have also some difficulties with all these abdominal tests (BKFO and DLL-L; DLL-ALE; DSLL). Four of the six tests are actually more or less testing the abdominal muscles. Can we call them movement control tests? Are they not testing more the ability of the abdominals to control for the stability of the pelvis and lumbar spine?

3. I also wonder, how functional these tests are? Are marines experiencing difficulties with their back while lying supine? Are these functions (the test positions) typical in all day duty by marines?

4. If movement control is the focus, why not use tests which are already published but adapt them to more high load?

5. So, I think you might rethink the name of the testbattery and the abilities tested
and accordingly rethink the title of the paper?

6. I would like to see more information describing the exact instructions to the participants in the study. How do you tell the participants what to do? Can you publish the standardized instructions?

7. Figures: there is always a notion “reproduced with permission from Movement Performance Solutions”. Does that refer to the picture or to the test itself? I can not imagine that some could “own” a certain test where you would need a permission. So, I think that permission should be omitted.

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Discretionary / minor Revisions

You collected both a symptomatic and asymptomatic population. However, the level of pain was only NRS >1/10, which is very little for the subjects to be labelled as “patients”.

I wonder whether Sensitivity and specificity are the correct labels here, as they would be used when you have a clear reference standard. Here the reference is only, if the second group has more pain than 1/10 NRS. So, basically for a diagnostic test you do not need this test battery (as the reference standard is pain or not – you could just ask if they have pain – without testing). I wonder whether Odds ratios would be more adequate to display the differences between the groups.

Otherwise the tables and statistics are clear and carefully documented.

Statistical review: Page 10. Last paragraph of analysis. I think “the lower the AIC value generated the better the fit of the model”: I think this should be “the higher”. Please check with a statistician.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

'I declare that I have no competing interests'