Reviewer's report

Title: Reduced thoracolumbar fascia shear strain in human chronic low back pain

Version: 3 Date: 29 June 2011

Reviewer: Einas Al-Eisa

Reviewer's report:

Thank you for inviting me to review this interesting article, for which I have the following comments:

Discretionary revisions
- It is advisable to use the term “gender” instead of “sex”.

Minor essential revisions
- Please explain the superscripts in Table 2
- There are 6 movies. I advice the authors to select only 2 of those showing clearly the thoracolumbar shear strain in LBP vs no-LBP participants.

Major compulsory revisions
- Although the study seems to be a continuation of previous work by the authors, the question and relevance of this particular study was not clearly defined. The authors could elaborate in the introduction to bring this paper in the context of previous publications, with emphasis on the novelty in this study.
- The methods section is too long, and could be made more precise with special attention to the following:
  # The validity and reliability of the testing instrument and protocol were not reported.
  # The authors need to justify the use of the motorized articulated table, and the choice of passive as oppose to active movements. This may be due to the constrains of the ultrasound application, and if so, the authors should highlight the shortcomings of this approach.
  # The detailed description of the ultrasound data processing may not be necessary.
  # Page 10- 1st paragraph under “Clinical Measures”: this information should be mentioned in the introduction.
  # The authors report that the number of physical performance tests was kept to a minimum. This raises a question: was the number of repetitions standardized across participants? Was it possible to capture true capacity when subjects were instructed to avoid fatigue or discomfort?
  # In regards to the functional measures, the order of testing should be reported.
  # In the statistical methods section, there was a mention of hip internal and external rotation, while this was not mentioned previously in the procedure.
The use of Spearman’s rank correlation is not appropriate given the number of correlations. Logistic regression is more appropriate for this type of data.

Page 15- 1st paragraph- last statement: “in contrast to our previous study in which…”. This statement should be moved to discussion.

The correlations values in page 15: the authors should report that while these correlations are significant, they are only low to moderate correlations.

The MOS questionnaire and Tampa questionnaire were reported in the results (page 15), but were not mentioned previously in the methods section.

The authors make general statements in the discussion, and reflect on their previous research, but the discussion should revolve around the results of the current study. In other words, the argument in the discussion is not supported by the data.

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