Reviewer’s report

Title: An initial application of computerized adaptive testing (CAT) for measuring disability in patients with low back pain

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Reviewer: Dennis Hart

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BioMed Central Review #2

Manuscript: An initial application of computerized adaptive testing (CAT) for measuring disability in patients with low back pain

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General:

This is the second review of the above manuscript. The authors satisfied most of my previous concerns.

Cited references are now up to date and comprehensive. The methods are described well enough to be replicated. I am still concerned about the small data set on which the analyses were performed because in the case of patients with spinal impairments, you can expect wide variability which might affect statistical results. The limited sample size was identified as a limitation, particularly for performing confirmatory factor analyses. The discussion is now well balanced and reflects current literature on CATs for patients with low back pain. Writing is well organized and clear.

Major Compulsory Revisions: None

Minor Essential Revisions:

The abstract identifies a sample size of 266, but there were two samples of 266 and 133. Consistency between the abstract and text would be beneficial.

With the strength of the analytic methods, the discussion of developing item banks that fit the ICF framework seem weak, even a secondary goal of the manuscript.

Discretionary Revisions: None.

1. Is the question posed by the authors well defined? Yes
2. Are the methods appropriate and well described? Yes
3. Are the data sound? Yes but sample sizes are small for comprehensive analyses.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes

6. Are limitations of the work clearly stated? For the most part.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes

8. Do the title and abstract accurately convey what has been found? Yes

9. Is the writing acceptable? Yes

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

Dennis L. Hart, PhD, PT is an employee of and investor in Focus On Therapeutic Outcomes, Inc., which is an international medical/rehabilitation database management company that has a series of computerized adaptive testing applications, one of which is similar to the one described by the authors.