Reviewer's report

Title: An examination of the psychometric structure of the Multidimensional Pain Inventory in temporomandibular disorder patients: a confirmatory factor analysis

Version: 2 Date: 12 May 2006

Reviewer: richard ohrbach

Reviewer's report:

General

This manuscript describes a study that is based on language translation of one instrument to another language and comparison of that instrument to the original, a generally important research activity and worthy of publication. Notably, the authors only used one subject group (TMD), which limits the generalizability of their results but in no way limits the importance of the paper as a potential publication. What is not clear is why another Spanish translation was deemed inadequate, and what disease groups it had been validated on. This is an important issue when looking at language translations as translation itself, of medical instruments, is fraught with many problems (e.g., differing interpretations within a language) and is generally regarded as an on-going process. Also, translation is only the first step; cultural equivalency needs to be assessed in order to hopefully prevent the kinds of item level problems that the authors report. It appears that this translation of the MPI did not undergo cultural equivalency evaluation.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Moving items around for better fit leads to subscales with greater or lesser numbers of items, compared to the original published version; how do the authors defend commensurate score values between this version and the original? CFA does not lead to that outcome, which is one reason why CFA is generally considered a lesser method for evaluating whether an instrument in a target language is the same as in a source language. The authors should really consider a mix of both conventional construct validation methods (e.g., CFA) and modern scaling methods (e.g., IRT or any of its derivatives) in order to better address these problems. In particular, the new version of the English MPI takes advantage of psychometric improvements inherent in the use of the new scaling methods (i.e., Rasch), and it would seem that the authors would be better off if they were to compare the current work in Spanish to the newer US English version with respect to validation efforts.

2. Translation and cultural equivalency processes should be better addressed. This has become a major issue in instrument development from one language to another, as otherwise claiming same or different results across cultures can be confounded with the instrument.

3. Does alteration in number of items in a scale warrant renaming the scale such that that new named construct is as valid as the certainty of the name would suggest? The original MPI underwent a lot of validation in support of the selected subscales and their construct designation.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Spelling (minor, and major: "suffers" for "sufferers", page 3) and subject-verb agreement are consistently poor and distracting.

2. How do the authors justify a revised sub-scale with only two items? It is not clear whether such sub-scales were retained or dropped.

3. The last para in Section IV is confusing. Moreover, it contradicts, via the assertion of the MPI for therapeutic uses, the primary purpose stated in the Conclusions (for assessment).
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

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