Reviewer's report

Title: Cutpoints for mild, moderate and severe pain in patients with osteoarthritis of the hip or knee ready for joint replacement surgery

Version: 1 Date: 9 January 2008

Reviewer: Gabriel Tan

Reviewer's report:

This paper is well written overall. No major compulsory revision is indicated. My general comment is that the manuscript is sound with respect to data analysis and conclusions. With respect to the latter, consider the last page of the Discussion and Conclusion on pages 16 and 17, with these quotes from the manuscript:

â‘Finally, some critique of the concept and use of CPs for pain should be raised. We have shown that the optimal CPs as derived with the standard methods differ between patient categories, which is also shown in previous studies. Therefore, there seems to be no universal optimal CPs, which makes such a classification difficult to use in practice.â’

â‘Because the CPs are based on the optimal group boundaries, this may not represent the best CPs for an individual patient [33], hence the concept of CPs may be difficult to use in a clinical setting.â’

â‘Therefore, for research purposes it is probably better to use BPI on the continuous 0-10 scale. It also seems illogical to include those with a score of 0 (no pain) in a group with mild pain and in some populations this would lead to large floor effects.â’

â‘Finally, optimal CPs may differ according to age, gender, race, or culture, which would represent another problem with optimal CPs.â’

â‘The optimal CPs differed between the patients categories. The associations between pain severity using these CPs support the validity of the optimal CPs, however, we think such a classification should be used cautiously. Whether the pain severity has a potential for clinical use or use in prioritization of patients for surgery could not be assessed in the present study, but may be a topic for future longitudinal studies.â’

In my judgment the above statements in the Discussion and Conclusion are the most salient aspects of the manuscript. This does not, however, diminish the quality of the manuscript. The authors should be complimented for their forthrightness in providing their own critique of the whole concept of cutpoints!

Now for specific comments:

I suggest that the manuscript be modified to only generate cutpoints for Average
Pain, as the authors seemed to conclude, anyhow (see page 8 â##We used the average pain CPs in further analysis, because a rating of average pain may be more representative of the chronic or persistent stable pain associated with a sample of patients with OA [7,8]â## and page 14, â##In the framing of the items of the questionnaires, the time perspective for the BPI was the past 24 hours, for the WOMAC 48 hours, and for the SF-36 4 weeks. Therefore, a closer association of BPI average pain with WOMAC scores would be expected, and we would put more emphasis on this for the purpose of validation.â## Note that the bold was mine. Also Table 4 used cutpoints from Average Pain, and table 5 correlations used Average Pain (not Worst Pain). Restricting the analysis to Average Pain would also make it easier to interpret the results.

The ultimate best cutpoints did not stand out as clearly superior from other possibilities. For example, For OA of the hip, Wilkâ##s lambda, which always gave the highest F value of the three criteria, was equal to 9.93 while second and third place were tied at 9.82. The point is that another sample of patients might easily have generated a different set of â##optimal cutpointsâ##.

The authors might wish to explain why they restricted the potential cutpoints to at least 0 to 3 for Mild and 8 to10 for severe (i.e. they did not consider the possibility of 0 to 2 for mild or 9 to 10 for severe. This should at least have been mentioned.

Otherwise, the analysis seemed to be appropriate. Various potential cutpoints for Average Pain (or Worst Pain) were investigated using the individual items of Interference in the multivariate ANOVA to generate the cutpoints with greatest F-value. Then used the WOMAC and SF-36 for validity.

Other minor essential revisions:
1. Full names of questionnaires need to be spelled out the first time they appear in the text.

**What next?:** Accept after minor essential revisions

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I have nothing to declare.