Author's response to reviews

Title: Patient-Reported Outcome questionnaires for hip arthroscopy: a systematic review of the psychometric evidence

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Author's response to reviews: see over
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Editorial Board BMC Musculoskeletal disorders
a.t.t.n dr. Ranawat

Submission revised manuscript: ‘Patient-Reported Outcome questionnaires for hip arthroscopy: a systematic review of the psychometric evidence’

Dear Dr. Ranawat,

Herewith we kindly submit the revised manuscript ‘Patient-Reported Outcome questionnaires for hip arthroscopy: a systematic review of the psychometric evidence’. We are very grateful for the constructive comments of the reviewers.

Enclosed you’ll find a point-by-point response to the comments of each reviewer. All changes made when revising the manuscript are highlighted red. We also added one additional file.

Zak Knutson:
Minor Essential Revisions:
1) Background section, line 3. The words ‘the last’ are inserted before ‘two decades’.
2) Background section, line 29. The word ‘amount’ is substituted by ‘number’.
3) Background section, line 32. ‘A’ is inserted between ‘not subject’.

Discretionary Revisions:
1) Background section, line 9. The authors stated that the number of arthroscopies is rising because of improvements in surgical equipment. We agree with the reviewer that also the surgical technique and a better understanding of the pathology have led to the rise in arthroscopies. This has been changed in the text.
2) Definitions section, line 4. The sentences ‘the patient’s perspective is of major interest in outcome related research. Therefore, the choice was made to search for PRO questionnaires and not for observer administrated questionnaires’ were deleted. We agree with the reviewer that this part does not belong in this section. Because it was outlined in our introduction, we decide to delete these two sentences.
3) Definitions section. The reviewer advised to ad a table with the definitions of the psychometric properties. This table was added in Additional file 1. It is referred to in the Quality Assessments section, line 9, because this paragraph contains all other information regarding the quality assessment procedures.
4) Study Selection, line 4 and Results, line 9. The reviewer pointed out that it was unclear whether the third reviewer, who was used as a ‘tie breaker’, played a role in the process and what criteria the third reviewer would have used. The third reviewer has not been used, because all disagreements were resolved by consensus. This has been clarified in the text.

James Voos
Minor Essential Revisions:
1) Abstract, results, line 1. It stated ‘six articles’ were identified, but this should have been ‘five articles’. This has been altered.
2) Conclusion section. The reviewer pointed out that the limitations of the study should be listed in the conclusion. The limitations being, the small number of outcome scores available and the small number of reviewers grading each article. Concerning the outcome scores we agree with the reviewer. This was also pointed out by Shane Nho. We changed this as follows: ‘A limitation of this study is the small number of questionnaires as well as the small number of studies that could be included’ and ‘A limitation of this study is the small number of studies that could be included’ (see Discussion, line 55, and Conclusion, line 3). For comments on the small number of reviewers, see Discretionary Revisions point 1.

Discretionary Revisions:
1) The reviewer advised to consider additional researchers to grade each study in order to strengthen the recommendations stated in the conclusion. The studies were currently graded by two researchers who only had two minor differences of opinion in grading the articles. These were both based on reading errors and resolved by consensus. As there are very clear definitions for the quality assessment procedures used, the authors do not believe more researchers will strengthen the recommendations in the conclusion.
2) The reviewer advised to proofread the manuscript for grammar. This has been performed and necessary alterations have been made and highlighted red.

Shane J Nho:
Background:
1) Line 7. The authors stated that hip arthroscopies are also performed on older patients in order to postpone total hip replacement. The reviewer pointed out that this is still controversial and long-term studies to support this statement are lacking. Therefore, this has been deleted.
2) Line 17. The authors were advised to mention that most of the existing PRO questionnaires were designed for hip osteoarthritis. This has been altered.

Methods:
1) Search Strategy, line 1. The reviewer asked if meeting abstracts were also searched. This was not the case, while the authors aimed at providing a systematic review based on thoroughly performed quality assessment procedures. These could only be performed on full text, available, articles.
2) Quality Assessments, line 8. The reviewer asked for definitions and criteria of the psychometric properties used. These have been added in Additional file 1: Table 2 – Definitions and scoring criteria of the psychometric properties.
Results:
1) Quality of questionnaires and articles, line 7. ‘Propertie’ was misspelled. This has been altered.

Discussion:
1) The reviewer stated that the conclusion that the NAHS is a better quality questionnaire and the articles by Martin et al. are of higher quality was repeated several times (2x) in the discussion. This has been removed once in line 23.
2) Line 24. The reviewer asked for an explanation as to why it is a disadvantage that the NAHS was developed for hip pain instead of hip arthroscopy patients. As the NAHS was developed for orthopedic, non arthritic hip pain patients it may exclude some patients undergoing hip arthroscopy as this is also performed on patients with mild degenerative changes. This has been adapted in the text (see line 24). The suggestion of the reviewer that the NAHS may be more generalisable has been inserted as follows: ‘Therefore, the NAHS may be a more generalisable questionnaire, but less specific for hip arthroscopy patients.’ (see line 25).
3) Line 28. The reviewer stated that bias introduced in the studies of Martin et al. should be more emphasized. The authors could not prove actual bias and stated that possible bias could occur (see: line 28). Furthermore, we adopted the suggestion of the reviewer and stated that: ‘These two disadvantages may compromise the reliability and validity of the HOS.’ (see: line 30).
4) Line 54. The reviewer pointed out that the quality of the systematic review depends on the quality of the studies included and that more rigorous studies to determine which score is most valid and reliable are necessary to provide a conclusive recommendation. The authors completely agreed and changed this in the text.

The authors declare that:
- All authors read the manuscript and agree to its content

We hope the answers to the comments are adequate and that the changes in the manuscript will now make it acceptable for publication.

Yours Sincerely,

Marsha Tijssen PT, MSc