Author's response to reviews

Title: Reliability of medical record abstraction by non-physicians for orthopedic research

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Author's response to reviews: see over
Dear editors:

Enclosed is a revised version of manuscript ID MS: 2278805669116201 entitled "Reliability of medical record abstraction by non-physicians for orthopedic research." The reviewers who remarked on the manuscript raised several important questions, which we have addressed in the enclosed version of the manuscript. In addition, point-by-point responses to each of the reviewers’ comments are included below. We have marked all changes to the manuscript in response to reviewers’ comments in bold. All authors have reviewed and approved these revisions.

On behalf of all of the authors, thank you for your consideration of this revised manuscript for publication in *BMC Musculoskeletal Disorders*.

Sincerely,

Michael Y. Mi
Reviewer #1 (Dr. Barbara Yawn)

**General Comments:** “The authors do a nice job of reporting their data. In fact they do not highlight one of the important factors that could be stressed in the discussion—a few reports of methods of assessing validity have been published but very few have addressed the type of information assessed. This should be highlighted—you did not assess just simply information to find and interpret such as gender, birth date, side of the procedure. You also assessed elements of the surgical procedure and you identified this as more complex. This should be highlighted in the discussion. Others such as Yawn et al 2005 have also stressed the importance of the choice of elements to compare and perhaps that could strengthen the discussion also.”

**Major Comments:** “Please address the elements compared in the discussion and add supporting references.”

**Response:** We have revised the first paragraph of the “Discussion” section to include the following bolded section to reflect the above comment and added supporting references.

**Changes to text (page 10):**

… On the other hand, complex categories that require interpretation of how the surgery was conducted, such as the type of arthroplasty approach or the knee deformity, had lower agreement. Our results were consistent with previous findings, which have shown that demographic data (e.g. gender, age, etc.) typically have higher kappa than narrative text data looking for a key word (e.g. presence of a symptom) and that data requiring judgment have the lowest kappa [10, 16-17].


Reviewer #2 (Dr. Angela Colantonio)

**General Comments:** “This paper has a clear focus and in my opinion is methodologically sound. It was also very well organized, clearly written and a joy to read. The authors also use tables well and discuss limitations/significance of the research well.”

**Minor to Major Compulsory Revisions:** “I have some concerns regarding the originality of this piece of work. At this point, I am not entirely convinced that establishing the quality of Medical record review of non clinicians has not been done to date. Is this because people typically do not report the level of training of reviewers or there has not been focused study of this. I think this should be better established in the literature review.”
Response: We searched assiduously through PubMed for articles like ours, but we have yet to find an article that specifically addresses the reliability between clinicians and non-clinicians when reviewing the same medical records. We cannot be certain whether the lack of such studies simply reflects failure on the part of authors to report whether the medical record reviewers have clinical training or whether there have been no prior studies comparing clinically trained and non-clinical reviewers. However, we did identify studies that look prospectively at the interrater reliability of clinicians vs. non-clinicians and researchers of various levels of clinical experience when evaluating patients [1-2]. We added to the last paragraph of the “Discussion” section the following bolded text and accompanying citations.

Changes to text (page 12):

To the best of our knowledge, this is the first assessment of agreement between clinically trained and clinically-untrained medical record reviewers. We cannot be certain, however, whether the paucity of studies of this issue simply reflects failure of authors of reliability studies to report the clinical training of the reviewers, or whether the question has not been addressed. To date, research has mainly addressed the interrater reliability of clinicians vs. non-clinicians and researchers of various levels of clinical experience when evaluating patients prospectively [24-25].


Minor Essential Revisions: “The other major revision that needs to be done in my opinion is to include the backgrounds of the non clinicians conducting the medical record reviews in the study. What are the educational backgrounds of the non clinicians? Do they have graduate degrees in non clinical areas but trained in research? or a high school education which is not atypical among medical record abstractors in hospitals. I believe this is important information given the nature of this investigation. Again, I believe this level of detail is largely missing from chart review studies.”

Response: We have added the following details to the “Research Coordinator Training” subsection of the “Methods” section.

Changes to text (page 5):

RC1 is a college graduate with no higher level degrees and two years of experience in clinical orthopedics research. RC2 attended college with no higher level degrees and one year of experience in clinical orthopedics research.
Formatting Changes

1. The title page has been edited to reflect the formatting of the journal.
2. A “Competing Interests” section has been added, declaring no competing interests.
3. References have been formatted to comply with the journal’s style.
4. Tables have been edited to comply with the following requirement: “Tables must be divided into cells/fields, the borders of which must be visible black lines in order to delineate the separate cell contents. Tables generated with tabbed text are not acceptable.”