Author's response to reviews

Title: The Impact of Trained Patient Educators on Musculoskeletal Clinical Skills Attainment in Pre-Clerkship Medical Students

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Author's response to reviews: see over
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Dear Editor of BMC Medical Education:

Thank you very much for the opportunity to submit revisions and responses to the kind and helpful comments provided by the reviewers of our manuscript entitled, “The Impact of Trained Patient Educators on Musculoskeletal Clinical Skills Attainment in Pre-Clerkship Medical Students.” We have responded to the reviewers numbered comments and questions below and have attached a revised version of the manuscript. All changes were made using “track changes” so they can be easily identified in the version where the references are not yet processed by RefWorks. However, when we generated the version with appropriately formatted references, RefWorks removed all of our track changes highlighting. For this reason, we have submitted both the final version of the paper with formatted references and a version with unformatted RefWorks syntax that shows the track changes. We apologize for this technical difficulty.

I hope that the editors of BMC find our revisions and responses satisfactory and we look forward to any further questions, comments or requests for changes.

Sincerely,

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On behalf of my co-authors: Drs Jeffrey Wiseman, and
Responses to the Review by Meridith Marks

Major essential revisions:
1. We have shortened the introduction significantly, removing approximately 3.5 paragraphs (nearly 1000 words).
2. Power calculations repeated and reported in results section.
3. We have worked to shorten the discussion considerably as well. The theory section moved to the introduction and slightly shortened.
4. Thank you for the comment. Tables 1, 2 and 3 have now been combined.
5. Agree with point about table 5. Have removed this table and all reference to this aspect of the data.
6. We have added a statement addressing the inability to extrapolate this study’s findings to spine, soft tissue, power or gait aspects of the MSK examination on page/line.

Minor essential revisions:
1. I am confused as Dr. Jeffrey Wiseman is indeed included in the authors’ contributions on page/line.

Discretionary revisions:
1. Our title is on the longer side already and we are very clear in our methods and now discussion that this study focuses on peripheral joint exam. For this reason we choose to leave the title in its original form.
2. We find this comment interesting as the other reviewer suggested we put more emphasis on our secondary outcomes. In light of these conflicting opinions, we have chosen not to increase or decrease the emphasis on our secondary outcomes.

Responses to the Review by Andy Wearn

Major Compulsory Revisions:
We greatly appreciate this reviewer’s suggestions for improvement of our manuscript and are glad to see that he has clearly reflected on many issues it raises. However, we feel we are in a slightly difficult situation as the other reviewer, Dr. Marks, has explicitly requested that we cut the length of the discussion in half and not include so much detail in both the discussion and the paper as a whole. On the other hand, Dr. Wearn has
provided suggestions for twelve other points that he would like to see us include as comments in the discussion. In order to balance these conflicting suggestions, we have cut the discussion as much as we can and will choose carefully from the list of potential additions to the discussion. We have provided explanations of our decisions on each point below.

1 a. We have added a reference to justify the use of the retrospective pre post design. In the interest of space we have not added all references but have provides a few more below for the reviewer’s interest. As outlined in the methods section, the rational for this methodology is that at this very early level of training, students often “don’t even know what they don’t know” until they have some baseline teaching on the subject. Thus it is more meaningful for them to rate their previous knowledge once they understand the breadth and depth of the skill set expected of them.


1 b. The reviewer questions the validity of subjective data such as self-assessments of comfort and interest. However, this data is used only for comparison of quasi-randomly selected groups of students. Absolute values of confidence are not the focus of this analysis and it is these absolute values that recent literature has suggested may be scored higher than students’ true abilities particularly in students with low levels of competence. The difficulties with reliability of the data would be expected to affect both groups equally allowing for sound comparisons to be made. If incompetent students are rating themselves more highly than they should this would suggest that the results we describe may be an underestimation of the differences in students rather than an overcall in our results. A comment has been added to the discussion in regards to this point.

1 c. A comment has also been added to the discussion in response to this point.

1 d. The PPIAs who examined the tOSCE were not the same as those who taught the students in question. As outlined in the methods section, “The tOSCE evaluations were completed by PP®IA patient educators who were blinded to teaching group assignments (students were taught by physician tutor or patient educators). Both students and patient examiners were specifically asked not to discuss teaching group assignment during the tOSCE.”
1 e. All but 1 student who completed the tOSCE also completed the questionnaire. Thus, completion rates were not affected by the personal feedback. In addition, both groups received personal feedback and completed the questionnaires. Thus, both groups should be equally affected by this feedback and comparisons of questionnaire results should not be biased by the personal feedback given. In the interest of keeping the discussion concise, this point has not been added to the discussion but should the editor wish expansion on this point in the manuscript, we can provide this.

1 f. As mentioned in the introduction, early clinical experiences do affect students’ interest in subject matter. As mentioned in the discussion, patient educator experiences do allow for a less intimidating introduction for students on how to comport themselves in front of patients. This was one of the important reasons for conducting this study. We have not added further to this part of the discussion in order not to add to length but can do so should the editor wish us to do so.

1 g. This is a good point and may form part of a future study to explore how verbalization and practice strategies for OSCEs help students prepare for these examinations. In the interest of space we have not added this to the discussion.

2. The current study is not designed to perform cost analysis and so the authors do not feel comfortable commenting on this post hoc. This may form the basis of a future research study. Previous economic analyses of standardized patient (SP) educators have shown that despite the fact that they paid their SPs and that these analyses were done 15 years ago, there was still a cost savings of $20000 - $65000 USD compared to using faculty teachers depending on the model used (Hasle et al., Academic Medicine, 1994). Although the national 100-hour training program for the patient educators certainly has a cost, this training program has been fully funded by Pfizer as part of their philanthropic programs and so the schools incur no cost directly. Further, it is mandated that patients volunteer their time and are provided only with a snack and reimbursement for parking so that it is cost neutral for the patients. The authors recognize that this may not be the case in other countries where external funding is not available for training the patient educators. Pfizer has been re-examining their continued support of this program and this is how we came to submit a grant proposal to them for the current study.

3. The cross over style was used to control for potential differences in the calibre of the teaching staff at the two hospital sites. There was a perception at our institution that one site had more “committed and experienced” teaching faculty and we did not wish to bias our results.

4. In response to the other reviewer’s comments, we have removed this aspect of the data collection from the manuscript.

5. These negative correlations are extremely small and thus we do not feel they are meaningful. According to Cohen et al, correlations below 0.4 (or -0.4) are unlikely to indicate meaningful relationships.
6. Relative weightings of IPS scores versus physical exam scores were not revealed to either students or patient evaluators. Our research assistant scored the checklists and so we feel it is unlikely that the difference on absolute weighting would affect the results.

7. This questionnaire is not independently validated to provide interpretation of the absolute scores and was designed to examine differences between the groups. Thus we have focussed on differences between the groups rather than absolute scores. Further we feel the addition of this data to the tables will make it very cluttered and more difficult to interpret. We do have this data and should the editor wish we can add it but it is not our preference.

8. The authors agree with the reviewers point on inconsistency of physician teacher training and our own previously done qualitative study of this teaching method highlights the variability encountered in physician tutors (Oswald et al. Medical Teacher 2011). In the interest of space we have not addressed this issue as determination of teacher variability was not the aim of the current study and we have reported on this important issue elsewhere.

9. The authors agree with the reviewers point on the short duration between the teaching and the tOSCEs. We have added a comment in the discussion of limitations on this point that explains the rational and suggest the need for future studies to evaluate long term retention of these skills.

10. We have modified the section on theoretical frameworks and in keeping with the suggestion of the other reviewer have moved it out of the discussion and into the introduction.

11. We appreciate this suggestion and have made this change by moving the first paragraph of the conclusions to last paragraph of the discussion.

Minor Essential Revisions:

Thank you for noting the typos - they have now been corrected.

1. Thank you, we have added a 2011 reference on the use of patient educators in general medical physical exam teaching.

2. We have elected not to make this change. The other reviewer actually questioned whether we even needed to include the comfort and interest data as discussed above and so we prefer not to re-prioritize our objectives.

3. This study was not powered to allow for valid reporting of subgroups and so we will not add sex specific analyses.

4. Ethical approval was obtained and this is listed in the last paragraph of the original methods section under the title “Ethics” in the statement “ethics approval was obtained from the McGill University Institutional Review Board”.

5. We thank the reviewer for this compliment but in the interest of space (as highlighted by the other reviewer) we will not add a comment and hope that these significant results stand for themselves.

Discretionary Revisions:

We thank the reviewers for these comments. As a brief response, the study was funded by Pfizer as they are the pharmaceutical company that provide the financial support for the training of the PPIA. We have heard unofficially that they were considering whether they should continue in this role and were interested to hear that we were interested to do an evaluation of the program. We are also interested in the many areas of future study that this study has raised. The issue of generalization is already included in our discussion and in the interest of space we have chosen not to expand it.