Reviewer's report

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

Version: 1 Date: 31 March 2011

Reviewer: Andy Wearn

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Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

My comments here are reflections that you can take or leave.

1. The barriers to learning MSK PE are the same as any PE learning. You might want to revise your comments.
2. You mention the number of MSK skills that u/g students need to learn – as alluded to elsewhere by yourselves, everyone has their vested interest! What core skills does a graduate need? Lots of answers to that question.
3. Comfort in MSK PE goes up – no surprise, as you comment yourself – would you have asked different questions in retrospect?
4. It’s always hard to generalise! Learning is so context and content specific.
5. It would be interesting to look at the value or otherwise of verbalisation whilst demonstrating PE – a future study?
6. I was curious as to why Pfizer would fund this – simple curiosity.

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. The initial evidence quoted in the background is quite old (80s/90s), please include some of the newer work (referenced later) from the outset.
2. Consider renumbering your aims to highlight the added value (interpersonal skills, comfort and interest in MSK). Half of your outcomes are similar to earlier studies and are adding additional, but not novel evidence.
3. Sex composition of each group would be useful to include (analysis by sex could have been considered).
4. Consent is mentioned, but ethical approval is not explicitly cited.
5. Table 6. The change in scores seems more significant than you give credit for – consider adding comment.

Typos as follows:
P21, para3, line6 – that > THE
P25, para4, line2 – UNusual
P27, para3, line 4 – how TO conduct

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

1. Although the authors cover a range of thoughtful limitations, there are several others that need to be discussed:
   a. The pre/post data was collected simultaneously and retrospectively. Change is likely to be reported differently when there is a temporal separation.
   b. There has been a lot written recently about the validity of subjective opinion data (e.g. comfort and interest) – there needs to be a comment on the reliability of this type of data. There are issues of subjectivity, behaviour of sexes, instability etc.
   c. Hawthorne effect on educators, doctors and students – the aims and outcome measures were strongly signalled from the start. There’s also a novelty effect to be considered.
   d. Were the PPIAs who examined the tOSCE the same as the PPIAs who led the learning? If so, there is a potential bias to be considered.
   e. The tOSCE included focussed personal feedback – this will have influenced completion of the questionnaire.
   f. This appears to have been their first PE learning experience – at the start of the 12wk block. Do you think that this has any bearing on your results?
   g. You could have asked students about how they practised for the tOSCE.

2. A comment on cost-effectiveness/efficiency would be welcome. Non-MSK clinicians managed to bring about the same changes in the students without the need for additional costs – the 100h training and presumed cost of employing PPIAs for 2h each.

3. Please defend your cross-over style. These are two different cohorts, so I see no need to have had a cross-over.

4. It seemed to me that the number of “no, I wouldn’t like to see this student again as a doctor” was quite high in both groups – deserves a comment.

5. You don’t comment on the negative correlation of the knee exams (table 4)

6. Hypothesis – the higher correlation of PE with Global cf IPS might be a weighting issue; more marks for PE so heavier psychological weighting in overall score?

7. Table 6. You don’t present comparison of pre scores or post scores for each intervention. Either add this or explain why you didn’t report it as it would demonstrate change within, rather than between interventions.

8. Table 7. Might this not represent a trained educator versus untrained? The teacher training of doctors is patchy.

9. If I read the design correctly, each cohort was tested by tOSCE one week after the learning activity. This is a very rapid follow-up assessment (and frequent
testing has been shown to improve retention more than repeat learning). Did you consider a longer gap to allow for some decay and perhaps an uncovering of longitudinal value of one method or the other?

10. The brief introduction of learning theories at the end of the discussion felt a little ‘forced’. I would also argue that both styles of learning (PPIA and clinician) draw on both theoretical frameworks.

11. The first paragraph of the conclusion is discussion. Needs to move backwards.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests