Author’s response to reviews

Title: Barriers and facilitators to writing quality items for medical school assessments – a scoping review

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Author’s response to reviews:

Liam Messin

Editor-in-Chief

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Dear Dr Messin,

Thank you for your invitation to submit a revision in response to reviewers’ comments on our manuscript entitled "Barriers and facilitators to writing quality items for medical school assessments - a scoping review" (MEED-D-18-00656). We appreciate your guidance on this manuscript, which were very helpful for revising our paper.

We have carefully considered the reviewers’ comments and have responded as below.

Reviewer 1

Comment 1:

The topic is of interest to a wide range of medical educators and others.

Comment 2:

The paper is generally well written (though very occasionally a little repetitive) and clearly structured.
Comment 3:
The search was well-conducted using accepted methods and is clearly explained.

Response:
We thank Reviewer 1 for these positive comments

Comment 4:
The methods are generally clearly explained. I have questions which concern the selection of the manuscripts for independent review (page 6 lines 31-32); why was this thought to be needed, how were these papers selected and how was it decided how many to include?

Response:
Thank you for raising this point. We have amended our methods section to clarify the steps undertaken, including number of abstracts that were reviewed independently, and the criteria for selecting the sample of papers for full paper review. (Methods section, page 6, lines 13-16)

Comment 5:
The discussion section is thoughtful and included wide consideration of the issues. The statement of the limitations of the work is thorough.

Comment 6:
The conclusion is clear and proportionate.

Response:
Again, we thank Reviewer 1 for their positive concluding comments about these key sections.

Reviewer 2

Comment 1:
OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?

Yes - there is a clear objective
Comment 2:

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

Yes - the approach is appropriate

Comment 3:

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?

Yes - experiments and analyses were performed appropriately

Comment 4:

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?

Yes - the author's interpretation is reasonable

Comment 5:

OVERALL MANUSCRIPT POTENTIAL - Could an appropriately REVISED version of this work represent a technically sound contribution?

Yes - current version is technically sound

Comment 6:

An interesting study considering that MCQs are the most used (and abused) tools in educational testing.

Response:

We thank Reviewer 2 for their positive support of the importance of our research, its aims, methods, execution, findings and conclusions.

Comment 7:

Adding few more citations/ studies of interventions where such factors have been shown to improve the outcome.

Response:
Thank you for raising this additional comment. We agree that a systematic methodology should include all relevant papers. In selecting the studies for review, we applied pre-determined inclusion and exclusion criteria, as is adopted for systematic reviews. Independent review of the sample, as described above, ensured that our sampling was reproducible, resulting in the final 13 articles. As mentioned by both reviewers, our methodology and execution were sound, so we believe that the final number of studies is appropriate, and any gaps reflect the current research on the topic.

Comment 8:

With increasing awareness about validity, it should be emphasized that validity is not an inherent property of any tool. It needs to be built up. Recognizing factors which improved the quality of items will go a long way in generating valid test items.

Response:

We thank the reviewer for raising an important point about validity. To address this comment, we have acknowledged that a limitation of our review is that newer concepts of validity have not been adopted by authors of papers in our review, and include a relevant reference (Limitations section, page 17, lines 22-25).

We look forward to hearing from you about our revised manuscript. We would be glad to respond to any further questions and comments that you may have.

Kind regards

Sowmiya Karthikeyan, Elizabeth O'Connor and Wendy Hu