Author’s response to reviews

Title: Simulation training in vitreoretinal surgery: A systematic review

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Concerning Manuscript BOPH-D-18-00858R1:

Dear Editor,

Once again, thank you for the valuable comments on our manuscript.

We have made a point-by-point list of all changes requested by the reviewers and hope that these improvements will make our paper suitable for publication in BMC Ophthalmology.

Yours sincerely,

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Editor:

Editor: Thank you for including the Cochrane risk of bias tool to assess bias in the studies. This addition has strengthened the manuscript. The main area of concern remaining is the use of the MERSQI, as detailed by the reviewer below. I agree that a total score is meaningless (as you point out in your manuscript, referenced by Cook). I also see the value of scoring the individual items that are not covered by a risk of bias tool. Reading the manuscript, it seems that the main area of concern within the MERSQI instrument is the instrument validity because this is lacking in most of the studies included in your review. You then go further to describe validity within the context of the simulator studies. I believe a reasonable approach here is to include the MERSQI instrument (perhaps as a supplemental file), but not to calculate a meaningless "total" score, but only use it to introduce the concept of validity as you have already done.

Response: Thank you for your comments. We agree that most of the MERSQI is redundant, and it makes a lot of sense to only include the parts we actually use in the manuscript. We have removed the paragraphs not concerning instrument validity and moved the scoring table into a supplemental file.

Editor: I would also like to see some synthesis of the results (as you have done in the discussion) within the results section. I understand that only generalizations can be achieved given the heterogeneity of the studies, but some synthesis would be extremely helpful to your readers.

Response: We have included a small section with a synthesis of the results.

S. Swaroop Vedula (Reviewer 2):

Reviewer: I do not understand what provides the methodological basis to use MERSQI to assess risk of bias in studies included in systematic reviews, and to use a score as an index of
"quality". I suggest omitting it unless there is clear methodological evidence for using the scale and calculating a score. In my opinion, using MERSQI to assess studies in systematic reviews and using a score on the scale is taking us about a decade back in time in terms of what we have learnt about how to do systematic reviews. I'm unable to recommend acceptance of this work for publication, which would indicate endorsing the use of scoring methodology. Stating that MERSQI scoring is insecure in the limitations is not sufficient. I don't see what "insecure" means in this context. The argument about scoring is not unique to MERSQI. There is a ton of literature on why scoring quality scales is not a meaningful exercise for studies included in a systematic review.

Response: Thank you for your comments. We agree with you and the editor that using any kind of score is redundant. We have removed the paragraphs concerning the scoring and total scores. We will keep the parts of the MERSQI concerning instrument validity, as it helps to put a spot on the methodological flaws in our included studies.

The reason MERSQI scoring is insecure is because of the very limited available guidelines on how to use it.

Reviewer: I don't understand how the risk of bias was assessed to provide constructive comment. The explanation about assessment of selection bias is unclear. What is "progress of dividing the participants into their respective group"?

Response: We assessed risk of bias using the available guidelines in chapter 8.5 of the Cochrane Handbook. For clarification, we have changed the phrasing to “protocol of allocating the participants into their respective groups” (line 94-95).

Reviewer: The aim/objective of the review is still unclear. What is "level of validation"? How is it defined? What "levels of validation" currently exist? Similarly, "state of evidence" is a vague phrase. What does it really mean? A clear objective will help.

Response: We agree with your comment. The alterations we made after the first review did not make the aim clearer, but only introduced new phrases, which would need further explanations. In order to make the aim clear and concise, we have returned to something close to our original phrasing (line 38-39).
The definitions you request are already in the discussion section, and we believe that is the optimal place to put them.

Reviewer: I don't understand why selection bias could not be evaluated for a single group study (Yeh, et. al.). For example, was it a sequential sample or convenience sample? Were inclusion/exclusion criteria pre-specified? Do we have information on those who agreed to participate versus those who did not?

Response: You are right. Although Yeh et al. provide information to judge selection bias, it would possible with any of the information you describe. We have made a judgment of selection bias on Yeh et al. and included in Figure 2.

Reviewer: My final comment is up to the Editor, but I would like to see a synthesis of the studies instead of individual summaries. It will explain what we can learn across the studies instead of what we've learnt from each study.

Response: We have made an effort to include a summary of the results. Although, we do believe that the first part of the discussion gives a good explanation of what can be learnt across the studies.