**Reviewer's report**

**Title:** Assessing the complexity of interventions within systematic reviews: development, content and use of a new tool (iCAT_SR)

**Version:** 0  **Date:** 07 Feb 2017

**Reviewer:** Lisa Susan Wieland

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This is a very interesting perspective on complexity and how to identify and assess it within a systematic review. Not all 'complex' interventions would be complex in the same way, so this tool might be used to capture the different ways in which a range included interventions may be complex.

The paper never clearly states what the authors take to be a complex intervention. The discussion in the third paragraph of the Background is close to one, but it could be clarified further and stated more directly, e.g., for the purposes of this work, we defined or considered complexity as … It would also be great to have a brief definition of what you mean by complexity in the Background of the Abstract. Not everyone reading the paper will be a seasoned researcher of complex interventions.

I am not convinced about the usefulness of jumping from iCAT to iCAT_SR. Isn't it possible that even trials with interventions that are similar enough to combine in a meta-analysis may vary in their levels of complexity and where that complexity lies? In this case, many of the judgements might be 'varies', and how helpful would this be to know? Can the authors discuss this and explain why it makes sense to have an overall rating for the review, rather than a presentation of the ratings for the individual trials in the review or the meta-analysis? Would it make sense to have both iCAT and iCAT_SR ratings done and presented in the review? Why or why not?

I agree that the tool would likely be modified after the protocol stage of the review, and think Table 5 is quite useful as a guide to how the tool could help the reviewers in conceptualizing the intervention and interpreting the review. It seems particularly useful for defining the scope of a review, and then considering the parameters of the included interventions during interpretation. This might be the strongest argument for having an overall rating for each aspect of the included interventions, accompanied by the details of what this rating means.
The usefulness of iCAT_SR is less clear for the review user, although this is mentioned briefly in the Conclusions. It would be helpful if the authors could include additional information on this, as it seems like an afterthought. How do the authors plan to explore this further? Can they think of a specific hypothetical example to give of how it could be useful? If the tool is planned to be useful to users of the review, is there a plan for a visual or numerical way in which the ratings can be presented? Would it simply be a presentation of the final table of ratings that the reviewers carried out? A little more detail about this, or even an explicit statement about planned testing or development, would be welcome. A statement that iCAT_SR is designed primarily to assist systematic reviewers would be fine too.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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