Reviewer’s report

Title: Risk of Bias Tools in Systematic Reviews of Health Interventions: An Analysis of PROSPERO-Registered Protocols

Version: 0 Date: 14 May 2019

Reviewer: Charlene Soobiah

Reviewer's report:

The authors conducted a retrospective analysis of risk of bias tools used in non-randomized studies. I found this paper quite interesting and the topic is very relevant, however, I am skeptical about the methods used in this process and as such I do not feel the results are robust. Below are my comments.

Introduction/Background

1. The authors should provide a definition of risk of bias in the introduction.

2. The authors refer to their study as a retrospective review of the Prospero registry for ROB of NRS in the title, and this should be explicitly stated in the last section of the introduction.

Methods

3. Can the authors include a list of terms they searched for the 2018 records in Prospero.

4. Can the authors comment on how records were screened. Was this completed in duplicate, how were disagreements resolved?

5. It seems strange the authors would not search all 4000 protocols, as the information they are abstracting is relatively little. Can the author provide a stronger justification for a 10% sample? Why not 50% or 25% since they are ascertaining trends?

6. Lines 124-125 is confusing. Can the authors clarify what is meant by "produced by the same organization" or provide a specific example.

7. Lines 125-127 are redundant as this was specified in the previous section on sample selection.

8. Longitudinal analysis - It does not seem methodological to search only 10% of the records and then only search for those tools retrospectively. I think this does not truly highlight actual trends in ROB for NRS over time can the authors address this or justify in the discussion section. Lines 139-141 are redundant and specified in the previous section on sample selection.
Results

9. Did the authors contact authors for the 4 protocols that were unclear?

10. For the studies reporting on RCTs does this include quasi-RCT as well, or are they just RCTs?

11. I am unclear why the Cochrane handbook is listed as a tool in Table 2. The handbook is not an ROB tool. Similar concerns about the AND/ADA Quality Checklist or GRADE.

12. Similar concerns for table 3 - Strobe statement is not an ROB tool or the CASP checklist. Why are these included in the results, as authors stated reporting guidelines and checklists were excluded from results?

13. The authors then state in the 'Annual trends' section they removed Cochrane and GRADE. For consistency please also remove from ROB tools identified in 2018.

14. For lines 223-237 - please specify if the RCTs using Cochrane ROB included quasi-studies. If they are RCTs only, I am not sure why they would be included, as the focus is on NRS.

Discussion/Limitations

15. The authors should include a limitations section in their discussion, which should address the 10% sample selection and not a true indication of shifts in trends used by authors over the last 8 years of the Prospero database.

16. Why did the authors not consider looking at published SR protocols? Published protocols are more likely to provide additional around ROB tools. Can the authors please comment on this?

17. What about the validity and reliability of the most frequently used tools identified in the retrospective search. Can the authors include this information?

Level of interest

Please indicate how interesting you found the manuscript:

An article of importance in its field that should be highlighted to relevant networks

Quality of written English

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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None declared.

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