Reviewer's report

Title: Adjustment for reporting bias in network meta-analysis of antidepressant trials

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Reviewer: Tianjing Li

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The study by Trinquart et al. assessed the robustness of results from network meta-analysis (NMA) to reporting bias. The authors tested two approaches: (1) a meta-regression model that allows the effect size to depend on its variance; and (2) a selection model that estimates the propensity of trial results being published. They found that NMA of published data was not robust to reporting bias and therefore, appropriate models adjusting for reporting bias should be considered.

The study addressed a critical methodological issue for NMA that has not been extensively studied. I found the methods novel, and the study well designed and executed. I am delighted to read such a beautifully written manuscript reporting findings that are extremely relevant to the filed. With that, here are my comments for the authors to consider.

(1) My first major comment is related to the Figures (Figures 1-5). It will be helpful if the authors could add footnotes or examples to help the readers to understand. More specifically,

Figure 1, “Visual inspection does not suggest stronger treatment benefit in small trials…” – You may want to illustrate how to read such figures. I doubt a general reader would apprehend it without any struggle.

Figure 2&5. I am not sure that I understand the Y-axis. Do you mean the difference between two estimates?

Figure 3. Could you include the probability for the drugs you have labeled?

Figure 4. Could you say something in general about the shape of the cumulative probability? Should the X-axis go all the way to 13 or 12?

(2) Discussion

Page 15, second limitation of exchangeability: I am not convinced this is a real limitation. You may consider starting a new paragraph and describing how the models you tested could be generalized to other contexts. For example, you may write in lay language how others could implement your methods. What are the steps? Any necessary modifications needed?

Following that line, please consider discussing implications for future research
and practice. Should readers be cautious if a NMA hasn’t considered reporting bias? Would you recommend others replicating your approach? If so, what are the areas they should focus and test?

(3) Other comments:
Please define “exchangeable” the first time you used it in the methods rather than in the discussion.

Please consider using “reference standard” rather than “gold standard”.

Last sentence before “2.3.2 Selection model”: Should it be “expect” or “assume”?

Page 10, first 2 sentences: How did you come up with these assumptions? Any empirical base or evidence supporting the assumptions? Could you present them more intuitively?

Check formatting for references, especially the journal title. They are not consistently done.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I have no competing interests to declare.