Reviewer's report

Title: Agreement between decision analysis and matching systematic review of randomized controlled trials in assessment of treatment comparisons: a systematic review

Version: 1 Date: 27 December 2013

Reviewer: Geert JMG van der Heijden

Reviewer's report:

Major Compulsory Revisions

1 - The objective of the authors is to assess the validity of DAs using results of matching SR of RCTs (page 3). But in fact they are only able to compare the proportion of concordant conclusions of pairs of DA & SR matched based on their PICO. That is, when for pairs of DA & SR concordant conclusions are found this does not imply validity of either, since both might suffer from similar systematic errors.

2 - Besides 21/37 strongly (optimal) matched pairs, they also include moderately (broad) and weakly (broader) matched pairs, each 8/37. It is considered likely that this fit (strength of matching) may have impact on the concordance of conclusions. Authors are advised to include data on the relation between fit (strength of matching) and concordance of conclusions.

3 - The claim made by the authors in their introduction that DA provide the advantage of "the required estimates" relating to statistical power and long term follow-up has not been substantiated by their findings: for 73% (27/37) of the pairs identified concordant conclusions were found, while after sensitivity analyses concordant conclusions were found for 3 initially discordant pairs.

4 - In Table 4 Meta-Analyses appear. The authors report to have selected Systematic Reviews. For many, Systematic Reviews and Meta-Analyses are one of a kind, while for some the latter is the quantitative data analytic extension of the former qualitative approach. The authors should explain whether (and if not why) they have excluded Meta-Analyses from their selection of Systematic Reviews.

5 - When SR, or RCTs included in these, has been used to inform matched DA it is very likely that further analysis will show that their conclusions are concordant. To prevent such bias pairs of DA and SR have been included when matched SR has been used to inform DA should have been excluded for analysis of their concordance. It is not clear from the methods (page 4) whether the authors have done so.
6 - The authors report a sensitivity analysis. From the methods (page 4) their approach to this it is not clear. Which aspects of uncertainty have been taken into account during the sensitivity analysis; please also explain how and why?

Minor Essential Revisions

7 - The approach to matching of DA & SR is clear. But the use of the wording 'matching conclusions' is rather confusing, as are synonyms used such as (dis)agreement and (dis)similar.

Authors are advised to avoid such potential confusion and use "matching" and "matched" as term for selection of DA and SR based on PICO and "concordant" and "discordant" for their conclusions.

8 - Most statements in the final paragraph (page 11) are rather ambiguous; e.g. when for pairs of DA & SR concordant conclusions are found this does not imply validity, since both might suffer from similar systematic errors. One may easily question the relevance of either DA or SR.

In addition, it is not clear from this paper why and how the findings reported "highlight the need for further in depth investigation ....."

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests