Author’s response to reviews

Title: Bayesian Meta-analysis of Comparative Diagnostic Test Accuracy Studies

Authors:

Joris Menten (jmenten@itg.be)
Emmanuel Lesaffre (emmanuel.lesaffre@med.kuleuven.be)

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Author’s response to reviews: see over
Dear editor,

Thank you and the three referees for the valuable comments on our manuscript. Please find attached a revised version and a detailed response to the referees. I hope you will consider the publication of our revised manuscript in "BMC Medical Research Methodology".

Best regards,

Joris Menten

Response to referees

**Referee 1: Jing Zhang**

**Q1**: Please check the typos and missing references. For example, on page 13 line 12, “as for example in is done” should be “as for example it is done”? And on page 13 lines 33-34, a reference regarding bias was missing, and a question mark appeared instead.

We have checked the manuscript for typos, grammatical errors, and missing references.

**Q 2**: On page 13 lines 27-37, it is nice that the authors acknowledged DTAs studies may be subject to larger heterogeneity, bias, and inconsistency. Another potential issue is study-level outliers, which could be more severe for DTAs than for RCTs. A paper has proposed several nice Bayesian detection measures for study-level outliers [Zhang J., Fu H., Carlin B.P. (2015), Detecting outlying trials in network meta-analysis, Statistics in Medicine], which may be of interest to the authors as well.

We thank the referee for pointing us to this interesting paper and have acknowledged this as another area in which our models can be expanded.

**Q 3**: It is nice that the authors clarified in the revised manuscript that a broad range of studies were combined. Does the “randomized test comparison” have better accuracy compared with the other types of studies? As we all know that randomized trials are at the top of hierarchy of evidence, is it true for DTAs? If yes, the authors should acknowledge this too.

The multiple test (corresponding to a cross-over design in RCT) and randomized test design would be expected to be on the top of the hierarchy, without a priori reasons to perform one over the other. We acknowledge this in the manuscript.

**Referee 2: Yemisi Takwoingi**

**Minor Essential Revisions**

**Q1**: I can’t find the change the authors made in response to my previous comment 1 related to the background. They say they have removed the reference to the Cochrane Handbook for Systematic Reviews of DTA from page 1 lines 44-46 but it is still there.
We apologize to Dr. Takwoingi for forgetting to incorporate some of the suggested corrections in the revised manuscript and have removed this reference.

**Q2:** In the discussion, the new text (page 13 line 44) needs checking for typos: "simulation studies" instead of "simulation results" and "their" instead of "there".

We checked the manuscript for typos, grammatical errors, and missing references.

**Discretionary revisions**

**Q3:** I can't find the change the authors made in response to comment 13 that they have replaced "trial" with "study".

We checked the manuscript and replaced where appropriate "trial" by "study".

**Referee 3: Nandini Dendukuri**

We thank Dr. Dendukuri for her positive review of our manuscript.