Author’s response to reviews

Title: A simulation study to compare different estimation approaches for network meta-analysis and corresponding methods to evaluate the consistency assumption

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Author’s response to reviews:

Re: Manuscript BMRM-D-19-00393R1

Point-by-point Response, 24.01.2020

Response to the Editor:

We provided more detailed discussions of our findings supported by our simulated data (see response to Reviewer 2).

Response to Reviewer 1 (Sung Ryul Shim):

1) We agree that it would be convenient to have one R version in the whole simulation. We started our simulations on the Bayesian NMA with BRugs and OpenBUGS in R 2.14.1. Later we included the netmeta approach, which required a newer R version (R 3.0.2). We tried to make it more clearly in the simulation study section (Software Implementation), lines 20 and 26, page 8. However, we feel confident that results obtained within the first period of simulations (under R 2.14.1) are not less valuable as if obtained by updated R versions.

2) For each scenario, we conducted R = 1000 replications, as stated in Table 1. For each of these 1000 replications we calculated a Bayesian MCMC estimate. This is done by MCMC simulations using 3 Markov chains. Each of the Markov chains has a burn-in of 20 000 iterations, which were followed by 40 000 iterations to obtain posterior estimates.

Response to Reviewer 2 (Hisashi Noma):
1) We introduced a new paragraph in the Results Section on the evaluation of the consistency assumption (pages 10-12), amended the first paragraph of the discussion starting on page 13, line 32 and complemented another paragraph on page 15, lines 37-38.

2) We amended the Conclusion Section with a more detailed explanation of the proposed pragmatic approach on page 16, starting with line 10 and introduced a new Figure 3.