Format for ANSWERING REVIEWERS

June 5, 2015

Dear Editor,

Please find enclosed the edited manuscript in Word format (file name: 19343-review.doc).

Title: Application of meta-analysis to specific research fields: Lessons learned

Author: Lynne V McFarland

Name of Journal: *World Journal of Meta-Analysis*

ESPS Manuscript NO: 19343

The manuscript has been improved according to the suggestions of reviewers:
Reviewer # 2549882:   No remarkable criticism for this manuscript.

Reviewer # 2555405: Dear Author, Your paper is a well justified paper as it is addressing important concerns on meta-analysis scope. I regret not to see more such papers, most of the methodolocal papers in meta-analysis discussing on differences between statistical optimization process or model adequacy, but they are almost never deal with pooling questions. In the same way, guidelines like PRISMA and others restrain on basic questions and also focus exagerately on some topics as randomization procedures. My critics are:
1-The whole body of the text is devoted to question as to whether pooling or not data, and this is a very valuable topic to deal with. I should have preferred this objective directly mentioned in the introduction, instead of this initial discussion that the public frequently voices their frustration when the media reports a treatment working on one day, but seemingly the next day reports a study refuting the previous one.
Reply: Thank you, revised as suggested.
2- I think that this paper underlines a very important question on pooling or not categories of drugs or type of diseases, but this question refers more to meta-analysts and not the public. It is true that too many meta-analyses are based on very discutable pooling of this kind and it was important to show how this may induce differences in the results.
Reply: Thank you.
3- However, this question has only a few to deal with how public understands meta-analysis. Although I agree that very few people may understand the contents of a meta-analysis, I think this is not the question here. My feeling is that even much less people are able to understand these concepts, but is scientific literature done for that? Articles are –in my opinion- essentially to convey information among scientists, to every one his/her job, and other journals such as well known magazines are probably better adapted to communicate simplified results to the whole world.
Reply: I have revised the text to reflect that scientific studies are now read by both the general public and healthcare providers and both groups can be confused by meta-analyses. I am finding that more news/reporters are using results of meta-analysis

to try and get a simple, good 'headline' for their news stories that the public reads. **Therefore, scientific articles are not just written for scientists anymore. We as scientists need to be aware that any article available on public websites are being used by the general public. Therefore, we need (at the very least) to have our conclusions understandable and accurate. This is the challenge!**

4- The enumeration of meta-analyses showing the inconsistency between them is useful and provides a clear demonstration of the danger to pooling species or types of diseases without a pre-defined rationale. However, the paper should much improve if the author should provides some recommendation to avoid these problems. In the same time, when describing the difficulty and pitfalls of pooling, the author may mention how a random model can help.

Reply: **Thank you for this suggestion. Added to the section "Solutions 'to pool or not to pool' section.**

5- The author also mentions that subgroups are needed. I agree with this point. To provide an even better paper, I think the author should mention methods to perform this sub group analysis. As mathematical statistician, I think the way meta-analysts are currently doing this subgroup analysis is often criticizable. First, these subgroups should be identified at the protocol level to avoid fishing expedition, but also, adequate analyses must be used. Perhaps the author may describe in some words how meta-regression may help in this matter. in conclusin, good and interesting paper, needing minor revision in particular on the methodological aspect.

Reply: I added a few citations for sub-group analysis (Higgins and Sun), but as this is an editorial, I did not go into too much more detail. But did add your suggestions (done a priori and some methods to do subgroup analysis) to the text.

Reviewer #02458583. No comments.