Reviewer's report

Title: Protocol registration or development may benefit the reporting, design and conduct of doseresponse meta-analysis: Empirical evidence from a literature survey

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Reviewer: Juan Ruano Ruiz

Reviewer's report:

Manuscript reference number: BMRM-D-18-00500

Summary:

The manuscript "Does registration benefits (sic) the reporting and methodological quality? A propensity score matching analysis on doses response meta-analysis" is an original research-on-research article exploring if there are differences of methodological and reporting quality, assessed using modified versions of AMSTAR tool and PRISMA checklist respectively, between meta-analyses of dose-response interventional studies (DRMAS) conducted after an a priori protocol has been published in a scientific journal or registered in a public repository as compared with those reviews conducted without an a priori protocol.

They found that only a minority of DRMAS were conducted after publishing or registering a protocol. This group showed higher reporting quality but without differences in methodological quality as compared with DRMAS conducted lacking an a priori protocol.

The manuscript is not well written and it does not flow as nicely. The methodology is sound but there are some confusing aspect that authors should be clarify. The results are innovative because is the first time that protocol utility to improve methodological and reporting quality is evaluated. However, using such a small sample and focusing only on a rare subtype of meta-analysis hamper the confidence and external validity of the results.

My conclusion is that this manuscript must be scientifically improved before I can recommend to publish this manuscript in your journal. For that reason, authors must consider to address some of the following questions/suggestions:

1: In the Title:

-"Does registration benefits the reporting and methodological quality? [...]") should be read "Does registration benefit the reporting and methodological quality? [...]";

-I do not believe that including "propensity score matching analysis" in the title will be of added value as it is only an operational method to match studies and no analysis to compare results with other matching methods has been performed. In my opinion this sentence should be removed and
formulating a new declarative title describing the results specifying the subtype of MAs analysed is suggested.

2: Other factors that could influence methodological or reporting quality should be considered when creating univariate and multivariate regression models [funding sources (pharma vs academic), authors' conflict of interest, journal's adherence to PRISMA statement, page number, Cochrane vs non-Cochrane reviews] and discussed based on previous studies (Gómez-García F, Ruano J, Aguilar-Luque M, et al. Systematic reviews and meta-analyses on psoriasis: role of funding sources, conflict of interest and bibliometric indices as predictors of methodological quality. Br J Dermatol. 2017 Jun;176(6):1633-1644.)

3: Authors have removed the item "structured summary" from PRISMA checklist arguing that the structure of summary varies considerably and unstructured summaries report sufficiently detail. However, there some reasons for not to exclude this item: "Free format abstracts were most sensitive to the increase of text complexity as compared with more structured abstracts (IMRAD or eight-heading formats), yielding opposite effects on their quality and completeness depending on the methodological quality: a worsening in low quality reviews and an improvement in those of high quality." (Ruano J, Aguilar-Luque M, Isla-Tejera B, et al. Relationships between abstract features and methodological quality explained variations of social media activity derived from systematic reviews about psoriasis interventions. J Clin Epidemiol. 2018 Sep;101:35-43.)

4: Pg 7, ln 15: 'PRIMSA' must be read 'PRISMA'. Please, fix it.

5: In the Results section (pg 8, ln 18), authors explain that '4 (studies) provided a supplemented protocol'. As these are not a priori published or registered protocols, in my opinion should have not been included in the study. In any case, a sensitivity analysis (without these studies) should be performed address this issue.

6: In addiction, authors include 'DRMAS with protocol registration or published' expression throughout the manuscript when in fact no include review has an a priori protocol published in a scientific journal -see comment #5.

7: Method for clustering journal was not defined in the Method section.

8: English writing of the Discussion section must be reviewed.
9: It would be interesting to expand the Discussion about the PRISMA items that discriminate reviews with registered vs non-registered protocols. Three out four items were related with risk of bias assessment or source of funding of primary studies. This may be another argument to question #2.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
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