Author’s response to reviews

Title: Systematic reviews of prognosis studies: a critical appraisal of five core clinical journals.

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"Systematic reviews in the prognosis field: a critical appraisal of five core clinical journals"

October 18, 2016

Dear Editor and reviewers,

We would like to resubmit for publication the revised version of manuscript # DAPR-D-16-00008 "Systematic reviews in the prognosis field: a critical appraisal of five core clinical journals " We truly appreciated the very helpful comments of the reviewers. At the following, the reviewers’ concerns will be addressed.

Reviewer #1:

Thank you for this opportunity to review this paper by Matino et al, entitled "Systematic reviews in the prognosis field: a critical appraisal of five core clinical journals." The authors aimed to investigate the trends and quality of systematic reviews of prognostic studies published in five journals.

There are however a few issues, which the authors need to address, before publication can be recommended.
ABSTRACT:

- background: "characteristics" instead of "characteristic"

We corrected the typo as suggested by the reviewer on page 2.

- although you mention SRs of prognostic studies in the methods-section, the results section starts with the overall number of SRs. Likewise, the evolution of the proportion of SRs is described, but proportion of what exactly? Total number of studies published that year?

We reported both proportion of SRs to total number of studies (Figure 1) and proportion of prognostic SRs to overall SRs (Figure 2). We revised the sentence to make it clearer. The methods section on page 6 was also revised.

- "trend of the overall summary score": please specify that this relates to the quality appraisal.

We revised the sentence as suggested by the reviewer.

INTRODUCTION:

- page 4 line 9: "characteristics" instead of "characteristic"

The introduction was substantially revised on page 3-4.

- overall the introduction is too long. Please consider dropping paragraphs, such as page 4 line 22 to page 5 line 5.

The introduction was substantially revised as suggested by the reviewer on page 3-4.

METHODS:

- Please elaborate on the selection of these 5 journals, as these are not at random.

We revised the paragraph on page 5, line 4-5 as suggested by the reviewer.

- literature search: did you only search Medline (NB: Pubmed is a search engine and not a database)?
We revised the sentences on page 5, line 4.

- number of SR of prognostic studies was hand-searched. Did you check for agreement between reviewers?

We did not formally perform a calculation for the agreement of the authors. However, all of the disagreements were resolved by consensus.

Which criteria did you use to define prognostic studies? There is a very thin line between prognostic studies and diagnostic studies especially if you are looking at prognostic factor research as defined in your introduction with subsequent clinical outcome. How did you differentiate between both?

We elaborated the study methods as suggested by the reviewer on page 4-5. For the definition of prognostic study, we followed the PROGRESS.

- why did you choose studies published in the last 12 years and not 10 or 15? Please justify your choice.

The protocol was written in 2010, and we intended to search 10 years. Subsequently the study was delayed and we updated the search in 2013, covering a total of 13 years. There is no specific reasons to chose 13, but we felt it was a pity trashing 3 years of already collected information.

- how did you calculate trends? From the figures, it seems like linear regression, but it is nowhere specified.

The trends of the publication were presented as a simple linear curve not a regression line. The curves were constructed for each journal from a proportion of systematic reviews and total articles by year. This was stated on page 6, line 1-4.

RESULTS:

- Please provide a flow chart explaining study flow starting from 41996 articles onwards.

We constructed the flow chart as suggested by the reviewer (Figure 1).
- Increase and stability of these percentages (for the trend over time) are not based on any statistical testing. Please explain.

We performed statistical test for the changes of the scores using ANOVA and linear regression. The results were added on page 7, line 10-15.

- Have you considered the distribution of these scores? Now you assume normality, but it might well be skewed, justifying the use of median scores.

We assumed that the scores were normally distributed. We calculated the median scores (data not shown) and found that the central tendency did not change much.

- In general: doesn't the trend just show that studies have become more rigorous in terms of adhering to the reporting guidelines instead of actually being of better quality? Some of these checklists were (e.g. PRISMA in 2009) only developed in the past few years and I find it a bit harsh to check whether a paper adhered to a guideline which hadn't been established at the time.

We agree with the reviewers. We added this limitation in the discussion part on page 10.

DISCUSSION:

- Please avoid repeating (or presenting) the results in the discussion section (page 8 line 10-21).

Substantial revision was made as suggested by the reviewer on page 7-9.

- Please add to the limitations section the issues mentioned above regarding the methods-section.

We added the limitations as suggested by the reviewer on page 10.

TABLES:

- Some figures contain comma's, other contain dots to indicate decimals. Please be consistent.
Thank you for pointing this out, we have thoroughly revised tables and we have incorporated in the new version also the changes suggested by Reviewer #2.

Reviewer #2:

This manuscript reviews the quality systematic reviews of prognosis studies with the aim to identify areas for improvement in such studies in the future. It focuses on reviews of fundamental prognosis research and prognostic factor research. While I see the importance that this research can play in improving the field of prognostic research, there are several points that I would like the authors to address:

MAJOR COMMENTS

* One goal of performing such a review is to identify areas for improvement in future studies and provide initial guidance on how the improvement can be realized. It would be helpful if the authors could give more attention to the items in PRISMA and MOOSE that did not score well (e.g. risk of bias of individual studies) and discuss why these items are important and what can (or is being) be done to improve them in the future.

The discussion section has been expanded to include the reviewer’s suggestion on page 8-9.

* The introduction and discussion were a bit lengthy and did not give a clear picture of the reporting and quality assessment tools associated with the two types of prediction studies of interest in this study. Additionally, since the focus is not on modeling studies, I think TRIPOD, should not be mentioned to avoid confusion.

We revised the introduction and discussion as suggested by the reviewer (page 4, page 8-10).

* Figure 5 and 6: These are the key figures of the manuscript. I would like to be able to see a description in the figure what items were well and less well covered (e.g. words, not numbers for the items). As this may be difficult in the margins of the figure, I would suggest presenting these results in a table instead. Additionally, the confidence interval for a proportion n cannot be above 1, so please redo these calculations.

We thank the reviewer for his comment. We have deleted figure 5 and figure 6. We constructed the tables 1 and 2 using the same information. We reported the proportion of fulfillment for each items with corresponding confidence interval.
* The manuscript would benefit greatly from proof editing.

The manuscript has been revised as suggested by the reviewer.

ADDITIONAL COMMENTS

* Abstract: It should be clear in the abstract that this review only focused on 2 types of prognosis research.

We have revised the abstract as suggested.

* Tables and Figures: Are tables 1 and 2 the same as Figures 3 and 4? If so, it's not necessary to present both and have a preference for the figures.

Yes, figures 3 and 4 (in the new manuscript version they are now figures 4 and 5) convey essentially the same information; as suggested by the reviewer we have eliminated tables 1 and 2.

* Flow chart: A flow chart showing the search and inclusion of studies should be included. It would also be interesting, if you have the information available, to see how many were type 1 or type 2 prognosis studies and to see how many prognosis reviews were excluded because they were type 3 or 4.

We created the flow chart as suggested by the reviewer (Figure 1 of the revised version of the manuscript), however unfortunately we didn’t keep record of what studies were excluded because they were type 3 or 4 nor we have tracked how many type 1 or type 2 were included in our analysis.

* Study characteristics: It would be interesting to have a baseline table with some information about the studies included, such as clinical domain and number of studies included.

We created a table as suggested by the reviewer.
The authors mention that there are items in MOOSE and PRISMA that are not relevant for prognostic studies. Could they elaborate on which items these are and also identify them in the result tables or figures?

We added the sentences in the results and discussion parts on page 8 and 9 as suggested by the reviewer, on page 8, line 3-13.

Discussion: In the discussion, the authors report having included systematic reviews of "clinical prediction guides". This requires further explanation as to what it is and why they included it.

Thanks for picking up on the inconsistency. We indeed did not include clinical prediction guides. We have now made this clear throughout the paper.

Associate Editor:

The manuscript is of value, but both reviewers highlighted major concerns. Please address these as well as the following comments (several of these corroborate issues already raised by the reviewers):

- TRIPOD is mentioned several times but this is not relevant for overall prognostic and prognostic factor studies. Please omit or replace by a more relevant guideline.

We agree with the reviewer and omitted TRIPOD from the manuscript.

- Search strings for identifying studies in Pubmed should be added, as well as a flow chart.

We added the search strings on page 5 as suggested by the reviewer.

- Table 3 is missing? An overview of individual items for MOOSE and PRISMA, and results per item are necessary as also mentioned by the reviewers. In the discussion you also discuss differences in evolution over time between items, these results are also required.

Tables have been now modified and renumbered 1-3. We also added MOOSE and PRISMA checklist as supplementary data. We’ve performed the statistical test for the evolution over time for the overall scores on page 7.

- Discussion, ‘some items proposed for ‘all purpose’ observation studies do not fit’: which?
We revised the paragraph on page 8 as suggested by the reviewer.

- Discussion, end of p10: how you divided the work for appraising papers is important information for the methods section.

The methods section has been revised.

- Figures 1-4: different symbols and lines are difficult to distinguish.

We adjusted the figures to make them clearer.

- Figures 5-6: CI cannot exceed 1. Also please show full CI, e.g. by replacing the bars with points with a CI around it.

We deleted figure 5 and figure 6 as requested from reviewer #2. We constructed the tables 2 and 3 using the same information. We reported the proportion of fulfillment for each items with corresponding confidence interval.

- As also indicated by the reviewers, the text should be edited for grammatical correctness, and perhaps also for conciseness.

The manuscript has been revised and proofed as suggested by the reviewer.

- The term 'prognosis field' in the title is rather vague.

Thank you: we change the title to “systematic reviews of prognostic studies”


Text has been modified as suggested.

- Abstract and text: do you really find 10.3% prognostic SRs in 2000? I don't see this in the graph, and in the discussion you write that the percentage remains stable at around 20%.
This was the proportion of prognostic SRs to overall SRs (not SRs to overall articles), Figure 2.

- Background, ‘prognosis research refers to … relations between future outcomes’: isn’t it better to write 'description and prediction of future outcomes’?

The text has been revised as suggested.

- Background, list of 4 PROGRESS categories: category 1 does not involve explanation, right?

Yes, you are correct. It does not involve the explanation.

- Background, ‘several methodological problems are still unsolved’: which?

We added the sentences as suggested by the reviewer on page 4, line 5-10.

- Clinical prediction guides: guides is not the best term.

We have changed to clinical prediction models throughout.

- P7, BMJ was the journal publishing progressively more SR about prognosis: I do not really see this in the figures?

BMJ has published progressively systematic reviews about prognosis (please see the slope of BMJ on figure 2).

- Discussion: % of SR increased 5-fold, not 4-fold?

It should have been 5-fold;

The text has been corrected.

- Discussion, what do you mean with ‘we did not formally exclude clinical prediction guide’?

See response to the last point of the referee #2.
Sincerely,

Alfonso Iorio
Davide Matino
Chatree Chai-Adisakopa