Reviewer’s report

Title: Collective intelligence in medical decision-making: a systematic scoping review

Version: 1 Date: 28 May 2019

Reviewer: Ralf H. J. M. Kurvers

Reviewer's report:

I thank the authors for addressing the large majority of my comments in their revision. I have a few more, mostly minor, suggestions. (Page numbers refer to revised manuscript). I do, however, urge the authors to be careful in the conclusions they draw from studies since at several occasions the cited studies are not accurately interpreted.

P2, L23-25. "Studies of radiological…” I would still suggest to clarify better what this inclusion/exclusion criterion constitutes. What is a complex problem, and what is a non-complex problem? Please clarify, I would also start this sentence with the general statement, and only in the end mention the specific examples of radiological scans. (Same for P6, L17).

P3, L11. Is it really true that the average in Galton's experiment (note that Galton used the arithmetic mean to determine the average) was better than all individual estimates? I read the original paper again, but I did not find such a statement. Also, why not cite the original study, rather than a study referring to it?

P3, L57. What is mean with "a specific correct and objective "answer"”? Please clarify, or give concrete examples to illustrate what is meant with this.

P4, L17. "This review includes investigations that describe their work as "wisdom of the crowd," "crowdsourcing," or "collective insight," as the same phenomenon."

I do not comprehend this sentence. This sentence seems to make an inference about how other studies used certain concepts. What (I think) the authors mean to state is that they consider these terms interchangeable. If so, this conflicts with P3, L22, in which they seem to suggest that crowdsourcing is not the same as the other concepts. Though the manuscript is much easier to follow after the revision in terms of terminology use, I still find a number of puzzling statements scattered throughout the text.

P10, Outcomes. This section has improved, but I still think it could benefit from some more structure. It is a list of discussion points without any structure, making it hard to grasp the essence and navigate this part. Since it is also not foreshadowed what will be discussed in this section (nor why certain aspects are discussed and others not), I find it hard to judge this section.
Having headers, or an explanation of why certain aspects will be discussed could help here I think.

There is also a lot of unnecessary repetition in this paragraph. For example, P11 L37, P11 L57, P12 L30 mentions three time the study in which pairs and individuals were compared. Also other conclusions are repeatedly stated. I would suggest to remove this repetition. I think this also happens because of the general lack of structural clarity in this section.

P11, L37. In reference 26 medical students were used, not physicians.

P11, L36 + L41. Diagnostic performance and diagnostic accuracy are used in sentences following each other. Why use different terminology to indicate the same thing?

P11, L57. Again, reference 26 did not use physicians. I really urge the authors to accurately report the studies they are citing to avoid confusion. If the aim is to provide a framework in this area, then it does not help that several of the statements are simply incorrect.

P12, L6. "Although studies included in this review are heterogeneous in design and outcomes, all of them examine some aspect of the use of collective intelligence in medical decision-making."

This statement can be removed because studies were selected based on these criteria, so I do not see the added value of this remark. Circular argument.

P12, L51. Typo.

I found it surprising that in the Conclusion the 3 pillars of the framework are not all mentioned. That seems strange as this seems to be one of the major conclusions of the study.

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

Yes

**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?**
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Yes
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.

Not relevant to this manuscript

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