Reviewer’s report

Title: Figure Interpretation Assessment Tool-Health (FIAT-Health) 2.0: from a scoring instrument to a critical appraisal tool

Version: 0 Date: 30 May 2019

Reviewer: Tanja Rombey

Reviewer's report:

I wish to thank the editor for the opportunity to review this manuscript entitled "Figure Interpretation Assessment Tool-Health (FIAT-Health) 2.0: from a scoring instrument to an assessment tool" by Reinie Gerrits and her colleagues.

The authors report the results of a testing and evaluation study of a Figure Interpretation Assessment Tool for figures on health and health care (the FIAT-Health), which they have developed previously. Based on their evaluation they have revised the tool (now called FIAT-Health 2.0). The authors also report the methods of revising it, details of the new tool and differences between the old and the new tool.

The manuscript is well written and their tool is a useful and valuable addition for its intended users (including us researchers). However, I would like the authors to consider my following comments, which are intended to further increase the readability of their manuscript and improve the transparency of their research:

Abstract - Background:

1. This section of the abstract only covers one part of your paper (namely the evaluation of the FIAT-Health). You should add that you also aimed to revise the tool based on the results from testing and evaluating it.
Throughout manuscript:

2. I think the word "motivate/motivations" is a little misleading and hence suggest you use "justify" and "reason(s)" or "justification(s)" instead.

3. I suggest that you use the word "critical appraisal tool" instead of "assessment tool" when talking about the transition from FIAT-Health 1.0 to FIAT-Health 2.0 (i.e. "the FIAT-Health 1.0 was revised from a scoring instrument into a critical appraisal tool: the FIAT-Health 2.0") as both tools already have the word "assessment" in their name.

Abstract - Methods:

4. Please state whether there was a protocol for your study. If so, please cite it (if published) or provide it in the appendix (if unpublished).

5. I suggest that you change the order in which you report your methods here, e.g. first say that you calculated the consistency across the potential users who participated in the evaluation and analysed their answers to the evaluation questions, and then say that experts provided comparative assessments and you compared the potential user's and expert's reasons. Otherwise it is not clear who was included in which analysis.

6. I would also consider the experts to be participants in your study and suggest that you call the potential users who decided to participate in your study differently.

Abstract - Results:

7. You should say how many potential users actually participated.

8. You should say by whom the 17 questions were consistently answered (i.e. the potential users who participated).

Abstract - Conclusion:

9. Saying that the FIAT-Health 1.0 tool is useful assessment tool brings up the question why you made a new (better?) tool. I suggest you repeat in brief the results of your testing and evaluation study and say that the drawbacks you identified lead to the refined tool.
Background:

10. As in the abstract, the end of the background section (where you state your aim) only covers one part of your paper (namely the evaluation of the FIAT-Health). You should add that you also aimed to revise the tool based on the results from testing and evaluating it.

Methods:

11. You should add a subheading where you outline the design of your study, to be followed by a subheading called "setting" (or similar) where you can put the information that your study took place in the Netherlands Feb to Aug 2017. This paragraph should be followed by the paragraph about the participants (which should definitely come before the paragraph about data collection).

12. The subheading "Case studies" is a bit misleading. I suggest that you rename it, e.g. "Figures used for testing" and call them figures in the following. You should provide these figures in the appendix and quote the primary publication.

13. You should say which format the FIAT-Health 1.0 normally has and perhaps provide the Excel sheet used for testing as an additional file.

14. The sentence about the number of people you invited who declined participation and who did participate belongs to the result's part.

15. Please state if there was an incentive for the users or experts to participate in your study.

16. You should elaborate on both the qualitative analyses you performed (motivations for assessment & valuation by the participants). Who and how many people did the coding? Which approach did you follow in this kind of content analysis? What kind of comparison did you perform?

17. You should provide and cite the figures used for piloting the FIAT-Health 2.0.

18. Figure 1: I suggest you add a box after "Assessment of cases by 4 experts" where you say that you determined the users level of consistency per item and compared the end users' and experts' assessments. Otherwise it is unclear from the figure why you would come up with a new version.
Results:

19. As mentioned earlier, you should start the result's section with information on how many of the invited people participated (i.e. under the subheading "participants").

20. You should then carry on with a subheading like "comparison of end users' and experts' assessments" (or similar) so the reader knows which aspect of your study is being reported.

21. The titles for the diagrams in Figure 2 do not give the reader enough information. I suggest that you use the actual questions no. 14 and no. 15 as the title and put in brackets "figure 1" (2, 3 or 4).

22. In the top left diagram in Figure 2, it says "Deelnemer" instead of "participants". Please correct this.

23. I noticed that the scale goes from 1 to 5 but that the diagram includes 0… so this might not be the optimal way to present these data.

24. When looking at Appendix 1 - Table 1, it appears that not all participants answered all questions (probably because some of the questions depended on the answer given to the previous question). However, the rule "Answers to dichotomous questions were considered inconsistent if the answer of two or more participants deviated from the majority for at least two cases." is not applicable if the number of people who answered a question is one and you should point this out to the reader.

25. You should say that the web version is available in Dutch only. Of course, it would be great if in the future there will be an English version of the website as well!
Discussion:

26. Analogue to my comments on the background section, I would add the other aim of your study (to revise the FIAT-Health 1.0) at the beginning of the discussion.

27. Under limitations, you should add that the coding might have been biased / done wrongly (for now I am assuming it was done by one person only with no means of quality control - if that is not correct please provide the respective information in the methods!)

28. AMSTAR is not a reporting checklist but a tool to assess the methodological quality of systematic reviews with. PRISMA is a reporting guideline for systematic reviews. However, from what I understood your tool rather resembles a critical appraisal tool, although it also can be used as a reporting checklist. Thus, I suggest you re-consider the wording if the first sentence under "context" (as well as the keyword "reporting guideline").

29. To be consistent, you should also write out AMSTAR in the text (as done with COSMIN).

30. There is a bracket missing after "Instruments".

Conclusion:

31. The conclusion should link back to your aim. Please revise it accordingly.

32. It is unclear how you arrived at the conclusion that the transformation of the tool has increased its usability as you have not again tested the FIAT-Health 2.0 among the people who have tested the FIAT-Health 1.0. Please reword this (e.g. using the subjunctive).

Availability of data and material:

33. You say that RG collected all answers, so I assume there must be some sort of data you could share. I suggest you at least provide your data on reasonable request.
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.

Yes

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:

Acceptable

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Please complete a declaration of competing interests, considering the following questions:

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