Reviewer’s report

Title: Languages for different health information readers: Multitrait-multimethod content analysis of Cochrane systematic reviews textual summary formats

Version: 1 Date: 18 Feb 2019

Reviewer: William Speier

Reviewer's report:

The authors did a good job of addressing the comments from the previous submission. I have a few remaining comments that I would like to see addressed before recommending publication.

My main comment is a remaining concern about the clarity of the figures. I believe that figure 2 in particular should be a box plot rather than a radar plot. This plot is only making a comparison on one dimension (SMOG index), so I don't agree that this plot is too complex to represent as a box plot. Currently, it is hard to compare values on opposite sides of the plot. Also, I would suggest changing the minimum value for this plot as all values are within the range 10-16, and plotting from zero condenses everything making differences harder to see. Finally, the caption states that all confidence intervals are covered by the points, but this does not seem to be the case from the data in the supplemental tables. For instance, the upper value for the CI of Cochrane Clinical answers is 16.6, which is above the maximum of this figure while the point is clearly within the range of the figure.

For figures 3-5, I can understand the reasoning behind using radar plots, but my concern is the differences in ranges for the variable values making differences between abstracts, press releases, and plain language summaries difficult to see. These plots do a good job of visualizing overall trends across document types (e.g., all document types have higher openness than agreeableness scores), but they do not do a good job of visualizing differences between document types (e.g., that press releases have higher clout than other document types). For instance, the points for analytical thinking are practically overlapping, while the variable is marked as statistically significant. Rescaling the values or axes could help with this visualization. Otherwise, I would consider a different type of plot.

Minor comments:

In the abstract, the results section has too many numerical details. It is enough here to state the means a say they are significantly different.

SMOG is now defined in both background and methods.

There are several repeated citations that could probably be condensed. For instance, [21] is cited in three consecutive sentences on page 5 where once is probably sufficient.
What is the default prior distribution (page 6)? I assume it is uniform.

The abbreviations section at the end only mentions CI and LIWC, but others are used in the manuscript (e.g., SMOG, ANOVA, BF, PLS).

The PLS abbreviation is only used in Figure 2. I would use it consistently, or spell it out in the figure.

In figures 3-5, plain language summaries are used, but it isn't clear which language they were (I assume English).

There is significant dropout between press releases and clinical answers, and scientific abstracts and French and German PLS. Could this have led to bias (e.g., only simpler summaries were translated)?

eTable2 word count: German is listed as significantly different from English, but English is not listed as significantly different from German

Asterisks in figures can be difficult to follow when some refer to significantly higher values and some refer to significantly lower values.

I think tables 1 and 2 provide enough information to warrant inclusion in the main manuscript rather than supplemental material.

**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.

Yes

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

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.

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