Author’s response to reviews

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

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Author’s response to reviews:

We uploaded the full resubmission letter. Here are the specific responses to the reviewers' comments:

William Speier (Reviewer 1): 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.

ANSWER: We thank the reviewer for the argument, which we accept. We now have the figures with individual points, and hope that they are now clear. We still leave the full numerical analysis in the supplementary documentation.

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.

ANSWER: We deleted the numerical presentation of the results for the psychological characteristics of the text, but left the numbers for SMOG scores. Presenting only means or medians without variability measures did not seem appropriate, but we agree that deleting some numbers makes the abstract clearer.

SMOG is now defined in both background and methods.

ANSWER: We deleted the redundant text in the Methods section.

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.

ANSWER: We deleted the redundant mentions of the reference on the page.

What is the default prior distribution (page 6)? I assume it is uniform.

ANSWER: Thank you for your observation. Default prior distribution in JASP means that we did not specify an expected effect in any direction. The default distribution uses a Cauchi distribution as a prior which specifies that the effect will fall anywhere between -0.707 to
+0.707, and puts the most probability mass centred around 0. In that sense, our analysis was complementary to the frequentist analysis of differences between groups. We will make this point clearer in the manuscript.

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

ANSWER: All abbreviations are now spelled out and consistently used in figure legends.

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

ANSWER: As stated above, the abbreviations are not spelled out and consistently used in figure legends.

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

ANSWER: Yes, they are in English, as specified in the Methods section. This is now also clarified in the figure legends.

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)?

ANSWER: Our methodological approach was to start with the cohort of existing press releases and find other matching formats. This meant that we found (almost) all of the scientific abstracts and plain language summaries in English and Croatia (because Croatian Cochrane is very active in plain language summary translations). Other formats varied in the sample size, but the reasons are not known – this is addressed in the limitations section. We are not sure whether the simplicity of the summaries was the reason for translation, probably rather the interest of the translators or interest for the clinical practice community for the Cochrane Clinical Answers. The latter group had the fewest summaries, so that sample was not included in the language analysis.

cTable2 word count: German is listed as significantly different from English, but English is not listed as significantly different from German
ANSWER: We thank the reviewer for noticing this – we introduced this correction in the revised supplementary table.

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

ANSWER: We have now changed the format of the figures to clarify the relationship between different groups.

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

ANSWER: As stated above, we changed the format of the figures to make them clearer. The numerical data are still presented in full in the supplementary documentation.

Mike Conway (Reviewer 2):

The authors have addressed all my major points, but there are still some issues — primarily with language, style, and clarity — that need to be addressed.

COMMENTS

p3. paragraph1: "also, patients and general population" -> *the general population

p3. paragraph1: Sentence beginning "The most common readability tool…” should be broken down into two sentences for the sake of clarity

p3. paragraph2: Sentence beginning "While there are many efforts to translate…” grammar issues [Suggestion: While there are many efforts to translate health information of different kinds to a form suitable for patients and the general public]

p3. paragraph3: "… customised health information is Cochrane, international" Probably "*an international"
Study design and data sources: "We used cross sectional" -> *across sectional

Text readability: "and considered most appropriate for assessing" consider making this a new sentence (i.e. breaking up the sentence)

Text readability. "is that the values over six" Probably better without with no "the"

"They describe different entities or processes…" What does "they" refer to here?

"… were not analysed due to the sample.." *asample

"Plain language translations were also not analysed because those language corpora are not well presented…” Suggest rewriting for clarity

"… tested by Kolmogorov Smirnov…” insert "the" between "by" and "Kolmogorov"

"eta" ?

Sentiment analysis: "We used Stanford NLP…” *the Stanford NLP

Discussion: "… as there is not much literature" - "as there is little literature"

Discussion. "…on the use of SMOG formula" *the SMOG

Discussion. "The study that compared…” This may read better as "Further, the study that compared…”

"…balance between the reading ease" suggest removing "the"

"Scientific abstracts are intended for professionals and emotional "coldness" it is to be expected as it presents " - "coldness" is to be expected as they present"

"gain greater insights in the " - "gain greater insights into the"

"The future research should…” - "Future research should…”

"accurately express the scientific findings" - "accurately express scientific findings"

"…and the proposition to introduce" - "and the proposition that news stories should involve a…”

"…characteristics of the text" Don't think "the" is needed here.

ANSWER: All suggested corrections were introduced in the revised version of the manuscript. We appreciate the help with language editing.