Author's response to reviews

Title: Understanding Plain English Summaries: A Comparison of two Approaches to Improve the Quality of Plain English Summaries in Research Reports.

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Author’s response to reviews:

Dear Editors,

We thank you and the reviewers for your comments and insights. We have addressed each point below and made substantial changes to the manuscript.

We were pleased to read that the reviewers felt this was an important area of research and recognised the potential impact of the findings.

We hope that with these changes you will be happy to publish the paper.

Kind regards,

Emma Kirkpatrick

Reviewer reports:

Reviewer #1: A mixed bag of comments! There is a typo on where it refers to 'a Plain English Summaries' - the a is superfluous. There is some correction needed with subject verb agreements. For example it says 'As the writing style for Plain English Abstracts are different' - it should read 'As the writing style for Plain English Abstracts is different. . . '. and ' the public are being'...
should be 'the public is being'. These are just two examples. Sorry to be pedantic but this is about writing clear summaries so think should be checked throughout.

We appreciate this input and have made some changes throughout the manuscript to improve its clarity.

Line 47 on page 7 Whilst, CRUK - superfluous comma here. Comma usage is a little random throughout and needs tidying.

Thank you - we have corrected this.

Page 8 - the aim is clearly set out. Should this be a separate heading? It is lost at the end of the background section.

We have added this heading.

Page 9 - consistency needed with Plain English summaries - sometimes referred to as PES, but here it is with random capitalisation.

This has been corrected.

Also reference could be made to:


This has underpinned NCRI work in this area.

We have included this reference in the introduction.

Reviewer #2: The issue of ensuring patients and the public can access and understand information about medical research is important. The authors are to be commended for conducting this study, and for testing an approach to improving the quality of plain English summaries that is feasible and could be rolled out at scale (providing brief guidance for authors). However, there are some important issues that I believe need addressing in order to strengthen the manuscript.

1) For the primary outcome, the authors report that the percentage of PES rated "Understood All" was highest for independently-edited versions (74%), followed by author revised (62%), versus 59% for original versions, but that there was no statistically significant difference. Was the sample size sufficient to detect a difference? The methods section gives no details on how the sample size was determined (this should be covered). If the sample size was determined by pragmatic considerations without consideration of statistical factors, this needs to be discussed as a limitation of the study.
This study was intended as an exploratory study evaluating two possible ways of improving ease of understanding and reading of PESs. We did not undertake an apriori power analysis. The decision to include 40 reports in the study was pragmatic in order to collect the data in a timely fashion. We have now included this in the method section. The limitations of understanding ratings has been expanded upon in the discussion.

2) The results and conclusion of the abstract seem overly positive - your primary outcome does not justify this, and you need to acknowledge this.

We have rewritten the abstract in response to this and other reviewer comments, taking note of this point in the conclusion.

3) Please specify the experience / training the medical writer had in writing in Plain English in your methods section.

We have added this.

4) I think it would be clearer to report your primary outcome before your secondary outcome in both the methods and results section.

We agree and this has been changed.

5) It would be interesting to see a breakdown of readability statistics that go into calculating the FRE score. Did the guidance for authors improve some of these aspects and not others? That could give an idea on whether the guidance needs to be strengthened in any specific aspect. It would also be interesting to see statistics on items that affect readability that aren't included in the calculation of the FRE score, for example proportion of passive voice sentences. This may help to provide insight into why an improvement in the FRE score did not translate to a significant improvement in understandability.

The factors that affect the FRE score are number of words relative to number of sentences (shorter sentences = higher score) and number of syllables relative to number of words (fewer syllables = higher score). The formula has been included in the paper. We have not included a breakdown of numbers of words, sentences and syllables in each summary but there are simple ways to increase FRE score, i.e. using shorter words and sentences.

However, clearly this does not necessarily equate to improved understanding. Shorter words are not always simpler; conversely, multisyllabic words are not always complex or nuanced in meaning. Similarly, simply shortening sentences will not always result in a text that is easier to understand. We have added a discussion of these issues into the paper as an explanation of the lack of translation of improvements in FRE score to improvement in ease of understanding.

In terms of strengthening the guidance in specific areas to increase the FRE score, we do not feel that this would add value. The guidance is not intended simply to increase FRE score. Rather, this score could be used as a quick check for authors, where lower scores may prompt them to reassess sentence length or use of unnecessarily long words.
6) You have chosen reported comprehension as your primary outcome measure, rather than testing that comprehension. People may believe that they understand something, but actually misunderstand. In your discussion of limitations, perhaps you could reflect on whether testing comprehension in addition to asking readers to rate comprehension might strengthen any future studies on this topic, and why you chose not to do that in this study.

It is true that people may believe that they understand something but actually misunderstand and we did consider including a comprehension test as the main outcome measure. However, assessing true understanding is non-trivial.

One possibility would be to ask a question with an objective answer and note whether the correct response was chosen. This would assess comprehension of that specific point in the PES but would tell us nothing of their broader understanding of the piece.

An alternative, which on the surface seems more attractive, would be to ask raters to briefly summarise the main point of the PES. This relies not only on the rater’s comprehending the PES, but their ability to effectively communicate that understanding and the ability of the assessor to understand or interpret this summary and subsequently determine that the rater had, had not, or had partially understood the text. The number of variables that are involved in this sort of assessment is large and we ultimately felt that this was less important than a self-reported rating of understanding. After all, in the real world, if a reader of a PES feels that they have understood its message they are not likely to seek any confirmation, nor may they have access to this.

Therefore, while testing comprehension is an attractive suggestion, we would not necessarily advise this in future studies and do not feel that its omission here is a significant limitation.

7) As a sensitivity analysis, would your conclusions be any different if you used a different readability formula?

We have added a sensitivity analysis using the Gunning Fog Index, which produces the same results.

8) I'm not sure that your sentence on the role of specialist writers (page 7) really does justice to their role.

We have amended this.

9) Some researchers and medical professionals I have spoken to are worried that making summaries Plain English is 'dumbing down' or 'patronising'. Did you have any comments on the revised versions where raters reported this? If not, it would be helpful to say you had no complaints about this.

We did not have any comments from raters that PESs were patronising or dumbed down; however, as we did not specifically ask about this we feel it would be overly speculative to include a statement to this effect.
10) It would be interesting to compare the three different versions of a single summary, to see the sorts of changes that were made (although I understand this may be difficult)

We agree that this would be an interesting exercise; however, have elected not to include it. Authors of the reports would be easily identifiable from the PESs and we feel that there may be ethical considerations around highlighting that their PES was difficult to understand and the suggestion that it was poorly written.

11) The use of commas is a bit random in places.

This has been addressed.

Reviewer #3: I enjoyed reading the manuscript and the further references are useful....thank you. In terms of methodology, it would be good to include a table as supplementary information to explain to the reader the difference between the groups of review type of the material (soft ware test vs human readability test) vs the two versions of lay summary that were written. Please include the reviewer numbers.

Unfortunately, I do not understand this comment and have been unable to respond to it – could the reviewer please clarify this point if it needs to be addressed?

In addition, can the authors provide their views on the use of expert patients as co-producers of lay summaries in place of medical writers as described here?

Involving patients and members of the public in the production of PESs is an interesting proposal, which may lead to better-written summaries. We have added this as a point in the discussion. We have not commented on this as an alternative to medical writers since we did not examine that in this study and do not wish to speculate.

Reviewer #4: I thought this was really well written and much needed guidance for academics and researchers publishing articles, especially in the Medical and Science fields. There is definitely a need for this and for this message to reach these people who as you rightly point out often struggle to remove technical language.

Thank you for these comments, highlighting the importance and potential impact of the paper.

My only slight comment is that the abstract (as oppose to the rest of the article) was harder to read - I believe a reading level of Shakespeare when I ran it through an online checker (The Writer) - for me as the first thing that people will see of the article it is important that this is as easy read as possible to make the article universally accessible.

We agree and have rewritten the abstract to make it clearer.
Also, I appreciated the definition of all of the acronyms used but wondered whether it would be helpful for readers to have an acronym table somewhere? Just so there is a quick reference point for the reader to check back when they want to double check an acronym in the text.

We have added a table of acronyms as supplementary material for reference (table S1)

Reviewer #5: Thank you for the opportunity to review this interesting manuscript.

Given the importance of lay summaries to facilitate understanding of research, this paper attempts to address an important question regarding how best to optimise the summaries.

Major comments

1. The study compares the value of providing authors with additional guidance versus professional medical writing input. However, only one medical writer was involved and there is no information regarding the level of relevant experience that this medical writer had. Writing lay summaries is a skill that is not a core part of all medical writing roles, with many trained to write for expert audiences only. Furthermore, it can take a number of years to become a fully trained writer. I would recommend that the background of training and experience that the medical writer had is detailed in the paper as this is key to the results. Ideally, the study would have involved a team of experienced medical writers trained in lay summaries.

We have added information about the medical writer’s training in the method section (as suggested also by reviewer #2). We have added the fact that only one medical writer was used to the discussion of limitations.

2. The manuscript abstract concludes that both interventions improved the quality. However, only the readability was significantly affected by the interventions, but not the ease of understanding. Quality cannot be assessed on readability alone, but needs to be based on an accurate understanding. Although ease of understanding was measured, no significant overall group differences were found. Furthermore, the level of understanding was never checked. Indeed the authors themselves raise the fact that some reader comments suggested a level of confusion, despite the reader rating the summary as ‘understood all’. It may well be that one of the interventions was significantly better at explaining the real meaning, but the reader was not aware of this as they did not realise they had misunderstood the summary. A further independent test of their level of understanding (rather than relying on self scores) would have improved the robustness of the data. This limitation needs to be clearer in the discussion.

We agree that the understanding scale that was used had limitation – these are discussed in the paper. We have elaborated on the challenges associated with assessing understanding in response to reviewer #2, point 6.

Minor comments
1. Within the methodology, there is use of a number of terms that appear interchangeable when referring to the group who reviewed the summaries which can make it difficult to follow (public reviewers, contributers, raters, participants, readers, patient public group). Defining the group up front and then consistently using the same language would improve the readability of the manuscript.

We agree that this is confusing and have endeavoured to keep the terminology consistent in this revised manuscript

Editor's Comments:

The authors may also wish to consider mentioning patient-authored guidance on lay reviews, available at http://www.ncri.org.uk/wp-content/uploads/2015/07/How-to-write-a-good-lay-summary.pdf, but omitted from their paper and their references.

Thank you, we have included this reference which was also highlighted by reviewer #1