Author's response to reviews

Title: Improving search filter performance: a study of palliative care literature

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Author's response to reviews: see over
Dear Sir

Thank you for the opportunity to review our manuscript in the light of the reviewers’ reports.

We appreciate the positive comments of Mr Michael Ackerman, and the constructive feedback of Ms Su Golder. The key issues identified for reconsideration were a lack of clarity given this research extends an earlier study published elsewhere, and insufficient commentary on limitations. We have now revised the manuscript substantially to redress these issues, and believe the quality of the paper has been enhanced. We note that the decision to submit this paper to your journal is based on our firm belief that understanding the difficulties and limitations of searching is now relevant for an increasing number of clinicians and researchers outside of the professional library community.

Our detailed responses to reviewer comments are provided herewith, and I would be pleased to correspond further with you regarding this manuscript.

Yours Sincerely

Ruth M Sladek
Responses to Reviewer (SG)

MAJOR COMPULSORY REVISIONS

Background

1. We have now outlined why searching in palliative care is difficult by adding the following text to the beginning of the first paragraph:

   *It is difficult to systematically search for literature relevant to palliative care. It is a diffuse subject, embracing topics from multiple other disciplines, and with relevant papers likely to be published in general medical journals. To facilitate improved identification of these papers...*

2. To facilitate understanding the relationship between this paper and our previously published one, the following text has been added to the end of the first paragraph:

   *This paper presents an overview of the previous study, and reports findings from current research which investigates further improvements to filter performance.*

3. Additionally, we have added the heading *The Original Study* to highlight that we are referring to a separate piece of work.

Methods

4. To explain why these journals and dates were used, we have added the following text under the heading *The Original Study* in the Background section:

   *The journals chosen (JAMA, BMJ, The Lancet and Annals of Internal Medicine) were selected for their wide availability, balance between North American and European perspectives, established reputations and underlying peer review processes.*

5. We have now reframed the second sentence in this section to better identify that the hand searching was undertaken in the earlier research

   *A set of incorrectly excluded citations was created by comparing records in the gold standard reference set (those identified in the previous study using a hand search)...

Results

6. The review has recommended describing the details of the SIGN, NICE and PAPAS searches in the results section. We do identify them later, but agree they should be introduced earlier, and think this information is better placed in the Methods section. We have therefore added some text and repositioned the latter text with it, in the Methods Section to read:
These searches included three previously published (yet not validated) search strategies relevant to palliative care [5-7], which we used to compare rates; the published Cochrane PAPAS Review Group Search Strategy, and strategies used by the National Institute for Health and Clinical Excellence (NICE) and the Scottish Intercollegiate Guidelines Network (SIGN) in the development of their respective guidelines.

**Discussion**

7. The reviewers comments related to inadequate discussion of the limitations. We have therefore added the phrase *in terms of generalisability* following to paragraph 8 of the discussion, so that it now reads:

> The palliative care filter has limitations *in terms of generalisability* as outlined in our original report [1].

8. We have also added a short paragraph to the discussion, specifically detailing the issues raised about limitations.

> Generalisability in this study is difficult to assess. Because it builds on the previous study, it shares issues such as being based on a restricted subset of journals, described more fully elsewhere [1]. No validation set of records was used to test MeSH terms, and terms were selected on the basis of frequency only, hence none were added that demonstrated high precision. Useful MeSH terms may have been missed. Also, there was no analysis of the cumulative effects of different combinations of MeSH terms.

**MINOR ESSENTIAL REVISIONS**

9. Re Background, Paragraph 1, Line 4. It was queried whether we used the same methods as Haynes et al. We believe we did use the same methodological approach, but aspects did vary (eg, the computer software they used) so we thought this might be better presented by inserting the word ‘methodological’ to read

> Using a methodological approach often used to evaluate new diagnostic tests in medicine, and previously used to develop validated search filters [3].

10. Re Background Paragraph 2, Line 3. As recommended, the word *database* has been changed to *reference set*

11. Re Background Paragraph 2, Line 6. Because this is the introduction, we have changed the term to *incorrectly excluded* to read *missed*, which is effectively describe in the sentence immediately preceding it.

12. Re Discussion, Paragraph 2, Line 4: As recommended, the correct for name for the Institute has been added
13. Re Discussion, Paragraph 3, Line 7: As recommended, deleted ‘who applied them’

14. Re Discussion, Paragraph 4, Line 6: As recommended, changed ‘all’ to ‘many other’.

15. Re Discussion, Paragraph 8, Line 1. It was queried whether this was a third generation approach and why. We advise that according to the reference we cite (page 150 of the original article), we believe this is a third generation approach. We do agree there is still some subjectivity, so have reworded this paragraph to read:

   This study highlights the value of frequency analysis of MeSH terms, a third generation approach considered to be a more rigorous method [9]. Whilst we still had a subjective cut-off point, the selection of included additional MeSH terms was based on an objective and replicable process.

16. Re Discussion, Paragraph 8, Line 7. As recommended, we have defined for whom this represents the best compromise by adding in the words “for clinicians”

17. Box 1. We have added the title: Box 1. Rate definitions (sensitivity, specificity, accuracy, precision)

18. Box 2. As recommended, we have deleted ““

19. Box 3. As recommended, we have added the sign / as appropriate

20. Table 2 comments. This is a most complex issue, and the reviewer is quite correct. We note, using OVID software the searcher only has 2 choices: to either search for a MeSH term with all subheadings (hence the use of, eg Physician-patient relations/) or to select specific subheadings (eg, Physician-patient relations/es). The only option to exclude subheadings would be to use the Boolean operator ‘NOT’. However, a search for Physician-patient relations/ NOT Physician-patient relations/es would also exclude any relevant records if they happened to be indexed with both. We have added in the following explanation and note the limitations:

   Although the six most frequently appearing MeSH terms did not actually have any subheadings, the analysis was undertaken using exact MeSH terms (with or without subheadings) as they appeared in the citations. However, database limitations means it is not possible to search for MeSH terms without subheadings; a searcher has only two choices – all subheadings or to select specific subheadings. We chose all subheadings, as this preserved the intent of a frequency analysis and would ensure that all records tagged with the six most frequent MeSH terms would be retrieved. How the limitation is that sensitivity may be overestimated (other less frequent MeSH terms with subheadings may be included) and precision and accuracy underestimated (additional records will contribute to the denominator of those rates). Given the focus of this research was to improve sensitivity, we explored this
possibility of bias and note that only one citation relating to the six MeSH terms had a subheading (quality of life/psychology). Our sensitivity rate therefore, is held to be accurate.

DISCRETIONARY REVISIONS

Every recommended revision here has been incorporated, except for the following:

21. Background, Paragraph 1, Line 6: We have retained ‘comprising’ and not changed it to ‘comprising of’.