Reviewer's report

Title: A method to develop empirically derived search strategies: Identifying nurse staffing research in PubMed

Version: 1 Date: 27 April 2010

Reviewer: Monika Kastner

Reviewer's report:

1. Background:

a. In the second paragraph, the authors should explain what is the relationship between nurse staffing and patient outcomes; also to explain what the diverse methods are to nurse staffing research – there is not enough context for readers unfamiliar with this area to determine the relevance and potential usefulness of their suggested search strategy

b. The authors could also provide more references to support the above

c. On page 4, the authors should explain (and provide references) for what they mean by: “Empirical tested search strategies could support the identification of this literature in an effective and efficient manner and could be used for searches conducted in systematic reviews or to create automatic email updates” – is this a new approach developed by authors (re: using systematic reviews to inform the development set of terms) or has this been done before? How?

2. Methods: Overall, the methods need more detail and explanation – it is difficult to determine how the study was done and the rationale for each stage.

a. On page 5, the authors should explain why and how using the number of relevant papers in a systematic review could inform the “development set” – it’s an interesting idea, but not enough information is provided in the background or methods to determine its validity

b. Minor point on page 5: when referring to mining for “promising” free text terms, are the authors referring to terms that are potentially relevant?

c. On page 6, authors should explain what the “technical constraints” were that necessitated a more simplified approach to identify the 20 MeSH terms to be used for the strategy.

d. On page 6, what do the authors mean by “iterative queries” when developing the final stage of their strategy?

e. On page 7 or elsewhere in the methods, the authors should explain why these 3 systematic reviews were chosen to create the development set and why; and also how the terms were selected (i.e. based on inc/exc criteria?).
3. Results

a. Was agreement using kappa statistics calculated for the 2 people who screened for relevance during hand searching? – if yes, it should be reported in the results

b. Did authors look at another operating characteristic such as specificity (searches that retrieve somewhat lower relevant articles but fewer off-target articles)? This might provide more information on measures of precision, which might vary according to the ratio of relevant and non-relevant studies – a tradeoff between sensitivity and specificity often exists.

c. Authors could describe more of their findings as reported in their tables.

d. Figure 1 is a bit confusing and repetitive – could be presented as a flowchart showing actual results for the development and testing?

4. Discussion & Conclusion

a. Authors should explain more about the implications of their findings to their objectives, and to tie into work by others in this area – for example, as authors point out, their strategy had high sensitivity but at a high cost – this could be explored further

b. Limitations of the study are not described.

c. Authors may wish to rephrase so as to not make such a strong conclusion: “The empirical search strategy development process (Figure 1) used here is a useful approach to building comprehensive and performance-oriented search strategies”.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.