Reviewer's report

Title: PICO, PICOS and SPIDER: A comparison study of specificity and sensitivity in three search tools for qualitative literature

Version: 2
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Reviewer: Julie Mytton

Reviewer's report:

The authors have identified an issue which is a practical challenge for researchers wishing to complete systematic reviews of qualitative literature. The historical absence of consistent indexing of qualitative studies in electronic databases means that approaches used for searching quantitative studies cannot be generalised for qualitative studies.

Minor essential revisions

In the methods section it is observed that Table 2 and Table 3 appear to be identical except for the ‘S’ row in the Table 3 and the final rows of each table indicating how the concepts have been combined with Boolean operators. In the interests of space and avoidance of duplication I suggest that either these two tables could be combined or Table 3 simplified to acknowledge where it is identical to Table 2. The authors appear to have muddled their table numbers and text; Table 4 (search terms used in SPIDER search) probably needs to be inserted after Tables 2 and 3 (ie bottom page 6 of manuscript), and not as currently signposted in the Results section (bottom of page 7 of manuscript).

The first sentence of the results section suggests that the number of hits and their relevance to the search aim are referred to Table 3 which is incorrect as table 3 relates to terms used in the PICOS search. Greater attention should be paid to how the results have been presented where lack of clarity, inconsistency and omissions have been made. For example, I assume that the second sentence of page 8 should read “For the PICO model in MEDLINE, 0.42% of hits were deemed relevant after the title and abstract screening stage (34/8158 articles), and of these 12/34 (35.29%) were confirmed to meet the inclusion criteria after full text review.” Similar attention to detail is required for the reporting of findings following the PICOS and SPIDER searches. In paragraph 3 on page 8 there is a typographical error “5 articles/41 articles” instead of “5 articles/14 articles”. The Table inserted at the bottom of page 8 should be Table 6 not Table 5.

Major compulsory revisions

I am not an expert in the development and assessment of search strategies for electronic databases but I believe the methodology used to estimate sensitivity and specificity is incorrect. The sensitivity of a test is the ability to correctly identify all those papers meeting the inclusion criteria, and the specificity is the ability to correctly exclude those papers that do not meet the inclusion criteria.
You need to identify a ‘gold standard' to compare against, so that you know what is the true number of qualitative studies of patient experience with MS and the true number of studies that do not describe these criteria. I recommend that you should seek expert advice on selection of your gold standard and the calculation of your sensitivity and specificity. As you appear not to have identified a gold standard I believe the best you may be able to do is compare the sensitivity and specificity of the PICOS strategy (or the SPIDER strategy) against the PICO strategy (since this identified most studies). The discussion and conclusions of the study would then need to be rewritten depending on the outcome of this analysis.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I have no competing interests