

## Authors' letter provides further evidence that language for trial phase would appear necessary when searching for RCT

Thompson and Scott (2019) suggest including “additional search filters which are more frequently utilised in systematic reviews” in our case study; we question if it is possible to determine which of the many search filters available for randomised controlled trials (RCT) are the most frequently used in systematic reviews. It is not mandatory to reference search filters, so we cannot use citation count as an imperfect proxy, and we are not aware of any evidence which ranks search filters according to use. In fact, study authors seldom provide a justification for the selection of a search filter (1, 2) and adapting search filters is common practice (3), such that it is often unclear if the search filter used in a systematic review bears fidelity to any established search filter, or if it is an assembly of many different search filters, (4, 5). Guidance on how to cite search filters, and when to cite search filters which combine components of various search filters, would be welcome.

We contend that the Cochrane HSSS are the original RCT search filters. Developed and published in 1994, the filters not only set out a strategy of search terms to identify controlled trials for the first time but also the team behind the HSSS was instrumental in adapting the architecture, and developing the process, which underpins the identification of controlled studies in bibliographic databases (c.f. (6-16)). The BRSS and SIGN filters acknowledge this heritage (17-21), and we suggest that this is justification for the use of the term ‘established’ in our case study.

Thompson and Scott (2019) suggest that the SIGN and the CADTH RCT filters “include the very terms” that we suggest for the P<sub>3</sub> filter and that the SIGN and CADTH filters would capture the types of study we identified in our original publication and which the HSSS and BRSS missed. The authors also question why we did not compare the P<sub>3</sub> filter to search filters which already use language for trial phase.

To respond to these criticisms, we present further analyses here where we compare the P<sub>3</sub> filter to:

- the SIGN RCT filter (21);
- the CADTH RCT filter, pre-April 2018; and
- the CADTH CCT/RCT Filter April 2018 (22).

We include the pre-April 2018 CADTH filter as Thompson and Scott suggest that, even prior to the 2018 update, the CADTH RCT filter would capture the studies missed by the HSSS and BRSS, as reported in our article (23). This pre-2018 version of the filter was provided by CADTH.

Before we present the comparisons, it is important to note one point. As is set out in our article, the P<sub>3</sub> filter was initially presented at the 2016 Health Technology Assessment

international (HTAi) conference in Tokyo, Japan. Members of CADTH staff attended this presentation and we are advised that our presentation directly influenced CADTH’s decision to include terms for trial phase when their CCT/RCT search filter was updated in April 2018 (see lines 1 and 31 of the CADTH CCT/RCT Filter April 2018).

## Extending the analysis of the P<sub>3</sub> filter

### Methods

The search strategies for the new analyses were:

1. search filter
2. unique identifier codes for the seven studies missed by the HSSS and BRSS in our article
3. 1 and 2
4. 2 NOT 3

Line 4 would identify any studies picked up by the P<sub>3</sub> filter but missed by the SIGN or CADTH filters. The search strategies are reported in supplementary material and using a search narrative for clarity of reporting (24).

### Results

The three search filters were run in MEDLINE (Ovid interface) on August 12<sup>th</sup> 2019. The results are presented in Table One.

*Table 1 results from comparing the P<sub>3</sub> filter to the SIGN and CADTH filters*

Seven marker studies from our article	SIGN	CADTH pre-April 2018	CADTH April 2018	P <sub>3</sub> Filter
Attard et al 2015 (25)	✓	✓	✓	✓
He et al. 2015 (26)	✓	✓	✓	✓
Kim et al. 2015 (27)	X	X	✓	✓
Kuhle et al 2015 (28)	✓	✓	✓	✓
Nasr et al. 2015 (29)	X	X	✓	✓
Tarhini et al. 2015 (30)	✓	X	✓	✓
Zhang et al. 2015 (31)	✓	✓	✓	✓

Key: ✓ identified; X still missed

Both the SIGN and CADTH pre-April 2018 filters missed studies, in particular the RCT by Nasr et al. This challenges the suggestion of Thompson and Scott and it adds further

support for our findings, namely, that including language for trial phase would appear to improve sensitivity when searching for RCT.

The CADTH April 2018 filter identifies all seven studies missed by the HSSS/BRSS in our original article. CADTH's April 2018 filter includes language for trial phase (see lines 1 and 31) in a way similar to the P<sub>3</sub> filter, since it is based on the work we presented in 2016 and subsequently published in 2019. In addition to phase III terminology, the CADTH CCT/RCT April 2018 filter also incorporates several MeSH and keywords related to controlled clinical trials (in lines 1, 5, 6, 7, 18, 19, 23, 24, 25, 26 and 30) as compared to the CADTH pre-2018 RCT filter.

There are differences between the P<sub>3</sub> filter and CADTH's consideration of our work. CADTH's use of phase III terminology in the April 2018 filter did not retrieve the study by Zhang et al.. However, CADTH's April 2018 filter does retrieve this article with terminology for open-label extension studies at line 26.

### Summary

The analyses presented here provide further evidence for the importance of using language for trial phase when searching for RCT. This would appear to add strength to our original findings (23).

We would agree with Thompson and Scott that it is important reviewers understand the limitations of search filters. As we have demonstrated here, this is not always clear from simply reading them. Guidance suggests that information specialists are well-placed to contribute to these discussions and the broader methodological debates summarised here (32).

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