Reviewer’s report

Title: Applying systematic review search methods to the grey literature: A case study examining guidelines for school-based breakfast programs in Canada

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Reviewer: Judy Wright

Reviewer’s report:

Overall this is a nice paper giving a practical example of how a rigorous grey literature search can be undertaken and reported. Using a systematic review that only looks a grey literature gives and interesting case study and the opportunity to examine the grey literature searches more closely. An even fuller description of the steps taken during the grey literature search and more analysis/comparison on the four different strategies would be useful. Further details on time taken, costs, and the impact of studies found by the four strategies would decisions for when and how to undertake grey literature searches. Most reviews have competing demands for published and grey literature searching, plus supplementary searches such as forward and backwards citation tracking. For example, how long did each search strategy take? What impact did the different search strategies have on the final selected studies? What would you do differently for future similar searches?

P2 line 11-12 states ….Further, there is no "gold standard" for rigorous systematic grey literature search methods and few resources on how to conduct this type of search.

However, a key resource and guidance document for searching grey literature for reviews is Grey Matters: a practical search tool for evidence-based medicine (2014) by CADTH. This document may not be a gold standard for all grey lit searches would be expected to be considered in this piece of work. Did this document guide the searches, if not please explain why it was inappropriate and why alternative methods may be helpful. https://www.cadth.ca/media/pdf/Grey-Matters_A-Practical-Search-Tool-for-Evidence-Based-Medicine.doc

p3 53-57
This is a strong claim with little evidence as yet. Searches can never be truly fully 'comprehensive' and it's difficult to be confident that the data is completely unbiased. Suggest changing this sentence to:

Applying systematic methods for searching grey literature should improve the quality of review syntheses that include grey literature by providing a more comprehensive and less biased set of reports to examine.

P4 16-19
These challenges do not exist within most mainstream databases (e.g., MEDLINE, CINAHL); however, these databases exclude grey literature publications.
Many mainstream databases (with indexing, controlled vocabulary…) do contain grey lit e.g. EMBASE has conference proceedings, PsycINFO contains dissertations/theses. Web of Science databases include conference proceedings (but do not have controlled vocabulary). So I think this sentence needs modifying along the lines of:

The coverage of grey literature is patchy across mainstream databases. Conference proceedings and dissertations are found in some databases e.g. Embase and Web of Science but other forms of grey literature e.g. industry and government reports are rarely found in mainstream databases.

25-28 The Cochrane Handbook (Chapt 6) also states you should search ongoing trials websites (which could be categorised as targeted website searches) and advises contacting key authors and experts for unpublished literature

P5 30-39.
The 'methodological plan' described is essentially the search methods that should be described within the protocol for a systematic review, including all sources (bibliographic databases, grey lit databases, websites, search engines, contacting experts..), the search terms to be used and ideally has an example search strategy. This is required in Cochrane reviews and PRISMA-P Checklist. Protocols that are registered with the PROSPERO database require names of sources to be searched, any restrictions, a sample draft search is optional. I'm confused that a 'separate methodological plan' is being described here when the search methods should already be in the protocol (to the same detail).

Suggest changing:

Prior to conducting the grey literature search, it is essential to develop a methodological plan, similar to a protocol for a systematic review.

To Prior to conducting literature searches for the review, it is essential to develop a detailed search plan which forms the search methods section of the systematic review protocol.

Add descriptions of source/terms/limits… for both published and unpublished lit searching is needed to meet the PRISMA-P reporting standard and to meet the requirements of the PROSPERO database of systematic review protocols.

P5 53-34
The PRISMA reporting standards DO apply to grey literature searches, but sadly are often not adhered to.

These reporting standards should be applied to both the published and grey literature search activities.

P7 20-22.
It's more usual and considered best practice for the first screening to be both title and abstract together (See Cochrane and CRD guidance). Some titles do not accurately describe the document and are 'catchy' but misleading, to a title & abstract screening is preferable.
54. It will be helpful to clarify the number of hits per page - were pages always set to 10 results per page? - i.e. you always looked at the first 100 results? I suggest this is changed to 'first 100 results' (or whatever the number was) throughout the manuscript.

P8 12-17
After you identified relevant organisations & websites via a google search how did you choose which ones to use? Did an expert (e.g. someone on your project team with expertise in breakfast clubs) help prioritise those likely to be best? If so it would be helpful to report this method too.

19-32
Are these methods describing 10 strategies (app 2) used with a Canadian filter the ones that were used to do the 3rd strategy searches described in lines 9-18. I'm not sure if these are separate searches. Were 77 websites identified using the method described in lines 12-14?

P10 Line 13 I think 'manageable' needs quantifying in some way. How long did it take to process, screen and download results using different strategies?

Line 26 What percentage overlap was there? 'moderate overlap' is vague for the reader

Line 32-33. How many studies overall were retrieved by the searches? Given that the first 10 pages of Googles searches were screened - how many was this in total? What was the proportion of the screened results compared to the total results for the google searches? For example were 500 out of 2000 results screened, or say 500 out of 2 million results?

PRISMA diagram

- It would be more transparent to have the number of records found listed and the number or records screened in in the Google and Targeted web search top boxes. This would show consistency in reporting results of the databases searched where 2258 records were found, 1600 would have been screened

- A Simpler PRISMA layout would be to have in the identification section row 1 listing number of studies found by each strategy (e.g. 2258 for strategy 1), row 2 beneath listing number of duplicates removed in each strategy (or across the strategies) e.g. 658 for strategy 1 , Row 3 would be. In the Screening section row 1 is the number of records available for screening (i.e. 1600 for strategy 1). In the Screening section, the Row 1 would be the potentially relevant studies identified either by the screening of titles and abstracts as in strategy 1 (to get to 91) , or by the screening of the websites for strategies 2 and 3, to get to 47 and 126 records respectively. Table 1 and Table 2 are of passing interest but not directly related to this as a methodological paper. A table comparing search time, downloading time, screening activity/time, overlap, and other pros and cons of the 4 different strategies would be more helpful. Also a breakdown of included/excluded studies per search strategy may be helpful to see e.g. did one strategy find most of the newspaper items? In future, searchers could bear this in mind when selecting strategies and planning their search activities.
App 2 - # new records - are these the ones selected from screening? Label them as Potentially relevant records

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