SWAR 27: Impact on time and accuracy of manual versus Web of Science-based tabulation of included studies to determine overlap in overviews of systematic reviews

Objective of this SWAR
To compare manual tabulation of included studies from systematic reviews to a Web of Science reference list download, and whether use of Web of Science has an impact on time and accuracy.

Study area: Overlap in overviews of reviews
Sample type: Reviewers
Estimated funding level needed: Unfunded

Background
The number of published systematic reviews has increased substantially in recent years, leading to the development of overviews of reviews (or umbrella reviews).[1,2] However, including multiple systematic reviews in answering a research question could lead to the same study being considered more than once (overlap), causing issues with effect estimates and precision.[3] Therefore, it is important to investigate how many studies overlap across the systematic reviews included in an overview.

There are a variety of ways to investigate the degree of overlap, including visual presentation of overlapping citations and calculating corrected covered area.[3,4] Corrected covered area is a formula calculating overlap based on the number of unique studies and the systematic reviews including them.[3] To calculate the degree of overlap and corrected covered area, included studies from systematic reviews need to be tabulated for each review and their details (e.g. authors, publication date, title, and journal) need to be compared.[3] However, this process can be time consuming, and with the increasing demand for timely evidence synthesis products for decision making, particularly rapid reviews, it is important to consider how this process could be made more efficient and quicker.

Some methodological research has considered how best to use corrected covered area,[5] but less research has focused on how to tabulate included studies in a timely fashion while still ensuring accuracy.[6] With increasing developments in computer science and systematic reviewing, multiple search engines and web applications can now track citations both backwards (reference lists or backchaining) and forwards.[7] For the purposes of this study within a review (SWAR), Web of Science will be used to retrieve and download the reference lists for each included systematic review within an overview of reviews to investigate whether this would be a more timely and accurate way to tabulate included studies compared to manual extraction of study details from the published papers. This will be done in the context of an overview of systematic reviews of multimodal cancer prehabilitation interventions.

Interventions and comparators
Intervention 1: Manual extraction of details of included studies from systematic reviews into MS Excel. Study details will include: authors, publication date, title, and journal. Two reviewers will independently extract included studies from the same systematic reviews. Manual extraction of included studies from reference lists will be timed for each systematic review.
Intervention 2: Downloading reference lists of included studies into MS Excel by using Web of Science. Study details required will be: authors, publication date, title, and journal. Based on previous testing, Web of Science could miss some included studies. Therefore, reviewers will be asked to double check the downloaded reference lists and manually add included studies that have not been added by Web of Science. Moreover, as Web of Science does not specifically download included studies, but the whole of a review's reference list, reviewers will be asked to remove unrelated references. Two reviewers will check and edit references independently, similar to the manual extraction. Download from Web of Science, manual checking and editing of the included studies list will be timed.

Index Type: Overlap in overviews of reviews

Method for allocating to intervention or comparator

Various

Outcome measures
Primary: Time spent tabulating included studies.
Secondary: Accuracy (Percent error).

Analysis plans
After determining data distribution and sphericity, if the data meet assumptions, factorial repeated measures ANOVA will be conducted in IBM SPSS 27 to compare whether manual or Web of Science-based tabulation are quicker or more accurate.[8] Moreover, the outcomes for the two reviewers will be compared to see whether the person completing the task had any influence on the timings.

Possible problems in implementing this SWAR
It is possible that reviewers might extract data slightly differently which might bias results. Thus, a detailed operating procedure will be developed, and processes will be piloted on one systematic review. As both reviewers have commitments alongside the SWAR, they will ensure that a couple of days will be allocated to do the extractions without distractions, such as emails or meetings. This is to ensure that the length of extraction is not influenced by the reviewers' other work. It is possible that the order in which the reviewers complete extraction (whether they manually extract or use Web of Science first) might influence speed, because familiarity with included studies might help reviewers complete the tasks quicker. To try to minimise bias, the order in which the extraction is completed will be switched for a random sample of systematic reviews. As accuracy of included study extraction is also investigated in this SWAR, it is important to determine whether the systematic reviews reported the correct number of included studies. Based on previous experience, the number of included studies reported in the text of a manuscript or in the PRISMA flowchart can differ from what is presented in tables for included studies or data extraction.[9] Therefore, reviewers will be asked to keep a log and report any discrepancies between reported and actual numbers of included studies and, when extraction is complete, the reviewers will discuss whether their final numbers differ in any way.

References
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Publications or presentations of this SWAR design

Examples of the implementation of this SWAR

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Date of idea: 31/DEC/2023
Revisions made by:

Date of revisions: