SWAR 64: Comparison of two search strategy development techniques used in the PubMed database for a scoping review

Objective of this SWAR
This study aims to analyse the difference in proportion of relevant articles retrieved through two search techniques in the PubMed database for a scoping review.

Study area: Study Identification
Sample type: Review Authors
Estimated funding level needed: Unfunded

Background
Search strategy development refers to a systematic method for choosing an appropriate database, identifying the key search terms, using Boolean operators, truncations, wildcards and specific search fields and finally designing the search strings to increase chances of retrieving relevant articles.[1,2] Following research question formulation, developing a search strategy is a crucial and often time-consuming process due to the wide range of resources available across various electronic databases and web-based search engines.[3,4] Despite the availability of various standard techniques for search strategy development, increased subjectivity inherited from expert-driven decisions during the selection of key words and search fields and the variety of search methods in databases has significant impact on sensitivity and specificity of search strategies resulting in considerable variation in the number of articles retrieved. [5,6,7,8] Hence, this Study Within a Review (SWAR) [9] was planned with an objective to compare the proportion of studies retrieved using two search methods [Search conducted through Advanced PubMed search using MeSH explode (MeSH Entry terms) and Search conducted through PubMed search builder available in MeSH database] in the PubMed database using a scoping review research question developed as per the PCC framework. The outcomes of this study should provide clear understanding of the variation in the results obtained based on the method adopted and provide criteria for selecting an individual method.

Interventions and Comparators
Intervention 1: Search conducted through Advanced PubMed search using MeSH explode (Mesh Entry terms)
Intervention 2: Search conducted through PubMed search builder available in MeSH database

Index Type: Searching

Method for Allocating to Intervention or Comparator:
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Outcome Measures
Primary: Difference in proportion of relevant articles retrieved using the two search techniques.
Secondary:

Analysis Plans
After conducting the literature search using both methods, the two data sets will be subjected to deduplication followed by data screening based on title, abstract and full text of the article as per predefined inclusion criteria. The total numbers of included articles from both sets will be compared to assess the sensitivity of the search techniques. Inclusion proportion will be calculated by considering the ratio of included articles to the initial articles retrieved for both methods and the difference in inclusion proportion for the two methods will be calculated using z-score statistics. Screening burden will be reported to show the number of articles screened per included study.

Possible Problems in Implementing This SWAR
All the electronic databases will undergo periodic upgradation. As this SWAR focuses on the different methods of search strategy development within PubMed database, any upgrades related to accessibility of the database or modification to the features available to develop the

search might impact on its implementation. Furthermore, any restrictions or limitations for downloading process might contribute to altered results.

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: 30/10/2025
Revisions made by: Not applicable
Date of revisions: