

Search Filter to Identify Reports of Randomized Controlled Trials in CINAHL

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BACKGROUND AND OBJECTIVES

The Cochrane Centralised Search Service gathers together reports of randomised controlled trials (RCTs), to inform Cochrane reviews. It produces the CENTRAL database of reports of RCTs and also search filters to identify reports of RCTs in biomedical databases.

CINAHL is a key database recording and indexing the nursing literature – there are several versions, but CINAHL Plus is likely to be the version to which many organisations have purchased access. Published search filters to identify reports of randomized controlled trials (RCTs) on CINAHL Plus are not recent. Therefore reports of RCTs in CINAHL may not be being identified efficiently and therefore searchers may be missing studies.

Objectives: This project was undertaken to develop, test and validate a sensitive search filter to identify reports of RCTs, quasi-RCTs and controlled clinical trials from CINAHL Plus.

METHODS

Eleven sets of relevant and irrelevant records were identified. Nine sets were used to develop and test search filters iteratively. Two sets were used to validate the filter performance in terms of sensitivity and precision. We also tested the performance of publicly available filters. Two previously published filters were identified from the ISSG Search Filter Resource:

- A non-validated filter published by the Scottish Intercollegiate Guidelines Network (SIGN)
- Wong, et al (2006). Optimal CINAHL search strategies for identifying therapy studies and review articles (1).

The third filter was the high sensitivity Therapy filter that is built into the EBSCOhost implementation of CINAHL Plus (via advanced searches option).

Search terms for the filter were identified by the use of WordStat text analysis software. Subject headings were tested first and then records not retrieved by selected subject headings were analysed to identify textwords. A strategy was developed in an iterative way to identify a filter that would perform with adequate sensitivity for Cochrane purposes.

RESULTS

The filter that was validated offers :

- sensitivity of 0.88 (95% CI: 0.77 – 0.95)
- precision of 0.36 (95% CI: 0.31 – 0.41)

This is comparable to the sensitivity of the published filters, but represents a great improvement in terms of precision.

Table 1: Results

Filter	Validation set 2, RCTs=65, Non-RCTs=1932		Number needed to read
	Sensitivity	Precision	
Cochrane filter	0.88 (0.77 - 0.95)	0.36 (0.31 - 0.41)	2.7
SIGN filter	0.91 (0.81 - 0.97)	0.12 (0.11 - 0.13)	8.3
Wong et al filter	0.88 (0.77 - 0.95)	0.07 (0.07 - 0.08)	14.28
EBSCOhost filter	0.85 (0.74 - 0.92)	0.11 (0.10 - 0.12)	9.09

Figure 1: Cochrane filter for RCTs in CINAHL Plus

S1 MH randomized controlled trials
 S2 MH double-blind studies
 S3 MH single-blind studies
 S4 MH random assignment
 S5 MH pretest-posttest design
 S6 MH cluster sample
 S7 TI (randomised OR randomized)
 S8 AB (random*)
 S9 TI (trial)
 S10 MH (sample size) AND AB (assigned OR allocated OR control)
 S11 MH (placebos)
 S12 PT (randomized controlled trial)
 S13 AB (CONTROL W5 GROUP)
 S14 MH (CROSSOVER DESIGN) OR MH (COMPARATIVE STUDIES)
 S15 AB (CLUSTER W3 RCT)
 S16 MH ANIMALS+
 S17 MH (ANIMAL STUDIES)
 S18 TI (ANIMAL MODEL*)
 S19 S16 OR S17 OR S18
 S20 MH (HUMAN)
 S21 S19 NOT S20
 S22 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15
 S23 S22 NOT S21

CONCLUSIONS

We have developed a Cochrane sensitive search filter to retrieve reports of RCTs, quasi-RCTs and controlled clinical trials in CINAHL Plus. The precision we have achieved is much greater than has proved possible for the available CINAHL filters. The filter benefits from the availability of a number of relevant CINAHL Plus subject headings which seem to be applied with a high level of consistency. This helps with achieving both sensitivity and precision. The filter also benefits from careful exclusions to achieve precision.

Database retrieval is impacted by many known factors. For example, many authors do not report explicit study design and methods descriptions within abstracts. Human readers looking at records that mention 'groups' and assignment to 'groups' can make the assumption that the record may be the report of a

comparative trial, but there is often very little other information in the record to substantiate this decision.

Improving sensitivity in CINAHL Plus specifically will always be challenging because of the high proportion of records without abstracts. For example:

- In test set 1, 60% (595/998) of the records had no abstract
- In validation set 1, 66% of the records (1297/1974) had no abstract

We have produced a sensitive and precise filter to identify reports of RCTs, controlled clinical trials and quasi RCTs from the CINAHL Plus database via EBSCOHost (2). The precision of the new Cochrane CINAHL RCT filter is such that it is likely to cut the number of results that need to be scanned by researchers to at least one third of those retrieved by one of the currently available filters.

REFERENCES

1. Wong, S. S., Wilczynski, N. L., & Haynes, R. B. (2006). Optimal CINAHL search strategies for identifying therapy studies and review articles. *J Nurs Scholarsh*, 38(2), 194-199.
2. Glanville J, Dooley G, Wisniewski S, Foxlee R, Noel-Storr A. [Development of a search filter to identify reports of controlled clinical trials within CINAHL Plus](#). *Health Info Libr J*. 2019 Feb 8. doi: 10.1111/hir.12251.

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