

Identifying Search Terms Likely to Retrieve Reports of Randomized Trials in Iranmedex – a Pilot Project

Mona Nasser, DDS* Anne Eisinga, BA Comb Hons.MSc** Amani Al-Hajeri, MD***
Zbys Fedorowicz, MSc DPH BDS****

Background: Recent studies have led to improvements in the international coverage of reports of randomized controlled trials retrieved from electronic databases in developing countries. The objective of this study was to identify search terms likely to retrieve reports of randomized controlled trials in Iranmedex which could ultimately be developed into a sensitive search strategy for this database.

Objective: The objective of this study was to identify a set of terms likely to retrieve reports of randomized controlled trials in Iranmedex, an Iranian healthcare database.

Method: We handsearched seven Iranian healthcare journals to identify reports of randomized controlled trials (RCTs) and quasi-randomized trials (CCTs) and examined the reports in three of these journals for study design terms and selected those occurring most frequently to compile an initial set of search terms. We then used these terms to search Iranmedex for reports of trials in the remaining four journals plus the initial three from which the search terms were derived and compared results with our original handsearch of these journals. The electronic records of any reports of trials missed by this initial set of terms were examined for additional relevant search terms which might improve retrieval.

Result: In the first set of journals handsearched we identified six study design terms which occurred most frequently in the relevant studies: clinical trial, double blind, randomly, prospective, placebo. Improvements to the initial set of search terms could be made by adding the study design term ('cross over').

Conclusion: Electronic searches would be more efficient and effective if authors and editors were consistently to abide by the guidance provided in The CONSORT Statement. The possibility for researchers to search the full text electronically in Iranmedex would greatly improve retrieval as relevant study design terms were frequently only to be found in the full text of many of the journals indexed in Iranmedex.

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- * Researcher, Department of Health Information, German Institute for Quality and Efficiency in Health care – IQWiG, Köln, Germany
 - ** Information Specialist, UK Cochrane Centre Oxford, UK
 - *** Assistant Editor, Bahrain Medical Bulletin
Bahrain Branch UK Cochrane Centre
 - **** Director, Bahrain Branch UK Cochrane Centre

Recent studies^{1,2,3} have improved international coverage in the *Cochrane Central Register of Controlled Trials* of reports of randomized controlled trials by retrieving such reports from electronic databases with minimal overlap with major bibliographic databases, such as MEDLINE and EMBASE, as part of the PractiHC initiative (Pragmatic Randomized Controlled Trials in Healthcare – www.practihc.org/). Our pilot study seeks to identify reports of trials in Iranmedex, an Iranian healthcare database. Currently only four Iranian healthcare journals are indexed in MEDLINE and an additional 15 are indexed in EMBASE. Iranmedex indexes the contents of 91 Iranian healthcare journals, 72 of which are published in the Farsi language. It also provides electronic links to the full text of many of the articles in these journals. Searching of the Iranmedex (www.iranmedex.com) database can be undertaken using simple words and phrases.

METHOD

We handsearched seven Iranian healthcare journals to identify reports of randomized controlled trials (RCTs) and possibly randomized or quasi-randomized trials (CCTs), which we identified and classified according to Cochrane Collaboration criteria⁴. The full text copies of all of the reports (n=44) identified by the handsearch of three journals (*Archives of Iranian Medicine*, *Iranian Heart Journal*, *Medical Journal of the Islamic Republic of Iran*) were examined for study design terms occurring in the title, abstract, and keywords (which had been assigned by the article authors) see Table 1.

Table 1: Number of Reports of Trials in Which Study Design Terms Appear in the Title or Abstract or Keywords

Study design terms	Archives of Iranian Medicine (1998 - Jan 2006) (21 reports of trials)	Iranian Heart Journal (2000- 2004) (8 reports of trials)	Medical Journal of the Islamic Republic of Iran (2001 - 2004) (15 reports of trials)	Total (%)
randomized	14	6	10	30/44 (68)
placebo	4	1	1	6/44 (14)
double blind	7	3	6	16/44 (36)
clinical trial	8	4	6	18/44 (41)
randomly	8	1	3	12/44 (27)
control	2	0	0	2/44 (5)
cross over	3	0	0	3/44 (7)
crossover	1	0	0	1/44 (2)

prospective (unique identifier)	1	3	3	7/44 (16)
single blind	2	0	0	2/44 (5)

Of these terms, we selected those occurring most frequently and combined them with terms which uniquely identified relevant studies to enable us to compile an initial set of search terms likely to retrieve reports of randomized trials. Using these terms (Table 2), we then searched Iranmedex for reports of trials in the remaining four journals (*Acta Medica Iranica*, *Iranian Journal of Medical Sciences*, *DARU*, *Urology Journal*) and compared the results with our earlier handsearch of these journals, which had identified 55 relevant reports of trials.

Table 2: Initial Searches Conducted of Most Frequently Occurring and Uniquely Identifying Terms Derived from the First Set of Journals Handsearched

1	Name of Journal AND randomized limited to All Fields search (which covers Title, Abstract, Keywords but not full text)
2	Name of Journal AND clinical trial
3	Name of Journal AND double blind
4	Name of Journal AND randomly
5	Name of Journal AND prospective
6	Name of Journal AND placebo

We also searched Iranmedex for reports of trials in the initial three journals from which the search terms were derived. The electronic records, where they existed, of any reports of trials missed by this initial set of terms were examined for additional relevant search terms to improve retrieval.

RESULT

There were six study design terms occurring most frequently or uniquely in the relevant studies (n=44) in the first set of journals handsearched (Table 2). In our search of Iranmedex for the second set of journals, these terms retrieved 100% (21/21) in the *Iranian Journal of Medical Sciences*; 89% (8/9) of the relevant studies in *DARU*; 65% (11/17) in *Acta Medica Iranica*; and 62.5% (5/8) in the *Urology Journal* (Table 3).

Table 3: No of Reports Identified by the Electronic Search in Comparison to the Handsearch

Journals	Reports retrieved by the electronic search out of the total identified by the handsearch	Reports missed by the electronic search out of the total identified by the handsearch	Possible explanations for why reports were missed by electronic search
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Acta Medica Iranica	11/17 65%	6/17 35%	4 were not yet included in database; 2 records had no study design terms in Title, Abstract, and Keywords
Archives of Iranian Medicine	4/21 19%	17/21 81%	16 records had no study design terms in Title and Keywords; Abstracts were not available for searching for this journal; 1 record could have been retrieved if the term “cross over” were to be added to the search strategy
DARU	8/9 89%	1/9 11%	1 record had no study design terms in Title, Abstract, and Keywords.
Iranian Heart Journal	7/8 87.5%	1/8 12.5%	1 record had no study design terms in Title, Abstract, Keywords
Iranian Journal of Medical Sciences	21/21 100%	0	All records were retrieved
Medical Journal of the Islamic Republic of Iran	10/15 67%	5/15 33%	2 records had no study design terms in Title, Abstract, Keywords; 3 records had no study design terms in Title and Keywords and the Abstract for these records was not available for searching
Urology Journal	5/8 62.5%	3/8 37.5%	3 records had no study design terms in the Title and Keywords and the Abstract for these records was not available for searching

For the seven journals, the total number of relevant reports of trials missed by the search strategy was 33/99 (33%). This was largely due to the absence of any study design terms (28/33 85%) included in the Title, Abstract or Keywords all of which are searchable fields in this database. The poor retrieval of relevant studies from the *Archives of Iranian Medicine* 19% (4/21) was largely due to the fact that only the Title field for this journal, which in general did not include study design terms, was available for searching in Iranmedex. The remaining missing reports were from issues of journals not yet included in Iranmedex or reports that could only be found by adding a relevant study design term (‘cross over’) to the initial set of terms (Table 3). All of the relevant reports of trials found by the handsearch (n=99) have been submitted for inclusion in the Cochrane Central Register of Controlled Trials published in *The Cochrane Library*.

CONCLUSION

Implications for Practice

Handsearching Iranian healthcare journals retrieves relevant reports of trials which would otherwise be missed by electronic searching of Iranmedex. For journals which are not readily accessible for handsearching, an electronic search of Iranmedex should prove valuable as it indexes journals not indexed by other major bibliographic databases.

Electronic searches would be more efficient and effective if authors and editors were consistently to abide by the guidance provided in The CONSORT Statement and the newly extended CONSORT for abstracts guidance on how to report methods in both the titles and abstracts of reports of randomized trials in journals^{5,6}. This guidance and the recommendations which have been made available since November 2003, by the International Committee of Medical Journal Editors, advises that all titles of research articles should include information about their study design (www.icmje.org/).

Implications for Research

The ability to search the full text electronically in Iranmedex would greatly improve retrieval as study design terms were frequently only to be found in the full text.

The next stage of this pilot project is to identify a set of search terms likely to retrieve reports of randomized controlled trials in Farsi, derived from a set of handsearched Iranian healthcare journals, which have been included in the Iranmedex database. The final stage of this project is to develop a sensitive search strategy of search terms in English and Farsi, to be run across the entire data set of Iranmedex to retrieve reports of randomized trials for inclusion in the Cochrane Central Register of Controlled Trials.

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