Searching a biomedical bibliographic database from Bulgaria: the ABS database

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Abstract

Background: The University of Sofia, Bulgaria, disseminates local biomedical literature (1994 to present) through a free online database, ABS.
Objectives: Our objectives were to systematically search ABS, identify citations to controlled trials and discover what proportion of these studies are to be found on MEDLINE.
Methods: We searched using Bulgarian and English phrases; manually selected citations of controlled trials and sought these citations on MEDLINE.
Results: Using the two languages, we found a total of 628 unique citations, 47 of which seem to be relevant controlled trials (precision 7.48%, 13% of ABS citations were found on MEDLINE). The trials in ABS commonly focused on evaluation of care for people with cardiovascular or urological problems.
Discussion: ABS is another source of easily accessed trials not readily available elsewhere.

Background

The Republic of Bulgaria, in south-eastern Europe, borders on Greece, Macedonia, Montenegro, Romania, Serbia and Turkey. Its population of 7.3 million, with a median age of 41 years (UK—39 years), infant mortality 19.8 percentile (UK—5 percentile) and life expectancy at birth of 72.3 years (UK—78.5 years). The major language is Bulgarian, of Cyrillic origin. It is a middle income country [gross domestic product (GDP) $71.54 billion—UK $1.83 trillion], but since 1997 Bulgaria has been on the path to economic recovery. Its GDP is growing at a rate of 4–5% per year and it will join the European Union (EU) in 2007. In Bulgaria, medical staff are trained to a high standard, although hospitals and clinics may not have all the equipment and facilities expected in richer nations. With positive changes in the GDP, it would be expected that medical research activities would also be increasing.¹

Wide dissemination of research, however, may lag behind its production. There is good evidence that there are many relatively new databases, some of which have open access, containing citations to research of wide general interest.²³ There is also the concern that the results of some of the types of studies may change their likelihood of being widely disseminated. For example, when Egger et al. searched German medical journals for randomized controlled trials (RCTs), and then searched for other RCTs published in English from the same authors, they found that quality was constant but that the size of the estimates of effect was not.⁴ On average, these German trialists published studies with ‘positive’ results in English-language journals, but studies with ‘negative’ results, or those showing no difference in the effect, were more likely to be published in German-language journals—a phenomenon known as language bias.
The Bulgarian database (ABS) is a public access biomedical bibliographic database and can be searched in English and Bulgarian. It is produced by PC-TM Ltd. The main web link is named ABS but the label on the database web page is AB-Catalogue. We will refer to this database as ‘ABS’. ABS offers easy access to the contents of over 130 ongoing and discontinued Bulgarian journals from 1994. It contains at least 18 000 records of medical, pharmaceutical and chemical papers (relative proportions unspecified), 26 000 citations to books, and 1400 citations to PhD thesis publications. All records are indexed using Medical Subject Headings (MeSH), the thesaurus of Index Medicus. Searches can be carried out using the ‘all words’ option, or by selecting specific fields such as title, author, keywords and ISBN. This study describes the formulation of a search strategy for ABS and the comparison of the results of that search with records available in MEDLINE.

Objectives

Our objectives were to search ABS, systematically identify citations to randomized controlled trials and investigate how many of these are found and correctly indexed in MEDLINE.

Methods

We identified the Bulgarian database ABS by using a search engine on the Internet using the terms ‘Bulgarian’, ‘bibliographic’ and ‘medical’. We ran simple searches in English and Bulgarian, using the ‘all words’ search option. This option searches the whole record, including keywords. The search results could be viewed as a list of titles, short references or full bibliographic references (including abstracts where available). We captured the full references. We took terms commonly used to identify trials and employed ‘random%’ as a benchmark phrase against which all other terms were compared (% is the wildcard symbol). The results of searches using additional phrases were then compared with those of the phrase ‘random%’, duplicate records deleted and unique reports of trials stored in an MS Access database. Our commercial bibliographic reference management package could not store Cyrillic script. Records that seemed to meet the criteria for RCT or controlled clinical trial were then sought in MEDLINE and the ABS’s MeSH classification recorded.

Results

We found ABS to be easy to use for relatively simple searches, but it was problematic to export and manage results. We chose ‘random%’ for our benchmark phrase as we felt it to be acceptable to a wide group of users, but recognize that it is possible that the other phrases could have also been of similar value.

ABS contains records of randomized trials, and most of what we identified can be found by running a simple search (Table 1, no. 2). Additional phrases do identify more studies, but at the cost of much loss of precision (Table 1, no. 1). In order to investigate whether, at least for RCTs, the contents of MEDLINE eclipse that of ABS, we sought each citation we had identified in ABS on MEDLINE (PubMed). Most of the RCTs we identified were not in MEDLINE (41/47, 87%). Of those that were in MEDLINE, only four were categorized as RCTs under the ‘Publication Type’.

Searching with the native language term for random was fruitful, identifying papers not found using English terms with a high precision.

Our search identified 47 randomized controlled trials throughout the entire database, which covered a range of topics across health care. Studies were most frequently classified as focusing on cardiovascular problems (9/47) or urology (7/47) according to the existing MeSH classification. We are unsure, however, how this reflects the health care needs of Bulgaria.

Discussion

Biomedical literature from Bulgaria, similar to that of other formerly communist states of Eastern Europe, is poorly represented in MEDLINE. ABS is a bibliographic database, available free of charge on the Internet. As English language medical websites do not link directly to ABS, we used search engines to find it. Direct links are available from Bulgarian medical websites or via search engines (e.g. Google). The ABS database contains records of randomized trials, most of which can be
found even by those using only the English language, although search results are enhanced when using native language search terms. Those undertaking comprehensive searches for such papers should consider this database as a source of further studies. At best, not to do so would leave the results of their reviews less precise than could otherwise have been the case. Not including relevant data from Bulgaria will unnecessarily widen the confidence intervals of the final point estimates of effect. At worst, not to consider the increasing number of less well known biomedical bibliographic databases emergent from outside of the mainstream MEDLINE and EMBASE could lead to inclusion of bias in the results of reviews. Studies have repeatedly shown that many high-quality trials are not indexed in mainstream databases, and that these trials have systematically less positive effects than those disseminated through MEDLINE or EMBASE.\textsuperscript{8} Failing to take less accessible trails into account in meta-analysis will lead to overestimation of the benefit of treatment or underestimate of adverse effects.

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Key Messages

Implications for Policy

- Using MEDLINE and EMBASE for searching will result in considerable coverage of the world’s higher-impact biomedical literature, but this searching will not be comprehensive.
• There are advantages in amalgamating biomedical databases to facilitate wider dissemination, but it is important that people or institutions compiling the smaller local databases are supported for their efforts.

Implications for Practice

• Often, small national biomedical databases are not local subsets of MEDLINE or EMBASE.
• Those undertaking systematic reviews of trials, especially in cardiology and urology, should consider using the ABS database.
• Working with an Information Specialist with relevant language skills is advantageous.

References


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