The pond is wider than you think!

Problems encountered when searching family practice literature

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OBJECTIVE  To explain differences in the results of literature searches in British general practice and North American family practice or family medicine.

DESIGN  Comparative literature search.

SETTING  The Department of Family and Community Medicine at the University of Toronto in Ontario.

METHOD  Literature searches on MEDLINE demonstrated that certain search strategies ignored certain key words, depending on the search engine and the search terms chosen. Literature searches using the key words “general practice,” “family practice,” and “family medicine” combined with the topics “depression” and then “otitis media” were conducted in MEDLINE using four different Web-based search engines: Ovid, HealthGate, PubMed, and Internet Grateful Med.

MAIN OUTCOME MEASURES  The number of MEDLINE references retrieved for both topics when searched with each of the three key words, “general practice,” “family practice,” and “family medicine” using each of the four search engines.

RESULTS  For each topic, each search yielded very different articles. Some search engines did a better job of matching the term “general practice” to the terms “family medicine” and “family practice,” and thus improved retrieval. The problem of language use extends to the variable use of terminology and differences in spelling between British and American English.

CONCLUSION  We need to heighten awareness of literature search problems and the potential for duplication of research effort when some of the literature is ignored, and to suggest ways to overcome the deficiencies of the various search engines.

This article has been peer reviewed.

Cet article a fait l'objet d'une évaluation externe.

The pond is wider than you think!

Two countries divided by a common language is how George Bernard Shaw is said to have described linguistic differences between the United Kingdom and North America. Since 1985, the first author (W.W.R.) has been a member of the Royal College of General Practitioners in the United Kingdom and has received that College’s journal every month. His research interests spurred the habit of reviewing bibliographies in areas of particular interest to him. He found that British researchers in general practice frequently ignored studies published in North America that asked the same questions and often arrived at the same answers. In particular he noted that, in preventive recall studies, many North American findings that complemented British research findings were not mentioned or referenced.2,3

In 1996, the second author (C.S.), a British general practitioner interested in research and education, came to the University of Toronto to participate in the Academic Fellowship Program in the Department of Family and Community Medicine. During course work, she noticed that her literature searches yielded results very different from those of her Canadian colleagues. In casual discussion, W.W.R. and C.S. realized that the likely cause of the discrepancy was the use of the key word “general practice” rather than “family medicine” or “family practice” when performing literature searches.

Both parties had previously attributed the differences they observed to possible arrogance of those working on opposite sides of the pond. Both had observed a tendency on the part of people presenting papers at academic meetings to ignore or discount the value of the work of those from other countries. In some ways this was not surprising, given the quite marked differences in the organization of primary care services in the United Kingdom, Canada, and the United States.

METHODS

When we realized the importance of actual key words, or even the spelling of some key words, our first hypothesis was that using “general practice,” “family medicine,” or “family practice” as key words in a literature search would yield substantially different results. The Librarian for the Department of Family and Community Medicine at the University of Toronto (R.S.) was asked to complete a series of literature searches substituting the three key words.

Otitis media and depression were selected as common topics in family and general practice to be searched on MEDLINE from 1993 to 1997. Each topic was searched with identical search strategies on four Web-based search interfaces: Ovid,4 PubMed,5 HealthGate,6 and Internet Grateful Med (IGM).7

With the exception of Ovid, which is licensed for University of Toronto use, these search interfaces are freely available on the Internet. Many free MEDLINE sites have become available during the past couple of years.8 Each one has a different search engine, so the way in which it processes the search query varies, as does the ease of use and the number of references retrieved.9

Ovid Technologies in the United States produce the Ovid search engine. It has basic and advanced modes to suit the skill of the user. The search engine prefers use of MEDLINE’S Medical Subject Headings (MeSH) and guides to the appropriate headings. Key word searching is available, as is the ability to limit search results in many ways—by language, age group, study type, and so on. Some knowledge and experience is required for effective searching.

The National Library of Medicine, producers of MEDLINE, created PubMed in 1996 to search MEDLINE and made Grateful Med available free on the Internet in 1997. Both versions handle search queries more intuitively than Ovid, that is, they translate the query into appropriate medical subject headings without the searcher having to know or choose exact MeSH terms. PubMed offers basic and advanced modes; advanced mode allows users to search multiple concepts in any field and has all the limits available for tailoring a search. PubMed advanced mode assumes some knowledge of MEDLINE indexing. Grateful Med is simpler and very user friendly, but has fewer features; for example, field searching is limited to subject, author, and title. The IGM requires little knowledge of MEDLINE indexing.

HealthGate Data Corp in Massachusetts, a commercial vendor, offers MEDLINE free on its website. The HealthGate search engine offers basic and advanced modes: basic mode searches the last 2 years only and allows key word entry in a single query box; advanced mode offers multiple concept searching with use of Boolean operators, major
MeSH designation, selected field searching, and
selected limits. It does not have the full range of
search capabilities that Ovid and PubMed do and is
not as intuitive as Grateful Med.

The terms “general practice,” “family medicine,”
and “family practice” were searched as text words or
free text and then each one was combined with “otitis
media” as a major MeSH heading where otitis media
was the main subject of the article. The same strate-
gy was then repeated for “depression.” All searches
were limited to the English language.

**RESULTS**

Table 1 shows sample literature searches and the
yield of articles for each key word. The surprising
finding was that use of the three key words yielded
different references with each of the four search
ingines. PubMed and IGM, to their credit, merged
the key words “general practice” and “family prac-
tice,” yielding the most complete list for these terms.
PubMed and IGM took into account both “general
practice” and “family practice” and used them inter-
changeably. This resulted in a more complete search
of both British and North American literature.

Some remaining and surprising differences were
also noted. One might expect that searching “general
practice” would turn up articles in British journals,
but this was not always the case. For example, the
search on Ovid using “family practice” found articles
from the British Medical Journal while “general prac-
tice” found articles from the Lancet published in the
United States (Figure 1).

The search on depression, while resulting in far
greater numbers of articles in all categories, followed
the same pattern as described for otitis media. The
IGM did the best job of recognizing “family medi-
cine” as interchangeable with “general practice” and
“family practice.” It yielded the most consistently
complete results for all three terms (Figure 2).

Further exploration of the literature using British
and American spellings of words such as paediatrics
(pediatrics), orthopaedics (orthopedics), and gynaec-
ology (gynecology) yielded very different results
with almost no articles in common between North
American literature and that of the United Kingdom.
Table 2 lists some of the key words spelled differen-
tially in the United Kingdom and the United States.

Our librarian pointed out that, if appropriate
MeSH headings were used by investigators, this defi-
cency would not occur. The reality of research in the
clinical setting, however, is that relatively few family
physician or general practitioner investigators have a
good working knowledge of MeSH headings, and
very few have the luxury of a librarian who is knowl-
edgeable in overcoming the problems found in these
searches.

**DISCUSSION**

The discrepancy observed in the results of literature
searches carried out on both sides of the pond was
more dramatic than any of us expected. The systemic
problem identified has already resulted in unneces-
sary duplication of effort. A particular example is
found in an article by Iliffe et al in the British Journal
of General Practice. The references in this article
are all from the British literature. There is no men-
tion of the international World Health Organization
project on AUDIT (Alcohol Use Disorders Test) or
work by Watson et al, Albert, or Wolf-Klein et
al that were found using a search based on the key
word “family practice.” There are no references to
any of these authors’ work in Iliffe et al, but there is
reference to work in American geriatrics journals
that would not have been excluded by the use of the
search term “general practice.”

By contrast, an American meta-analysis of comput-
er-based reminder systems published in the Journal
of the American Medical Association searched with
“family practice” and failed to include European studies, eg, Robson et al, that we found by searching with the term “general practice.” These examples were chosen at random from our library shelves, and we believe they are not isolated incidents. We might add that if our discipline had only one acceptable name, not three, this would alleviate the problem.

Our discipline is not yet internationally strong enough that we can afford to disregard the published work of an entire nation or continent when embarking on, or drawing conclusions from, a research study. We hope that, by identifying the problem and making members of our research community aware of the potential for duplication of research effort, these literature searching deficiencies can be avoided.

From the Canadian perspective, agreement on use of a universal name for our discipline might reduce these literature-search problems in the future. Many countries throughout the world, led by the World Health Organization, are shifting toward using the names family medicine and family practice.

To avoid duplication of research effort in the discipline of general practice or family medicine, it is important that investigators in the United Kingdom and North America seek out appropriate MeSH headings or search engines that use the terms “general practice,” “family medicine,” and “family practice” interchangeably.

Should these headings or search engines not be available, searches should be carried out using all three terms as key words to detect all relevant literature on a subject in the English language. With this understanding and the knowledge that British and American spellings of many words can similarly affect literature search results, we hope family medicine researchers will overcome the problem of incomplete searches that could lead to unnecessary duplication of effort.
Key points

- In this study, literature searches for the topics “otitis media” and “depression” had remarkably different results when matched with the key words “general practice,” “family medicine,” or “family practice.”
- This appears to be why studies in the United Kingdom and North America do not cite studies from the opposite location. This lack of research communication could lead to duplicate studies and wasted effort.
- When conducting searches, we recommend matching the topic with each of the terms “general practice,” “family medicine,” and “family practice.”

Points de repère

- Dans cette étude, les recensions des ouvrages scientifiques sur les sujets « otite moyenne » et «dépression » se sont traduites par des résultats remarquablement différents selon qu’on les jume- lait aux mots clés en anglais « pratique générale », « médecine familiale » et « pratique familiale ».
- Il semble que ce fait explique pourquoi les études au Royaume-Uni et celles en Amérique du Nord ne citent pas réciproquement les études réalisées dans l’autre pays. Cette lacune de communication en recherche peut se traduire par une duplication des études et des efforts inutiles.
- En procédant à des recensions, nous recommandons de jumeler le sujet avec chacune des expressions « pratique générale », « médecine familiale » et « pratique familiale ».

References


