Bibliography of clinical research in Malaysia: methods and brief results

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ABSTRACT

This article describes the methodology of this bibliography. A search was conducted on the following: (1) bibliographic databases (PubMed, Scopus, and other databases) using search terms that maximize the retrieval of Malaysian publications; (2) Individual journal search of Malaysian health-related journals; (3) A targeted search of Google and Google Scholar; (4) Searching of Malaysian and foreign institutional repositories; (5) Searching of Ministry of Health and Clinical Research Centre website. The publication years were limited to 2000-2013. The citations were imported or manually entered into Refworks bibliographic software. After removing duplicates, and correcting data entry errors, PubMed’s Medical Subject Headings (MeSH terms) were added. Clinical research was coded using the definition “patient-oriented research or research conducted with human subjects (or on material of human origin) for which the investigator directly interacts with the human subjects at some point during the study.” A bibliography of citations [n=2056] that fit the criteria of clinical research in Malaysia in selected topics within four domains was generated: Cancers [589], Infections [795], Injuries [142], and Mental Health [582]. This is done by retrieving citations with the appropriate MESH terms, as follow: For cancers (Breast Neoplasms; Colonic Neoplasms; Colorectal Neoplasms; Rectal Neoplasms; Uterine Cervical Neoplasms), for infections (Acquired Immunodeficiency Syndrome; Dengue; Enterovirus Infections, HIV Infections; Malaria, including species name such as Plasmodium knowlesi; Tuberculosis), for injuries (Accidents, Traffic; Child Abuse), for mental health (Depression; Depressive Disorder; Depressive Disorder, Major; Drug Users; Heroin Dependence; Ketamine; Methadone; Psychotic Disorders; Substance-Related Disorders).

BACKGROUND

Research and publications in Malaysia up to the year 2000 had been documented in various bibliographic works.[1-5] A search of the PubMed using the text words “Malaya” and “Malaysia” retrieved 8850 items for the period 1950-1999. However, for the period 2000-2013, the number of items retrieved has increased dramatically to 17909 items [search date 22 August 2013]. PubMed is clearly a great place to look for Malaysian health sciences publications but it contains only a fraction of what is available. A search of the Scopus [all subject areas] using the text words “Malaya” and “Malaysia” retrieved 10425 items for the period 1960-1999. However, for the period 2000-2013, the number of items retrieved has increased dramatically to 30196 items [search date 22 August 2013]. Do note that, Scopus is a general database containing citations of all disciplines, so many articles in there are not health-related.

Searching for Malaysian research has improved with the electronic access of databases. However, comprehensive search of Malaysian health sciences literature continue to pose difficulty for a few reasons:
- There are at least 50 Malaysian journals containing health sciences literature; only a few of them are indexed in major databases (six in PubMed, three in Web of Science and 11 in Scopus).[6,7]
- Inaccuracy of indexing of Malaysian works in the databases.[6,7]
- Grey literatures (e.g. books, book chapters, reports, and theses) are not indexed by databases.

This article describe search methods for “Bibliography of Clinical Research in Malaysia”, a project funded by the Clinical Research Centre, Kuala Lumpur.
METHODS

A team of searchers (consisting of librarians, medical students and a clinician) conducted simultaneous search and import citations into a web-based bibliographic manager (Refworks, http://www.refworks.com). The type of citations retrieved consisted of the following:

1. Journal articles
2. Conference proceedings
3. Books and book chapters
4. Guidelines and reports
5. Theses and dissertations

Journal articles are searched at these databases and websites

2. Scopus (http://www.scopus.com)
3. MyJurnal (http://www.myjurnal.my)
5. Publisher/journal websites

PubMed

PubMed is the free online database of life sciences journal articles offered by the National Library of Medicine, National Institutes of Health, United States. It currently host over 6000 journals containing over 23 millions citations from 1950s. At the moment, six Malaysian journals are indexed in this database.

The following search string is used to query the PubMed for the period 2000-2013:


[note: AD, TA, and MH are PubMed field tags that refer to address, journal title abbreviation and Medical Subject Headings, respectively]

The rationale for the above search string is to maximize the retrieval of Malaysian publications or Malaysian journals indexed in PubMed. The above search string retrieved 21291 citations

Scopus

Scopus is a subscription-based bibliographic database owned by Elsevier. It contains over 50 millions records from around 21000 journals. A search for “Malaysia” for the period 2000-2013 in the subject area of “Health Sciences” retrieved 9720 citations.

Other journal searches

Medical and health sciences journal listed in MyJurnal (a portal of 347 Malaysian journals, 38 are listed under “Medicine & Health Sciences”) and UKM Journal Repository (a portal of 42 journals published by Universiti Kebangsaan Malaysia) are comprehensively searched. All together we conducted hand search and electronic search of 52 Malaysian journals published in the period 2000-2013 (see Table 1).
Table 1: List of Malaysian biomedical journals

1. Annals of Dentistry. [hand search]
2. Archives of Orofacial Sciences. [hand search]
3. ASEAN Journal of Psychiatry. [hand search]
4. Asia Pacific Journal of Molecular Biology and Biotechnology. [hand search]
5. ASM Science Journal. [hand search]
6. Biomedical Imaging and Intervention Journal. [hand search]
8. Education in Medicine Journal. [hand search]
9. FMS Malaysia [hand search]
12. Journal of Health Management. [hand search]
13. IMR Quarterly Bulletin. [hand search]
15. International Medical Research Journal (IMR) [hand search]
16. Journal of Nuclear and Related Technologies. [hand search]
17. Journal of Surgical Academia. [hand search]
18. Journal of the University of Malaya Medical Centre (JUMMEC). [hand search]
22. Malaysia Journal of Nursing. [hand search]
23. Malaysian Family Physician (For the period 2000-2005, this journal is known as Family Physician). [hand search]
27. Malaysian Journal of Forensic Pathology and Science. [hand search]
28. Malaysian Journal of Health Sciences (Jurnal Sains Kesihatan Malaysia). [hand search]
29. Malaysian Journal of Medical Sciences. [hand search]
30. Malaysian Journal of Medicine and Health Sciences. [hand search]
31. Malaysian Journal of Microbiology. [hand search]
32. Malaysian Journal of Microscopy. [hand search]
33. Malaysian Journal of Nutrition. [hand search]
34. Malaysian Journal of Obstetrics and Gynaecology. [hand search]
35. Malaysian Journal of Paediatrics and Child Health. [hand search]
36. Malaysian Journal of Pathology. [hand search]
37. Malaysian Journal of Pharmacy. [hand search]
41. Malaysian Orthopaedic Journal. [hand search]
42. Medical Journal of Malaysia. [hand search]
43. Medicine & Health Reviews. [hand search]
44. Medicine & Health. [hand search]
45. NCD Malaysia [hand search]
46. Neurology Asia. [hand search]
47. Neurology Journal of Southeast Asia. [hand search]
48. Pertanika Journal of Science & Technology. [hand search]
49. Pertanika Journal of Social Sciences & Humanities. [hand search]
50. Sains Malaysia. [hand search]
51. Sunway Academic Journal. [hand search]
52. Tropical Biomedicine. [hand search]

Search for non-journal citations

For non-journal citations (e.g. theses and dissertations), we performed search using Google (http://www.google.com.my) and Google Scholar (http://scholar.google.com.my/). We queried the following databases and institutional repository, both local and international, for scholarly works containing health and medical information on Malaysia:

3. Open Access Theses and Dissertations. www.oatd.org
7. Institute for Medical Research Library. www.imr.gov.my
21. University of Malaya Theses and Dissertations. http://www.diglib.um.edu.my/umtheses/#sthash.2gD1j0rp.dpbs

Data cleaning and coding

After removing duplicated items and non-Malaysian references, the keywords based on National Library of Medicine’s Medical Subject Headings (MESH terms) were coded for each citation.

Inclusion and exclusion criteria of bibliography

The inclusion criteria for the present “Bibliography of Clinical Research” has a limited scope (as requested by the funder):

1. Publications must be clinical research. The definition of clinical research by Glasser is adopted, i.e. patient-oriented research or research conducted with human subjects (or on material of human origin) for which the investigator directly interacts with the human subjects at some point during the study.[8]
2. Publications that fall within four domains and 13 subtopics (breast cancer, cervical cancer, child abuse, colorectal cancer, dengue, depression, drug abuse, enterovirus infection, HIV infection, malaria, road traffic accident, schizophrenia, tuberculosis)
3. Publications that were published between 2000-2013.
4. Publications by non-Malaysians or originate from foreign countries may be included if they contain data on Malaysians’ health or diseases.

The following types of publications were excluded:

1. Conference abstracts (unless full text is available in a conference proceeding).
2. Laboratory and animal studies where specimens did not originate from a human subject.

Naming conventions for journal titles and authors

We used PubMed abbreviated journal title where available; for non-PubMed journals, we used the full journal name unless an abbreviated journal title from the publisher is available.

For authors’ name, we used the following naming style:

1. Authors with surnames: Surname, followed by initials of other names (e.g. Ooi MH for “Ooi Mong How”, Rampal L for “Lekhraj Rampal”)
2. Authors without surnames: First name, followed by initials of other names (e.g. Adeeba K for “Adeeba Kamarulzaman”, Nirmala BP for “Nirmala a/p Bhoo Pathy”)
3. Where it is uncertain, the last name is used, followed by initials of other names.
4. Honorifics (e.g. Dato’) and part of name indicating relationships (a/l, a/p, anak, bin, binte) are excluded
Limitations

We recognize that this bibliography is an incomplete collection of Malaysian clinical research. Journals that are not in databases are most likely incompletely searched. Searching for Malaysian dissertations and theses are difficult because of incomplete collections at the local university repositories.

BRIEF RESULTS

A total of 2056 publications fall within the above inclusion criteria. See Tables 2 and 3 for distribution of publications by year and topics. Of the 2056 publications, 1212 (58.9%) were retrieved from PubMed. Free full text is available for 1293 (62.9%) publications. The URL (internet links) are provided where available.

Table 2: Number of publications by year

<table>
<thead>
<tr>
<th>Year</th>
<th>All publications</th>
<th>Included in bibliography</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>932</td>
<td>58</td>
</tr>
<tr>
<td>2001</td>
<td>980</td>
<td>63</td>
</tr>
<tr>
<td>2002</td>
<td>948</td>
<td>71</td>
</tr>
<tr>
<td>2003</td>
<td>1102</td>
<td>74</td>
</tr>
<tr>
<td>2004</td>
<td>1275</td>
<td>111</td>
</tr>
<tr>
<td>2005</td>
<td>1595</td>
<td>103</td>
</tr>
<tr>
<td>2006</td>
<td>1708</td>
<td>118</td>
</tr>
<tr>
<td>2007</td>
<td>1681</td>
<td>145</td>
</tr>
<tr>
<td>2008</td>
<td>2153</td>
<td>179</td>
</tr>
<tr>
<td>2009</td>
<td>1911</td>
<td>147</td>
</tr>
<tr>
<td>2010</td>
<td>2213</td>
<td>199</td>
</tr>
<tr>
<td>2011</td>
<td>3039</td>
<td>275</td>
</tr>
<tr>
<td>2012</td>
<td>3415</td>
<td>237</td>
</tr>
<tr>
<td>2013</td>
<td>4308</td>
<td>272</td>
</tr>
<tr>
<td>All years</td>
<td>27260</td>
<td>2056</td>
</tr>
</tbody>
</table>

Table 3: Number (in bracket) of included publications by domains and subtopics

<table>
<thead>
<tr>
<th>Domain</th>
<th>Subtopic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers (589)</td>
<td>Breast cancer (389)</td>
</tr>
<tr>
<td></td>
<td>Cervical cancer (112)</td>
</tr>
<tr>
<td></td>
<td>Colorectal cancer (97)</td>
</tr>
<tr>
<td>Infections (795)</td>
<td>Dengue (182)</td>
</tr>
<tr>
<td></td>
<td>Enterovirus infection (50)</td>
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<tr>
<td></td>
<td>HIV infection (294)</td>
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<td></td>
<td>Malaria (108)</td>
</tr>
<tr>
<td></td>
<td>Tuberculosis (193)</td>
</tr>
<tr>
<td>Injuries (142)</td>
<td>Child abuse (41)</td>
</tr>
<tr>
<td></td>
<td>Road traffic accidents (101)</td>
</tr>
<tr>
<td>Mental Health (582)</td>
<td>Depression (265)</td>
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<tr>
<td></td>
<td>Drug abuse (157)</td>
</tr>
<tr>
<td></td>
<td>Schizophrenia (164)</td>
</tr>
</tbody>
</table>

Note: The content of some publications cover more than one subtopic

The full list of citations for all 13 subtopics will be published as a separate book by the Clinical Research Centre, Kuala Lumpur.

References

3. 100 Years of the Institute for Medical Research 1900-2000. Kuala Lumpur: Institute for Medical Research, 2000