Choosing the proper database(s) for dental researchers: WOS vs. Scopus vs. Medline (PubMed)

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Introduction

Literature searching is essential to evidence-based dentistry. With an enormous number of research papers published every year and many databases available to retrieve them, the decision of selecting a database has a direct influence to the success of a search. Some researchers in dental fields may only rely on Medline for their search. However, according to Ulrich’s Periodical Directory, the number of active primary dentistry journals in 2012 is 729, and only 172 dentistry titles (24%) are currently indexed in Medline (The National Center for Biotechnology Information 2012). As a result, Medline alone is far from a comprehensive source. To conduct thorough research, dental professionals need to go beyond Medline and search other databases containing health science information. Although there are a number of other sources that dental researchers should consider (PsycINFO, EMBASE etc.), due to the fact that Scopus and Web of Science (WOS) are the most popular and extensive interdisciplinary databases with extensive medical literature coverage, the focus of this research project is to compare Medline with Scopus and Web of Science (WOS). This research intends to address the question: should I only search Medline for my research?

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The first goal of this research is to identify unique dentistry journals that are not covered in Medline. The second goal of this research is to identify the content coverage for selected important journals. The important titles list will be compiled based on the top 50 dentistry titles ranked as the top 50 impact factor from journal citation reports 2012 (“Journal summary list” Scimago Journal Rank (SJR) from Elsevier 2012). Medline, Scopus and WOS are the most popular and extensive interdisciplinary databases with extensive medical literature coverage, the focus of this research project is to compare Medline with Scopus and Web of Science (WOS). This research intends to address the question: should I only search Medline for my research?

Methodology

All the dentistry titles from PubMed (Under Dentistry and Orthodontics), Scopus (under Dentistry), WOS (under Dentistry, Oral surgery & Medicine) were copied into a Microsoft excel file. Titles from the same database were listed under the same column and then each column was sorted alphabetically. After that, titles in each database were double checked to make sure that they were active and were currently being indexed in that database. The titles where the coverage has been discontinued in a certain database have been removed from the list for that database. Later, a color-coding method was used to identify the unique titles and duplicated titles in each database. After coloring the excel file, five tables were created to show unique titles in three databases, duplicated titles in three databases, duplicated titles in PubMed and Scopus, duplicated titles in PubMed and WOS, and duplicated titles in Scopus and WOS. Unique titles identified at this stage were then further examined for their uniqueness. That is, unique titles identified in PubMed were searched in WOS and Scopus; unique titles identified in WOS were searched in PubMed and Scopus; unique titles identified in Scopus were searched in PubMed and WOS. Non-English titles were also searched using English names. Corrections were then made based on the number of unique titles identified in each database. It was done to provide some guidance in collection development.

Results

Table 1: Examples of the studies which have been done in selected subject areas

Table 2: Current Unique Titles in Each Database

From a user’s perspective, utilizing a general search guideline in a different subject area is much more useful than a guideline for each individual journal title. This study analyzed the total number of articles indexed in these three databases using the subject approach rather than the individual title approach. 78 important titles that meet the selection criteria were searched in PubMed, Scopus, and WOS. The research was done between Sept, 2013 and Nov, 2013. To ensure a fair comparison, the same titles were searched in the three databases on the same date. The number of unique titles found in PubMed, Scopus, and WOS were: 5 journals, 37 journals, and 1 journal respectively. 80 duplicated titles were found in PubMed, Scopus, and WOS. 93 duplicated titles in PubMed and Scopus, 83 duplicated titles in PubMed and WOS, and 94 duplicated titles in Scopus and WOS. From a user’s perspective, utilizing a general search guideline in a different subject area is much more useful than a guideline for each individual journal title. This study analyzed the total number of articles indexed in these three databases using the subject approach rather than the individual title approach. 78 important titles that meet the selection criteria were searched in PubMed, Scopus, and WOS. The research was done between Sept, 2013 and Nov, 2013. To ensure a fair comparison, the same titles were searched in the three databases on the same date. The number of unique titles found in PubMed, Scopus, and WOS were: 5 journals, 37 journals, and 1 journal respectively. 80 duplicated titles were found in PubMed, Scopus, and WOS. 93 duplicated titles in PubMed and Scopus, 83 duplicated titles in PubMed and WOS, and 94 duplicated titles in Scopus and WOS.

Conclusions

Scopus has the broadest coverage of dental journals with the highest number of unique titles (37 out of 42, most of them are internationally oriented, 20 of them are referred titles). Thus, from the dental title coverage point of view, Scopus should be the first choice to carry out comprehensive research, especially when researchers are interested in international dental research activities. As Medline is a free database, if a researcher does not have access to Scopus, PubMed is a good choice as well. However, when considering the number of articles indexed in each database for each title, depending on the topic, please check Table 3 for the suggested first choice of database.

References

Please see Appendix 1

Limitations and Significance of this study

The goal of this study is to compare Medline with Scopus and Web of Science by identifying the unique titles and comparing the content coverage for selected important journals. The important titles list will be compiled based on the top 50 impact factor, Eigenfactor, SJR, and MLA recommended for first or priority subscription dentistry titles. The results will help dental researchers and health science librarians select the proper databases for their research.

Objectives

The first objective of this research is to identify unique dentistry-related titles in each of the three databases. The second objective is to compare the content coverage for selected duplicated journals, tools for selecting the journals will include journal Citation Reports, SCImago and the list of journal titles identified by Medical Library Association. For these journal titles, this research will determine

- the number of articles indexed in each of the databases
- the time frame for these titles in each of the databases
- the currency for these titles in each of the databases

The results of this study may mislead titles indexed in each database with a group of selected title journals. However, as Robin et al. pointed out: “more hits do not necessarily mean higher quality studies” (Robin, Damon, Gaillard, & Garinelli, 2010). A more accurate conclusion, more detailed research should be done to compare the quality of articles indexed in each database for each subject in these three databases. Although coverage data above is not sufficient as a basis for database acquisition decisions, this study can be used to provide some guidance in collection development.

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