Evidence Based Library and Information Practice

Bibliometric Analysis Identifies Publication Trends and Most Common Research Topics Related to Internet Health Information Seeking Behaviour

A Review of:

Li, F., Li, M., Guan, P., Ma, S., & Cui, L. (2015). Mapping publication trends and identifying hot spots of research on Internet health information seeking behavior: A quantitative and co-word biclustering analysis. *Journal of Medical Internet Research, 17*(3), e81. http://dx.doi.org/10.2196/jmir.3326

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Abstract

Objective – To identify research and publication trends related to health-seeking information behaviour on the Internet.

Design – Bibliometric analysis, publication trends, and co-word biclustering analysis.

Setting – Academic journals.

Subjects – Journal articles retrieved from PubMed meeting eligibility criteria, and articles selected through hand-searching of the top three journals publishing in the identified area of research.

Methods – A search for relevant articles was performed in PubMed and supplemented by manual searching of the top three journals in the field, yielding a total of 2,780 articles. Following a high concordance rate on screening agreement, researchers identified a total of 533 articles for inclusion. These articles were considered to be representative of all the articles published on Internet health-seeking behaviour as of September 2014. Data deemed essential to biclustering co-word analysis included article title, author, institution, country, source, publication year, and MeSH terms, and was collected in both XML and MEDLINE formats to ensure information exhaustivity for subsequent analysis. Analysis of the distribution of data, as well as major

MeSH frequency ranking, allowed researchers to identify the most active journals in the subject area, while biclustering for highly frequent MeSH terms determined hot spots of research. Researchers used both mountain and matrix visualization to further illustrate semantic relationships of MeSH terms and the framework for the analysis of research hot spots. Co-word analysis facilitated the identification of like-articles based on major MeSH indexing, while cluster analysis utilized a matrix grouping to identify themes. By combining this information and reorganizing the matrix, researchers were able to highlight the most common themes.

Main Results – Researchers identified ten research "hot spots," the most prolific research topics, thus providing the top subject areas of research published in the literature related to Internet health-seeking behaviour. Top subjects include health information seeking behaviour related to HIV infection or sexually transmitted diseases; information seeking behaviour of students and of patients with cancer; consumer trust in online health information; behaviour of Internet health information seeking through mobile apps; the interaction between physician-patient relations/communications and Internet use; personal preference and computer literacy related to Internet use; and the use of social media by parents.

In terms of publishing rates, the number of papers published on health information seeking behaviour has increased consistently since 1985, when only one paper was published, to 2013, in which 114 papers were published. Authors from 42 countries or regions contributed to the body of relevant literature, with authors from the United States of America accounting for over half of published papers. Just over 96% of articles were published in English. Of the 253 journals identified as publishers of these articles, eight published over one-third of all the identified articles. The *Journal of Medical Internet Research* published the most articles on this topic.

Conclusion – Bibliographic analysis identified both subject and publication trends related to

Internet health information seeking behaviour. Publication rates of research in the area of Internet health information have increased steadily since the first article was published in 1985. The bulk of the research tends to fall within ten identified hot spots, or research topics, according to a bibliometric analysis of indexing.

Commentary

The authors provide several resources supporting the fact that a significant proportion of Internet searches are related to health information. Bibliometric analyses on research trends in this subject area are sparse and therefore this is a relevant and timely study that helps to fill a gap in the literature.

The articles identified for analysis were obtained through a broad, and arguably inefficient, PubMed keyword search, using only those indexed with MeSH terms. It is unclear why only major MeSH terms were ultimately utilized in the bibliometric analysis, though this is likely because such terms would identify the primary rather than secondary focus of the article. The eligibility criteria of PubMed search results ensured that articles focused on health information seeking behaviour rather than the evaluation of online health information or other behaviours related to Internet use (e.g., online shopping, Internet addiction, online gaming). According to the authors, PubMed was selected as the only database to search because it is freely available. They suggest that available research data will increase when other databases become available through open access publication. It is not clear whether the authors had access to additional licensed databases through their institutions, however one would assume that additional resources would be available through academic affiliations. The authors note that using only PubMed is a study limitation, as journals that are not indexed in PubMed could not be included in the analysis. The authors also concede that a lack of standard indexing, along with the timing of the introduction of MeSH terms, are factors that may affect the accuracy in identifying research hot spots.

Given that complex bibliometric analysis may be unfamiliar to many readers, one of the strengths of this study is the clear definition and description of the methods used in data analysis and interpretation. That said, the research sometimes read as more of a lesson in bibliometric analysis rather than a presentation and discussion of findings to the extent that one would expect in a research publication.

Results from this study can be used to inform the development of subsequent research areas since the identification of "hot spots," by default, implies gaps in the literature. As well, these study results can provide the initial basis of a scoping review on a hot spot topic, aid in decisions related to authors' journal selection for manuscript submission, and provide data to inform collection development decisions.