

Are health sciences librarians taking the evidence-based medicine challenge?

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Abstract

This study sought to find out whether and how health sciences librarians' roles have been changing to support the evidence-based medicine (EBM) practice. Both content analysis of job advertisements and literature review were employed. Results revealed that there exist some disconnects between what are expected of health sciences librarians in their EBM related responsibilities by their prospective employers, their actual EBM related activities, and the present prospering EBM practice in health professions.

1. Introduction

"Evidence-based medicine" (EBM) was introduced in 1991 by Gordon Guyatt (1991). Since then, it has become an increasingly pervasive term in health care-related areas. EBM is defined as "the integration of best research evidence with clinical expertise and patient values" (Sackett et al. 2000). There are five essential steps to evidence-based practice (EBP): converting information needs into focused, answerable clinical questions; efficiently tracking down best evidence to answer questions; critically appraising the evidence for validity and clinical usefulness; applying results in clinical practice; and finally, evaluating performance of evidence in clinical application (Babish 2003). It is the process of identifying and assessing the best available scientific evidence and integrating this evidence with the clinician's judgment and the patient's values to make medical decisions (Evidence-Based Medicine Working Group 1992). Many health care institutions have started to consider EBM as a priority for professional medical practice. The nature of this practice provides both challenge and opportunity for health sciences librarians.

The research was initiated from the results of the authors' project supported by a 2005 Research Project Grant from the Southern Chapter of the Medical Library Association (SC/MLA). The project examined the content of 247 reference

position advertisements posted in *MLA News* from January 2000 to December 2005 to find out the qualifications and characteristics expected of reference librarians by prospective employers in health sciences libraries and to investigate the reference librarians' evolving roles. The content analysis on EBM related qualifications from the project shows a disconnect between the requests in job postings for EBM related qualifications and duties and the present prospering of EBM in health care settings. Only 17% (n=41) of the job descriptions asked for EBM related qualifications and duties. Therefore, the authors wonder whether the job ads really reflect health sciences librarians' roles in supporting EBM and whether the librarians have taken the challenge in this initiative.

This study sought to examine what EBM related qualifications and responsibilities have been expected of health sciences librarians by prospective employers and how health sciences librarians have been involved in EBM related activities as reported in literature, based on which inferences are expected to be made as to what roles health sciences librarians have been playing to support and enhance evidence-based practice (EBP).

2. Methodology

Both content analysis and literature review were employed in this study. Content analysis of job postings aimed at examining EBM related qualifications and responsibilities prospective employers expected of potential employees. Literature review attempted to find out what roles, as reported in literature, health sciences librarians have been playing in supporting the practice of EBM in health care settings.

MLA News is the only data source for the content analysis. Although it is not the only medium used by library administrators in health sciences libraries to post vacant positions, it is the major outlet for publication of position vacancies in health sciences libraries in the United States and Canada (Schmidt and Swanton 1980; Smith 1997), and the content of *MLA News* job advertisements has strong indication of the trends in the demand for medical librarians and their special skills and knowledge (Altas 2000). Data analysis was expanded to include job postings from January 2006 through December 2007 in order to have current information on what prospective employers expected of reference librarians on EBM related responsibilities. Thus, eight-year position announcements that mentioned EBM related qualifications and responsibilities in *MLA News* were coded and analyzed.

All issues of *MLA News* from January 2000 to December 2007 were scrutinized, and duplicate advertisements were omitted from analysis. If wording or job descriptions varied slightly, the two were retained. Fifty-four job ads with EBM related responsibilities were identified and coded initially in an Excel spreadsheet and then exported to SAS for data analysis. Job titles included in the content analysis, but not limited to, were reference librarian, information services

librarian, information specialist, health sciences librarian, medical librarian, librarian, instruction services librarian, and head of reference services. Six variables were used to code EBM related responsibilities: expertise with or knowledge of EBM resources, providing evidence-based medical research, contributing to evidence-based initiatives, attending morning reports, medical rounds, or journal club, teaching EBM, and supporting the application of evidence-based practice (EBP).

The literature searches were conducted on several databases including Academic Search Premier, PubMed/Medline, CINAHL, ERIC, and LISTA. Forty-one articles were identified from the literature search. The criterion for inclusion was whether the articles contained evidence on or described librarians' involvement in EBM related activities. The content of the articles was analyzed and the identified librarians' EBM-related duties, responsibilities, and activities were coded in an Excel spreadsheet. The coding elements included author, article title, source, librarians' roles, nature of the activity, resources used, assessment, and conclusions. The 6 variables used to analyze reference job advertisements were also included in the spreadsheet for further comparison.

3. Results

From January 2000 through December 2007, 336 (46%) out of the total 726 position announcements were reference positions; 54 (16%) job ads mentioned EBM related qualifications and responsibilities. Among these 54 job postings, 39 (72%) job ads were posted by academic health sciences libraries, 12 (22%) by special libraries, and 3 (6%) by hospital libraries. Yearly speaking, 2005 had the most job openings (n=11, 20%) mentioning EBM related responsibilities, followed by 2001 and 2004 (n=8, 15%), 2006 (n=7, 13%), 2000 and 2007 (n=6, 11%), 2003 (n=5, 9%), and 2002 (n=3, 6%). Most of the 54 job ads described EBM responsibilities or qualifications in one sentence.

The content analysis of the job postings revealed the detailed EBM related qualifications and responsibilities expected of health sciences librarians by potential employers, which can be shown through the following table:

EBM related variables	Number	Percentage (%) *
Expertise with or Knowledge of evidence-based medicine resources	28	52
Teaching EBM	17	32
Supporting the application of EBP	12	22
Providing evidence-based medical research	9	17
Contributing to EBM initiatives	3	6
Attending morning report, medical rounds, or journal club	2	4

* Percentages do not total 100%, as the content of the each job description could apply to multiple variables.

Forty-one articles were identified from the literature search on health sciences librarians' roles in supporting EBM practice; some expressed opinions or suggestions on how health sciences librarians could play an important role in EBP; some reported on their involvement in EBM related activities, among which most were of project nature in academic settings. In most of the projects, librarians' roles as instructors, team members, or partners in the EBM initiatives were integrated into curriculum, workshop, and programs (Ryce and Dodson 2007; Linton et al. 2004; Traditi et. al. 2004). Evidence showed librarians were invited to participate in EBM initiatives to help improve patient care (Banks et al. 2007; Verhoeven and Schuling 2004). Literature also demonstrated that librarians played a role in working with medical school faculty members to create an online EBM tutorial (Mayer, Schardt, and Ladd 2001), partnering with hospital department to produce clinical guidelines (Keating et al. 2004), and contributing their evidence-based search expertise and knowledge in supporting the Family Physicians' Inquiries Network (EPIN) (Ward, Meadows, and Nashelsky 2005). Librarians played a leading role in three projects as reported in the literature. One was a Web-based EBM library consult service application (LCS) project (Schwartz and Millam 2006) to provide full text evidence-based literature with critical appraisal in response to clinical questions asked by remote physicians. One was a UK clinical librarian project at Barnet Primary Care NHS Trust (Rigby

et al. 2002; Reid, Ikkos, and Hopkins 2002). The core of this project was to provide patient-focus information to clinicians to support them in practicing evidence-based health care. Another one documented how the Arizona Health Sciences Library (AHSL) created an EBM search engine for retrieving EBM resources and presenting results organized according to an evidence pyramid (Bracke, Howse, and Keim 2008).

Only four articles reported on librarians' routine involvement in EBM related activities. In Kaplan and Whelan's article (2002), librarians took an active part in the curriculum integration to support EBM and to help health sciences majors and professionals to achieve their professional competency objectives. Atlas et al. (2003) reported how librarians took advantage of their participation in morning reports to discuss search strategies with residents in order to improve their information searching skills. McKibbin and Bayley (2004) reported on their formal liaison responsibilities with all educational programs in identifying, supplying, and providing training in EBP resources. Librarians carried out systematic reviews of the research literature and took the leading role in compiling the comprehensive searches. In Schwing's article (2005), librarians participated in graduate medical education and acted as experts in finding the best evidence and relating it to clinical problems and questions. All these reported routine activities were in academic libraries.

4. Discussion

The content analysis of the 8-year job postings alone showed some disconnects between the popularity of EBM practice in the current health care settings and the expected qualifications and responsibilities of health sciences librarians by their prospective employers. Only a small number and percentage of the job postings (n=54, 7%) specified EBM related responsibilities for potential librarians. In addition, most of these job postings only provided a very simple and brief statement for the EBM related responsibilities. However, literature seemed to reveal a more clear and different situation. Health sciences librarians have been involved in EBM related initiatives. But most of the reported EBM activities were of project nature. Only in four articles were health sciences librarians reported to have taken on some routine EBM responsibilities.

Content analysis and literature review revealed that health sciences librarians, though ready and willing to contribute to EBM related projects as situations or opportunities arise, they were not proactive enough in their role to support EBM practice in their daily work. On the other hand, library administrators did not feel the urgent need to have prospective employees provide regular services to support EBP, either. This might explain the lack of specific information on EBM related qualifications and responsibilities in the job descriptions for health sciences librarians. Based on this understanding, the authors concluded that there exist some disconnects between what are expected of health sciences librarians in their responsibilities by their prospective employers and the present prospering EBM

practice in health professions.

Ever since it was introduced in the early 1990s, EBM has become an increasingly pervasive initiative in health-care related areas. The ongoing explosion of available health information, especially the online health information, has made access to and use of evidence-based medical research both a concern and expectation of clinicians (Kronenfeld et al. 2007). Clinicians need more skills in efficiently and effectively finding the materials they need for EBP (McKibbin and Bayley 2004). Health sciences librarians, with their knowledge of health information resources and their information search and retrieval expertise, can take on the responsibilities to support and enhance the EBM practice (Perry and Kronenfeld 2005). EBM is a collaborative effort of health and information professionals and the two groups should partner in the teaching and practice of EBM (Dorsch, Jacobson, and Scherrer 2003). Successful partnership programs or projects (e.g. McKibbin and Bayley 2004; Mayer, Schardt, and Ladd 2001; Banks et al. 2007) confirmed that health sciences librarians can have input into all the essential steps of evidence-based practice except the fourth one, which requires clinical expertise (McKibbin and Bayley 2004). The authors suggest health sciences librarians and library administrators should consider incorporating supporting EBM practice into librarians' routine responsibilities and getting ready to provide EBM support and services as the needs arise and opportunities appear.

5. Conclusions and Future Research

With the purpose of examining the roles health sciences librarians have been playing in supporting and enhancing EBM, this research should be significant in identifying and alerting both health sciences librarians and administrators to the potential existence of disconnects between what health sciences librarians have been doing or expected to do and the prospering of EBM in health professions. The research should also be significant in providing guidance for both employers and potential employees on the importance of the EBM related qualifications and responsibilities that health sciences librarians should have. It should be significant as well in bringing insight into the development of library schools' curricula for the training of future health sciences librarians to meet the needs of EBM practice.

The study findings are preliminary. More rigid data need to be collected to validate these findings. Further research will be to conduct a survey among health sciences librarians to find out what EBM activities practicing health sciences librarians have been doing, their routine EBM related duties and responsibilities, and their attitudes towards supporting EBP. It is assumed that the survey results will be able to provide a more clear and more realistic picture of health sciences librarians' involvement in EBM initiatives, based on which a better conclusion can be made on whether they have been taking on the evidence-based medicine challenge.

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