



*Article*

**The Perception and Practice of Evidence Based Library and Information Practice Among Iranian Medical Librarians**

Vahideh Zarea Gavvani  
Librarian  
Tabriz University of Medical Science and Education  
Tabriz, Iran  
Email: [Vgavvani@gmail.com](mailto:Vgavvani@gmail.com)

**Received:** 14 August 2009

**Accepted:** 13 November 2009

© 2009 Gavvani. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

---

**Abstract**

**Objective** – Evidence based library and information services help to link best evidence with decision making in library practice. Current library and information science practice operates in both a knowledge and evidence-based environment. Health service librarians provide information services in an evidence based health care context to improve patient care. But the evidence based practice movement has influenced many fields of human knowledge, including librarianship. Therefore, this study seeks to answer the following questions: 1) What are the perceptions of Iranian medical librarians regarding the use of an evidence based approach in their decision making processes? 2) Do Iranian medical librarians apply an evidence based approach in their professional work? 3) How do Iranian medical librarians practice an evidence based approach? 4) What are the barriers and limitations for Iranian medical librarians who engage in evidence based library and information practice (EBLIP)?

**Methods** – This study utilized a survey to discover medical librarians' attitudes and perceptions towards the use of an evidence based approach to library practice in Iran. Data was collected using a structured questionnaire to identify medical librarians' attitudes toward EBLIP.

**Results** – The findings of the study indicate that Iranian medical librarians are aware of EBLIP and that they utilize an evidence based approach towards their LIS work. They practice the five steps of an evidence based answering cycle in formulating, locating, assessing, applying, and redefining questions. However, they have less knowledge about levels of evidence, research methodologies, and critical appraisal.

**Conclusions** – Medical librarians in Iran are familiar with the concept of an evidence based approach. More training is needed in some elements of evidence based practice to improve their approach to evidence based library and information practice.

---

## Introduction

While there are various definitions of evidence based library and information practice (EBLIP), it is generally understood to be the pragmatic use of the best available evidence from relevant research in conjunction with professional experience and users' preference in decision making in library and information science practice.

It might be suggested that the core element of an evidence based approach in a health care context originated in the principles set out in Archie Cochrane's 1972 work, *Effectiveness and Efficiency: Random Reflections on Health Services*. Cochrane stressed the importance of using evidence from randomized controlled trials (RCTs), because RCTs are likely to provide more reliable information than other sources of evidence. Although Sackett noted that the "philosophical origins [of evidence based practice] extend back to mid-19th century Paris and earlier" (71), it was not until the 1980s that the evidence based medicine approach emerged as "a system for using medical information to improve everyday health care decisions." (Jordan 22).

Today the importance of the "explicit and judicious use of best available evidence" (Sackett 72) in the everyday practice of many fields of human knowledge has led to the use of an evidence based approach in professional decision making and practice. Evidence based law, evidence based engineering, and evidence based librarianship are examples of the development and growing influence of this approach in diverse fields and specialties, beyond the health and medical arena.

The research policy statement of the Medical Library Association (MLA) takes the position that scientific evidence is the basis for improving the quality of library and information sciences now and in the future.

Research activity is seen as the foundation of an evolving knowledge base for the profession--a knowledge base that will set health sciences librarians apart from others in an increasingly competitive world of information service providers (Bradley and Marshall 147).

Since the first discussion of an evidence based approach for library and information science by Eldredge ("Commentary"), various authors have provided different definitions of EBLIP, including Booth ("Exceeding"), Eldredge ("Overview"), and Crumley and Koufogiannakis. Each of these authors has discussed how an evidence based approach works in library and information science and practice. Though the definitions differ, they share four common criteria that help to explain how library and information practice can be evidence based:

- User centricity
- Research driven
- Pragmatic
- Integrated with professional experience and observation

These four basic elements and many of the same research methods used in EBM are incorporated by EBL to improve library practice. However, "to adapt core characteristics from EBM does not imply that EBL imitates EBM, or even EBHC, blindly" (Eldredge, "Overview" 290).

Since the emergence of EBM concepts in the information service of medical libraries, librarians have been involved in EBM processes in theory and practice, training clinicians to locate evidence in the literature (Hill; Klem and Weiss; McCarthy; and Crumley) and providing access to the best available evidence and reliable information (Marshall; Williams and Zipperer; Lucas et al.).

Partridge and colleagues noted that "Increasingly, the library and information science (LIS) practitioner is being challenged to incorporate evidence based practice into the context of their [sic] professional work." (2) A review of Farsi language literature indicated that although the evidence based approach has not been formally included in the curriculum for medical librarianship in Iran, a medical librarian delivered the first formal lecture concerning the topic of EBM in a presentation to Iranian medical school faculty in 2004. (Gavvani, "Qualified"). Gavvani also authored a paper researching the use of EBM among clinical faculty in Iran ("Approach"). The latter paper concluded that clinical faculty members have little practical knowledge about EBM or sources of evidence based information. The study also reported that Iranian clinical faculty lacked knowledge about methods of searching and retrieving evidence. Gavvani concluded that training in searching and retrieving evidence based information was needed. This led to the formation of the Center for Evidence Based Medicine at the Tabriz University of Medicine. The center recruited a number of medical librarians to collaborate in its training programmes.

### Aims and Objectives

The question remains, however, as to whether librarians incorporate an evidence based approach in their practice more for their own professional development rather than as a service for users. Thus, the present study aims to determine Iranian medical librarians' perceptions and attitudes towards EBLIP, in addition to investigating how EBLIP is practiced in Iran.

The study sought to address the following questions:

- What is the perception of Iranian medical librarians about using an evidence based approach in their decision making process?
- Do Iranian medical librarians apply an evidence based approach in their daily library practice?

- How do Iranian medical librarians practice an evidence based approach in their daily library practice and services?
- Do Iranian medical librarians face barriers and limitations in practicing EBLIP?

### Literature Review

There are few studies about the actual practice of EBLIP in libraries. A presentation by Brice et al. at the 2005 IFLA conference provided a practical introduction to evidence based information practice. Their paper, "Evidence Based Librarianship: A Case Study in the Social Sciences" sought to equip participants with the skills required for evidence based practice in the workplace. A social sciences scenario demonstrated how evidence can be used to support library management decisions. Concepts such as formulating focused questions, understanding research design, and critical appraisal were applied. In conclusion, the study suggested that library and information staff need to consider, and plan for, practical steps to introduce the concept of evidence based practice in their workplaces. Lewis and Cotter examined the similarities and differences between research questions asked by librarians in 2001 to those posed in 2006. They also explored the extent to which the published research supports the questions being asked. They found that in 2001 and 2006 the most commonly asked questions were regarding management and education issues.

Westwood examined one librarian's experience in applying an evidence based librarianship model to her practice as a humanities librarian. She concluded the paper by expressing her success and proposing the self evidence based model as a way forward.

The literature review highlighted a lack of studies examining medical librarians' practices and their perceptions of EBLIP. This study sought to understand Iranian medical librarians' perceptions of EBLIP and to

examine how EBLIP is used in everyday decision making processes.

## Methods

The study was carried out utilizing a survey approach. A random sample of 100 librarians was selected from the current membership list of the Iranian Medical Library Association. The total number of members was 600 at the time. A structured questionnaire with fixed responses and a set of attitude statements using Likert Scales formed the basis of the questionnaire (see Appendix). Open-ended questions were also included to capture respondent's opinions. The questions were derived by extracting the factors and criteria for practicing EBLIP, levels of evidence, and the generally accepted five steps of evidence based practice from relevant evidence based practice literature. For example, the evidence based cycle that has been recognized by a number of authors in the EBM/EBLIP literature (Rosenberg et al.; Cook, Jaeschke, and Guyatt; Epling et al.; Eldredge "Formulating") was used to formulate questions 14-17. Open-ended questions helped determine which methods of evaluation and appraisal of evidence were used by these librarians and which sources of evidence they most frequently consulted. Responding librarians used Likert scale response options ("strongly agree," "agree," "neutral," "disagree," and "strongly disagree") to respond to statements regarding their perceptions about EBLIP and its importance in their daily work. Electronic mail was used to collect data from the sample. Email was also used to clarify opinions and responses where necessary.

## Results

There were 100 questionnaires distributed among medical librarians in Iran, and 63 valid responses were returned and analyzed. The findings of the study are presented below.

### *What are Iranian medical librarians' perceptions of EBLIP?*

Familiarity with the EBLIP concept  
Respondents were asked if they knew what EBLIP was and, if so, from which sources they obtained information about EBLIP. A total of 63 librarians answered this question. Of these n=32 (50.7%) stated that they knew about EBLIP, and n=31 (49.2%) stated that they had not heard the term. Those familiar with the term EBLIP (n=32) also responded to the question, "From which sources did you receive information about EBLIP?". Respondents were able to select more than one response; n=17 (53.1%) said they had discovered EBLIP from the "literature." Other responses included "friends" n=9 (28.1%), "discussion groups" n=6 (18.75%), and "other media" n=9 (28.1%).

The librarians were asked whether they searched for evidence in the published literature for everyday decision making. Of the 49 respondents to this question, 79.1% stated that they search for evidence when they face questions in daily LIS practice.

### *Why engage in EBLIP?*

To determine the librarians' views about the importance of EBLIP in their daily practice, they were asked the extent to which they agreed with the following statements.

Table 1  
The Importance of EBLIP for Iranian Medical Librarians

Attitude Statement	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Respondents #
	#	%	#	%	#	%	#	%	#	%	
EBLIP ensures risk free decision making.	16	25.4	40	63.5	5	7.9	2	3.2	0	0	63
Practicing EBLIP improves the LIS profession and its practice.	12	20	36	60	10	16.7	2	3.3	0	0	60
I practice EBLIP to demonstrate the correct practice for my organization.	24	38.1	30	47.6	5	7.9	4	6.3	0	0	63
I don't practice EBLIP, because I am not a policy maker or decision maker.	7	11.1	3	4.7	35	55.5	16	25.3	2	3.1	63

The majority of respondents "strongly agree" or "agree" that EBLIP ensures risk free decision making, improves the LIS profession and practice, and demonstrates correct practice. A negative statement asked whether the respondents do not practice EBLIP because they are not library managers. Just over half of respondents (55.5%) were "neutral" about the statement "I don't practice EBLIP because I am not a policy maker or decision maker." Another 28.4% responded "strongly disagree" or "disagree"

with the statement, while 15.8% of the respondents said they "strongly agree" or "agree" with the statement.

Formulating questions and accessing evidence  
To ascertain whether librarians consider the "five steps of evidence based practice" when they engage in EBLIP, participants were asked to answer a set of statements by selecting one of five Likert scale responses ("strongly agree," "agree," "neutral," "disagree," or "strongly disagree").

Table 2

Do Librarians Consider the "Five Steps of Evidence Based Practice" in Their Daily Practice?

Attitude Statement	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Respondents
	#	%	#	%	#	%	#	%	#	%	
I formulate questions in an answerable form.	22	34.9	35	55.6	5	7.9	0	0	1	1.6	63
I access research evidence for daily LIS practice.	3	4.9	35	57.4	7	11.5	16	26.2	0	0	61
I assess the accuracy of evidence.	28	45.2	31	50	1	1.6	1	1.6	1	1.6	62
I rely on the evidence and apply it in daily LIS practice.	18	29	34	54.8	8	12.9	1	1.6	1	1.6	62
I'm usually satisfied with whatever evidence I find, and then I stop searching.	1	2	6	11.5	6	11.5	30	57.7	9	17.3	52

The majority of respondents were familiar with the five steps of EBP, and they follow these procedures regularly (Table 2). The majority a) formulate questions in an answerable form; b) access research evidence in their daily decision making; c) assess the accuracy of the research evidence; d) apply evidence discovered in the literature in their LIS work; and e) continue to search for more evidence when the evidence is not conclusive.

*Do Iranian medical librarians apply an evidence based approach to their daily library practice?*

Evidence based information needs of medical librarians in daily LIS practice  
Crumley and Koufogiannakis articulated six domains for EBL as "major areas under which questions can be grouped." (63). They suggested that every LIS practice question falls within one or more of the following domains: collections, education, management, professional issues, information access and

retrieval, and reference questions. In this study, the questionnaire categorized the LIS practice questions in the following domains, typical of the LIS curricula and daily practice in Iran: management, collection development, organization (e.g., classification, cataloging, indexing), standards, user studies, and new services and trends (question 2). Librarians were asked to specify in which fields they needed more evidence to make correct decisions.

The majority of the respondents (66.7%) stated that they primarily search for evidence about LIS standards, followed closely by searches regarding collection development (63.5%). Other reasons cited for locating research evidence were to help with organization of library materials (52.4%) and to support library management (50.80%). "User studies" and news about "new services and trends" were each selected as reasons for research by 47.6% of the respondents.

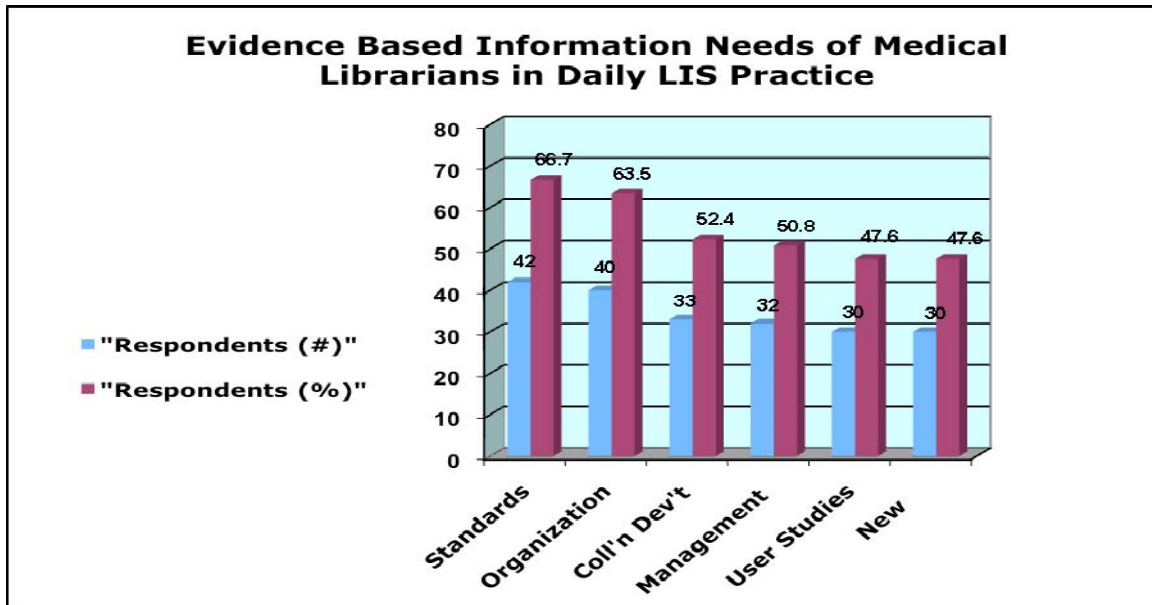


Fig. 1. Evidence Based Information Needs of Medical Librarians in Daily LIS Practice

To determine which sources librarians consult most often for LIS decision making and whether they value the combination of their experience and users' preference with the results of research studies, a question with pre-determined responses asked about the sources they consult for evidence in LIS decision making (Figure 2).

The majority of respondents (65.1%) stated that they consult the "literature" as a first option. Other options in descending order were "libraries with similar experiences"

(39.7%), "senior colleagues" (36.5%), and "personal experience" (31.7%). The lowest percentage (30.2%) referred to "LIS professors or faculty members" as a source of evidence. None of the respondents specified other sources such as user feedback, perspectives, or opinions.

The survey asked the librarians to specify which sources they used most often to locate evidence based information relevant to their EBLIP practice.

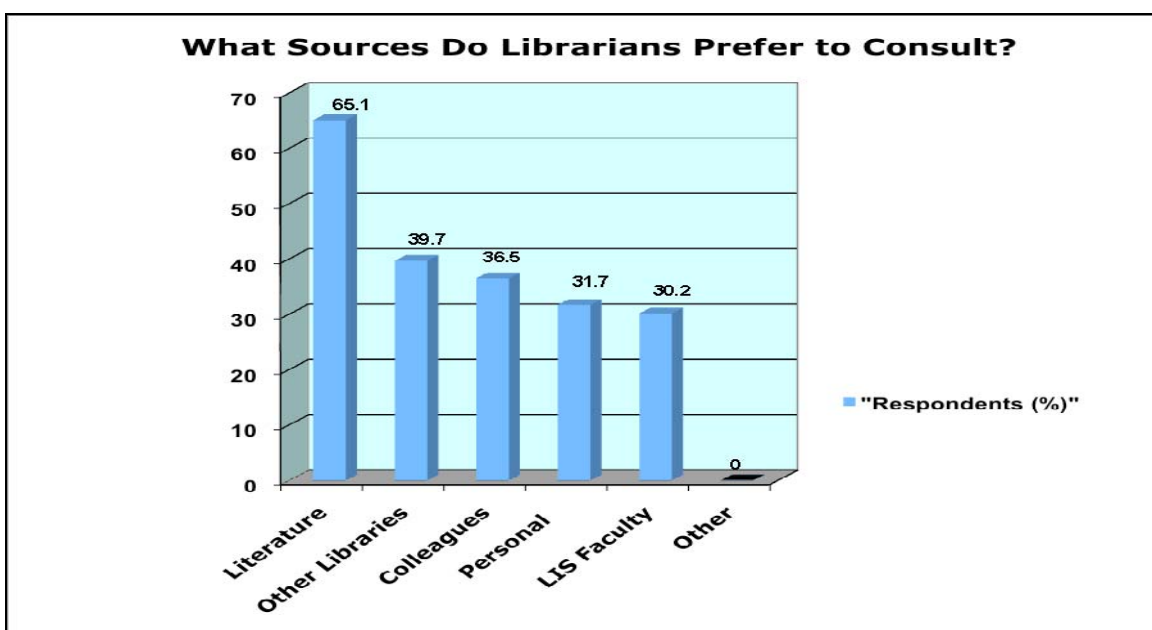


Fig. 2. What Sources do Librarians Prefer to Consult?

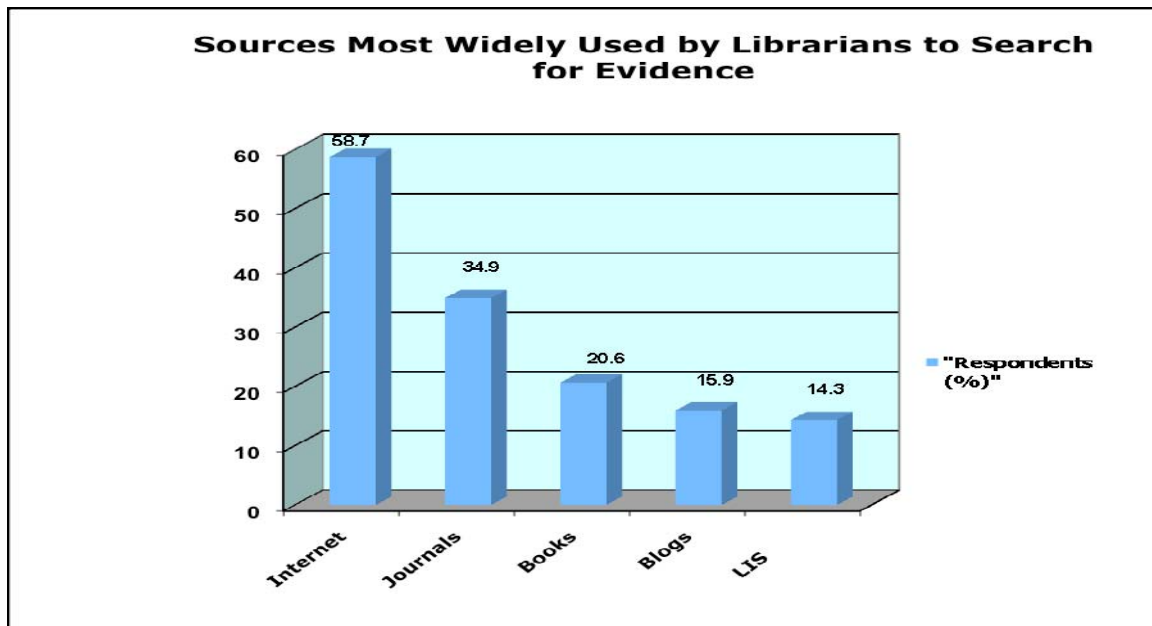


Fig. 3. Sources Most Widely Used by Librarians to Search for Evidence

The results indicated that the majority of respondents (58.7%) search for evidence on the Internet (e.g., Google, Yahoo!). The next most popular sources of evidence were electronic or print journals (34.9%). Books were a source of evidence for 20.6% of respondents, and 15.9% stated they consult blogs to answer LIS practice questions. The lowest percentage of respondents (14.3%) stated that they use LIS databases for their EBL research.

### How Do Iranian Medical Librarians Use an Evidence Based Approach?

#### *Critical appraisal*

An open-ended question sought to learn how librarians appraise the level of evidence extracted from relevant literature. The survey asked, "How do you evaluate the accuracy and reliability of the evidence gained from research studies?" Only 31 of the 63 total respondents (49.2%) answered this question. Of these respondents, 20.6% referred to "citation analysis," which they explained as the number of articles cited by a particular study and the reputation of the articles that, in turn, cited the original source documents. Other factors the librarians considered included an evaluation of the "reputation of the sources" (11.1%), the "reputation of the author of the

article" (4.8%), "research methods" used in the study (3.2%), "comparative methods" (7.9%), and "statistical methods" (1.6%).

#### *Levels of evidence*

Eldredge and colleagues noted that levels of evidence in LIS research influence decision making in librarianship. ("Weeding") This study sought to examine Iranian medical librarians' attitudes towards levels of evidence and to determine whether and how these librarians link the evaluation of evidence to the level of evidence. Respondents who answered the earlier question (number 6) about evaluating evidence in EBLIP, were then asked about levels of evidence (Figure 4).

Most of these respondents (40%) stated that they use evidence based information extracted using various research methods or from the literature, without considering the type of research method used. The survey method ranked second with 20% of the responses. Next were systematic reviews and case studies, each listed by 13.3% of the respondents. The lowest percentage mentioned using quantitative (6.7%) and qualitative studies (6.7%). None of the



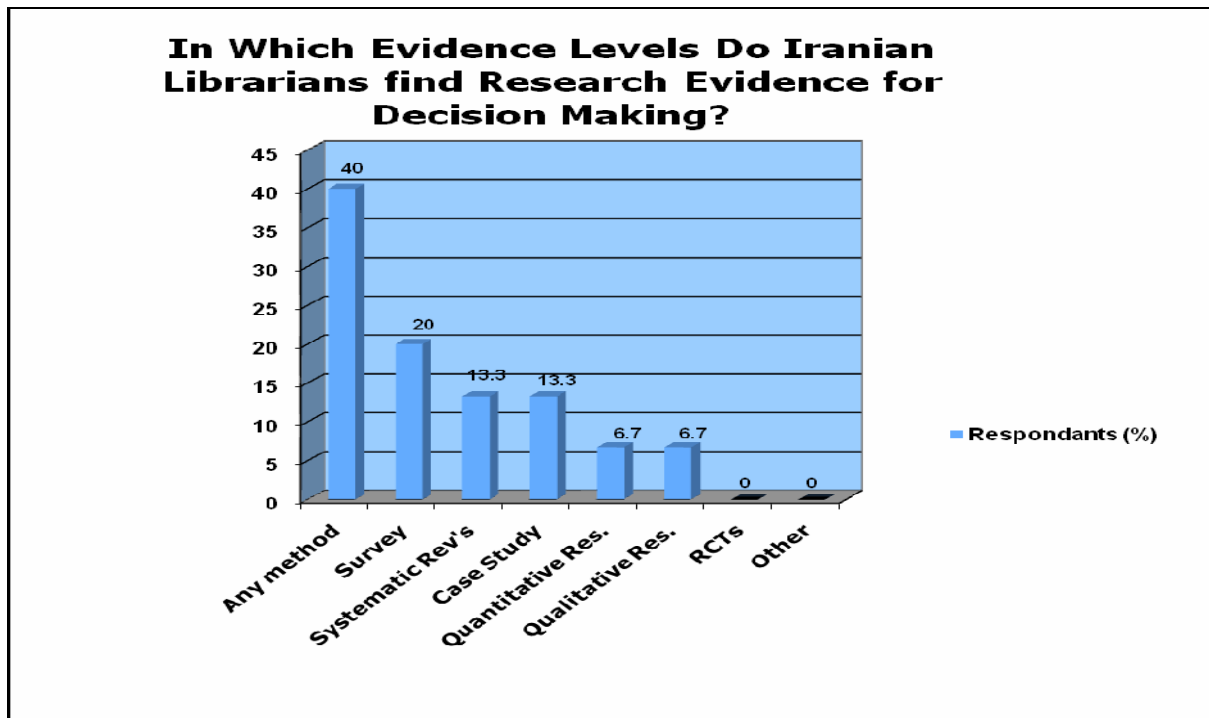


Fig. 4. In Which Level of Evidence Do Librarians Find Research Evidence for Their Decision Making?

respondents referred to using randomized control trials (RCTs), and none referred to any other research methodology used in LIS practice.

*Has evidence based information changed Iranian medical librarians' practice?*

Respondents were asked if evidence based information had changed their daily LIS practice and, if so, in which areas. The majority (67%; n=42) said that the evidence they find from the literature impacts their practice and creates change in their decision making. For 20% of these respondents, there was no change in LIS practice based on evidence based information.

In terms of the areas where evidence based practice has led to changes, 40.5% stated that EBLIP leads to changes in LIS service, 33.3% saw changes in the organization of library

collections, 21.4% reported changes in library management, and 4.8% noted changes in technical areas.

To better understand whether EBLIP has had a creative or reformative role in LIS practice, respondents were asked how EBLIP impacts in their decision making and LIS practice. The majority of respondents (66.6%) stated that EBLIP impacts their LIS practice by creating change in existing procedures and practices, and 60.3% stated that it leads to new decisions in library and information practice. This suggests that EBLIP is useful for both existing LIS practice and for the development of new services.

*Are there any barriers and limitations to EBLIP in Iran?*

A range of questions was posed to discover if there are barriers for Iranian medical librarians in practicing EBLIP (Table 3).

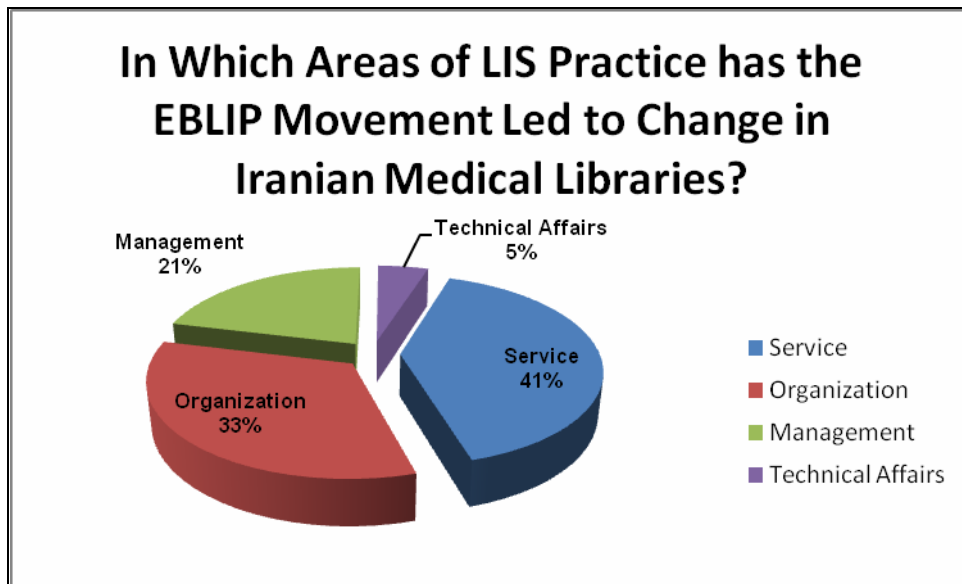


Fig. 5. In Which Areas of LIS Practice has the EBLIP Movement Led to Change in Iranian Medical Libraries?

Table 3  
Barriers and Limitations Librarians Face in Practicing EBLIP and Accessing Evidence

Attitude Statement	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Respondents
	#	%	#	%	#	%	#	%	#	%	
In some instances there is no relevant evidence in the literature.	6	9.8	20	32.8	10	16.4	23	37.7	2	3.3	61
As there is less research evidence in the Library and Information Science literature, I'm satisfied with any evidence I find.	1	1.9	6	11.5	6	11.5	30	57.7	9	17	52
There is abundant LIS evidence based information in Farsi literature.	0	0	4	6.6	9	14.7	40	65.6	8	13.1	61
It does not matter in which language the relevant evidence or information has been published, but it is important to find the evidence.	15	24.6	17	27.7	3	4.9	23	37.7	3	4.9	61

Less than half of the respondents agreed with the statement, "In some instances there is no relevant evidence in the research," and the majority of respondents (74.7%) disagreed that "There is less research evidence in the Library and Information Science literature." At the same time, the majority (78.6%) disagree or strongly disagree with the statement, "There is abundant evidence based information in LIS in Farsi literature." Just over half of the respondents (52.4%) agreed with the statement, "It does not matter in which language the relevant evidence or information has been published, but it is important to find the evidence." This suggests that Iranian medical librarians do not face problems in finding evidence based information from the literature due to a lack of research evidence, nor do they see the lack of evidence in the Farsi literature as problematic.

## **Discussion**

A total of 63 Iranian medical librarians responded to the questionnaire. Almost half of these understood the concept of EBLIP and reported they gained their knowledge about the recent EBLIP movement through relevant literature. The majority of these librarians search for evidence from relevant research and professional literature to support their daily library and information work when they face uncertainty.

The majority of librarians believe that evidence based library and information practice ensures risk free decision making, improves their practice and profession, and can be cited as a proof of best practice or correct decision making to upper level managers in their organizations, because evidence based decisions are reliable and usually risk free. However, the majority were neutral about the statement, "I do not practice EBLIP because I am not a policy maker or a decision maker." This suggests that although librarians are knowledgeable about EBLIP, believe that it is an essential part of their practice, and that it provides advantages for their profession, they do not have strong convictions about their right to make decisions

regarding their LIS practice. It indicates that paternal, uni-directional, and top- down decision making methods remain dominant within Iran's library systems and management.

The majority of Iranian medical librarians in the study are familiar with the five steps of EBP (formulating an answerable question, accessing, assessing, applying evidence, and redefining the question to the best extent possible), and they regularly practice the process. This suggests that medical librarians in Iran understand the concept of EBLIP and its importance in their daily LIS practice. Although this study did not include tests to determine the representativeness of the sample, it documents that these Iranian medical librarians were attentive to a critical and essential task of the LIS profession in their search for evidence, and that they practiced EBLIP.

The aim of evidence based practice is to overcome uncertainty in decision making and to improve the outcomes of practice in any profession. Patient safety is the ultimate aim of EBM in the practice of medicine, thus EBP should improve patient safety and reduce uncertainty and risks in treatment, care, and diagnosis. In the same manner, for library and information science there may be uncertainty about new information services, the selection of new library materials, new methods and technologies in information service, or the collection development decisions to purchase new titles or weed others. The Iranian librarians in this study paid less attention to new services and trends and more to standards, management, and organization.

Management and organization represent strategic and risky decision making, but standards usually represent stability, certainty, and background knowledge. Evidence based practice is a "practice in the context of rigorous research, it is framework for decision making and supports lifelong learning. It is not empiric, based on tradition, cook book, perspective limiting, or static" (Hannigan and Pokala). Searching for evidence based

information about standards indicates that librarians in Iran are concerned about principles, rather than trends. Developed countries like the USA (Gluck; Hassig et al.), Canada (CHLA), and Germany (Ahrens et al.) have already developed their own standards for health science libraries, and they regularly update and revise their standards. In Iran, however, there are no standards for health science libraries. In his primary conceptual framework for evidence based librarianship, Eldredge stated that EBL supports the adoption of practice guidelines and standards developed by expert committees based upon the best available evidence, but not as endorsement of adhering to rigid protocols ("Overview" 291).

"Collection management is a further area that most libraries would see as core business, whether it be book acquisition or withdrawal or management of the serial collection." (Booth, "Using" 82 ). There are several examples of small-scale projects that would allow a library manager to demonstrate the application of evidence based practice. These include selective weeding of sections of the collection (Eldredge, Mondragon, and Fierro) and examining the use of the reference collection. (Booth, " On the shelf" 154 ). Similarly, annual performance appraisals or staff development reviews should include one specific and measurable objective that relates to achievement of an agreed task in an evidence based way (Booth "Using" 83). This study also revealed that these librarians search for evidence based information in all areas of library operations, including management, organization, user studies, and new services.

"Evidence based practice is the integration of research with professional experience and consumer value", Eldredge stated that "EBL seeks to improve library practice by utilising the best available evidence combined with a pragmatic perspective developed from a working experience in librarianship." ("Overview" 291) The data in this study shows that Iranian medical librarians are knowledgeable about sources of decision making that can support the successful

practice of EBLIP. The author's anecdotal experiences as a medical school librarian suggests that librarians traditionally value users' preferences and choices in their decision making, especially when it comes to service, organization, and collection development.

In this study the survey instrument was designed to avoid giving respondents an explanation of the EBLIP process to ensure their objective responses regarding the basic components of the process, especially the inclusion of users' preferences and feedback as sources of decision making. However, none of the respondent librarians entered any data in this option. If EBLIP is a combination of research evidence, personal experiences, and user preferences (Booth "Exceeding"; Crumley and Koufogiannakis; Eldredge, Mondragon, and Fierro; Wilson), librarians in Iran are missing one of the basic components of EBLIP--that of users' preferences--in their decision making. Rigid rules and regulations still dominate LIS practice in Iran, and in spite of having the knowledge and ability to practice EBLIP, librarians are either not able to do so or are not fully authorized to incorporate evidence into their practice.

A further issue is the reliability of the evidence on which Iranian librarians base their decisions. More than half of the responding librarians stated they search for evidence on the Internet using Google or another browser. Although Google is a powerful search engine, it cannot provide full-text access to most scholarly journals or databases, and relying on Google alone will lead to missing most of the best evidence available. Another resource cited by librarians in this study are blogs, which record the personal opinions of their authors. As the purpose of EBLIP is making correct, unbiased, strong, risk free, and cost effective decisions based on the results of up-to-date and rigorous research, blogs cannot be considered as a qualified and reliable source for evidence based practice. There are also problems in relying on books for evidence to support EBLIP.

Books as a source of information are more useful for learning background knowledge such as principles, fundamentals, and history rather than foreground knowledge such as trends, latest approaches and on-going research. Since the evidence based decision making process needs foreground knowledge, books should be considered only as secondary sources for extracting information. (Gavvani and Mohan 7)

Furthermore, less than half (n=31) responded to the open-ended question about methods used by librarians to evaluate the accuracy, reliability, and applicability of evidence. Critical appraisal uses intrinsic factors (design, etc.), rather than extrinsic factors (author, journal, institution) to determine the quality of an article (Booth and Brice). Intrinsic factors such as research methods (3.2%) and statistical methods (1.6%) were stated by less respondents compared to extrinsic factors such as "reputation of the sources" (11.1%) and "reputation of the author of the article" (4.8%) as methods of critical appraisal. None of the librarians referred to critical appraisal tools such as CRISTAL checklists to evaluate the validity, reliability, and applicability of evidence found from the literature. However, a small percentage of librarians (7.9%) did refer to comparative methods that might be considered as one of the five steps in the SPICE process (Booth and Brice; Perryman). This suggests that librarians have gained knowledge in formulating answerable questions, accessing evidence from the resources by providing information, reference, and EBL services for clinicians and other health professionals, but they have not acquired the skills for evidence based practice through education. Theoretically they mix reference service, information literacy, and the traditional evaluation of reference materials with evidence based information or levels of evidence. The longstanding use of authority and reputation of publisher and author, date of publication or copyright, and references or citations were mentioned by the majority of respondents in assessing the reliability and validity of evidence. The findings of the study

in this regard substantiate Eldredge's concept that "reference librarians are experts at helping library users articulate and refine their research questions. Reference skills can be helpful in formulating EBL questions" (Eldredge, "Formulating" 74). However, it does not mean that librarians' acquired knowledge is efficient for successful evidence based library and information practice. Librarians need to be trained in research methodologies to not only conduct rigorous research but also to be able to judge the validity, reliability and applicability of the evidence and information they retrieve for their users and themselves.

More than 60% of the responding librarians stated that EBLIP has either changed their practice or it has led to new decisions and practices. This indicates that EBLIP has both a creative and a reformative role in the LIS profession and in librarians' daily decision making. It can either develop new methods, services, and strategies, or it can reform already existing rules, regulations, and strategies.

In terms of barriers to practicing EBLIP in Iran, respondents are neutral regarding a potential lack of evidence in the LIS literature and also believe that there is an insufficient amount of research evidence in Farsi language. However this does not act as a barrier, as Iranian medical librarians continue searching until they find suitable evidence in any language.

### **Conclusions and Recommendations**

This is a significant study about the practice of EBLIP among medical librarians in Iran. It revealed that medical librarians in Iran have knowledge of the evidence based approach, that they know how to search for evidence, and that they are fully aware of the five steps of evidence based practice. However, they have less practical knowledge about using EBLIP in their daily practice, and they are more concerned about standards and library organization rather than trends and new services. They do not pay much attention to the quality and reliability of evidence or to the

sources of evidence. Furthermore, few are familiar with critical appraisal methods. "Within the last decade critical appraisal has been added as a topic to many medical school and UK Royal College curricula, and several continuing professional development ventures have been funded to provide further training" (Parkes et al. 1). For this reason Iranian LIS curricula should also expand to include critical appraisal instruction. The new curricula of health science LIS programs must include EBLIP, critical appraisal, and rigorous research methods. Librarians and LIS researchers should be encouraged to conduct rigorous studies with reliable research methods to investigate and discuss libraries' current conditions, problems, and prospects. Results of these studies need to be published in both local and international journals. The professional library associations--IMLA (Iranian Medical Library Association) and ILISA (Iranian Library and Information Science Association)—should take action to empower librarians through training programmes and to reform and enrich LIS curricula by providing structured and systematic programmes to the Ministry of Health and Medical Science Education and Ministry of Science and Technology. In this way Iranian medical librarianship might be put on the path to a more research-based profession and be able to attain the Medical Library Association's vision of research for our profession.

...a foundation for excellence in health information practice, for new and expanded roles for health sciences librarians, and for attracting excellent people to the profession. (Medical Library Association)

### Works Cited

Ahrens, Peter, Frank Baumann, Dorothee Boeckh, Diana Klein, Petra Riethmuller, and Ilona Rohde. "Standards for Hospital Libraries in Germany," German Medical Libraries Association (AGMB), Nov. 2004. 16

Nov. 2009  
<[www.agmb.de/papooopro/index.php?menuid=12&downloadid=18&reporeid=0](http://www.agmb.de/papooopro/index.php?menuid=12&downloadid=18&reporeid=0)>.

Booth Andrew. "Exceeding Expectations: Achieving Professional Excellence by Getting Research Into Practice," LIANZA, 15-18 Oct. 2000. Christchurch, New Zealand. 22 Nov. 2009  
<<http://www.shef.ac.uk/~scharr/eblib/Exceed.pdf>>.

---. "From EBM to EBL: Two Steps Forward or One Step Back?" Medical Reference Services Quarterly 21.3 (2002): 51-64.

---. "Using Evidence in Practice: Eleven Steps to EBLIP Service." Health Information and Libraries Journal 26.1(2009): 81-4. 16 Nov. 2009.

---. "Using Evidence In Practice: on the shelf?: how unused is your reference collection." Health Information and Libraries Journal 23 (2006):154- 157. 16 Nov. 2009-12-04 <<http://www3.interscience.wiley.com/cgi-bin/fulltext/118585536/PDFSTART>>

Booth, Andrew, and Anne Brice. "Evidence Based Librarianship: The First Steps." Second International Evidence Based Librarianship Conference, 6 June 2003. Lister Hall, University of Alberta, Edmonton, AB, Canada. 20 Nov. 2009 <<http://www.shef.ac.uk/scharr/eblib/conf2003.htm>>.

Bradley, Jana, and Joanne Gard Marshall. "Using Scientific Evidence to Improve Information Practice" Health Libraries Review 12.3(Sept. 1995):147-57

Brice, Anne, Andrew Booth, and Nicola Bexon. "Evidence Based Librarianship: A Case Study in the Social Sciences. "Libraries - A Voyage of Discovery," World Library and Information Congress: Seventy-First IFLA General

- Conference and Council, 14-18 Aug. 2005, Oslo, Norway. 12 Nov. 2009 <<http://www.ifla.org/IV/ifla71/Programme.htm>>.
- Canadian Health Libraries Association / Association des bibliothèques de la santé du Canada (CHLA/ABSC). "Standards for Libraries and Information Services in Canadian Healthcare Facilities." 24 May 2006. 17 Nov. 2009 <[http://www.chla-absc.ca/documents/Standards\\_2006.pdf](http://www.chla-absc.ca/documents/Standards_2006.pdf)>.
- Cochrane, Archie L. Effectiveness and Efficiency. Random Reflections on Health Services. London: Nuffield Provincial Hospitals Trust, 1972.
- Cook, Deborah J., Roman Jaeschke, and Gordon H. Guyatt. "Critical Appraisal of Therapeutic Interventions in the Intensive Care Unit: Human Monoclonal Antibody Treatment in Sepsis. Journal Club of the Hamilton Regional Critical Care Group." Journal of Intensive Care Medicine 7.6 (Nov.-Dec.1992):275-82.
- Crumley, Ellen T. "Exploring the Roles of Librarians and Health Care Professionals Involved with Complementary and Alternative Medicine." Journal of Medical Library Association, 94.1(Jan. 2006):81-9
- Crumley, Ellen T., and Denise Koufogiannakis. "Developing Evidence Based Librarianship: Practical Steps for Implementation," Health Information and Libraries Journal 19.2 (June 2002):61-70.
- Eldredge, Jonathan D. "Evidence Based Librarianship: a Commentary for Hypothesis" Hypothesis 11.3(Fall 1997): 4-7.
- . "Evidence Based Librarianship: an Overview," Bulletin of the Medical Library Association 88.4(Oct. 2000): 289-302.
- . "Evidence Based Librarianship Formulating the EBL Question," Bibliotheca Medica Canadiana 22.2(Win. 2000):74-7.
- Eldredge, Jonathan D., Kathryn L. Mondragon, and Carol L. Fierro. "Does Weeding a Monographs Collection Increase Subsequent Usage of Unweeded Titles? A Randomized Controlled Trial." Medical Library Association Annual Meeting, Dallas, TX, USA. 17-23 May 2002.
- Epling, John, Jason Smueny, Aparna Patil, and Fred Tudiver. "Teaching Evidence-Based Medicine Skills Through a Residency-Developed Guideline." Family Medicine 34.9 (Oct. 2002): 646-8.
- Gavgani, Zarea Vahideh, "Evidence-Based Medicine Approach Among Clinical Faculty Members." Medical Journal of Tabriz University of Medicine and Health Sciences 85(Spr. 2006). 22 Nov. 2009 <<http://medicaljournal.tbzmed.ac.ir/PDF/bahar%2085/AE.htm>>.
- . "Evidence Based Medicine and Qualified Information." Proceedings of the Sixth National Congress of Medical Library and Information Sciences, 2004. Isfahan, Iran: Isfahan University of Medical Sciences. 52.
- Gavgani, Zarea Vahideh, and Vangari Vishwa Mohan. "Physicians' Attitude Towards Evidence-Based Medical Practice and Health Science Library Services." LIBRES Library and Information Science Research Electronic Journal. 18.1(Mar. 2008):1-10 18 Nov. 2009 <[http://libres.curtin.edu.au/libres18n1/Gavgani\\_Final\\_rev.pdf](http://libres.curtin.edu.au/libres18n1/Gavgani_Final_rev.pdf)>.

- Gluck, Jeannine Cyr, Robin Ackley Hassig, Leeni Balogh, Margaret Bandy, Jacqueline Donaldson Doyle, Michael R. Kronenfeld, Katherine Lois Lindner, Kathleen Murray, JoAn Petersen, and Debra C. Rand. "Standards for Hospital Libraries 2002." Journal of the Medical Library Association 90.4 (Oct. 2002): 465-72. 15 Nov. 2009 <<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1082947>>.
- Hassig, Robin Ackley, Leeni Balogh, Margaret Bandy, Jacqueline Donaldson Doyle, Jeannine Cyr Gluck, Katherine Lois Lindner, Barbara Reich, and Douglas Varner. "Standards for Hospital Libraries 2002 with 2004 Revisions." Journal of the Medical Library Association 93.2 (Apr. 2005): 282-3. 17 Nov. 2009 <<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1082947>>.
- Hannigan, Gale G., Pokala, Suma. "Evidence Based Librarianship: Evolution, Principle and Practice." ATLAS Annual Lecture. Osmania University, Hyderabad, India. 19 Feb. 2009.
- Hill, Thomas. "Fear, Concern, Fate, and Hope: Survival of Hospital Libraries," Journal of the Medical Library Association 95.4(2007): 371-3.
- Iranian Medical Library and Information Science Association (IMLA). 22 Nov. 2009 <<http://www.imla.ir/>>.
- Jordan, Theresa J. Understanding Medical Information: A User's Guide to Informatics and Decision-Making. New York, McGraw-Hill, 2001.
- Klem, Mary L., Weiss, Patricia M., "Evidence-Based Resources and the Role of Librarians in Developing Evidence-Based Practice Curricula." Journal of Professional Nursing 21.6 (Nov. 2005): 380-7.
- Koufogiannakis, Denise. "Establishing a Model for Evidence Based Collection Management." Fourth International Evidence Based Library and Information Practice Conference, Durham, NC, USA, 6-11 May 2007. 8 Nov. 2009 <<http://www.eblip4.unc.edu/papers/Koufogiannakis.pdf>>.
- Kronenfeld, Michael, Priscilla L. Stephenson, Barbara Nail-Chiwetalu, Elizabeth M. Tweed, Eric L. Sauers, Tamara C. Valovich McLeod, Ruiling Guo, Henry Trahan, Kristine M. Alpi, Beth Hill, Pamela Sherwill-Navarro, Margaret P. Allen, Linda M. Hartman, Judy Burnham, Dennis Fell, Raymond Pavlick, Ellen W. MacNaughton, and Nan Bernstein Ratner. "Review for Librarians of Evidence-Based Practice in Nursing and the Allied Health Professions in the United States." Journal of the Medical Library Association 95.4(Oct. 2007):349-407. 20 Nov. 2009 <<http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=2000778&blobtype=pdf>>.
- Lewis, Suzanne, and Lisa Cotter. "Have the Most Relevant and Answerable Research Questions Facing Librarians Changed Between 2001 and 2006?" Evidence Based Library and Information Practice 2.1(2007):107-20. 22 Nov. 2009 <<http://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/98/243>>.
- Lucas, Brian. P., Arthur. T. Evans, Brendan M. Reilly, Yuri V. Khodakov, Kalyani Perumal, Louis G. Rohr, Joseph A. Akamah, Tunji M. Alausa, Christopher A. Smith, and Jeremy P. Smith. "The Impact of Evidence on Physicians' Inpatient Treatment



- Decisions." Journal of General Internal Medicine 19.5 pt. 1(May 2004): 402-9.
- Marshall, Joanne Gard. "The Impact of the Hospital Library on Clinical Decision Making: The Rochester Study." Bulletin of the Medical Library Association, 80.2(April 1992):169-78. 19 Nov. 2009  
<<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC225641/pdf/mlab00115-0079.pdf>>.
- McCarthy, Laine H. "Evidence-Based Medicine: an Opportunity for Health Science Librarians." Medical Reference Service Quarterly, 15.4 (Win 1996): 63-71.
- Medical Library Association. "Using Scientific Evidence to Improve Information Practice. The Research Policy Statement of the Medical Library Association." Chicago, IL: The Association; 1995. 17 May 2009 22 Nov. 2009  
<<http://www.mlanet.org/research/science1.html>>.
- Parkes, Julie, Chris Hyde, Jonathan J. Deeks, and Ruairidh Milne. "Teaching Critical Appraisal Skills in Health Care Settings." Cochrane Database of Systematic Reviews 23 July 2001 (3):CD001270; amended 2 Nov. 2008. 19 Nov. 2009  
<<http://www.ncbi.nlm.nih.gov/pubmed/11686986>>.
- Partridge, Helen L., Clare E. Thorpe, Sylvia L. Edwards, and Gillian Hallam. "The Practitioner's Experience and Conception of Evidence Based Library and Information Practice: an Exploratory Analysis." Fourth International Evidence Based Library and Information Practice Conference, Chapel Hill-Durham, NC, USA. 6-11 May 2007. 21 Nov. 2009  
<<http://eprints.qut.edu.au/9946/1/9946.pdf>>.
- Perryman, Carol. "The Process of Evidence-Based Library and Information Practice: The Well-Built Question." 16 Apr. 2006. 19 Nov. 2009  
<<http://www.unc.edu/~cperryman/Teaching/Wellbuilt%20question%20lesson%20plan.htm>>.
- Richardson, W. Scott, Mark C. Wilson, Junichi Nishikawa, and Robert S.A. Hayward. "The Well-Built Clinical Question: a Key to Evidence-Based Decisions." ACP Journal Club 123.3 (Nov.-Dec.1995): A12-3.
- Rosenberg, William M.C., Jon Deeks, Anne Lusher, Robin Snowball, Gordon Dooley, and David L. Sackett. "Improving Searching Skills and Evidence Retrieval." Journal of the Royal College of Physicians of London, 32(1998):557-63.  
<http://www.biomedcentral.com/pubmed/9881313>
- Sackett, David L., William M.C. Rosenberg, J.A. Muir Gray, R. Brian Haynes, and W. Scott Richardson. "Evidence Based Medicine: What It Is and What It Isn't." British Medical Journal 312.7023 (13 Jan. 1996):71-2. 19 Nov. 2009  
<<http://www.bmj.com/cgi/content/full/312/7023/71>>.
- Westwood, Glenna. "Evidence Based Librarianship in the Humanities: an Application for Second Language Learners."Third International Evidence Based Librarianship Conference. Brisbane, Australia. 16-19 Oct. 2005. 18 Nov. 2009  
<<http://conferences.alia.org.au/eb12005/Westwood.html>>.
- Williams, Linda, and Lorri Zipperer. "Improving Access to Information: Librarians and Nurses Team Up for Patient Safety." Nursing Economic\$ 21.4 (July-Aug.2003):199-201.

Wilson, Virginia. "Evidence Based Librarianship." Canadian Association of Law Libraries Conference. University of Saskatchewan, Saskatoon, Canada. 26 May 2008. 22 Nov. 2009  
<[www.callacbd.ca/conferences/2008/presentations/wilson.ppt](http://www.callacbd.ca/conferences/2008/presentations/wilson.ppt)>.

## Appendix

Questionnaire sent to Iranian Medical Librarians (translated from the Farsi original)

A	Name _____ Degree _____ Address _____
B	Qualification - in which library section or department do you work? _____
1	Do you know about EBLIP? If 'yes,' from which of the following sources have you learned about EBLIP?  Literature                      Yes/No      Friends                      Yes/No Discussion groups              Yes/No      Educational curriculum      Yes/No Others                              Yes/No
2	In which fields do you need evidence based information to make right decisions?  Management (e.g., quality performance, employee issues)              Yes/No Collection Development (e.g., vendor choice, journal subscriptions)      Yes/No Organization (e.g., classification, cataloging, indexing)              Yes/No Standards                              Yes/No User Studies                              Yes/No New Services and Trends              Yes/No
3	Do you use the results of previous research studies in making decisions about your library practice?              Yes/No
4	Which sources do you consult and use to access evidence for decisions in your LIS practice?  Relevant literature      Yes/No      Libraries with similar experiences      Yes/No Senior colleagues      Yes/No      Personal experience              Yes/No LIS Professors/Faculty members      Yes/No Other (please specify )              Yes/No _____
5	Which of these widely used sources do you use to search for evidence?  Internet (e.g., Google, Yahoo!)      Yes/No LIS databases              Yes/No Journals (electronic or print)      Yes/No Books                              Yes/No Blogs                              Yes/No
6	How do you evaluate the accuracy and reliability of the evidence you access from research studies? _____
7	Has evidence based information changed your library and information (LIS) practice? _____ If 'yes,' in which areas has the change occurred? _____
8	How does EBLIP impact your decision making and LIS practice?  It has led to development of new services or /methods              Yes/No It has led to the creation of change and reformation in LIS practice      Yes/No
9	In which language do you search for evidence based information in LIS?  English Language              Yes/No Farsi                              Yes/No Both Farsi and English Language      Yes/No

	Other (please specify) _____	Yes/No _____
Please respond to the following statements by selecting the appropriate responses from the scale below: <b>1=strongly agree 2=agree 3=uncertain 4=disagree 5=strongly disagree</b>		
10	EBLIP ensures risk free decision making.	1,2,3,4,5
11	Practicing EBLIP improves LIS profession and practice.	1,2,3,4,5
12	I practice EBLIP as a proof of right practice for my organization.	1,2,3,4,5
13	I don't practice EBLIP, because I am not policy maker or decision maker.	1,2,3,4,5
14	I formulate questions in an answerable form.	1,2,3,4,5
15	I access research evidence for daily LIS practice.	1,2,3,4,5
16	I assess the accuracy of evidence.	1,2,3,4,5
17	I rely on the evidence and apply it in my LIS practice.	1,2,3,4,5
18	In some situations there is no evidence in the professional literature.	1,2,3,4,5
19	As there is less research evidence in library and information science literature, I am satisfied with even one piece of evidence.	1,2,3,4,5
20	I am usually satisfied with whatever evidence I find, and I do not continue to search.	1,2,3,4,5
21	There is abundant LIS evidence based information written in Farsi.	1,2,3,4,5
22	It does not matter in which language the relevant evidence or information has been published, but it is important to find the evidence.	1,2,3,4,5