

## Investigating Factors Affecting the Provision of Information Resources Services in the Central Libraries of Medical Sciences Universities: Voices from Iran Libraries of Medical Sciences

**Tayebeh Khajeh** 

Ph.D. Candidate in Knowledge and Information Sciences, Hamedan Branch, Islamic Azad University, Hamedan, Iran

**Alireza Isfandyari Moghaddam** \*

Professor, Department of Knowledge and Information Sciences, Hamedan Branch, Islamic Azad University, Hamedan, Iran

**Behrooz Bayat** 

Assistant Professor, Department of Knowledge and Information Sciences, Hamedan Branch, Islamic Azad University, Hamedan, Iran

**Fariborz Doroudi** 

Assistant Professor, Iranian Research Institute for Information Science and Technology (IranDoc), Tehran, Iran

### Abstract

**Purpose:** The libraries of medical sciences universities have much more diverse goals and services than can be publically conceived, so providing services related to information resources is one of the most important challenges facing these organizations.

**Method:** The present study is an applied research based on its purpose and descriptive-analytical as regards method. The study utilized the semi-structured interview method to obtain the factors affecting the provision of health information resources services. Sampling was conducted based on a purposeful method and experts' viewpoints. The sampling was carried out the fuzzy Delphi technique which aimed to provide a solution for the issues. A

\* Corresponding Author: ali.isfandyari@gmail.com

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researcher-made questionnaire was used to check the factors obtained from 62 central libraries of medical sciences.

**Findings:** In general, six types of services were determined as health information resource services in specific central libraries, including tools for exploring the online book registration network, selection tools, interlibrary loan, free educational tools, additional book publishing tests, and content evaluation. Additionally, eight factors were identified, including providing services of specialized bibliographic review by librarians, consultation services to users, dissemination and provision of selective information services on Persian and Non-Persian sources, overcoming the weaknesses of librarians without library education, increasing the diversity of medical sciences library services, utilizing new technologies to compensate for deficiencies and lack of resources, improving the social function of the library as a social institution, and offering various electronic services such as databases and digital resources. These identified factors were found to influence the provision of health information resources.

**Conclusion:** Various factors may affect the provision of health information resources services in universities of medical sciences, most importantly improvement of the social functions of libraries.

**Keywords:** Information Resource Management, Health Information Resources, Library, University, Medical Sciences.

## **Introduction**

Libraries are one of the most important pillars of human society providing people with the service regardless of race, gender, social class, age, ethnicity, and religion. Those services, which are provided using public funds, promote awareness and people are educated (Suharso, 2018). By providing those services, libraries can play a significant role in promoting the cultural, social, political, and economic development of community (Kamali, 2019).

Employment of library and information resources and services has always been a challenging issue since libraries changed from cultural postures to knowledge acquisition along with information communication centers. Regarding those developments librarians held the idea of educating the library user to find and track information they needed for their daily activities. The earliest evidence of library user education was reported at Harvard College in the 1820s (Tiefel, 1995). These early librarians were professors with part-time library appointments who educated students according to the academic purposes of libraries. The practice gained acceptance and in the late 1800s, separate courses were reported at the university of Michigan, Azarian Root at Oberlin College and others. In America, Lubans (1974) reported a number of cases where a variety of methods was used to train library users. Library instruction in academic libraries is one of the methods used to highlight information literacy.

Globally, Libraries and librarians have the opportunity to provide dignity to individuals and form relationships that will make the library an important part of their lives, both publically and academically. It is worth noting that theoretically a better planning model and a more strategic communication and discourse, along with library organizations' commitment to eradicate barriers to inclusiveness, are an essential part of building an enthusiastic working culture as well as raising awareness, thus offering supportive mechanisms in order to reach all members of our diverse communities. The diversity of both patrons and library staff should be reflected in the diversity of libraries' solutions, nevertheless the following success elements are evident in more inclusive library service ( Racelis, 2018).

The services granted by the academic library would comprise borrowing library resources, creating a suitable environment for studying, providing an opportunity to access theses, using databases, reference questions, accessing the Internet, and participating in related

programs and workshops of the library (Harley et al,2001). The most important goal those libraries follow is to provide services and various information resources in the form of different media to meet the needs of the public in equal conditions (Fernández et al, 2018). However, what should be considered in the provision of information resource services would be the extent of libraries' success in providing services toward the collection of resources and providing access to information. The second stage the implementation extent of those services should be tracked on par with the needs of the clients. Considering this important point results in members' return and their encouragement to use resources and services (Farhadpoor& Hourizadeh, 2021).

The present study was based on such objectives as establishing students' awareness of the library and information resources which affects utilization of library services and resources, and determination of the students' level of acquaintances with the library and information resources' organization; therefore, those objectives should necessarily be gratified, so that the work in this field will be more promoted. Thus, the present study attempts to respond to the question concerning how the provision of information resources and services of the central medical University library can be optimized.

### **Literature Review**

The library in a community provides a unique service that should be accessible to everyone. The primary purpose of a public or community library is to promote democracy, equality, and social justice through providing unlimited access to information, cultural trends, and contributing to the public knowledge in a meaningful and informative process. Generally, there are numerous factors involved in providing library services, with the most important ones including technical resources, human resources, researchers' perceptions of the library, leadership support, communication, coordination, and collaboration.

A study conducted in the libraries of University of Tehran based on the perspective of international students showed that the provision of library services was limited to the delivery of textbooks, and the resources and services of the library do not live up to the expectations of students, and the library only served as a cozy and quiet place to study (Hariri et al, 2013).

It is worth noting that embodied libraries of university systems, potentially provide appropriate facilities which not only increase

students' learning power indirectly but basically lead students towards creativity and innovation (Isfandyari-Moghaddam et al, 2013). Librarians feel that they provide students with proper services and sufficiently recognize their needs, while they sometimes provide poor quality services with unreliable resources (Mohindra & Kumar, 2015). In a study on the services provided by Ferdowsi University of Mashhad libraries, it was found that users' satisfaction in connection with visual and audio sources was lower than the average. While the librarians considered the services of the university libraries to meet the needs of the students, there was still a significant difference between the knowledge of librarians and international students (Barghi Torghebeh et al, 2020).

Alongside the remarkable advances made in different fields of medical sciences, the amount of specialized medical information has increased. Therefore, the emergence of centers for the collection and dissemination of medical information in medical universities has become a necessity. These centers are known as central medical libraries (Sabeti, Jahangiri & Pazooki 2020). Medical libraries help universities and hospitals in proceeding with their ultimate mission, which is to provide clients with the best possible information and services. (Bradley, 2008). In the first half of the twentieth century, the existence of medical libraries was restricted to some bookshelves, but after the Second World War, libraries developed dramatically and their necessity for academic activities was taken into account (Holst, 1991). In recent years, the rapid growth of basic science and clinical medicine has underlined that it would be an important way for both academics and practitioners working in hospitals to obtain information concerning medical advances that seemingly happen almost daily. Rapidly increasing medical advances were a major reason for building libraries in universities and medical centers because the personal collections of medical personnel no longer met information needs. Today, medical libraries also play a crucial role in educating MDs; medical decisions are not solely based on a doctor's prior knowledge; rather it is necessary for physicians to refer to the medical literature. In general, medical libraries play a dynamic role in shaping the health culture of today's society moving towards a better future (Sabeti, Jahangiri & Pazooki, 2020). Considering the importance of standards and their impact on creativity, efficiency, and productivity, medical libraries can improve efficiency and effectiveness in providing services to physicians,

students, medical staff, hospital workers, and patients (Yaminifirooz & Noshinfard, 2013).

The findings of a study suggested that as many as 9 main risks could challenge service provision in medical sciences libraries including the existential value of the library, collecting stuff, information technology, issues related to human resources, laws and regulations, management, financial issues, evaluation and access to information (Rahmani, 2019). Moreover, students use libraries only as a resort to study since they may not be able to interact properly with the academic librarians in receiving their services due to various reasons, such as depression, anxiety and loneliness.

The issue of providing services concerning information resources is one of the most important challenges libraries of medical sciences universities face since they have much more diverse goals and services to grant. Libraries do not seem to function properly in all aspects of providing information resources services, so this study was conducted with the aim of investigating the factors affecting the provision of health information resources services in the central libraries of medical sciences universities. According to the literature the analysis is based on the fact that health managers and policymakers can plan and decide on the best alternatives for the provision of more effective information resources services in the libraries of medical sciences universities, as well as getting better results in accordance with their tasks.

## **Method**

This study was carried out in 2021 at two phases using a synthetic method. The first phase employed a semi-structured interview to identify the factors affecting the provision of information resource services in the libraries of medical sciences, and the second phase used a classic Delphi technique to provide solutions.

## **Phase one**

This phase involved 10 individuals who participated in a semi-structured interview. The sampling method was purposeful and continued up to the complete obtaining of information. According to our criteria, experts, university scholars, and managers were selected as they were acquainted with the services and functions of university libraries, and had specialized in the field pertaining to the research topic. The interview was conducted in a semi-structured way since it

was not possible to have a face-to-face interview with all the experts. To analyze the obtained findings, initially, the information from the semi-structured interviews was carefully examined, and tabulated; concepts for this study were developed through the meaningful ordering of sentences in different lines.

At this stage, the collected data through interviews was reviewed several times, its different aspects were examined and the hidden concepts in the collected data were recovered. According to the content, these concepts were coded into conceptual categories representing independent concepts; they included such items as open codes (from the information obtained from the interviews with experts, 6 types of health information resource services were extracted), verbal statements (interpretation of what the experts represented about health information resources services), interviewees codes (to each interviewee a certain code was assigned from 1 to 10).

### **Phase two**

The second phase in which the classic Delphi technique was used included the experts who participated in a virtual panel, they reached a consensus through negotiations and the brainstorming technique and identified 8 alternatives as solutions to the challenges of providing health information resources services where they subsequently formed a questionnaire. The validity and reliability of this questionnaire were confirmed based on the opinions of three members from the faculty of information science. Sampling was conducted based on the census method. The study population consisted of 62 managers of the central libraries of the medical sciences universities of Iran. The questionnaire containing demographic information was sent to the participants through e-mail.

Also, an email containing a reminder message was re-sent after 10 days to those who did not respond to the questionnaire. The average of the collected questionnaires was calculated using the fuzzy method, the results were included in the second questionnaire and sent to the participants again, and the average of the responses was calculated using the fuzzy method. In this study, based on the opinions of experts, a critical score of 50 was considered as selection criteria, in other words, items that scored less than 50 were excluded at the end of the study.

## Findings

Based on the texts taken from the interviewees and their qualitative analysis, the main concepts were extracted and coded into conceptual categories that actually represented an independent concept (Table 1). Based on the findings of this study, the services of health information resources in the central libraries of medical sciences universities were categorized into 6 main groups including tools for exploring the online book registration network, selection tools, interlibrary borrowing, free educational tools, additional publishing tests, and content evaluation.

**Table 1. Health information resources services in central libraries of medical sciences universities**

Axial code	Open code	Verbal statement	Interview code
Health information services	Tools for exploring the online book registration network	Programs employed to automatically explore resources on the Internet	I <sub>4</sub> , I <sub>5</sub> , I <sub>8</sub> , I <sub>10</sub>
	Selection tools	Tools employed to access information properly	I <sub>6</sub> , I <sub>7</sub>
	Interlibrary borrowing	Shared online system allowing inter-library loan of resources in libraries	I <sub>3</sub> , I <sub>5</sub> , I <sub>6</sub>
	Free educational tools	Optical discs, guides, and indexes used by librarians and library users	I <sub>6</sub> , I <sub>7</sub> , I <sub>8</sub> , I <sub>10</sub>
	Educational book publishing tests	The technique of testing additional book publishing, providing an opportunity for libraries to evaluate a new resource	I <sub>8</sub> , I <sub>4</sub>
	Content evaluation	Evaluating the content of books deciding on whether or not to buy resources for libraries	I <sub>1</sub> , I <sub>2</sub>

In the second phase, the fuzzy Delphi method was used to determine and finalize the factors affecting the services of health information resources of central libraries of medical sciences, subsequent to which 8 main factors were identified as the most effective and afterwards the fuzzy average was obtained and de-fuzzified based on the opinions of experts. The services of health information resources



in these libraries included the provision of specialized bibliographic review services by librarians with 58% of de-fuzzification mean, consulting services to clients 51%, dissemination and provision of selective information services on Persian and Non-Persian sources 73%, overcoming the weakness of uneducated librarians 54%, increasing the variety of services of medical sciences libraries 66%, using new technologies to compensate for deficiencies and lack of resources 71%, improving the social function of libraries 78% and types of electronic services such as databases and digital resources with 63% mean. Among all these factors, improving the social functions of libraries was recognized as the most important one in providing services of health information resources in the central libraries of medical sciences (Table 2).

**Table 2. Factors affecting the provision of health information resources services in central libraries of medical sciences universities**

No	Suggestions	Phase 1		Phase 2		The difference between phase 1 and 2
		Fuzzy mean	Post-defuzzification mean	Fuzzy mean	Post-defuzzification mean	
1	specialized bibliographic review by librarians	(0.32, 0.57, 0.86)	0.58	(0.39, 0.64, 0.39)	0.64	0.06
2	Consultation services to the users	(0.33, 0.50, 0.70)	0.51	(0.08, 0.25, 0.50)	0.28	-0.23
3	dissemination and provision of selective information services on Persian and non-Persian sources	(0.52, 0.75, 0.52)	0.73	(0.66, 0.91, 0.98)	0.88	0.15
4	overcoming the weaknesses of librarians without library education	(0.33, 0.54, 0.75)	0.54	(0.17, 0.38, 0.63)	0.39	-0.15
5	increasing the	(0.53,	0.66	(0.38,	0.63	0.02

No	Suggestions	Phase 1		Phase 2		The difference between phase 1 and 2
		Fuzzy mean	Post-defuzzification mean	Fuzzy mean	Post-defuzzification mean	
	diversity of medical sciences library services	0.75, 0.90)		0.63, 0.87)		
	using new technologies to compensate for deficiencies and lack of resources	(0.35, 0.60, 0.59)	0.71	(0.54, 0.79, 0.98)	0.78	0.08
7	improving the social function of the library institution	(0.44, 0.69, 0.84)	0.78	(0.53, 0.78, 0.94)	0.74	0.09
8	various electronic services such as databases and digital resources	(0.36, 0.61, 0.82)	0.63	(0.46, 0.71, 0.90)	0.69	0.02

## Discussion

The present study indicated that the library and information services as well as accessible resources through medical central libraries are underutilized, especially electronic resources which are highlighted among them. The study findings show that e-books, and e-journals remain largely underutilized. This is a major concern to the University administration in general and the library administration in particular. The university has invested extensively in resources- human, financial, and machinery to develop an integrated library and information services of global standards. Continued underutilization of e-resources will culminate in a waste of effort. The main reasons attributed to the underutilization of these resources are students' lack of library and information skills, collectively referred to as information literacy. For optimum utilization of academic library information services and resources, university administrators, coordinators, and librarians among

other stakeholders should ensure that the users are empowered with information literacy skills of the highest order by developing user educational programmes in proportion to their environment. Eight factors were identified by the study as being effective on the provision of information resources services in Iranian central libraries of medical sciences universities (Loftin, 1983).

Efficient and effective utilization of electronic information environment requires that users to develop skills in employing advanced search strategies. Knowledge of the information environment will enable users to focus on the best information source to approach whereas, knowledge of ICT will enhance the quality of their work by sharing and exchanging information directly and through electronic media. Libraries without elaborate user educational programs are overwhelmed by users' too much reliance on library staff for assistance to find needed information which is accessible through different sources of integrated library services. The designing of a library user educational program that incorporates all the stakeholders, can assure optimal utilization of the wide range of information resources available through the library and information services. Faced with the challenge of offering quality education and training embodied in the aspiration of medical students, faculty members, and medical staff as useful members of society, universities should ensure those members have interacted with an adequate content of information and knowledge in their domain through appropriate educational informative programs.

The present study was conducted with the aim of investigating the factors affecting the provision of health information resources services in the central libraries of Iranian medical sciences universities. This study identified 6 factors as the salient features of health information resources services along with 8 main factors affecting the provision of those services. The first effective factor was the provision of specialized bibliographic review services by librarians. Najafgholinejad and colleagues conducted a research aimed at improving the service to the National Library's clients, drawing on the results obtained from 50 librarians and clients that participated in two brainstorming sessions, the study found that creating brochures and guides, simplifying processes, lack of reliance on librarians help, and user training are the most important factors to improve the provision of library services (Najafgholinejad et al, 2020).

The present study is consistent with the fact that librarians must

provide not only information but also solutions and alternatives concerning information challenges. This way, the library can make its users aware of its facilities and capabilities in order to provide consulting services and guide users, especially in the face of difficulties of some searches. This study identified consulting services to users as the second most effective factor in providing information resources services. According to the consensus of Chinese students in the United States, four factors of human resources improvement, development of reference resources, development and editing of library guides, and preparation of brochures can be effective on the provision of services (Shao et al, 2013).

The present research asserts the need for strategies and initiates competitive intelligence systems as a vital tool or source for health information services rendered by medical librarians due to the increasing information needs of the health care services (Zakari & Nongo, 2016). Given that libraries play an important role in providing services to the users of organizations and specialized centers, the need to identify the types of services provided by those libraries is felt more than ever. The findings of this study are in line with O'Neill and Gil Foyle's (2015) in terms of the distribution and provision of selective information services of Persian and non-Persian sources as an effective alternative in receiving services from health information sources ; they suggested using common terms so that they could be easily understood by the clients and refusing to use the specialized librarian terms in all different contexts or in the conversation between the librarian and the client is another facilitating factor in providing services (O'Neill & Guilfoyle, 2015).

The findings of the present study are also consistent with results of the research conducted by Mikas et al (2015) where it was proposed that librarians who have master's degrees in librarianship are familiar with the principles and techniques of this profession, they have knowledge of different parts of the library, and are acquainted with online references and information centers possessing more privileged knowledge to provide services and consequently to provide professional services they are more skilled than other individuals educated in other fields. Of course, taking various training courses planned by their organization, librarians who have studied in other fields can get rid of their weak points and shortcomings which have caused them to fall behind other librarians (Gerolimos et al, 2015).

In general, speed, memory, and very high accuracy in providing, accumulating, and retrieving information with the help of computers and saving the human workforce count as justifying reasons for the libraries and information centers to use new technologies. The research conducted by Zakian and Ghaffari (2019) into the medical sciences libraries of Shahid Beheshti University shows that there is no balance in the distribution of resources services hence using information technology as an alternative to deal with this challenge, can partially compensate for the lack of other resources (Taghi Zadeh et al, 2020). The results of this research are also consistent with the current study, which finds it desirable to use new technologies in the library to compensate for the deficiencies and lack of resources.

Since library is a social institution and has been established to cater for the needs of society, it can be said that the improvement of the social function of the libraries is considered the most important factor in providing services of health information resources for the central libraries of medical sciences. The findings of a study done by Ishimura & Bartlett in 2014 suggest that the organizational culture and the characteristics of human resources may influence the type of services provided in academic libraries. According to the results of the conducted research convenient access, a vibe learning environment, and a variety of learning resources as the issues that contribute to the improvement of the provision of library services cannot be achieved without improving the social performance of libraries (Zakari & Nongo, 2016).

It is worth noting that the distribution and provision of selective services of Persian and non-Persian information sources, as well as the provision of specialized bibliographic review services in medical sciences libraries will eliminate the weakness of librarians who lack library education and have not received specialized training in this field. On the other hand, the use of new technologies to compensate for the lack of resources and the use of electronic services such as databases and digital resources in medical sciences libraries, as well as the provision of consulting services to the users of those libraries may increase the diversity of medical sciences library services, and what ultimately those factors are supposed to do is improvement of the social function of medical sciences libraries.

## **Conclusion**

Organizations and institutions can continue to exist and keep developing which base their activities on the correct and appropriate quality of their services and products with a view to satisfying customers and users.

The libraries of medical sciences universities are considered a part of the country's higher education system, which are of paramount importance as providers and distributors of specialized information for the country's medical community. Improving the quality of services of those sensitive scientific centers plays a fundamental role in realizing the goals of society in the field of

public health. Therefore, those centers should come up with solutions to provide better services of information sources. This study identified 8 factors affecting the quality of providing resources services the use of which can increase the productivity of central libraries of medical sciences universities. The organizational attitude towards health information resources services is not only assumed as a kind of asset resource in the library but also as a means to manage all kinds of resources used in medical sciences libraries, hence, as regards the two aspects of management and resources services they have a special value in central libraries, and this value is not practical unless the effective factors and necessary information are provided to library managers. Since the health information services and resources in the medical sciences libraries are needed by the medical community and the subcategories related to the medical field, therefore, the managers of the central libraries of medical sciences can eliminate the weaknesses and strengthen the motivation to achieve the main goals and optimal training of people related to the health system based on those factors affecting the better provision of services and reporting the shortcomings to the higher authorities and the ministry.

The findings of this study can help managers and policymakers in the health sector to plan more successfully in providing updated resources and meeting the needs of the user community, which will of course improve the provided services resulting in user satisfaction. The findings of the present study also pave the way for academic staff to think of university syllabus for the advancement of the library science goals, especially in the field of health. The results of this study cannot be generalized to the libraries of other countries due to limitations such as the lack of an integrated communication system between libraries

and executive organizations, as well as the differences existing between Iran's library system and those of other countries, and the lack of necessary technological infrastructure.

Also, the findings of this study have implications for academic libraries with regard to information-seeking behavior of their users. Specifically, they affect university library educational programs, accessibility of resources, information skills of users, and instructional leadership of academic administrators. It is a fact that users overrely on library personnel for help in their learning activities and using information resources. This places librarians in a key position where users and faculty information behavior are concerned. Due to the fact that public libraries are in contact with different groups of people, it is suggested a similar research be conducted in public libraries, and since the results of this research are practical, doing another research into the libraries of various institutions and organizations to improve the level of providing library services is recommended.

Based on findings, it is suggested that :

Accessibility should be assumed as a key factor affecting users' choices of resources and services. Librarians should be required to provide appropriate library skills educational programs that are easily accessed within a user-friendly environment.

1. Although users have varying abilities and experiences related to finding and using resources, librarians can provide instruction throughout the workshops at all levels, targeting users who are not familiar with academic libraries.
2. The burden of instruction should not be imposed on librarians and they should be allowed to work with academic staff to help educate the users regarding the resources available and how to find them.

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