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ASSESSING THE REQUIRED COMPETENCIES OF MEDICAL LIBRARIANS FROM THE VIEWPOINTS OF PROFESSORS, MANAGERS AND LIBRARIANS

Mohammad AZAMI[1*], Alireza PAYVAND ROBATI[2], Parvaneh ABOTALEBI[3]

[1] PhD, Assistant professor, Medical Informatics Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran.
[2] PhD, Assistant professor, Dept. of Library and Information Sciences, Kerman Islamic Azad University, Kerman, Iran.
[3] MSc, Dept. of MedicaL Library and Information Sciences, Kerman University of Medical Sciences, Kerman, Iran.

*Corresponding Author

ABSTRACT

Introduction and Objective: Medical Librarianship and Medical Informatics have an interdisciplinary nature so that medical librarians and information providers use other fields of science, humanities and information technologies to train specialized staff needed in educational units, libraries, and academic/medical information centers. The present study was conducted to investigate the required competencies of librarians working in Iranian universities of medical sciences from the viewpoint of professors, library managers, and librarians. Methodology: the current research is an applied research and conducted by survey method. The population in the present study is consisted of a group of profession in the field of medical librarianship, library managers and librarians who were working in Iranian universities of medical sciences. The required data were collected using a researcher-made questionnaire. The validity and reliability of the questionnaire were confirmed by professors' comments on its content and calculating the Cronbach's alpha (0.97). Finally, the collected data were analyzed via the SPSS software and using both descriptive and inferential statistics (p>0.05). Results: According to the results, competencies in information seeking and competencies in medical concepts and topics were respectively the most and the least important competencies, according the experts' point of view; competencies in management and Competencies in medical concepts and topics were ,respectively, the most and the least important competencies from the viewpoint of library managers; and Personal and Moral competencies and competencies in research were ,respectively, the most and the least important competencies from the viewpoint of librarians. Discussion and Conclusions: Considering the current changes, investigating and identifying the required competencies of the librarian can optimize the education of librarianship and medical informatics; therefore, the provided competences in this study, can be effective and useful for the professions of librarianship and the medical informatics.

Keywords: *Competency, Medical Librarian, Library Manager, Professor, Iranian Universities of Medical Sciences.*

INTRODUCTION

With the availability of large amounts of information in various scientific areas and the specialization of science, rapid access to proper and accurate information is of great importance. Given that physicians and health professionals are continually dealing with the lives of patients, they need up-to-date and accurate information for the diagnosis and treatment of various illnesses (Phinney J and Horsman A. 2018). Provision of such information is the responsibility of a group of specialists, especially medical librarians. They try to provide, organize, and disseminate medical information by using Information Technology (Ma, J et al., 2018). The goal of medical library and information sciences is to educate experts, who can carry out professional duties and manage libraries and medical information centers, to meet

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the medical population's information needs and enhance their capabilities in using IT (Nouri Zadeh & Pazouki, 2007).

Given the recent changes and developments in information and communication technologies, the acquisition of new skills and adaptation to changes seem entirely necessary for medical librarians (Miles A., 2015). Thus, the first step is to identify the new skills required in the field of medical librarianship to meet the needs of the modern world. In this sense, the required competencies of medical librarians must be carefully and precisely identified and classified.

One method that can be applied to meet the information needs of physicians and health professionals and to strengthen the overall medical librarianship educational program is to assess the necessary competencies of medical librarians. The term 'competency' has various definitions. For example, in clinical psychology, competency is defined as self-care skills or the ability to perform everyday life activities. In occupational settings, competency refers to the knowledge, skills, and capabilities one has about a specific profession (Chan, 2005). Many studies have been conducted to identify the competencies required to establish a successful organization.

One of the approaches to the identification of competencies is the one in which competency includes the knowledge, skills, and attitude needed to perform a job successfully (Bryant & Poustie, 2001). The main components of competency are knowledge, skill, and attitude. Knowledge is what is perceived by an individual about a subject, or in other words, knowledge guarantees successful occupational performance of an individual in a given job; skill is what is required for processing the acquired knowledge; and attitude is a behavioral characteristic that affects both knowledge and skill and makes a profession successful (Griffiths & King, 1985).

The history of competency evaluation in various occupations dates back to more than three decades (Chan, 2005). Since then, librarians and informants have emphasized the need for the identification of competencies required for medical librarianship; thus, attempts have been made by national and international scientific and professional associations to identify those competencies (Rehman, 2008).

Given the recent changes and developments in librarianship and medical informatics, the adaptation to changes and acquisition of new skills are absolute necessities for medical librarians. In this process, the first step is to identify the skills required in the field of medical librarianship to meet the needs of the contemporary world. Thus, the present study aimed at identifying the necessary competencies of librarians working in libraries of Iranian universities of medical sciences.

METHODOLOGY

The present study is an applied research study and is conducted using survey method. The statistical population is consisted of 481 Iranian librarians, library managers and professors of medical librarianship. To select the study's samples, stratified random sampling method was applied. Thus, each university of medical sciences was considered a stratum, and based on the Cochran formula, the sample size was determined to be 240. The samples were selected according to the number of librarians, faculty members of the medical librarianship group and library managers in each university. A researcher-made questionnaire, including 100 items and ten sections, was used as the research tool for identifying required competencies of medical librarians. The first section of the questionnaire was designed for collecting the

participants' demographic information and the subsequent sections for examining the required competencies of medical librarians based on the views of librarians, library managers, and professors. Except for the items in the first section of the questionnaire, each item was scored on a 5-point Liker scale ranging from totally agree to totally disagree. The validity of the questionnaire was confirmed by a group of professors and experts in the fields of medical library and information sciences. Using the Cronbach's alpha formula, the reliability of the questionnaire was examined on 20 members of the study's sample group and the obtained value was 0.97, indicating appropriate internal consistency reliability. After the confirmation of validity and reliability of the questionnaire, it was distributed among the study's samples. Using the SPSS software, the collected data were analyzed through descriptive and inferential statistics.

RESULTS

In this section, the identified competencies and their mean scores will be presented in ten different tables. The mean scores of the ten general categories of competencies from the viewpoints of librarians, library managers, and professors are presented in table 1. As it can be seen, the most and the least important competencies from the viewpoint of professors were respectively related to competencies in seeking information (47.8 ± 2.46) and competencies in medical concepts and topics (43.4 ± 4.22); the most and the least important competencies from the viewpoint of library managers were related to competencies in management (47.7 ± 3.45) and competencies in research (43.4 ± 5.0), respectively; and the most and the least important competencies from the viewpoint of librarians were related to personal and moral competencies (47.0 ± 3.08) and competencies in research (43.9 ± 5.72), orderly.

Table 1. Means and SDs of required competencies from the viewpoints of the three groups of specialists

Variable	Population	Mean	SD
Competencies in medical concepts and topics	Professors	43.4	4.22
	Managers	43.6	6.37
	Librarians	44.0	4.93
Competencies in management	Professors	45.9	3.41
	Managers	47.7	3.45
	Librarians	46.4	4.11
Competencies in collectivization	Professors	46.7	3.18
	Managers	45.7	4.34
	Librarians	45.6	4.45
Competencies in seeking information	Professors	47.8	2.46
	Managers	47.0	3.77
	Librarians	46.7	4.11
Competencies in information resources and referencing management	Professors	47.4	3.27
	Managers	45.4	4.74
	Librarians	46.0	4.52
Competencies in system management and IT	Professors	45.3	4.47
	Managers	46.0	4.05
	Librarians	46.1	3.27

Competencies in user training	Professors	46.0	4.04
	Managers	46.7	4.21
	Librarians		
Competencies in research	Professors		
	Managers		
	Librarians		
Competencies in communication	Professors		
	Managers		
	Librarians		
Personal and moral competencies	Professors		
	Managers		
	Librarians		

Competencies in medical concepts and topics

The mean scores of competencies in medical concepts and topics from the viewpoints of professors, library managers, and librarians are presented in table 2. The results indicated that professors in medical librarianship believed that the most important competencies were familiarity with providing medical information (4.85) and familiarity with important medical databases (4.85) and the least important competencies were related to familiarity with the ethics of health care and medical-legal matter (3.76). From the point of view of library managers, the most and the least important competencies were related to familiarity with important medical databases (4.80), familiarity with the ethics of health care and medical-legal matter (3.77), respectively. Finally, the examined librarians considered familiarity with important medical databases as the most important competency (4.79) and familiarity with the ethics of health care and medical legal matter as the least important competency (4.04).

Table 2. Means of competencies in medical concepts and topics

Competencies in medical concepts and topics	Professors	Managers	Librarians
Familiarity with the methods of providing medical information	4.85	4.77	4.72
Familiarity with various disciplines and specializations of medical sciences	4.42	4.54	4.46
Familiarity with important medical databases	4.85	4.80	4.79
Familiarity with educational patterns related to medical sciences	4.14	4.37	4.26
Familiarity with medical concepts and terminology	4.61	4.60	4.66
Familiarity with institutions and associations related to medical sciences	4.23	4.08	4.37
Familiarity with information policies of medical institutions and associations	4.23	3.97	4.18
Familiarity with goals of medical education in different educational levels	3.95	4.20	4.25
Familiarity with the ethics of health care and medical-legal matter	3.76	3.77	4.04
Familiarity with scientific relational patterns of medical sciences and information infrastructures	4.33	4.34	4.26

Competencies in management

As shown in table (3), professors introduced the abilities to run the library (4.80) and codify policies (4.80) as the most important competencies in management. On the other hand, they mentioned the ability to manage budgets and collect funds from external sources (4.38) as the least important management competency for medical librarians. From the viewpoint of library managers, the ability to plan and set goals (4.91) was the most important management competency and the ability to manage budgets and collect funds from external sources (4.48) was the least important one. Finally, from the viewpoint of librarians, the ability to run the library (4.71) was the most important management competency and the ability to manage budgets and collect funds from external sources (4.48) was the least important one.

Table 3. Means of competencies in management

Competencies in management	Professors	Managers	Librarians
Ability to run the library	4.80	4.88	4.71
Ability to codify the policies	4.80	4.77	4.65
Ability to plan and set goals	4.61	4.91	4.64
Ability to make decisions	4.52	4.88	4.65
Ability to manage time and determine prioritize	4.47	4.77	4.65
Ability to manage budgets and collect funds from external sources	4.38	4.48	4.48
Ability to manage changes	4.57	4.57	4.62
Ability to manage and develop staff	4.52	4.77	4.66
Ability to assess library performance and services both qualitatively and quantitatively	4.61	4.85	4.70
Ability to solve professional and occupational problems	4.61	4.82	4.65

Competencies in acquisition

As shown in table 4, professors mentioned familiarity with the selection of medical resources tools (4.90) as the most important acquisition competency and familiarity with authors and experts in the medical sciences (4.33) as the least important acquisition competency for medical librarians. From the viewpoint of library managers, the ability to maintain and protect medical resources (4.57) was the most important acquisition competency, and familiarity with authors and experts in the medical sciences (4.17) was the least important acquisition competency. Finally, from the viewpoint of librarians, familiarity with the selection of medical resources tools (4.70) was the most important and familiarity with authors and experts in the medical sciences (4.31) was the least important acquisition competencies.

Table 4. Means of competencies in acquisition

Competencies in acquisition	Professors	Managers	Librarians
Familiarity with different methods and procedures of acquisition	4.80	4.62	4.69
Familiarity with the selection of medical resources tools (traditional, electronic)	4.90	4.60	4.70
Familiarity with authors and experts in the medical sciences	4.33	4.17	4.31
Familiarity with domestic and foreign medical publishers	4.85	4.57	4.52

Familiarity with publication market and having a good interaction with that market	4.80	4.57	4.49
Ability to manage collections	4.76	4.74	4.63
Ability to order and supply medical resources	4.76	4.74	4.63
Ability to maintain and protect medical resources	4.57	4.80	4.64
Ability to use e-commerce for medical acquisition	4.42	4.37	4.50
Ability to provide users with proper information	4.47	4.57	4.55

Competencies in seeking information

As indicated in table 5, professors considered familiarity with seeking information required by users (5.0) as the most important competency of information seeking and familiarity with the application of medical informatics (4.61) as the least important information seeking competency for medical librarians. From the viewpoint of library managers, the abilities of providing users with information services (e.g., current-awareness services) (4.80) and using traditional and modern searching tools for information services (4.80) were the most important information seeking competencies, while the ability to exchange information with other libraries (4.57) was the least important competency of information seeking. Finally, from the viewpoint of librarians, familiarity with seeking information required by users (4.75) was the most important and familiarity with the application of medical information (4.60) was the least important information seeking competencies.

Table 5. Means of competencies in information seeking

Competencies in information seeking	Professors	Managers	Librarians
Familiarity with seeking information required by users	5.0	4.74	4.75
Familiarity with the application of medical information	4.61	4.71	4.60
Ability to retrieve information and compile searching strategies	4.95	4.71	4.71
Ability to provide users with information services (e.g., current-awareness services)	4.85	4.80	4.72
Ability to use traditional and modern searching tools for information services	4.71	4.80	4.66
Ability to use medical bibliographic databases	4.80	4.74	4.74
Ability to use medical resources portal	4.66	4.68	4.65
Ability to present and use medical information properly	4.80	4.68	4.65
Ability to seek medical evidence-based information	4.66	4.60	4.59
Ability to exchange information with other libraries	4.71	4.57	4.66

Competencies in information resources management and reference sources

As indicated in table 6, professors mentioned the ability to use medical subject headings (Mesh) (4.85) as the most important and the ability to conduct reference interviews (4.65) as the least important competencies of information resources management and reference sources for medical librarians. From the viewpoint of library managers, familiarity with the organization of various printed, non-printed and electronic medical resources (4.69) was the most important competency and the ability to index medical resources and write medical abstracts (4.34) was the least important competency of information resources management

and reference sources. Finally, from the viewpoint of librarians, the ability to use information available in the National Library of Medicine (NLM) (4.69) was the most important and the ability to conduct reference interviews (4.50) was the least important competencies of information resources management and reference sources.

Table 6. Means of competencies in information resources management and reference sources

Competencies in information resources management and reference sources	Professors	Managers	Librarians
Familiarity with rules of cataloging and standards of bibliographic formats	4.66	4.60	4.61
Familiarity with printed and electronic sources in medical sciences	4.71	4.54	4.63
Familiarity with the organization of various printed, non-printed and electronic medical resources	4.76	4.69	4.60
Ability to use information available in the National Library of Medicine (NLM)	4.76	4.65	4.69
Ability to use medical subject headings (Mesh)	4.85	4.68	4.68
Ability to teach users about how to use medical reference sources	4.80	4.65	4.63
Ability to conduct reference interviews	4.65	4.40	4.50
Ability to index medical resources and write medical abstracts	4.71	4.34	4.53
Ability to manage and collect periodical publications	4.76	4.37	4.54
Ability to use different databases for the shared organization of resources	4.71	4.48	4.62

Competencies in information systems management and IT

As shown in table 7, professors presented familiarity with the internet for library use (4.76) as the most important competency of system management and IT. On the other hand, they mentioned familiarity with Web-2 technology for library use (Facebook, Twitter, RSS) (4.27) as the least important competency of system management and IT for medical librarians. From the viewpoint of library managers, the ability to use ICDL skills (4.77) was the most important information systems management and IT competency and the ability to design and maintain web pages (4.37) was the least important competency. Finally, from the viewpoint of librarians, familiarity with the internet for library use (4.75) was the most important and the ability to design and maintain web pages (4.48) was the least important information systems management and IT competencies.

Table 7. Means of competencies in information systems management and IT

Competencies in information systems management and IT	Professors	Managers	Librarians
Familiarity with integrated library automation system	4.71	4.71	4.67
Familiarity with digitalization technology and the creation of digital resources	4.28	4.60	4.63
Familiarity with medical database management	4.57	4.48	4.53
Familiarity with the internet for library use	4.76	4.74	4.75
Familiarity with telecommunication and networking	4.52	4.54	4.57

Familiarity with Web-2 technology for library use	4.27	4.45	4.49
Ability to create, develop and support library website	4.47	4.62	4.64
Ability to use ICDL skills	4.75	4.77	4.69
Ability to use specialized software	4.71	4.71	4.66
Ability to design and maintain web pages	4.28	4.37	4.48

Competencies in user training

The results presented in table 8, showed that professors mentioned the ability to evaluate results of the searching process about meeting the information needs (4.76) as the most important competency of user training. On the other hand, they mentioned the ability to present information to users (4.33) as the least important competency of user training for medical librarians. From the viewpoint of library managers, the ability to recognize information needs (4.81) was the most important while the ability to use technology in the teaching process (4.47) was the least important competencies of user training. Finally, from the viewpoint of librarians, the ability to recognize information needs (4.70) was the most important, in contrast, familiarity with how to hold workshops (4.51) was the least important user training competencies.

Table 8. Means of competencies in user training

Competencies in user training	Professors	Managers	Librarians
Familiarity with information literacy and its standards	4.66	4.60	4.60
Ability to recognize information needs	4.71	4.81	4.70
Familiarity with new user training methods	4.71	4.71	4.62
Familiarity with literacy skills training methods	4.71	4.68	4.57
Familiarity with how to hold workshops	4.47	4.62	4.51
Ability to evaluate results of the searching process in relation to meet the user information needs	4.76	4.71	4.59
Ability to lecture information to users	4.33	4.54	4.52
Ability to educate users on how to use library and information resources	4.61	4.80	4.67
Ability to negotiate with users to make them self-sufficient in information retrieval	4.57	4.74	4.60
Ability to use technology in the teaching process	4.47	4.51	4.59

Competencies in Research

According to the results presented in table 9, faculty members mentioned familiarity with research methods (4.61) as the most important competency of research. However, they mentioned familiarity with descriptive and inferential statistics (4.23) as the least important competency of research for medical librarians. From the viewpoint of library managers, familiarity with library research needs (4.60) was the most important while familiarity with descriptive and inferential statistics (4.17) was the least important competencies of research. Finally, from the viewpoint of librarians, familiarity with library research needs (4.57) was the most important while familiarity with descriptive and inferential statistics (4.21) was the least important research competencies.

Table 9. Means of competencies in research

Competencies in research	Professors	Managers	Librarians
Familiarity with research methods	4.61	4.54	4.46
Familiarity with principles of different research methods	4.52	4.51	4.47
Familiarity with library research needs	4.57	4.60	4.57
Familiarity with descriptive and inferential statistics	4.23	4.17	4.21
Ability to use research tools	4.57	4.37	4.37
Ability to use data analysis software	4.28	4.25	4.30
Ability to use reference software	4.52	4.40	4.42
Ability to use quantitative and qualitative research methods	4.38	4.20	4.37
Ability to design research hypotheses and questions	4.47	4.22	4.31
Ability to write proposal and conduct research projects	4.57	4.31	4.39

Competencies in communication skills

According to the results presented in table 10, faculty members considered the ability to communicate effectively with clients (4.90) as the most important and the ability to work with different cultures (4.33) as the least important competencies of communication skills for medical librarians. From the viewpoint of library managers, the ability to communicate effectively with clients (4.85) was the most important while the ability to work with different cultures (4.42) was the least important competencies of communication skills. Lastly, from the viewpoint of librarians, the ability to communicate effectively with clients (4.76) was the most important and the ability to use counseling skills (4.50) was the least important communication skills competencies (table 10).

Table 10. Means of competencies in communication skills

Competencies in communication skills	Professors	Managers	Librarians
Ability to communicate effectively with clients	4.90	4.85	4.76
Ability to communicate effectively with other libraries and information centers	4.85	4.80	4.57
Ability to communicate effectively with publishers	4.57	4.68	4.67
Ability to communicate effectively with professional associations	4.52	4.62	4.53
Ability to share knowledge and experience	4.52	4.80	4.64
Ability to do group works	4.61	4.68	4.67
Ability to work with different cultures	4.33	4.42	4.54
Ability to use counseling skills	4.57	4.48	4.50
Ability to use communication skills	4.47	4.62	4.57
Ability to use computer communication skills (e.g., chat, e-mail)	4.61	4.71	4.67

Personal and moral competencies

As shown in table 11, professors considered the ability to commit to ethics and professional values (4.85) as the most important and the ability to participate in professional programs (4.33) as the least important personal and moral competencies for medical librarians. From the viewpoint of library managers, the abilities of providing users with the best services (4.88) and creating an environment full of mutual respect and trust (4.88) were the most important and the ability to participate in professional programs (4.48) was the least important personal and

moral competencies. Finally, from the viewpoint of librarians, the ability and willingness to learn new skills (4.82) was the most important and the ability to participate in professional activities (4.50) was the least important personal and moral competencies.

Table11. Means of personal and moral competencies

Personal and moral competencies	Professors	Managers	Librarians
Ability to provide users with the best services	4.80	4.88	4.81
Ability to create full of mutual respect and trust	4.71	4.88	4.81
Ability and willingness to learn new skills	4.76	4.82	4.82
Ability to commit to ethics and professional values	4.85	4.71	4.80
Life-long learning and occupational planning	4.66	4.77	4.63
Ability to learn English language	4.66	4.62	4.66
Ability to adapt to changes	4.66	4.71	4.66
Ability to have creative thinking	4.66	4.68	4.73
Ability to do works independently	4.52	4.57	4.63
Ability to participate in professional activities	4.33	4.48	4.50

One-way ANOVA was used to examine the differences between professors', library managers' and librarians' viewpoints concerning the required competencies of medical librarians. The results indicated no significant difference between the viewpoints of professors, library managers and librarians ($p>0.05$). In other words, professors, library managers, and librarians had similar viewpoints on the important competencies required for medical librarians.

Table12. Comparison of the viewpoints of the examined population

Variable	F	p-value
Competencies in medical concepts and topics	0.31	0.72
Competencies in management	1.83	0.16
Competencies in acquisition	0.51	0.59
Competencies in seeking information	0.65	0.52
Competencies in information Resources Management and Reference sources	1.33	0.26
Competencies in information system management and IT	0.28	0.75
Competencies in user training	0.42	0.65
Competencies in research	0.27	0.76
Competencies in communication skills	0.18	0.83
Personal and moral competencies	0.12	0.88

DISCUSSION AND CONCLUSIONS

According to the results of this study, the examined groups of experts (i.e., professors, managers, & librarians) had similar views on the competencies required from medical librarians. Concerning competencies in medical concepts and topics, all three groups of experts believed that familiarity with important medical databases and new medical technologies was the most important competency that medical librarians must have.

Regarding competencies in management, the examined experts highlighted the abilities of managing the library and assessing library performance and services as the most important competencies. About competencies in acquisition, all three groups mentioned familiarity with

the selection of medical resource tools and the ability to order and supply medical resources as important competencies of acquisition.

Regarding competencies in information seeking, familiarity with seeking information required by users and the ability to provide users with information services were emphasized more than other competencies. Concerning competencies in information resources management and reference sources, the ability to use medical databases such as PubMed and MeSH was frequently emphasized. About competencies in information system management and IT, the ability to use the internet for library purposes and being able to use the ICDL skills were typically emphasized. Concerning competencies in user training, it was expressed that medical librarians should attempt to help users identify their information needs and guide them through the proper use of the library and other information resources.

Regarding competencies in research, the medical librarian's ability to identify the library's research needs and priorities was typically emphasized. About competencies in communication, effective communication with clients and other libraries and medical information centers were mentioned as core competencies. Finally, the medical librarians' commitment to provide users with the most appropriate services and create full of mutual respect and trust was the most important personal and moral competency.

A comparison of the present study's results with results of previous studies revealed that most of the competencies identified in this study have also been detected in previous studies. For example, competencies in medical concepts and topics was found to be one of the most important competencies of medical librarians in the current study. Some previous studies have not mentioned competencies in research as required competencies in medical librarianship, which is in line with results of the present study. However, competencies in management, IT, communication skills, and information seeking have been mentioned among the most important characteristics of medical librarians in most of the previous studies. Furthermore, the importance of using communication skills when interacting with library users has been mentioned in various studies.

Our research findings are identical with obtained results of previous research including: PeyvandRobati and Tahavori, 2014 who stated that research competences of specialized librarians' required research competences consist of : research method knowledge, being familiarized with research basics and methods, being familiarized with research techniques, the ability to design one research project, the ability to present research's questions and hypothesis, being familiarized with data analysis tools and statistics, the ability to collect information and interpreting inferential and descriptive statistic data and the report-writing ability. PeyvandRobati and Sing in 2013 stated that information technology competences are considered as the most important competence for specialized librarians. In addition, communication and inter-individual skills is confirmed as an important competence for specialized librarians with associate of art and bachelor of art or science degree. In spite of this, information organizing competences and research competences are more important for specialized librarians with master's degree. Ansari and khadher in 2011 showed leadership competences have been divided into 6 categories including managerial, cognitive, social, incentive, personal and job competences from the managers' viewpoint. Also incentive, social and personal competences have been ore emphasized and cognitive competence has been less considered. Ullah in 2013 in another research expressed that the ability to use information

technology and library's unified software and communication, writing and oral communicative skills and the capability to apply medical information bases such as pop mode have been ranked as the most important competences from the medical libraries managers' viewpoint.

Nonthacumjane in 2010 in his studies regarding basic competences of an employed librarian at digital library environment concluded that analytical, creative and technical competences established librarians' work base. So, the concepts and subjects knowledge of medical area of work with data, database development, systems of database management and being familiarized with applicant's need and also need to general skills of information literacy, communication, criticism thought and group work are needed.

Howard in 2009 in his research regarding required knowledge and skill for working at a digital library workplace in order to prepare librarianship and information headings from the viewpoint of librarians and library's teachers stated that individual skills including inflexibility, the ability to work with a lot of number of applicants, adaptability, criticism thought and accountability to others; need for work is necessary at digital library environment. In addition to applicants' needs, copy write and ultra-data were under consideration as very desirable areas of knowledge. Chan in 2005 stated that the main competences which are required for general libraries' personnel include: communicative skills, intra-individual, leadership, offering service to customers, analytical skills, accepting responsibility, adaptability, technical competences, planning and organizing

Reagan in 2005 stated that the managers have identified the ability to offer services, working with information services, inter-personal and communicative and behavioral skills as the pivotal competences for graduates. Rahman et al in 1998 showed that from the managers' viewpoint, the competences in relationship with information technology application, understanding managerial abilities and duties have been considered necessary for future experts. In addition, the most priority was application of an effective and smart applied planning from information technology. Bowden et al in 1990 expressed in their study that the skills of employers who recently have graduated include: problem-solving, educating bibliography, online searching, and reference/information services, mode line searching, inter-personal skills and cataloging. The employers have reported important the inter-personal characteristics such as self-confidence, inflexibility, interest, interest in group working, intellectual curiosity, professional and mature attitude for recent graduates.

In general, the set of competencies identified in this study can help physicians and health professionals gain access to relevant and up-to-date information. On the other hand, these competencies help medical librarians focus on their knowledge, skills, and capabilities. Medical librarians need to learn constantly in order to adapt to professional changes and be helpful in the development of the medical library profession. Libraries are constantly changing due to rapid IT developments; thus, librarians are required to enhance their capabilities in order to cope with new technologies properly.

The results of this study can also be useful in assessing medical library and information science educational curriculums in relations to the needs of medical librarians in the workplace.

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