The Use of Information Sources by Faculty Members of Babol University of Medical Sciences: a Case Study from Iran

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Original paper ABSTRACT

Introduction: This study seeks to determine the expertise, use, and satisfaction of faculty members of Babol University of Medical Sciences, using the provided online information services by the university. **Methods:** This study is descriptive and analytical survey and the information gathering was through the questionnaire and the samples, based on the random of *Kerjesi* and *Morgan* Table sample size determination that was selected through stratified sampling proportionately to the size of the departments which summed up to 155 of which 113 responded to the mailed questionnaire. **Results:** the results of the study show that among the various data sources such as books, journals and internet, faculty members have more undemanding and

convenient access to the Internet compared to other resources use, however, half of the information needs of faculty members, 57 (50.4 percent) are provided by the printed books; and the databases available to the University and used by faculty members are PubMed with 76.1% and Science direct with 53.1% and Iranmedex with 46.9%. Only 17% of faculty members have the absolute contentment of the Internet information services, and more than half of the respondents (58.4%) expressed the low speed of Internet service as their major reason for their dissatisfaction of the provided services. **Practical implications:** Use and Satisfaction of Internet-Based Information Services of Faculty Members **Discussion:** Using the Internet to provide the needed information with an index of 46% is a significant issue. The results of the study show

that among the various data sources such as books, journals and internet, faculty members have more undemanding and convenient access to the Internet and their access to printed books was really hard and limited, although the internet was more convenient to acquire information, most of the information needs of faculty members are provided by the printed books based on what they expressed. The study showed that the use and acquaintance of the sample of the information databases is very low and only a few of them have the full satisfaction of the provided Internet information services and the main foremost reason for this major dissatisfaction is the low-speed Internet services at the University.

Key words: Internet, personal satisfaction, libraries, universities, users, Iran

1. INTRODUCTION

Increasingly, consumers engage in health information seeking via the Internet (1). In the recent years internet has been defined as the information highway or information infrastructure (2-6). Twenty first century is the century of information explosion. Considering the increasing usage of computer and internet in education, the role of internet in the educational environment cannot be denied. In the recent years, the attitude of medical college towards providing internet services has improved. Information technology and communication are part of education and learning through internet in some educational settings replaced the tra-

ditional methods of learning and teaching (7).

In the twentieth century, technology made great strides and human knowledge increased explosively, but as the amount of knowledge that an individual can use has its limits, knowledge came to be subdivided into numerous fields (8). Information technology and communication are part of education. Learning through internet has in some educational settings replaced the traditional methods of learning and teaching. The literature on the academic uses of the internet is littered with empirical studies, which analyzed different aspects of the broad spectrum of uses to which the internet can be put by

academics anywhere in the world (9). Edward and Bruce (2002) observed that, "sources of information and other opportunities available via the Internet are increasing exponentially. This is reflected in the steady increase in the use of computers and the Internet in teaching and learning. The evolving nature of medical knowledge and technology requires medical students to develop computer skills (10-11). The Internet use for retrieving health information is increasingly common (11-13, 17, 9, 18-20, 3, 21-22). The use of computers and the Internet by people in all walks of life increases day by day. The Internet plays a crucial role in access to information resources. (23-24). The In-

ternet Use to retrieve health information is increasingly common. (19)

Information and communication technologies may help reduce health disparities through their potentiality for promoting health, preventing disease and supporting clinical care for all. Unfortunately, those who have preventable health problems and lack health insurance coverage are the least likely to have access to such technologies. Barriers to accessing the services include cost, geographic location, illiteracy, disability, and factors related to the capacity of people to use these technologies appropriately and effectively (25). Our understanding about the role of the Internet as a resource for physicians has improved in the past several years with the reports of patterns for use and measures of impact on medical practice. (26). Sophisticated health care consumers are beginning to use the Internet to educate themselves about their own health and manage their own care. As health care stakeholders (providers, payers, and employers) feel pressure from consumers to implement Internet-related strategies, stakeholders must realize that obtaining Internet access is a challenge for many consumers. Stakeholders who expand consumer Internet access will, however, have a competitive advantage.

Stakeholders who expand consumer Internet access will, however, have a competitive advantage (27). Interactive health communication applications have great potentiality to improve health, but they may also cause harm. Until recently, few applications have been adequately evaluated. Physicians and other health professionals should promote and participate in an evidence-based approach to the development and diffusion of IHC applications and endorse efforts to rigorously evaluate the safety, quality, and utility of these resources (28). The most obvious changes have occurred in informal communication between scientists, reflecting the rapid expansion of electronic networking in recent years. Automation has also led to an increasing emphasis on the information role of the end-user. At the same time, the formal communication system has posed an

increasing number of problems (e.g. information overload, rapid increases in costs). There was a fair degree of consensus amongst respondents concerning likely communication trends in the immediate future. Interestingly, it was the opportunities, as much as the problems that were stressed.

Perhaps Internet is the most striking example of the term global village, because internet has changed to be an information and communication technology tool and an international phenomenon with the aid of the three chief components to the information, communications, and technology which does not belong to certain groups, time or places place and

In fact, the Internet' is the world largest digital library and different resources which are found and stored in different libraries and information centers in the world can be found here and can be retrieved in this substantial world information center in any electronic forms. (29). Empowering and training the teachers and professors to use more of the services and databases provided by the Internet will enhance the quality of research results, improve the specialized information for teaching, facilitate the correspondence through e-mail and publish the teachers' research results (30-31). Therefore, understanding the use and functionality and also the satisfaction level can lead to the future empowerment planning.

New communication and information technology plays a major role in the development of science and research and their quality promotion the significance of having information networks lies in the heart of the matter that it increases the information gathering and use and also the availability of all existing information resources in libraries and information centers. These networks serve as the tools for collecting, maintaining, organizing, retrieving and producing the required data and are considered an important means to meet the information needs of faculty members in order for endorsing and promoting the education and research quality. Taking into account

the users' demands and attitudes is an important feature of any successful information system application and information centers cannot be fully performing their missions without considering their users' role (32).

Babol University of Medical Sciences has provided the opportunities for faculty members to access the Internet at work, Internet sites, departments, and libraries, and proxy based at works and at homes. The research questions are: How do faculty members use the facilities?, How is their satisfaction of the existing facilities?, What are their problems when using such?, and, what are the strengths and weaknesses of University information networks facilities?

Babol University of Medical Sciences has afforded access to the Internet for its faculty members through providing infrastructures in universities, hospitals and libraries, and they are also provided with the access to well-regarded international scientific databases with their updated medical sources. The present study inquires about evaluating users and their satisfaction level of the information networks. It also seeks out to shed lights on the areas of weaknesses and strength, and so let the university managers take measures in their future planning at alleviating the unforeseen possible problems in the information networks and improving them.

Regarding the results of this study, we can also identify the barriers and problems in providing the Internet information services in the universities and remove the barriers, employ factors affecting satisfaction and use of Internet services in the service process providing. There have been a lot of researches on the satisfaction and use of Internet services in Iran and in the world of which those with similar procedures and structures to this study would be briefly addressed in the following sections. Then, the purpose of this study is to examine the faculty members' online information service satisfaction and use at Babol University of Medical Sciences.

2. MATERIALS AND METHODS

This study is descriptive and analytical survey which tries to examine sat-

isfaction and use of the faculty members on Internet information service which provided by Babol University of Medical Sciences. Data collection was, through a researcher-made questionnaire used after studying and considering the books and designed resources and its content validity was confirmed by 20 faculty members of library and Information Sciences department. The reliability of the questionnaire was evaluated through test-retest method in which the correlation coefficient was estimated to be 0.9. The questionnaire was consisted of demographic questions, different accessible information sources, the working hours on the Internet, the surfed and browsed databases and the users' satisfaction. The questionnaires were distributed among the faculty members of Babol University of Medical Sciences which included 260 people at the time of study and based on the Krejcie & Morgan sample size determination, 155 cases were selected through stratified sampling proportionately to the size of the departments of which 113(73%) responded to the mailed questionnaire. After collecting the questionnaires, data were entered in SPSS software. Descriptive statistics indexes and chi-square tests were used to analyze the data.

3. RESULTS

Among the 113 samples, 66 persons (58.5%) were men and 47 persons (41.5%) were female. 33.6% of the cases were faculty members of Medicine College, 22.1% was from the Affiliated Hospital to Babol University of Medical Sciences, 16.8% were the dentistry college faculty members, 12.2% from the Amol Nursing and Midwifery college, 8.21% were from Ramsar Nursing and Midwifery college and 7% of Faculty of allied medical Sciences. Regarding the faculty members' degree, 31% had master's degree, 20.4% had PhD, 38.9% were specialized expert, and 9.7% had other educational degrees.

The results of the study show that among the various data sources such as books, journals and internet, faculty members have more undemanding and convenient access to the Internet 59 persons (52.2%) and their

Ratio of easy accessible to University Resources	Usage Ratio of different information resources	Source
N (%)	N (%)	
48(42.4)	57(50.4)	Printed books
6(5.3)	4(3.5)	Periodicals
59(52.2)	52(46)	Internet
113(100)	113(100)	Total

Table 1. Access, and usage of available information resources at Babol University of Medical Sciences

access to printed books was really hard and limited 6, (5.3%), however, half of the information needs of faculty members, 57 (50.4 percent) are provided by the printed books. The Internet use to provide information needs with 46% is a significant issue. Faculty members use the printed resource less. (Table 1).

The data analysis on the faculty members' internet use showed that generally 60.2% of faculty members use the Internet for less than 2 hours in a day, 30% between 2 to 4 hours, 8% between 5 to 7 hours and 1.8% used the internet more than 7 hours. Although 77% of faculty members had internet access at work, their Internet use amount is relatively low. Considering the statistical analysis performed to determine the extent of Internet use, it becomes evident that 58.4% of respondents stated that their purpose of using the Internet was just to check the e-mails, 13.3% stated that they had educational purposes for using the internet, 24.8% expresses research purposes and 3.5% stated that they had used the Internet to update their scientific information.

Another important objective of the research was to measure the faculty members' satisfaction of internet use. The results of the study showed that 32.7% have high or almost high satisfaction in fulfilling their purpose of internet use, 19.5% expressed to have low and very low levels of satisfaction and 39.8% had average level of satisfaction.

Regarding the familiarity and use of different database centers subscribed by the university, the results showed that the familiarity and application level of faculty members in the case of Pub Med database was significantly different from the other centers in which 96 cases of the sample

(85%) were familiar with this center and used it and their satisfaction level was also remarkably different. The second ranking database in the list was Science direct with 57.5% and IranMedex database with 54.9% was in third place; and other databases such as Blackwell, Ovid, and Scopus were next in the ranking. Moreover, faculty members have limited use of databases such as First Consult, The Cochrane Lib, Path Consult compared to the other sites. Nineteen cases (16.8%) of faculty members were only satisfied with the online information service provided by the University, and 94 cases (83.2%) are not satisfied with the provided services. The faculty members stated that the most common reason for their dissatisfaction were the internet low speed (58.4%), lack of access to high speed internet at work (22.1%) and the disconnection time while using the internet (6.2%).

The subjects were asked on how many of their main publications in their course of study (major) were in the subscribed databases. Based on the research results, it can be said that only half of the original publications of faculty members' courses of study was shared and available in the databases.

It certainly does not mean that such features are available and accessible in the subscribed databases because there remained a possibility that the faculty members did not use and access their required journals and publications due to their lack of expertise and knowledge on the internet use. However, such an idea can reduce the ratio of use of database in the information center.

4. DISCUSSION

Using the Internet to provide the needed information with an index of 46% is a significant issue. The results of the study show that among the various data sources such as books, journals and internet, faculty members have more undemanding and convenient access to the Internet and their access to printed books was really hard and limited, although the internet was more convenient to acquire information, most of the information needs of faculty members are

provided by the printed books based on what they expressed.

Most of the respondents stated that their purpose of using the Internet was just to check the e-mails, to follow the educational and research purposes and to update their scientific information.

Although the subscription to access English full-text of 21 databases and two Persian-language website has been made possible by the University, the findings of the research is incongruent with the results of the research conducted by Yaminfirooz (2003) because the main purpose of Internet use among the faculty members Ferdowsi University of Mashhad was teaching and research activities (33), but it was consistent with the result of the study conducted by Siamian et.al (2010) conducting a study on the faculty members' Internet information service satisfaction and use at Babol University of Medical Sciences that expresses their main purpose of using the internet for checking their e-mails (7).

In another study conducted by Dehgahn (2001), 81.8% of the samples from the same university had access to the information technology all of whom used the technology in their educational activities (34) comparing the results of both studies, the internet use for research and educational purposes was significantly reduced although the access to the information technology increased. The result of previous research also shows that the use of information technology in research activities was 50%.

Considering the acquaintance and use of different database centers subscribed by the university, the results showed that the familiarity and application level of faculty members in the case of Plumbed database was significantly different from the other centers and most of the samples were familiar with this center and used it and their satisfaction level was also remarkably different. It can be concluded that the given database center can be viewed as the most visited and referred data centers in the field of medicine. The findings of the study are consistent with the results of the study by Siamian et al. (26).

The second ranking database in

the list was Science direct and Iran-Medex database was in third place; and other databases such as Blackwell, Ovid, and Scopus were next in the ranking. The results of this part are quite similar to the results obtained in these studies by Shirdel (2005) (36) and Okhovvati (1998) (37).

Moreover, faculty members have limited use of databases such as First Consult, The Cochrane Library, Path Consult compared to the other sites, it is worth noting that in addition to the familiarity of people for using these sites, the university subscription is also important (37).

Aldoan (2007, 2006) in his doctoral dissertation entitled as "An Exploratory Study About Internet Use Among Education Faculty Members in Jordanian Public Universities" concluded that the findings of the study indicated that all the respondents' frequency use of the Internet ranged between (2-3 times a week) and (daily use) since the means are close to each other. Results indicated that there was no significant difference across academic rank. Results indicated that there was a significant difference across age. E-mail was most often used on a daily basis, followed by the World Wide Web, followed by electronic journals, followed by online database, followed by list-serves, followed by transferring files, followed by online services, followed by electronic newspapers, followed by discussion groups (38, 39).

Aldoan (2007) in his doctoral thesis evaluated the use and satisfaction of faculty members of the Jordanian public universities. The findings of his study showed that the average internet use in the Jordanian universities was between 2 to 3 hours in a week and there was a significant difference in terms of age difference among the faculty members of Jordanian faculty members. It is also revealed that the teaching assistants have higher satisfaction in using the Internet than the professors and most of them stated that the obstacles impeding them from using the Internet were lack of Internet access, Internet content, and lack of time management and limitations related to the internet. They believed that the managers of the university must meet

the demands of the faculty members through a comprehensive program of information technology (38).

In this study, 39.8% of the participants used the Internet more than 2 hours a day which is higher compared with the study by Siamian et al in which (33.9%) of the participant used internet more than 2 hours during the day (7).

58.44% of the respondents stated that the main cause of their dissatisfaction was the low-speed Internet service in the university which is congruent with the results of the studies by Momani, Adoan and Yaminfirooz (40, 38, 33) because in their studies the same reason that is the line engagement and low speed internet was the main factor for the participants' dissatisfactions. Therefore, the research hypothesis stating that half of the faculty members' dissatisfaction of the services mentioned above is confirmed.

Regarding the question on how much it is necessary to use ADSL for internet services and faculty members' access to the information resources, most faculty members responding the questionnaire (80.6%) expressed that the university must provide such a service for them.

Most participants had an average satisfaction in the network infrastructure, the number of stations, network speed, support services, training workshops, Information Services section, Research, and Technology Department publicizing, and most of the people had very little satisfaction from the University Dialup system.

Momani (2003), in his doctoral dissertation, evaluated and compared the internet use and satisfaction among various educational departments such as medicine, nursing, dentistry, pharmacy, engineering, agriculture and information technology in the Jordan. The results of his study showed that the Internet is widely used among the faculty members of the Jordan universities like other countries, and two-thirds of subscribers were satisfied with the Internet service and network connections. Besides, lack of time, limited access, low internet speed, lack of training and university poor support were among the obstacles in using the Internet in

various educational departments of Jordan universities (40).

It is suggested that in order to enhance the user's satisfaction, information technology and communication infrastructure in universities must be promoted and faculty members use the internet with increasing network bandwidth. But in order to encourage faculty members to use the subscribed databases more, it is suggested the training workshops would be held for the faculty members emphasizing the internet expertise to make them more familiar with database centers and use them. This study can be considered about this university and this period of the study. Some of the faculty members were in abroad for continuing of their study and some of them are working in clinical field such as hospital, because of this we hadn't reach them for including in this study.

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