<u>**Research Article**</u>

User Education Impact on Medical Students

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Abstract: The purpose of this study is to survey the effect of user education impact on students to empower and encourage them to be motivated for visiting the libraries and to get the best use of the available information resources. This is a quasi-experimental study in which 100 first-year (freshmen) medical students of Iran University of medical sciences participated in it willingly. The data were collected by two questionnaires. The data were analyzed by statistical software such as SPSS and paired t-test was used for analyzing the data. 41.3% of the students claimed that they were familiar with library and using its resources. The impact of education on student was effective and was efficient for medical students. Some numbers of the students recommended establishing a course entitled "Library user-education program" in the universities' syllabuses.

Keywords: User education, Information databases, Information resources, Libraries.

INTRODUCTION

Libraries in medical universities are as the heart of this body and they pump information into it.

They collect a huge number of information resources with enormous costs that they spend each year on providing and developing these centers and their resources [1] and the need for library user orientation and instruction is widespread and unprecedented in degree, according to the library literatures [2] and one of the essential issues about students' need entering university is to know and be familiar with libraries and using information resources because library presents them science something more than knowledge and information [1, 3]. Library informed users know that libraries provide the resources that are more comprehensive and scholarly than most Web sites provide. Libraries provide access to scholarly literature that, as a rule, is not freely available on the Web, or may not be online at all. Often, users become aware of libraries' resources, usually while writing research papers. Assuming that on average most students face the same number and type of papers and assignments during their college career, it is critical to understand what makes one student use the library's resources (print and/or electronic) while another do not

think that the library as a place to find specialized resources for their papers, especially in the early duration of their college careers [4]. Nowadays for different reasons libraries and resource centers are not used as it should be in the universities of most countries. As the investigations show the usage amount of resources is low for many reasons. A lot of costs and fees are spent especially in medical universities to build, launch and they undergo much more for shopping and providing information resources to facilitate students' access to their required information with accuracy, speed and care, but it is not accessible except through getting familiar with these centers resulted from education. As early as 1970, F. W. Lancaster stated, "The federal government is annually spending millions of dollars in the support of a myriad of information transfer services. Merely to establish information services is not enough; however they must be used, and used efficiently. Efficient use is most likely to be realized through programs of user education"[1], understanding how students navigate this maze of resources is important in helping us to develop and assess pedagogy designed to instruct our students in library usage [5].

Information professionals have sought to determine the factors that are relevant to encourage a person to seek out information. A particular focus of inquiry has been on the factors playing a role in deciding to use the library and its resources as a place to seek information (whether physically or virtually) as opposed to just surfing the Internet [4]. One of the main reasons for not achieving the proper use of library resources is lack of training or appropriate and correct education for information searching or seeking that this problem avoid students to visit or use these centers and be familiar with their services and can deprive them at first from good and proper relationship and provide a weak and sick communication between clients and these centers and sometimes no relationship or communication is established and in some cases students do not know any necessity to refer or visit these centers or use the resources required to know information [3].

Today almost in all developed and in developing countries it is a custom to make university students familiar with libraries, use of resources and with information centers through a field trip, seminar, class training and so on [25]. Not only library services and instruction are necessary for the completion of assignments and doing research in many courses, they are also important for the empowerment of students with life-long learning skills. Thus librarians are challenged to deliver instruction and services to the students [6]. Perhaps it can be in truth that the most important principle of human life is learning because human is faced with different learning processes from birth to the end and learning and especially effective learning is not possible except through research and studying based on library information resources and these centers, due to the lack of learning to use libraries or inappropriate learning in spite of economical losses will result in problems such as frustration, loss of self esteem, feelings of inferiority, depression and will end in the absence of full blossoming of talents and abilities of failed person [7], Libraries have a specific place in universities and have also an important role in students' education and research. University libraries must be standardized to meet the need of the students and staffs [8], In a review by Ertejaee in 1994 as "client satisfaction of the central Library of Iran University of Medical Sciences" she concluded that about half of the visitors of information centers (libraries), do not use shelves list or card catalog (guides) for some reasons due to the lack of familiarity to use libraries and selective method of most of them for using and accessing information resources needed is direct referring to the library shelves. At the end of her proposals she offers and recommends such as client training and installation of signpost and others to guide the students [9]. Bannyeghbal in her study revealed that with increasing of information resources, students have to do a creative and reasonable selection, then they should be trained to use information resources as best as they could. According to the above statements, this research intended to study the influence of education on encouraging and usage of libraries information resources on students of medicine [10].

METHODOLOGY

This study is a quasi-experimental study with one group, 100 male and female first year (freshmen) students of medicine in Iran University of Medical Sciences were studied.

Each participant took part willingly and was informed of work objectives and how to fulfill it. Before the interview, participants' written consent was obtained and they were assured that the information will remain confidential and they were told that they would be free in interviews and they could leave it at any stage if they would not like to continue their participation. The data were collected through two approved questionnaires as pre-test and post-test derived from a library self-instruction manual written and approved by librarianship college of Iran medical university.

At first a questionnaire including demographic information and research questions were presented to participants as pre-test on libraries related questions and how to use them for finding academic questions and researches, then the library self-instruction manual as intervention was presented to the students and they were requested to study the manual carefully or they were trained through the manual on familiarity with libraries' resources and information centers for two weeks. They were informed that after two weeks another questionnaire as post-test with similar questions, but not exactly the same with pre-test questions will be offered to them. 93 of the pre-rests and 81of post-tests were received to be matched and analyzed, then the matched questionnaires were analyzed and 7 were left out due to their faults (1 in pre-test and 6 in post-test). Questionnaire losses were more in post-test in compare with pre-test. Pre-test and post-test were scored and then all obtained scores were analyzed and compared all together and individually (person for person). The data were collected in order to determine the effect of self-education through the manual. The collected data were statistically analyzed with necessary, descriptive and statistical software, SPSS, paired t-test and the outcomes were presented in proper tables.

RESULTS
Major Findings

The study showed that most of the students were referring and visiting university libraries and information centers. They mentioned a variety of reasons for their goal of visiting these centers. Based on findings most students (80%, 30 females and 50 males) referred for the reason of using resources and or for other reasons such as studying or using library reading

hall, borrowing books, reading newspapers and for some other reasons.

Table 1: Students' referring reasons to libraries and information centers in sex

Sex / Referring for	Female		Male		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Using library hall	20	66.7	50	100	70	87.5
Using library resources	24	80	40	80	64	80
Newspaper studying	2	6.7	8	16	10	12.5
Others	1	3.3	0	0	1	1.25

Most students (35.4%) regularly visited libraries and only 12.7% students referred to information centers irregularly. Referring to the database of information centers, female students visited the library more than male students with13.3% vs.12.2%.

Since one of the most essential issues of the students is using from library resources and information

databases to have a good education and research in the university based on these resources and they will encounter difficulties and problems if they don't learn seeking skills or methods. Some say they knew how to use it some say no. For these reasons the following table shows the number of students that had familiarity or unfamiliarity with the library and its resources to use.

Table 2: Students' familiarity level with using method of libraries resources

Sex / Knowing method	Female		Male		Total	
	Frequency	percent	Frequency	percent	Frequency	percent
Yes	19	46.3	19	37.3	38	41.3
NO	22	53.7	32	62.7	54	58.7
Total	41	100	51	100	92	100

The above table showed that 41.3% students claimed that they knew how to get use of resources and were familiar with library resources. Female students showed more familiarity in this area than male students and in general unfamiliarity of the students showed more than those who were familiar.

Students also stated that they knew and learned to use information resources through their classmates and their friends (71.4%) and only 2.9% of the students had learned it through pamphlets, books and other ways and methods. 49.1% of them due to lack of time and 41.8% due to lack of familiarity with the bases and

usage of its resources did not refer to these centers. Most students (61.9%) mentioned necessity of education and training for using libraries and their resources at very high level and 37% at high level and only 1.1% of them had emphasized on non-necessity of education. Some number of the students (35.6%) considered this education necessary at high and very high level. To know the impact of education on students knowledge and in encouraging students for visiting library and information centers and to use the resources available there based on study questions the following table was presented.

Table 3: Impact of education on students encouraging and using resources and medical information centers

Degree / Item	Very much		Much		Little		Never		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Students encouragement	11	17.2	27	42.2	17	26.6	9	14	64	100
Using resources	23	33.3	37	53.6	7	10.2	2	2.9	69	100
Total	34	25.5	64	48.1	24	18.1	11	8.3	133	100

Table-4: The comparison of achieved mean and SD scores of the students in pre and post tests based on Pair T-test per chapters and in total in term of sex

Tests	Pre-test				Post-test				T-test	
Sex	Female N=28		Male N=33		Female N=28		Male N=33		Female	Male
Booklet chapters	Mean	SD	Mean	SD	Mean	SD	Mean	SD	T	T
Familiarity with library	0.92	0.59	1.30	0.86	1.75	.84	1.84	0.66	4.61	3.89
How to use library resources with library	6.89	3.28	6.84	3.44	8.60	2.68	9.87	3.30	2.94	4.92
Library services	7.17	2.14	6.63	3.88	9.5	3.5	9.60	3.45	3.38	4.13
Relationship with library	1.32	1.4	1.15	1.42	4.96	1.09	2.27	1.96	2	4.17
Online searching	0.25	0.43	0.33	0.47	0.5	0.5	0.78	0.41	2.64	5.13
Total	16.55	7.84	16.25	10.07	22.31	8.61	24.36	9.78	4.65	6.14
Mean	16.4				23.33					
SD	8.95				9.20					

The above tables suggest that education and instruction for students to use medical libraries information and resources has encouraged them about 60% at high and very high level for visiting and visiting medical libraries and information centers and only 14% said that this kind of training had no effect. Approximately 87% of the students had mentioned training effect positive on their knowledge increase at high and very high level to use databases and existing resources of these centers and only 5.3% of male students had not mentioned these educations effective. About 74% of the students believed the influence of such kinds of educations to enhance and encourage students more to visit libraries and medical information databases for using their existing resources and they considered it effective and useful and they had also emphasized on these kinds of educations and found it important that some of them (35.6%) claimed education as a necessity at high and very high level. Level of scores increased after instruction and training by manual to 6 marks in total or to say 30% from pre-test to post-test. Diversity or differentiation of scores decreased from pre-test (C.V=54.75) to post-test (C.V= 39.3). Since most of the students (98.9%) have stated that they require such trainings, this thought is resulted however from effective increase of education impact as they themselves (70%) believed. The students recommended university responsible men to offer a library course entitled "Library user-education program" in universities syllabuses and it is confirmed and advised by the above studies in different models or styles.

DISCUSSION

As the study showed education and instruction skills that is needed for students to use libraries and their resources effectively should be provided by university training systems, however this is the first and main duty of them while it is confirmed that education and instruction has positive influence on students' usage of the resources bought every year with heavy costs, so many researches emphasize on such kinds of trainings and instructions [3].

Librarians have known for years that regular library use and lifelong learning are often the same. While not all lifelong learners are library users, regular library users tend to be lifelong learners. Studies have shown the association of use of the literature and other lifelong learning attributes to innovators, leaders, and successful medical practitioners [11, 12, 14].

Many variables have been found to affect the use of libraries and information resources that can be visualized as concentric circles of influence, including environment, behavior and attribute variables [13]. The factors include types and intensities of information that are needed, applications and uses for the information, descriptive attributes such as age, discipline, habits, and library skills [14]. Investigators have shown that factors like course work, class level, gender, scholastic standing, and level of awareness of library services may have the effect on the use of library [14, 15].

Librarians know that medical students are the heaviest users of academic medical libraries. Information needs of medical students, when typified, are often for textbooks and for general and overview material [14]. Da Rosa demonstrated that medical students exhibit sadly limited efficiency in finding information [16].

Tiefel in a study entitled: "Evaluating a Library User Education Program: A Decade of Experience" Describes the method used and results of evaluations of the impact of library instruction on student learning and attitudes in the Ohio State University freshman program. The discussion covers common student misperceptions about librarians, the importance of planning reliable and valid evaluations, and recommendations for implementing an evaluation [17].

A study was conducted by Asadi to show internet using impact on researches by University faculty members of Tehran University that showed this impact clearly, the most effective factor of misusage or

non-usage of internet in conducting researches was lack of education or internet instruction to faculty members [18].

Another study performed by Rankin JA with title of "Problems based medical education: effect on library use" claims in the study that it was performed to investigate medical student use of information resources and the library in the PBL curriculum and to compare this use with that of students in conventional medical school programs. The study looked at student information behaviors, centering on the students as library users, not on the libraries themselves. According to that study Information-seeking skills are central to the PBL curriculum that emphasizes self-directed learning and the acquisition of problem-solving and lifelong learning skills. Finally the study reported that certain significant differences ($p < 0.05$) between PBL and conventional curriculum students, suggesting that PBL students were the more frequent library users, used information resources that supported the independent learning process, acquired information seeking skills at an earlier stage in their medical education, and reported greater ease in using these skills [14].

Davis in a study conducted in University of Illinois tested two ways and methods for user education and instruction, self-paced audiotapes and computer-assisted instruction (CAI). The tapes were used to orient the user to the libraries' physical facilities, policies, services, and tools, while CAI was used to provide detailed library information in an interactive mode. The audiotape accompanied by a simple printed sheet describing services, hours, and new acquisitions was the best medium for the student's initial orientation to the library and its physical layout. We decided to expand the initial individual library orientation to a course orienting the user to the University of Illinois library system as a whole. The library course on PLATO (Programmed Logic for Automatic Teaching Operation) a computer assisted instruction system at the University of Illinois) would enable the user to: (1) select a departmental library or libraries to meet his needs; (2) select appropriate reference tools; (3) select appropriate materials using the card catalog; and (4) locate materials selected in the library [19].

Rahimi and his colleagues studied the evaluating of professional human resources in Tehran University in compare with Iran academic libraries standards and reported that libraries should have a written and defined education or instruction program to acquaint the new staff, both professional and paraprofessional, with its program and activities working there for all the librarians and they must provide and facilitate necessary affairs and conditions. The researchers concluded that 9 persons (56.3%) claimed that libraries have a written and defined education program for their newly hired professional and paraprofessional librarians and 7 persons (43.8%)

did not believe this, as they said 8 persons (50%) stated that libraries provide necessary conditions or situations for needed or familiarity or introduction and necessary educations, only two persons (12.5%) were satisfied with occupational and professional conditions, but 7 persons (43.8%) said the opposite and 1person (6.3%) somehow believed that [20].

Another study based on library instruction for distance learning was done by May entitled: "Integrating Library Service and Instruction into Electronically-Delivered Classes" and claimed that since online courses become more and more ubiquitous, the need for supporting services becomes more acute. To meet the needs of students in online courses for library services and instruction means to deliver materials, reference services, and instruction were purchaged and developed. The needs of one particular class brought the problem into focus. A team of librarians worked with the instructor in order to provide tools for the students to learn accessing and using information from a distance. It was accomplished by providing a class web page created to help the students for locating the specific journals in their fields, and a tutorial based on the Texas Information Literacy Tutorial developed by the University of Texas at Austin. A list of resources, procedures, and materials was developed in order to guide the library practitioner in providing library services for distance learners [6].

Lorrie A. Knight in a study in 2002 entitled "The role of assessment in library user education" In response to a growing need for the library to articulate the success of its efforts in terms of student learning outcomes, claim that librarians at the University of the Pacific Library developed a plan to assess library instruction. This paper describes the process and presents the results of a case study of assessment of library instruction for first-year students. The study suggests that assessment can lead to the development of good practices in both instruction and evaluation [21].

Eskroochi *et al*. conducted a study to survey the use of information technology in organizing, cataloging and classification of materials of 44 university central libraries of Iran medical sciences universities. In the conclusion they stated that lack of so many things can encounter the libraries with problems in cataloging and classification of their materials such as lack of familiarity with cataloging and classification information technologies [22].

Another study as "Library Research Success: Designing an Online Tutorial to Teach Information Literacy Skills to First-Year Students" by Donaldson in 2000 was conducted in Seneca College of Applied Arts and Technology in Canada on over 600 first-year students in the College's School of Business Management. Library management had agreed and proposed developing a self-paced online, interactive

tutorial that would utilize current Web-based technology. The primary goals were to increase the knowledge of the students regarding library resources in general, and business resources in particular, and to increase levels of information literacy and basic research skills. The results were found to be overwhelmingly positive, as the study stated that efforts were underway to adapt this tutorial to meet the needs of other student groups within Seneca College [23].

Wilder in the University of North Texas performed a study entitled "Creating a successful information literacy program for distance students" in 2008 intended to help student to take their best from library information and this is provided by library education and tutorial programs in different methods and ways. The key areas to be considered are determining the distance students in the institution, the courses taken by them, learning styles and means of obtaining online information. It stated that the librarians should work and know well with the instructors and faculty in order to assess the disciplines they teach and resources that needed to be available to students and instructors [24].

As it is cleared user-education and training students anyway is a part of libraries' duty for their own benefits and has long life interests for both of the library and users.

CONCLUSION AND RECOMMENDATIONS

The findings showed that most of the students had difficulty using libraries and their resources and this discouraged students to visit and use the resources of these centers. User-education had a significant effect on students and empowered them to use library and its resources more efficient.

Since there are some emphasis for providing and offering some courses in the universities and that most of the students shout its influence, more effort seems necessary by officials involved in these areas to solve potential problems the students are encountered with in libraries and universities, this also can decrease the costs spent for resources each year and make it more meaningful. Impact of user-education on students was diagnosed to be effective and encouraged them more to do their best for using resources and it is a hope for conducting more and wide researches in these areas and fields while almost all the researches conclusions persist to perform a course as far as possible, as the final sentence or saying it should be said that knowledge is power and this power is gained through education and instruction or learn to know, learning to do. While it is such so, we can cover all new fields such as new information technologies for first-year students (freshmen) through instruction and training courses to make costs more meaningful and at last but not the least save students' time with more satisfaction. More researches on other students are also recommended.

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