Journal of Research in Medical and Dental Science
Volume 5, Issue 6, Page No: 52-57

Available Online at: www.jrmds.in
eISSN No. 2347-2367: pISSN No. 2347-2545

Use of Digital Library of Medicine by Faculty Members and its Effect on Scientific Production

Zohre Sorinezami[1], Reza Hakimi[2]*, Mohammad Ali Tabasi[2]

[1] MS in Library & information Sciences, Central Library of Zahedan University Medical Sciences, Zahedan, Iran
[2] Faculty members of Department of Library & Medical information Sciences, Faculty of Paramedics, Zahedan University Medical Sciences, Zahedan, Iran

DOI: 10.24896/jrmds.20175610

ABSTRACT

This study evaluated the use of digital library of medicine by ZUMS faculty members and its effect on their scientific production. This study was a descriptive survey. Data was collected by a researcher-made questionnaire. Reliability of the questionnaire was estimated at 0.87 using Cronbach's alpha. The studied population consisted of ZUMS faculty members. Krejcie-Morgan table was used to determine the sample size (171). Results were analyzed using SPSS-20 software. the most used databases were Scopus and Elsevier. The results showed that the use of digital library of medicine was effective on knowledge production. Chi-square test showed that faculty members significantly had scientific production. Faculty members used digital library to produce research papers in foreign languages (66.7%) and Farsi (58.5%), present papers at national conferences (64.3%) and international conferences (56.1 %). the results showed that faculty members did not use all facilities of digital library; however, this limited use had a very important role in their scientific production.

Keywords: Library, electronic resources, databases, faculty members, Zahedan University of Medical Sciences

HOW TO CITE THIS ARTICLE: Zohre Sorinezami, Reza Hakimi, Mohammad Ali Tabasi, Use of Digital Library of Medicine by Faculty Members and its Effect on Scientific Production, J Res Med Dent Sci, 2017, 5 (6): 52-57, DOI: 10.24896/jrmds.20175610

Corresponding author: Reza Hakimi
e-mail✉ hakimirz@chmail.ir
Received: 15/06/2017
Accepted: 09/10/2017

INTRODUCTION

Like other fields of studies, medical sciences also take advantage of development in online resources and advanced search. Due to rapid process of knowledge production, medical sciences need to receive valuable information of accurate and updated research, because medical sciences are directly related to human health. In this regard, a huge range of information is continuously changing. This change is followed by new techniques in diagnosis and treatment of diseases. Awareness of physicians and medical students about these topics seems necessary [1].

With rapid advance of sciences and technologies, publication of scientific references is considerably increasing. More information is being produced every day in all contexts in the form of printed or electronic references. Development, particularly in science, depends on correct use of newer information [2]. Most researchers, particularly those who are active in information science, emphasize the fact that scientific society should shift to more use of electronic resources available in the World Wide Web (www). Important reasons of this shift may include availability of digital libraries, linkage of content, multimedia information and unlimited access to information in terms of time and place [3].

Above reasons and many others have led to new approach in selection of information resources and their use by researchers and academic

community with regard to potential features of internet and the World Wide Web. Undoubtedly, one of the advantages of countries regarding science and technology production in all fields, particularly medical specialties, is availability of updated information for scientific community. In this process, people who have directly successive interactions are academic researchers. One of the most important foundations of scientific production is original academic research which is impossible without new technologies. Theorists refer to this century as communication era. By accurate and powerful communication tools, computer technologies and information system management, researchers can achieve new scientific goals in developing study plans and choosing the methods to receive and retrieve accurate and updated information. Currently, researchers can use very valuable information stored in electronic databases, particularly in medical sciences. Undoubtedly, optimal use of these capabilities in scientific research and subsequently new findings are very beneficial for the country. These databases contain articles published in reputable publications, doctoral and master dissertations, re-training courses, evidence-based medical references, medical atlases, multimedia resources of medical skills, and drug information guides. Universities spend considerably for annual subscription of digital library of the Ministry of Health. The main objective of this study is to evaluate the use of information resources available in IKNITO by graduate students of Zahedan University of Medical Sciences (ZUMS) and its role in their scientific production. Through this study, policy makers may attempt to change current undesirable conditions. In the meantime, it is essential to conduct a comprehensive study to identify weaknesses and provide practical solutions. Eslami and Keshavarz [4] and Daroudi [5] evaluated the use of websites and other electronic databases by researchers; these evaluations confirm the crucial role of digital libraries in producing science and its significance given the novelty of the subject. The need to address this subject in medicine is twofold because of rapid changes in this field and human health.

Questions and Hypotheses

Hypothesis 1: faculty members of clinical medicine use more information resources available in IKNITO than faculty members of basic medical sciences.

Hypothesis 2: use of digital library of medicine has an effect on scientific production of faculty members.

Question 1: how much do ZUMS faculty members use information resources available in IKNITO?

Question 2: how much do ZUMS faculty members produce research works by 2015?

MATERIALS AND METHODS

This study attempted to measure the use of IKNITO by ZUMS faculty members and its effect on their scientific production. Therefore, descriptive and survey methods were used for the study. The studied population included 314 ZUMS faculty members. Krejcie-Morgan table was used to determine sample size [6]. Accordingly, the number of 171 samples was sufficient. Stratified random sampling was used, because the population was divided into two groups of basic medical sciences and clinical medicine, which were both essential for the study given the studied subject. Table 1 shows sample size and distribution of samples based on stratified random sampling method.

Sample size was determined by proportion partition in each group. Finally, 104 subjects (104 subjects in clinical medicine group and 67 subjects in basic medical sciences group) were included in the study. Data was determined based on objectives of the study through a questionnaire. The questionnaire was developed by content analysis of objectives and questions. Then, the questions which seemed to be able to measure objectives were developed. The questions were reviewed by professors and scholars in the field. A limited number of population was asked to respond to open questions descriptively. Among the responses received, the most frequent contents were extracted and considered as options. The preliminary questionnaire was reviewed again by scholars and modifications were made in questions and options. The questionnaire was implemented again in a limited group. The obtained data was computerized. Cronbach's alpha (internal consistency) was calculated for the questionnaire. The questions which were not enough correlated to other questions were modified again. Final form of the questionnaire was extracted ultimately. The

questionnaire contained different parts. The first part included 9 items regarding demographic variables of faculty members. The second part included 17 items to measure the use of IKNITO. The third part included 12 items to evaluate the The questions were reviewed by professors and scholars to determine validity of the questionnaire. Reliability of the questionnaire was estimated at 0.87 by using Cronbach's alpha test (internal consistency). Data was analyzed by SPSS, V20. Data analysis started by computerizing data obtained from questionnaire. Analysis was performed in two separate parts. The first part involved descriptive findings shown by frequency tables (frequency and percentage) for questions. The second part answered the questions of the study by using inferential statistics. Analysis technique and type of tests were determined by role of IKNITO in scientific productions and research activities. Table 2 shows distribution of items based on variables studied and their reliability.

considering variables and their scale. Depending on the type of questions, parametric and non-parametric tests were used. Nonparametric test was used for variables in a nominal or ordinal scale. Parametric tests were used for variables in a distance and relative scale provided that the conditions were met (normal distribution). Table 3 shows the variables.

Due to the fact that variables were nominal, chi-square test (goodness of fit) was used to examine the relationship between variables [7].

Table 1: Distribution and sample size based on groups

Group	Population	Sample size
Clinical medicine	191	100
Basic medical sciences	123	65
Total	314	165

Table 2: variables, related items and calculated reliability

Variable	Item	Scale and scoring	Reliability
Use of IKNITO	17	Very high(1), High(2), Medium (3), Low (4), Very low (5)	0.871
Role of IKNITO in scientific production	12	Very high(1), High(2), Medium (3), Low (4), Very low (5)	0.872

Table 3: Table of Variables

Specifications	**Role**			**Type**					
				Quantitative			Qualitative		
Variable	Contextual	Independent	Dependent	Continuous	Dichotomous	Nominal	Ordinal	**Practical definition**	**Scale**
Use of IKNITO		*		*				"	"
Knowledge production			*		*	*		Frequency of production	Number of produced references

RESULTS

Table 4: independent T-test for use of IKNITO by faculty members from different groups

	N	**Mean**	**Standard deviation**	**F-value**	**Sig**	**T-value**	**Df**	**Sig. level**	**Result**
Clinical	104	38.93	13.75	1.01	0.451	1.347	169	0.181	The difference is not significant.
Basic	67	42.89	14.00						

Table 5: T-test for use of IKNITO by faculty members from different groups

Information Resources	N	Mean	Standard deviation	Compared mean	T-value	Df	Sig.
SCOPUS	159	3.26	1.150	3	2.897	158	0.004
PROQEST	147	2.69	1.253	3	-2.962	146	0.004
END NOTE	148	2.63	1.357	3	-3.332	147	0.001
BEST PRACTICE	133	1.71	0.831	3	-17.844	132	0.000
WEB OF KNOWLEDGE	139	2.59	1.361	3	-3.552	138	0.001
JAMA	142	2.37	1.217	3	-6.204	141	0.000
BMJ	137	2.24	1.210	3	-7.344	136	0.000
ELSEVIER	167	3.75	1.196	3	8.088	166	0.000
OVID	151	2.54	1.193	3	-4.774	150	0.000
MD CONSULT	137	2.12	1.189	3	-8.698	136	0.000
SPRINGER	141	2.44	1.359	3	-4.894	140	0.000
OXFORD	143	2.29	1.248	3	-6.833	142	0.000
WILEY	138	2.33	1.280	3	-6.187	137	0.000
THIEME	137	1.69	0.872	3	-17.628	136	0.000
NURSING CONSULT	135	1.78	1.020	3	-13.926	134	0.000
UP TO DATE	136	2.04	1.195	3	-9.399	135	0.000
Ebsco	143	2.40	1.380	3	-5.213	142	0.000
Total	**171**	**42.91**	**13.46**	**51**	**-7.848**	**170**	**0.000**

Table 6: Chi-square test to determine research works of faculty members

		Frequency	%
Less than 50 publications		72	42.1
More than 50 publications		25	14.6
No publication		74	43.3
Total		171	100.0
Sig: 0.000	Df= 2	α = 0.05	X^2=27.0

Table 7: T-test for the effect of IKNITO on knowledge production (publications)

	N	Mean	Standard deviation	Compared mean	T-value	Df	Sig.
Faculty Members	171	6.71	1.16	6	8.001	170	0.000

Findings related to hypothesis 1 and question 1 are listed in Tables 4 and 5. Since chi-square (27) is significant (α=0.05; df=2), ZUMS faculty members significantly produce knowledge. Findings related to hypothesis 2 are listed in Table 7.

Since the calculated T-value (1.347) is not significant (α=0.05; df=169), there is no difference between two groups of clinical medicine and basic medical sciences in use of IKNITO. Both groups use IKNITO similarly. Therefore, the hypothesis is rejected and null hypothesis is accepted.

As shown in the above table, test is significant for all the options. However, T-value is negative for some options and positive for some others. Positive options suggest that ZUMS faculty members use IKNITO in a significantly high extent. Negative options suggest that they use IKNITO in a significantly low extent. Test is significant for total index, suggesting that ZUMS faculty members use IKNITO in a significantly low extent.
Findings related to question 2 are listed in Table 6.

According to the above table, the test is significant for the sample group, suggesting that the use of IKNITO is effective on knowledge production (publications) of the sample group. Hence, the hypothesis is confirmed.

DISCUSSION AND CONCLUSION

Findings show that the use of IKNITO is not different between different groups of ZUMS faculty members. Both groups use IKNITO similarly (T-value = 1.347, which not significant at α = 0.05). Faculty members use IKNITO in a significantly low extent. Total T-test indicates that usage is less than average and at a low level. Among 17 information resources available in IKNITO, only Elsevier and Scopus are more used

than others. However, their total index is not optimal. This means moving away from updated resources. Since medicine is one of the most sensitive jobs in all communities, it is essential for physicians to update their information continuously to provide accurate diagnosis and treatment. In addition to physicians, faculty members are also required to gather updated information to transfer them to students and do their educational and research responsibilities properly. Greater use of electronic resources helps professors improve quality of education. Unfortunately, current findings shows that electronic resources are not used enough in ZUMS; thus, it is required to identify and eliminate the barriers. However, these findings are consistent with Rasoulabadi [8] who found that electronic resources are less used and Araghi et al [9] who found that Elsevier is the most frequently used reference by ZUMS faculty members. The results are also consistent with Ibrahim [12], Charlat [13], and Atilgan and Bayram [12] who found that electronic resourced are less used.

The results show that the use of IKNITO is effective on scientific production of ZUMS faculty members. Scientific publications and ranking of countries in this regard are important factors which are currently considered as one of the components of development. Currently, these rankings underlie the progress in scientific publications which are now faster and cheaper due to the advent of technology, particularly the World Wide Web. In this regard, scientific institutions worldwide such as the American Institute for Scientific Information (ISI), Scopus Institute located in the Netherlands and Islamic World Science Citation Center (ISC) in Iran are responsible to validate scientific publications. They consider the articles published in international journals as scientific productions of countries. Accordingly, this study measured scientific production of sample groups. These publications include ISI papers and authored textbooks. This study also evaluated the role of IKNITO in publications of faculty members. As the results show, the use of several databases which provide information in full-text plays an important role in scientific publications of faculty members. The most important indicator of research activities is papers published in ISI journals and textbooks which are most influenced by the use of IKNITO. These findings are consistent with Najafabadi [13, Rajabi [14], Shahbazi [15], Tenopir et al [16], and Atilgan and Bayram [12].

This study also evaluated research works of ZUMS faculty members published by 2015. This was measured by Chi-square test and the results were analyzed. Research works include all national and international publications, translations, conferences and seminars, supervised and advised dissertations. As the evaluations show, Chi-square = 27 which is significant at $\alpha=0.05$ and df= 2; thus, ZUMS faculty members had significantly one publication.

REFERENCES

1. Mohajeri F, Alijanpour Mknowledge and use of online databases by students of babol university of medical sciences. knowledge (Librarianship, information and information technology), 2010; 8(2) : 36-57
2. Davarpanah M. scientific search in printed and electronic references. tehran: Chapar. 2009.
3. Enayat-tabar M, Gholamali M. traditional publication versus electronic publication. librarianship and information, 2008; 2(3) : 259-276.
4. Eslami A, Keshavarz H. information searching skill in continuous electronic resources by doctoral students. information technology and sciences,2007;23(1, 2): 45-60.
5. Daroudi F. internet searching skills of information and librarianship students. information technology and sciences, 2008; 24(1): 1-36.
6. Naderi E, Seyfnaraghi M. methodologies and their evaluations in human sciences. Tehran: arasbaran. 2012.
7. Shavelson RJ. Statistical Reasoning for the Behavioral Sciences. tehran: academic jihad publications, 2005.
8. Rasoulabadi M. familiarity of faculty members and professors with internet research and its relationship with scientific activties. NAMA, 2008; 7(3) : 38-49.
9. Araghi F, Bigdeli Z, Najar B. The use of IKNITO by faculty members. jondishapour, 2012; 11(5) : 320-367.
10. Ibrahim AE. Use and user perception of electronic resources in the United Arab Emirates University (UAEU). Libri. 2004; 54(1):18-29.
11. Charlat R. The Use of Electronic journals by faculty members, physicians and medical

students of the faculty of medicine, Prince of Songkla University. Songklanakarin journal of social sciences and humanities. 2004; 10(3):323-340.
12. Atilgan D, Bayram O. An Evaluation of faculty use of the Digital library at Ankara University, Turkey. The Journal of academic librarianship. 2006; 32(1). 86-93.
13. Najafabadi F. effect of internet on Information seeking behavior of faculty members, s.l.: s.n,2007.
14. Rajabi A. the use of electronic publications of internet databases. message of library, 2010; 15(2) : 63-96.
15. Shahbazi S, Shahtalabi B, Mahdian MJ. use of electronic databases by faculty members in educaitonal and research activities. education and evaluation, 2010; 2(8) : 55-83.
16. Tenopir C, King DW, Bush A. Medical faculty's use of print and electronic journals: changes over time and comparison with other scientists. Journal of the Medical Library Association (JMLA). 2004; 92(2): 233-241.