Study of Knowledge, Attitudes and Practice towards the Internet among BSc Students of School of Public Health, Shahid Beheshti University of Medical Sciences

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Abstract

Background and purpose: *The Internet is a useful tool for developing a variety of learning experiences and as a source of information and as a means of facilitated communication between students and teachers. The aim of this research was to investigate the level of knowledge, attitudes and practice of The Internet use among Bachelors' degree students in Shahid Beheshti School of Health.*

Methods: *The study was cross-sectional and conducted on 250 students. Data collected using a questionnaire based on demographic characteristics, as well as knowledge, attitudes and practice regarding the use of the Internet.*

Results: *Majority of the students (77.1%) had poor knowledge about the Internet search, but most of them (92%) had positive attitudes towards using the Internet for learning. 52.4% of the respondents used the Internet for search related to their lessons less than 5 hours/week. The Internet usage and knowledge were significantly higher among male students.*

Conclusions: *In spite of positive attitudes about the Internet use for improving the education process and facilitating research, students' knowledge about the Internet search was poor. It is recommended that mentioned skills training were included as a separate course in the curriculum of BSc Students' program.*

Keywords: *THE INTERNET, PUBLIC HEALTH, INFORMATION AND COMMUNICATION TECHNOLOGIES*

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Introduction

Information and Communication Technologies (ICTs) are tools for communication, data processing and transfer and knowledge exchange in an electronic environment (1). ICTs, if used properly, are powerful means for development, and formation of knowledge-based societies. Information Telecommunication union defined three stages of information society development: 1) ICT readiness infrastructure and access; 2) ICT intensity (level of use of ICTs in the society); and 3) ICT impact (result of efficient and effective use). This union believes that one crucial factor for reaching a balanced impact is ICT skills (2).

The ability to use the Internet is essential for student. Since it helps with their current academic studies and later helps them to develop and maintain their professional skills. Peter Druker in 1994 stated that in the future an educated person would be someone who would have skills of life-long learning. The ability to use computer and search for intended information is a basic skill for a

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commitment to life-long learning (3). The Internet is a useful tool for developing a variety of learning experiences and as a source of information and as a means of facilitated communication between students and teachers (4).

Web-based learning is a way for developing skills such as teamwork, problem solving, communication, critical thinking, and digital literacy beyond the content of the intended learning courses (5). In general main advantages of ICT use in higher education are improvement of learning experiences as well as cost effectiveness (6). Given these advantages, the World Health Organization (WHO) targeted ICT skills as a focus of its e-Health Strategy (7).

A researcher report by EDUCASE (a nonprofit association whose mission is "to advance higher education through the use of information technology") in 184 universities and faculties throughout the world with more than 10000 students participation showed that students preferred courses with a blended learning environment. They believed that use of IT increased the motivation for learning and were important for future success in their businesses. Of all respondents, 64% strongly believed that IT improves education. Most of students in this survey expressed their need for courses in IT to prepare for better use of this technology in their education (5).

Today the Internet search is considered an important component of IT literacy and determine to a large extends the quality of evidence retrievals (8).

In this study we investigated the knowledge, attitudes and practice of the Internet use in the students' Bachelor's degree programs in Shahid Beheshti School of Health.

Methods

In this cross-sectional study, 250 students of Bachelor's degree program in Shahid Beheshti School of Health participated. The participants were equally selected from public health, occupational health, and environmental health with equal number of students from each semesters of 1 to 4.

For data collection a questionnaire was developed based on questionnaires used in studies by Blyth and Murray on Japanese students (9) and by Dabay and Ismal on Eastern Mediterranean University students in Cypress (10). The content validity was confirmed through a review by an expert panel. To assess the reliability of the questionnaire a test-retest procedure was carried out with 20 students of sample population answering it in 2 weeks interval. The Spearman correlation coefficient was calculated which ensured a good reliability (r=6.67). The first section of the questionnaire collected demographic data including age, gender, discipline, semester, and their residence. The second and third sections collected data of knowledge and practice of the Internet search respectively. The fourth section of the questionnaire dealt with students' attitude including importance and effect of the Internet search on their educational achievements, attracting interest to research and the necessity of this competency in formal program. In this section students answered based on a five-option Likert-type item (completely agreed – completely disagreed). The collected data was analyzed by SPSS software version 16. By Kolmogorov-Smirnov test the normality of data was checked to decide for appropriate (parametric or non-parametric) statistical tests.

Results

Of all 250 participants, 76 were male (30.4%) and 174 were female (69.6%). The mean age was 22.21 (1.86). The distribution of participants by program was as follows: 84 from public health; 83 from occupational health; and 83 from environmental health. Eighty four of students (33.6%) lived in their parents' house and 196 (66.4%) were in dormitories. Sixty eight (27.3%) used the Internet 1-2 hours/week and 63 (25.2%) used the Internet 3-5 hours/week.

Table 1. Frequency distribution of respondents by demographic factors, The Internet search

Variables		Number (%)
Gender		
	Women	174 (69.6)
	Men	76 (30.4)
Age	20≥	47 (18.8)
	21-22	91 (36.4)
	23-24	78 (31.2)
	25≤	27 (10.8)
	No answer	7 (2.8)
Discipline	Public Health	84 (33.6)
	Occupational Health	83 (33.2)
	Environmental Health	83 (33.2)
Site of residence	Dormitories	166 (66.4)
	Students' house	84 (33.6)
Media used for search	The Internet	227 (90.8)
	Library	18 (7.2)
	No answer	5 (2)
Time for the Internet use per week	Never	3 (1.2)
	Less than an hour	30 (12)
	1-2 hours	68 (27.2)
	2-3 hours	63 (25.2)
	5-6 hours	43 (17.2)
	7 and more	40 (16)
	No answer	3 (1.2)
Most time of using The Internet	Finding relevant information for assignment	131 (52.4)
	Entertainment	53 (21.2)
	New information or news	28 (11.2)
	Learning new materials to enhance specialized knowledge	19 (7.6)
	No answer	19 (7.6)

The most referred website in descending order were WHO (110, 14.4%), PubMed (36, 14.4%), Scientific Information Database (SID, 26, 18.4%), IranMedex (21, 84%) and CDC (16, 6.4%). Of all respondents, 227 (90.8%) used the Internet and 18 (7.2%) used library resources for search.

The students' intensions of the Internet search were in descending order as followed: topics and material related to their lessons and assignment (12, 52.4%), entertainment (52, 21.2%), new general information or news (25, 11.2%), and for finding materials to improve discipline specific knowledge (19, 7.6%). (Table 1)

Of a total of 7 score of research knowledge, the students' mean score was 1.65±1.36. Based on this score knowledge of 192 (77.1%) were categorized as poor, knowledge of 51 (20.5%) as moderate and knowledge of 6 (2.4%) as high. Fifty students (20%) gave incorrect answer to knowledge questions. A Mann Whitney test showed that men had higher knowledge of search than women (P>0.001). The student who lived in dorms had higher knowledge score than those who lived in their own houses (P=0.022).

A Kruskal Wallis test showed a significant association between the study discipline and knowledge of search (P=0.0001). Mann Whitney tests of pairs of discipline showed that Public Health students had higher knowledge score than occupational health, and environmental health (P=0.0001). The knowledge scores of occupational and

Table 2. Frequency distribution of men search knowledge score by gender, age, discipline, and site of residence

Variables		Mean±SD	P value
Gender	Men	2.07±1.46	
	Women	1.47±1.27	0.001
Age	20≥	1.38±1.43	
	21-22	1.47±1.35	0.013
	23-24	1.92±1.32	
	25≤	1.93±1.32	
Discipline	Public Health	2.26±1.52	
	Occupational Health	1.30±1.02	0.000
	Environmental Health	1.37±1.27	
Site of residence	Dormitories	1.77±1.35	0.022
	Students' house	1.40±1.33	

environmental health were not different (P=0.940).

A Chi-square test showed that men used the Internet more than women (P=0.021) (Table 2).

Of all respondents, 230 (22%) had high score in attitude section including items on usability and advantage of correct use of the Internet; 19 (7.6%) had a moderate score, while 1 (0.4%) had a poor score. The mean score of students in attitude section was 17.22±2.17 (4 questions, total of 20 score). There was no significant association between knowledge and attitude scores (P=0.51).

Most respondents (63.2%) believed that they didn't easily find the intended material and had to use a lot of time on search.

Of all respondents, 210 (84%) completely agreed and agreed that on independent course for the Internet search should be introduced in their programs; 202 (83.6%) believed that it was better to deliver the course in the first semester to equip them with the skill that would save time and energy.

Discussion

Our study showed that 52.4% of respondent used the Internet less than 5 hours/week. Another study by Doroodi et al. indicated that 64% of librarianship students used the Internet 2 hours/week or less which is rather similar to our findings (11).

Men used the Internet significantly more than women which is consistent with findings of Fayaz Bakhsh study in Tehran University of Medical Sciences and those of a study in USA students (12, 13)

The students' ability in effectively finding relevant sources and evidence and appraise of retrieved texts and articles are among effective factors related to how much time they used the Internet (11, 14). The higher the Internet use by men might be the only factor explaining their higher knowledge score compared with women. Similar results were repeated by Tao Hu et al. (on 805 US students), Rajab (on Jordan dental students) and Ada (on Nigerian nursing students) (15-17).

From a total of 7 score of knowledge section the students mean was 1.65±1.36 which indicated a low knowledge of search. More over 63.2% of respondents expressed that they were not able to find the evidence or material they wanted without wasting much times. A study in dental students reported that 61.9% of the students had only basic knowledge of IT use (18,19). In another study by Ivantis Kaya et al., 308 health students in USA stated that they were not able to find what they search for effectively (20). A study by Bond showed 56.6% of UK nursing students assumed that they had only basic search skills and 14.5% reported that they didn't use the Internet at all (3).

In our study 84% of students agreed that an independent course was required to develop this skill. Similar results were reported by many other studies including studies by Doroodi, Eslami, Ershad Sarabi, Mehrdad, Jadoon et al. Ada, Rajab et al. (3, 8, 11, 14, 17, 21).

In MSc and PhD programs health information systems are offered but if such courses are introduced in BSc programs, the students would have a good opportunity to practice search skills to get good at it when different models post graduate programs. There are different models of integrating information literacy into curriculum. In some curriculum it is offered as a longitudinal theme with various learning experience during the program while is others offered as an independent course (22).

In our study, public health students' knowledge of the Internet search was significantly higher than of students of occupational and environmental health, while search knowledge of students of this latter program was not different. These can be explained by the fact that the students of public health had at least a 6-hour course of The Internet search and introduction of relevant website and web resources.

Since 92% of respondents stated that The Internet search is a necessary skill that they should be trained on and given the fact that their knowledge on this topic was poor, it is evident that there is a good potential for introducing IT in these programs.

Conclusion

Effective use of the Internet as a cost-effective way to access the latest scientific information and assistance to the process of teaching and learning at the university and generally self-directed lifelong learning is possible only if they have knowledge and skills and resources required for searching and retrieving critical analysis and evaluation of the validity, reliability and accuracy of the data. According to the results of this study and similar studies, it is suggested an independent subject in the curriculum of undergraduate official in any field for a unit for teaching students how to use information technologies and the Internet.

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