Use of Social Networks for Learning Purposes Among Medical and Paramedical Sciences Students, Mashhad, Iran

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Abstract. Social networking sites are communication and information technologies which can facilitate the interaction between professors and students. The purpose of this study was to investigate the use of social networks for learning purposes among medical and paramedical sciences students in Mashhad University of Medical Sciences (northeastern Iran). A cross-sectional study was carried out in 2017 and the research tool was a researcher-made questionnaire based on a literature review. The results showed that social networks such as Telegram (3.44 ± 1.27 out of 5) and Instagram (1.83 ± 1.17) were the most frequently used social networks. On the other hand, Snapchat (1.04 ± 0.22) and Flickr (1.05 ± 0.31) were the least used social networks for learning purposes. The findings of the study showed that medical students have problems in using social networks for learning purposes. Familiarizing students with scientific and professional social networks such as ResearchGate and Linkedin and creating dedicated social networks, rather than public social networks, designed to achieve educational goals can resolve many problems.

Keywords. Social networks, e-Learning, Students, Medical Sciences, Paramedical Sciences.

1. Introduction

The increasing use of social networking sites to expand and strengthen social communication is a relatively new phenomenon today, which has outcomes for learning and education in the 21st century [1]. It is expected that the use of online sources will improve clinical decisions and medical education [2, 3]. Social media, through the Internet and other web-based technologies, have become a tool for communicating and sharing knowledge. Also, most social networks are used by mobile phones [4]. Social networking sites are communication and information technologies which can facilitate the interaction between professors and students [1]. In general, social media are tools that help students to learn, communicate, and collaborate with other people [5]. In addition, these tools enhance the motivation of students to learn [6] and can have a great

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effect on higher education [7]. In recent years, interest in the use of social media at universities of medical sciences has grown. The professors of medical sciences universities use social networks as a means for presenting their educational content to students. In medical education, social media have significantly strengthened the process of communication between medical professors and students, where software such as Skype has facilitated the sharing of information and easy communication between professors and medical students [8-10]. By identifying the role of existing social networks in advancing learning purposes, especially in developing countries, and given the limitations of these countries in this field, it can be helpful in root out and solve problems in this area. The purpose of this study was to investigate the use of social networks for learning purposes (include watching videos of lectures, viewing slides and presentations, sharing scripts and publications, arrange appointments for personal meetings and communication) among medical and paramedical sciences students in Mashhad University of Medical Sciences (northeastern Iran).

2. Methods

A cross-sectional study was conducted between May to July 2017 in Mashhad University of Medical Sciences (northeastern Iran). The research population consisted of all students of the school of medicine and school of paramedical sciences in Mashhad University of Medical Sciences (n= 480). The sample size was determined based on Cochran formula with 95% confidence interval. The only inclusion criterion was all students studying at the time of the study. The exclusion criteria were: a) transfer students and guest students from other universities; b) students who were on leave at the time of the study; c) foreign students. Data was collected using a researcher-made questionnaire based on literature review [11-13]. The questionnaire included questions about: a) demographic information (age, gender, level of education, field of study); b) social networks used by students (19 questions) on a five-choice Likert scale (Never = 1 to always = 5); c) social media usage and purposes (7 questions); and one open-ended question: "Do you have other comments regarding use of social media as an educational tool to support learning?". The questions were evaluated by two HIM and two medical informatics specialists for content validity. Therefore, vague questions were reviewed and corrected. The reliability was assessed using the test–retest method (r= 0.79). The data were analyzed using the SPSS version 16.0.

3. Results

In this study, the majority of participants were female (71.3%) and single (80.2%), with average age of students being 21 years old. Among 19 social networks, Telegram (3.44 ± 1.27 out of 5), Instagram (1.83 ± 1.17), WhatsApp (1.49 ± 0.95), and YouTube (1.44 ± 0.86) were the most frequently used social networks, respectively. However, Snapchat (1.04 ± 0.22), Flickr (1.05 ± 0.31), Vin (1.07 ± 0.32), and Tagged (1.08 ± 0.35) were the least used social networks in the field for learning purposes among the students of the school of medicine as well as paramedical sciences school, respectively. Also, the students (medical and paramedical) used mobile phone (83 %), personal computer (29 %), tablet (21 %), and university computers (6.4 %) to connect to social networks, respectively. Both medical and paramedical sciences students used these networks at

home more than the university. The results showed that considering usage of social networks, most medical students ranked the top priority of using social networks for learning and research (62.3%), followed by social (52%) and entertainment (50.8%) purposes. Also, concerning paramedical sciences students, the ranks were as follows: entertainment (47.9%), social (50.4%), and educational and research (55.5%) purposes (Table 1).

Table 1. Use of social networks based on usage purposes

Purposes	Schools	First Priority	Second Priority	Third Priority
Learning and research	Medicine	152 (62.3)	40 (16.4)	52 (21.3)
	Paramedical Sciences	48 (20.3)	57 (24.2)	131 (55.5)
Social	Medicine	49 (20.1)	127 (52.0)	68 (27.9)
	Paramedical Sciences	72 (30.5)	119 (50.4)	45 (19.1)
Entertainment	Medicine	43 (17.6)	77 (31.6)	124 (50.8)
	Paramedical Sciences	113 (47.9)	65 (27.5)	58 (24.6)

According to Table 2, the majority of medical students (69.3%) and paramedical sciences students (48.3%) stated that they use social networks less than an hour per day for their educational activities and academic studies. Also, the majority of them stated that they used social networks less than an hour per day to connect with their classmates and friends for educational and learning purposes. Also, most medical students (52%) said that they spent less than an hour per day on social networking sites for learning purposes to communicate with their university professors.

Table 2. The rate of use of social networks for daily activities

Type of Activities	Schools	None	Less than 1 hours	1-2 hours	2-3 hours	3-4 hours	More than 4 hours
Educational and academic activities	Medicine	34 (13.9)	169 (69.3)	29 (11.9)	9 (3.7)	2 (0.8)	1 (0.4)
	Paramedical Sciences	41 (17.4)	114 (48.3)	55 (23.3)	17 (7.2)	7 (3.0)	2 (0.8)
Connect with university professors for learning purposes	Medicine	71 (29.1)	127 (52.0)	32 (13.1)	9 (3.7)	4 (1.6)	1 (0.4)
	Paramedical Sciences	170 (72.0)	51 (21.6)	9 (3.8)	5 (2.1)	1 (0.4)	0 (0.0)

According to Table 3, most medical students (35.7%) stated that the use of social networks led to a decrease in their grade point average (GPA). However, some paramedical sciences students (33.5%) stated that the use of social networks did not have any effect on their GPA.

Table 3. The effects of use of social networks on GPA

Schools	I do not know	It neither helps nor hurts my GPA	It hurts my GPA	It helps my GPA
Medicine	28 (11.5)	56 (23.0)	87 (35.7)	73 (29.9)
Paramedical Sciences	48 (20.3)	79 (33.5)	76 (32.2)	33 (14.0)

4. Discussion

The findings showed that students used more social networks for learning and research purposes, followed by entertainment. There was a difference between the priorities of usage among medical students and paramedical sciences students. Bosslet et al. found that more than 90% of medical students utilized online social media [14]. Also, Davis et

al. observed that educational use of social media is beneficial for all levels of education, and university students significantly use these media for learning and research purposes [15]. Also, several studies revealed that use of social media has increased for learning purposes among medical sciences students [16-18]. The findings of our study indicated that the most frequently used online social networks by students was Telegram and Instagram, respectively. The majority of students connected to social networks via mobile phones. Villanti et al. in their study on youth ages 18-24 years found that in general, most of them used Tumblr (85.5%), Vine (84.7%), Snapchat (81.7%), Instagram (80.7%) and Linkedin (78.9%), respectively. Also, this study revealed that most of them (86.9%) used smartphones, followed by computers or laptops (74.3%) and tablet (40.6%) to connect to the Internet and access to social networks [19]. Overall, our findings indicated that participants in the study believed that the use of social networks caused reductions in their grade point average (GPA). However, some studies such as Tess concluded that the time spent on social networking sites can have a positive effect on student achievement and success [20]. There are many studies that suggest there is a negative relationship between the use of social networks and GPA, and it can lead to decreased GPA [17, 20]. On the other hand, some studies suggest that the use of social networking sites does not have any impact on the students' GPA [3, 21]. This can be considered as a challenge of using social networks for learning purposes. Ajjan and Hartshorne in their research at one of the major Southeast Universities in the United States, reviewed the faculties' views on social networking. They concluded that social networks are useful communication tools used to improve students' satisfaction (32%) and enhance interaction among students. However, only 24% of the faculty members used social networks in their course [22]. Our study findings indicated that students participating in this study seldom used social networks to communicate with their university professors for learning purposes. With the advent of the Internet and social media, communications across the world have become easier and faster. Nevertheless, these technologies have negative consequences, with concerns [23] over trust to technology and respecting the rights of privacy being two important ethical principles in this regard. Although some professors use social networks for their lessons, attention to privacy is very important and there are concerns about it [7, 9]. Also, trust is an important concept in social networking sites, because communication with others requires prior relationships or mutual communication [24].

This study has some limitations: 1) some students who had been on leave during the study were not available; 2) some social networks had been filtered at the time of study in Iran including Facebook, Twitter, YouTube, Google Plus, Pinterest, Flickr, Tagged, Snapchat, Tumblr, and Vine due to some country's domestic politics; 3) some students did not have access to smartphones for installing social networking software; 4) students from other fields of Mashhad University of Medical Sciences such as pharmacy, dentistry, nursing, and health were not included. These limitations can constrain the generalizability of research results.

In conclusion, the findings of the study demonstrated that medical students have problems in using social networks for learning purposes. Familiarizing students with scientific social network such as ResearchGate and professional social network such as Linkedin (which may contain non-scientific posts), and creating dedicated social networks, instead of public social networks, specifically designed to achieve educational goals, can resolve many problems.

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