

Social networking in medical schools: medical student's viewpoint.

Kamran Sattar¹, Tauseef Ahmad¹, Hamza Mohammad Abdulghani¹, Shakir Khan², Jenness John¹, Sultan Ayoub Meo^{3*}

¹Department of Medical Education, College of Medicine, King Saud University, Riyadh, Saudi Arabia

²College of Pharmacy, King Saud University, Riyadh, Saudi Arabia

³Department of Physiology, College of Medicine, King Saud University, Riyadh, Saudi Arabia

Abstract

The rapid growth and availability of social networking websites have changed the medical students approach to learn and manage the information about their academic, personal and professional lives. The aim of this study was to evaluate the medical student's opinion on the using of social networking sites and learning and development of medical information. Self-administered, paper based questionnaire survey was conducted in the Department of Medical Education, College of Medicine, King Saud University, Riyadh, Saudi Arabia. 647 questionnaires were distributed among the first and second year male and female medical students. 432 (66.76%) of the students completed the questionnaire 246 (56.94%) were males and 186 (43.05%) were females. The questionnaire items on the students' perception were about the social networking sites (SNSs) usage and its positive and negative impacts. Among 432 medical students 312 (72.2%) students showed that social networking sites are the necessity of the everyday life [p=0.001]; helps in sharing the healthcare information 321 (74.3%) [p=0.001]; provide enough opportunities to promote academic medical activities 392 (90.7%) [p=0.02]; improve the quality of health care and communication 360 (83.3%) [p=0.01]; and SNSs is the fastest and easiest access for sharing and understanding the medical subject contents to promote activities among the fellow students 302 (69.9%) [p=0.001]. Medical students have a positive perception about the social networking websites and its role in medical professionalism. SNSs are being used extensively by the medical students to promote and enhance the knowledge. The most positive impact of SNSs was to facilitate the medical students to learn and understand the medical information; however, the study provides students' concerns related to the shared information security.

Keywords: Medical students, Health information, Social networking, Face book, Technology.

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Introduction

In the recent years, social networking sites (SNSs) have been commonly used with multiple attractive facilities in different forms of applications and interactions [1]. The social networking sites include Wikipedia, Twitter, Facebook, YouTube, and Blogger. The SNSs have created a revolution in medical and health services. Health care professionals recognize the importance that, medical science community is immediately living, learning, teaching and practicing medicine in the digital and communication era. SNS's is a form of electronic communication proposed to make online groups and communities where the students connect with others, share information, ideas and personal messages [2].

Online social networking sites provide several advantages to the medical students, SNSs facilitate in resolving the health care related professional issues [3]. SNSs are popular among the students specifically in connection with their education

purpose. Students are using the SNSs to communicate with their fellow students to share the subject-related information, to discuss the coursework and useful in learning. Presently, about more than 1.2 billion users around the world are using SNSs [4].

SNSs are extensively used within the domains of medicine and allied health sciences to share information about professional problems and clinical experiences. SNSs added a new dimension to current teaching and learning strategies, enhance knowledge and clinical skills in medical sciences [5-11]. In addition, there are some issues associated with the use of SNSs in medical community such as health services, pharmacy information, and communication with patients and ethical significances and addiction of use of SNSs [12].

The literature is lacking about the applications of SNSs among the medical students. Therefore, the aim of this cross-sectional study was to evaluate the medical student's opinion towards

using of social networking sites and learning and development of medical information.

Subjects and Methods

Study subjects

This comparative cross-sectional questionnaire-based study was conducted in the Department of Medical Education, College of Medicine, King Saud University, Riyadh, Saudi Arabia during the period August 2015 to Dec 2015. This study was based on an anonymous and self-administered questionnaire (paper based) with the items on the students' perception about SNSs usage and its positive and negative impacts (if any).

Instrument design and preparation

A well-established English-language questionnaire based on five-point Likert scale was designed and developed by an expert panel of medical educationists (authors) having huge experience for the construction of survey questionnaires. While working in the department of medical education pilot study was carried out by distributing the survey among 5 senior faculty members in the college and after a thorough discussion and careful revision, 3 items were modified for clear understanding of students and other 3 items were deleted from the study. The survey consisted of total 19 items, which were developed, based on the three main parameters i) for usefulness of medical information ii) personal innovativeness on SNSs iii) medical students security issues. The first part consisted of eight questions, for knowing the viewpoint of medical students as what opinion they have about the usefulness of medical information provided and shared via SNSs.

The Second part dealt with four questions targeting to explore what actually the student's personal innovativeness is carried out while using SNSs. In this part, the students were asked to respond to the items like, I actively seek new ways to use social networking sites in my practice, I participated in an online medicine community in social networking sites and I usually find out about new social networking sites to connect with our medical friends. The third part was formed of seven questions to know student's opinions about the privacy & the security concerns while using SNSs. These all items from above 3 parameters were answered by the students on a 5-point's Likert scale separated into; strongly agree (5), agree (4), do not know (3), disagree (2), strongly disagree (1).

Data collection

For the exploration of students' perceptions on social networking sites (SNSs) a total of 647 questionnaires were distributed among the first and second year male and female medical students. 432 (66.76%) of the students completed the questionnaire 246 (56.94%) were males and 186 (43.05%) were females. The questionnaire items on the students'

perception were about the social networking sites (SNSs) usage and its positive and negative impacts.

Data analysis

Data were coded and entered into the computer, Microsoft Excel Software and analyzed using SPSS version 21.0 (IBM Corporation, Armonk, NY, USA) statistical software. The average score for each student was calculated on a 5-point's Likert scale. The 5-point Likert scale responses were combined into three different categorical variables 'agree (strongly agree plus agree)', don't know, 'disagree (strongly disagree plus disagree)'. Chi-Square test was used to measure the associations between the different categorical outcome variables (agree, no idea and disagree).

Ethical approval

All the participants were verbally informed about the aims and objectives of the study. The information on the items included in the questionnaire was also explained to all participants. Throughout the study, participants' anonymity was assured and maintained by assigning each student with a separate code number for the later analysis. The Institutional Review Board, Ethical Committees, Colleges of Medicine, King Saud University approved the study.

Results

A total of 647 questionnaires were distributed, 432 (66.76%) of students completed the questionnaire, from them 246 (56.94%) were males and 186 (43.05%) were females. Table 1 summarizes the students' perception towards the SNSs usefulness of medical information, which included 8 items. The overall responses of all 8 item usefulness of medical information hybrid mean (SD) was 4.09 (0.34) that showed the students frequently using SNSs and enjoy the services. Most of the students agree 420 (97.2%) SNSs help them to meet class friends easily among them 238 (96.7%) male and 182 (97.8%) female agree and overall mean (SD) was 4.72 (0.63). However, there is no statically significant correlation observed between male and female students ($p=0.61$). 61.8% of the males students and 86% of the female students reported that the most of the SNSs has become a necessity today and correlation shown between males and females was highly significant ($p \leq 0.0001$).

Furthermore 74.3% students agreed that the sharing medical and healthcare information with others is easy (66.3% male and 84.9% female agreed) that is highly significant ($p \leq 0.0001$). Similarly most of the students (85% of the male and 90.3% of the female) reported that SNSs help in finding job opportunities and findings were statically significant ($p \leq 0.0001$). Regarding the SNSs providing good opportunities to medical students to promote their academic activities and knowledge 90.7 % students agreed about this among them 93.5% male and 87.1% female. Male and female both agreed about SNSs capacity to improve the healthcare quality (87%

male and 78.5% female). The students reported that SNSs is the best source to get the study materials, videos and other information (Table 1).

Table 1. Student's perception to SNSs n= 432 (for usefulness of medical information).

Questions	Mean(SD)	Categories**	Participants n (%)	Male n (%)	Female n (%)	P-value*
Do you think Social networking site help to meet your class friends easily?	4.72 (0.63)	Agree	420 (97.2)	238 (96.7)	182 (97.8)	0.61
		Neutral	1 (0.2)	1 (0.4)	0 (0)	
		Disagree	11 (2.5)	7 (2.8)	4 (2.2)	
Do You think use of social networking site is a necessity today?	3.77 (1.31)	Agree	312 (72.2)	152 (61.8)	160 (86)	<0.001
		Neutral	10 (2.3)	10 (4.1)	0 (0)	
		Disagree	110 (25.5)	84 (34.1)	26 (14)	
Do you think sharing medical and healthcare information to others is very easy in social networking sites?	3.80 (1.31)	Agree	321 (74.3)	163 (66.3)	158 (84.9)	<0.001
		Neutral	2 (0.5)	2 (0.8)	0(0)	
		Disagree	109 (25.2)	81 (32.9)	28 (15.1)	
Do you think social networking sites, shared current information regarding medical science	4.53 (0.71)	Agree	414 (95.8)	260 (97.6)	174 (93.5)	0.39
		Neutral	0 (0)	0 (0)	0 (0)	
		Disagree	18 (4.2)	6 (2.4)	12 (6.5)	
Do You think these social networking sites provides enough opportunities to medical students to promote themselves and their activities	4.12 (0.84)	Agree	392 (90.7)	230 (93.5)	162 (87.1)	0.02
		Neutral	10 (2.3)	2 (0.8)	8 (4.3)	
		Disagree	30 (6.9)	14 (5.7)	16 (8.6)	
Do you think Social Networking Site help to finding job opportunities	3.96 (0.77)	Agree	377 (87.3)	209 (85)	168 (90.3)	<0.001
		Neutral	24 (5.6)	23 (9.3)	1 (0.5)	
		Disagree	31 (7.2)	14 (5.7)	17 (9.1)	
Do You think social networking site improve the quality of healthcare and its communication.	4.01 (1.05)	Agree	360 (83.3)	214 (87)	146 (78.5)	0.01
		Neutral	3 (0.7)	0 (0)	3 (1.6)	
		Disagree	69 (16)	32 (13)	37 (19.9)	
Do you think social networking site help in study material like lecture, notes, video	3.88(1.23)	Agree	338 (78.2)	187 (76)	151 (81.2)	0.32
		Neutral	1 (0.2)	1 (0.4)	0 (0)	
		Disagree	93 (21.5)	58 (23.6)	35 (18.8)	

Overall mean score 4.09(0.34) *Chi-square test, **the 5 point liker scale responses were combined into 3 different categorical variable; agree (strong agree plus agree), neutral, disagree (strongly disagree plus disagree).

Table 2 summarizes the perception of student's personal innovativeness on SNSs, which was addressed within the questionnaire. The students' responses showed that they were satisfied to use and innovate the SNSs for personal information sharing. The overall 4 questions' mean score was 3.81 (0.54). Moreover, 69.9% agreed that SNSs allow them to have the fastest and the easiest access to a wider audience for sharing and understanding the subjects course contents, which in turn

helps them learn the course better, among the total agreed students 93.5% were male and 38.7% were female, showing that male participants are using SNSs more than females for this same purpose (p<0.0001). However, 96.5% students actively use the SNSs (97.2% male agreed and 95.7% female agreed). There is no group difference found between the male and females (p=0.71). Many students (75.7%) participated in

an online medical community in SNSs, there is no statistical significance between the males and females ($p=0.22$).

Table 2. Student's perception to SNSs $n=432$ (for personal innovativeness on a social networking sites).

Questions	Mean(SD)	Categories**	Participants n (%)	Male n (%)	Female n (%)	P-value*
SNSs allow me for fastest and easiest access for sharing and understanding the college subjects/courses with a wider audience (fellow students)	3.56 (1.25)	Agree	302 (69.9)	230 (93.5)	72 (38.7)	<0.001
		Neutral	6 (1.4)	3 (1.2)	3 (1.6)	
		Disagree	124 (28.7)	13 (5.3)	111 (59.7)	
I actively seek new ways to use social networking sites in my practice.	4.71 (0.67)	Agree	417 (96.5)	239 (97.2)	178 (95.7)	0.71
		Neutral	2 (0.5)	1 (0.4)	1 (0.5)	
		Disagree	13 (3)	6 (2.4)	7 (3.8)	
I participated in an online medicine community in social networking sites	3.56 (1.04)	Agree	327 (75.7)	179 (72.8)	148 (79.6)	0.22
		Neutral	4 (0.9)	2 (0.8)	2 (1.1)	
		Disagree	101 (23.4)	65 (26.4)	36 (19.4)	
I always find out about new social networking sites to connect our medical friends	3.31 (1.38)	Agree	284 (65.7)	163 (66.3)	121 (65.1)	0.95
		Neutral	2 (0.5)	1 (0.4)	1 (0.5)	
		Disagree	146 (33.8)	82 (33.3)	64 (34.4)	

Overall mean score 3.78(0.62). *Chi-square test, **the 5 point liker scale responses were combined into 3 different categorical variable; agree (strong agree plus agree), neutral, disagree (strongly disagree plus disagree).

Table 3 summarizes the student's perception about security issues in SNSs. The overall mean (SD) score of all 7 questions were 3.03 (0.58). Only 39.1% were males, 59.3% females, 12.4% students agreed on the SNSs potential to protect the personal information and 60.4% disagreed. Among them 40.2% male and 87.1% female did not agree ($p \leq 0001$). The female students were more concerned about security related to the SNSs usage. Most of the students 73.6% disagree that the SNSs do not use their personal information for any other purpose, the mean score was 2.19 (1.35) and among them 68.7% were male and 80.1% were female, that is also

significant as the $p=0.02$. When asked "if they would continue to use it regardless of its privacy policy if it is popular", the results found that majority of respondents, 53.5% disagreed (male 54.9% and females 51.6%), however, the overall mean score was 2.90 (1.26) that is marginally significant ($p=0.059$). Furthermore, on the item "how much the financial information on SNSs is safeguarded", the 78.7% students' agreed on it and females agreed more than males as females score was (90.3%) than the male score (69.9%), this variance was highly statically significant ($p \leq 0.0001$).

Table 3. Student's perception to SNSs $n=432$ (for students privacy and security).

Questions	Mean (SD)	Categories**	Participants n (%)	Male n (%)	Female n (%)	P-value*
Do You Think Your personal information are protected on social networking site	2.53 (1.37)	Agree	169 (39.1)	146 (59.3)	23 (12.4)	<0.0001
		Neutral	2 (0.5)	1 (0.4)	1 (0.5)	
		Disagree	261 (60.4)	99 (40.2)	162 (87.1)	
Do You trust on social networking site not use your personal information for any other purpose	2.19 (1.35)	Agree	110 (25.5)	74 (30.1)	36 (19.4)	0.027
		Neutral	4 (0.9)	3 (1.2)	1 (0.5)	
		Disagree	318 (73.6)	169 (68.7)	149 (80.1)	

		(73.6)	(68.7)	(80.1)		
You worry that you will be embarrassed by information others post about on it	3.25 (1.42)	Agree	246 (56.9)	159 (64.6)	87 (46.8)	<0.0001
		Neutral	5 (1.2)	5 (2)	0 (0)	
		Disagree	181 (41.9)	82 (33.3)	99 (53.2)	
You would continue to use it regardless of its privacy policy if it is popular	2.90 (1.26)	Agree	191 (44.2)	102 (41.5)	89 (47.8)	0.059
		Neutral	10 (2.3)	9 (3.7)	1 (0.5)	
		Disagree	231 (53.5)	135 (54.9)	96 (51.6)	
You would continue to use it regardless of its privacy policy if it helps you stay in touch with your friends	3.22 (1.27)	Agree	255 (59)	137 (55.7)	118 (63.4)	0.254
		Neutral	2 (0.5)	1 (0.4)	1 (0.5)	
		Disagree	175 (40.5)	108 (43.9)	67 (36)	
In general how active are you in safeguarding the financial information submitted by you on social networking sites	4.01 (1.26)	Agree	340 (78.7)	172 (69.9)	168 (90.3)	<0.0001
		Neutral	5 (1.2)	2 (0.8)	3 (1.6)	
		Disagree	87 (20.11)	72 (29.3)	15 (8.1)	
Everyone concerned about the privacy of the lifestyle related information like photos, Blogs, history that you have submit on social networking sites	3.15 (1.31)	Agree	237 (54.9)	133 (54.1)	104 (55.9)	0.73
		Neutral	4 (0.9)	3 (1.2)	1 (0.5)	
		Disagree	191 (44.2)	110 (44.7)	81 (43.5)	

Overall mean score 3.03(0.58). *Chi-square test, **the 5 point liker scale responses were combined into 3 different categorical variable; agree (strong agree plus agree), neutral, disagree (strongly disagree plus disagree).

Discussion

The present study addressed three important issues related to the use of SNSs by first and second year medical students at College of Medicine, King Saud University. The first issue was about usefulness of medical information. Secondly, finding the students personal innovativeness during usage of the SNSs. The third issue was the security and privacy within SNSs, which showed students' response to privacy concerns and their wider scope for the engagement with the information they make. We found that, large number of students agree that SNSs help them to contact and access their class fellows and they also prefer to use SNSs for social interaction, particularly to maintain existing academic relationships. McGowan et al. [13] reported that 24.1% of physicians use social media every day

to search medical and healthcare information. We found a higher percentage of students 74.3% shared and explored medical information. Aikens et al. [14] reported that, SNSs provides enough opportunities to promote students on the basis of their learning activities, integration of new information and learning experiences may improve academic outcomes. In our study, 90.7% medical students placed importance on the activities factor to use SNSs which was 93.5% from male 87.1% from female agreeing on the levels of self-projection and also their activities. The previous study conducted by Lefebvre et al. [15] found that the use of digital social networks for sharing and discussing personal health information raises over the privacy and confidentiality of information. We found that 95.8% of students used SNSs to sharing current medical related information did not have any

group differences between male and female 97.6% male and 93.5% female agreed ($p=0.39$). According to Kukreja et al. [16] the Food and Drug Administration (FDA) figuring out to set a direction for the pharmaceutical industry concerning its regulatory scope over the use of SNSs and the provision of social media related sites. With the elaborating presence of healthcare institutions and its services the government agencies using social networking sites as a mechanism for communication, future medical related information. Our results inscribed same opinion about healthcare improvement as 83.3% of our students agreed that the “SNSs help to communicate medical related information and by using SNSs the healthcare quality is also improved and social media provides significant opportunities for healthcare medical students ($p=0.01$). Furthermore majority of medical student’s responded to use social networking sites considering that SNSs allow them to have the fastest and the easiest access for a wider audience for sharing and understanding the subject course contents which in turn helps them learn the course better, here (69.9%), male students (93.5%) were more likely to do so than the female students (38.7%), that show highly statically significant ($p \leq 0.0001$) group differences between male and female students (Table 2). According to Purcell et al. [17] 96% of the participants agreed that, “today’s digital technologies allow students to share their work with a wider and more varied audience.

According to Young and Quan-Haase [18] the security and privacy concern for Internet and SNSs was negatively related to users’ information revelation practices. Our results have shown similarity as there were 60.4% students who agreed that the personal information is not protected in SNSs, furthermore 87.1% female students were more concerned about privacy in social networking sites. In an abstraction belonging to SNSs, this inclines to develop roughly the topic of identity deception based on users’ posted in a public place as an advertisement of information on their profiles or the SNS itself is permitting unrestricted “default” access. Our results showed that 56.9% of students agreed with the same finding. In the previous literature, the level of security and privacy concern on SNSs was combined reaction. Some researchers discovered that students did not concern on self-limiting their profile visibility. Only 11% of 339 students limiting the access to their profiles. According to Kolek et al. [19] the awareness of privacy settings does not necessarily mean that they are used. Our study showed same mixed reaction on it, 44.2% of students out of 432 regardless of its privacy policy on the basis of it is popular and 59% students regardless of its privacy policy due to it helps to touch with friends and relatives.

Limitations

The present study has a few limitations. First, the findings are only based on perceptions of students in College of Medicine, King Saud University. Second, the result revelation is based on a limited number of survey questions.

Conclusion

The present study provides an important overview of the students' concerns with usage of SNSs as they play a part and their usage is increasing in the day-to-day lives of medical students. The popularity of the social networking sites has made it easier than ever for students to reveal personal information and share the medical information with their class fellows and friends. SNSs also play a vital role in health sciences and may lead to a future where patients and physicians play a greater role in healthcare services. In the present study, students reported many benefits related with the usage of SNSs fulfilling their needs, including provision for letting them get connected with their colleagues, family member, this also provides opportunities for sharing, information about academics and healthcare information. It is concluded that the usage of SNSs enables the medical students to remain connected with friends and family. It is notable that SNSs provide a platform to the students for the enhancement of their learning and development of education, opportunities and provision for sharing the medical and health care information. The study also finds the students' concern about privacy and security related to SNSs use.

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***Correspondence to:**

Prof. Sultan Ayoub Meo,
Department of Physiology,
College of Medicine,
King Saud University,
Kingdom of Saudi Arabia
Email: sultanmeo@hotmail.com / smeo@ksu.edu.sa