

The prevalence and factors associated with Facebook addiction among the sixth year medical students of Umm Al Qura University in Makkah, 2016

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Abstract: Background: The awareness of internet addiction and recently SNSs (Social Networking Sites) addiction started to draw the attention as a result of the enormous spread of smartphones and the availability of internet services which keep the user always online. **Objectives:** To estimate the prevalence and evaluate the associated factors of Facebook addiction among the sixth year medical students of Umm Al Qura University in Makkah, 2016. **Subjects and methods:** A cross-sectional study was conducted among sixth-year medical students of Umm Al Qura University, Makkah. Self-administered questionnaires were used for data collection. They included demographics and the 6-items version of the BFAS (Bergen Facebook Addiction Scale) to identify Facebook addiction. **Results:** The study included 137 medical students. Their age ranged between 21 and 28 years with a mean of 23.0 and (\pm SD) of (\pm 0.9) years. Slightly more than half of them (50.4%) were males. All students ever used Facebook and used it in the last year. Almost two-thirds of students (62.7%) checked their Facebook account daily whereas 5.1% checked it within a one-hour interval. Overall, based on the BFAS cut-off level, Facebook addiction was identified among 13 students representing 9.5% of the participants. Addiction was more reported among older students, $p=0.038$ and those who spent between 21 and 40% of their Facebook time in work-related issues, $p=0.034$. **Conclusion:** Relatively a higher rate of Facebook addiction was reported among medical students, Umm AlQura University compared to most of the reported rates elsewhere. The age and percentage of work-related time spent on Facebook were the only factors significantly associated with Facebook addiction.

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1. Introduction

Facebook, one of the most successful SNSs was launched by the founder Zuckerberg for the first time in February 2004 as a closed SNS for Harvard students(1). The number of students signed up to Facebook within the first day of launching the website was 1200 Harvard students(2). The total number of Facebook users by the end of September 2015 was 1.01 billion active daily users, about 83.5 % of them outside USA and Canada(3).

The number of Facebook users in Saudi Arabia by 2013 was 7.8 million, higher than Twitter, Linked In and YouTube(4).

Facebook and other SNSs are used by a wide variety of users worldwide for several reasons including social communication, chatting, posting, uploading pictures, sharing events, and for more important purposes such as learning and job organization.

The awareness of internet addiction and recently SNSs addiction started to draw the attention as a result of the enormous spread of smartphones and the

availability of internet services which keep the user always online(5).

In general, addiction is defined as a chronic state of dysfunction of the brain as a result of long-term use or exposure to a substance or behavior with resulting impairment in the biological, psychological, and social functions(6). The addict manifests difficulty in, behavioral impairment, and lack of awareness of consequences(7). A lot of debate is there regarding whether the term addiction is applicable in the case of SNSs. However, Griffiths argues that any behavior meeting the six criteria of addiction (salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse) is an addictive one(8).

Morahan-Martin and Schumacher (2000) define the internet addiction as the excessive usage of the internet and the inability to control this usage which severely harms a person's life(9). Beard and Wolf (2001), define it as the extreme use making users at risk to experience difficulties in their domestic, social, professional, educational and/or psychological life(10).

Internet addiction is categorized by Young into five main categories, computer addiction, search addiction, shopping addiction, pornography addiction, and social network addiction. The limited number of studies conducted so far on this topic show that SNS-addiction is associated with health-related, academic, and interpersonal problems/issues(11).

The aim of our study was to estimate the prevalence and evaluate the associated factors of Facebook addiction among the sixth year medical students of Umm Al Qura University in Makkah, 2016.

2. Patients and Methods

This study was a cross-sectional study carried out in Makkah city included 307 candidates. This study included all males and females sixth-year medical students of the college of medicine of Umm Al Qura University, Makkah.

Ethical Approval

This study was approved from regional research center and director of primary health care in Makkah. Each participants gave a verbal consent prior to recruitment and confidentiality was assured for each situation.

Study sample size calculation and method of sampling

The minimum number was 137 individual. The calculation of the sample size was done by using Raosoft sample size calculator with assuming of 95% confidence level, 5% sampling error, and 50% probability of prevalence. The required participants were selected by simple random sampling from the students' name lists (list for males and list for females). Data were collected through a self-administered questionnaire. The questionnaire was distributed to each participant's hand to hand by the researcher for the assurance of confidentiality. Data analysis for our study included descriptive statistical methods by using SPSS version 25.

Data collection tools

Self-administered questionnaires were used for data collection. The first page is labeled with the

research title and researcher name and contacts. The second page and after, cover the following sections:

- Demographics: Name (optional), age, sex, marital status, living status, smoking status, height, and weight.

- Facebook use: the 6-items version of the BFAS (Bergen Facebook Addiction Scale)(12)in a Likert scale was used to determine the Facebook addiction status among the participants. The participant is defined as an addict if he/or she chooses the response number 3 (sometimes) in 4 or more of the 6-items in the BFAS.

The questionnaire was adapted with a kind permission from the author of the article titled "Social Networking Addiction among Health Sciences Students in Oman", published in SQU in 2015(13).

Data collection

The data were collected over a period of one month by the researcher with the help of the female group leader. The questionnaires were distributed to the students after they finish their academic sessions. The questionnaires were collected on the same day. The data were verified by hand then coded and entered into a personal computer.

Pilot study

A pilot study was conducted among 10% (14 participants) of the population of interest, and they were excluded from the main study.

Data Analysis

Data analysis was carried out using statistical package for the social sciences version 22 (SPSS, 22) software. Frequency and percentages were applied to describe categorical variables whereas arithmetic mean and standard deviation were applied to describe continuous variables. Chi-square test was used to test for the association between Facebook addiction and categorical variables whereas student's t-test was applied to compare the age of Facebook addicts with that of non-addicts. P -value < 0.05 was considered for significance.

3. Results

Demographics

Table 1: Demographic characteristics of the sixth year medical students of Umm Al Qura University, Makkah

Demographics	Categories	Number	Percentage
Gender	Male	69	50.4
	Female	68	49.6
Marital status	Single	118	86.1
	Married	19	13.9
Living status	Alone	15	10.9
	With family	116	84.6
	With relatives/friends	4	3.0
	In the dormitory	2	1.5

The study included 137 medical students. Table 1 presents their demographics. Their age ranged between 21 and 28 years with a mean of 23.0 and (\pm SD) of (\pm 0.9) years. Slightly more than half of them (50.4%) were males. The majority of the students (86.1%) were singles and living with their families (84.6%). The prevalence of current smoking was 15.4% whereas that of ex-smoking was 0.7%. Regarding body mass index, obesity with its all classes was present among 12.7% of the students whereas underweight and overweight were reported among 11.2% and 29.1% of them, respectively.

Use of Facebook

Regarding Facebook use, all students ever used Facebook and used it in the last year. Table 2 shows that 40.1% of students spent 20% or less of their time on Facebook in work-related issues whereas 20.5% spent >80% of their time on Facebook in work-related tasks. Overall, based on the BFAS cut-off level, Facebook addiction was identified among 13 students representing 9.5% of the participants (see Table 2).

Factors associated with Facebook use

Multiple factors have been tested using t-test; age, gender, marital status, smoking, BMI and living status. It has been found that only age was statistically significant in addicted participants (see Table 3).

Table 2: Detailed Facebook usage among the sixth year medical students of Umm Al Qura University, Makkah.

	Categories	Number	Percentage
Percentage of work-related time spent on Facebook	0-20	55	40.1
	21-40	23	16.8
	41-60	26	19.0
	61-80	5	3.6
	81-100	28	20.5
Frequency of checking Facebook account	Within the hour	7	5.1
	Every 2 hours	9	6.6
	Daily	86	62.7
	Every 2 days	22	16.1
	Weekly	6	4.4
	>weekly	7	5.1

Table 3: Factors associated with Facebook addiction

		Facebook addiction		p-value (Student's t-test)
		Yes N=13 Mean (SD)	No N=124 Mean (SD)	
Age	Age (years)	23.5 (1.7)	23.0 (0.8)	0.038*
Gender	Male (n=69)	8 (11.6)	61 (88.4)	0.397
	Female (n=68)	5 (7.4)	63 (92.6)	
Marital Status	Single (n=118)	11 (9.3)	107 (90.7)	0.567
	Married (n=19)	2 (10.5)	17 (89.5)	
Smoking	Never (n=114)	10 (8.8)	104 (91.2)	0.352
	Ever (n=22)	3 (13.6)	19 (86.4)	
BMI	Underweight (n=15)	1 (6.7)	14 (93.3)	0.785
	Normal (n=63)	5 (7.9)	58 (92.1)	
	Overweight (n=39)	4 (10.3)	35 (89.7)	
	Obesity class I (n=10)	2 (20.0)	8 (80.0)	
	Obesity class II (n=5)	0 (0.0)	5 (100)	
Living status	Obesity class III (n=2)	0 (0.0)	2 (100)	0.060
	Alone (n=15)	4 (26.7)	11 (73.3)	
	With family (n=116)	8 (6.9)	108 (93.1)	
	With relatives/ friends (n=4)	1 (25.0)	3 (75.0)	
	In the dormitory (n=2)	0 (0.0)	2 (100)	

*p value below 0.05 is regarded significance

Facebook addiction, time spent and frequency of checking Facebook account

It is shown that percentage of work-related time spent on Facebook was significantly associated with

Facebook addiction, $p=0.034$. However, the frequency of checking Facebook account was not significantly associated with Facebook addiction as shown in table 4.

Table 4: Facebook addiction, time spent and frequency of checking Facebook account

	Facebook addiction		χ^2	p-value
	Yes N=13 N (%)	No N=124 N (%)		
Percentage of work-related time spent on Facebook				
0-20 (n=55)	2 (3.6)	53 (96.4)	10.40	0.034
21-40 (n=23)	6 (26.1)	17 (73.9)		
41-60 (n=26)	3 (11.5)	23 (88.5)		
61-80 (n=5)	0 (0.0)	5 (100)		
81-100 (n=28)	2 (7.1)	26 (92.9)		
Frequency of checking Facebook account				
Within the hour (n=7)	1 (14.3)	6 (85.7)	9.27	0.099
Every 2 hours (n=9)	3 (33.3)	6 (66.7)		
Daily (n=86)	8 (9.3)	78 (90.7)		
Every 2 days (n=22)	0 (0.0)	22 (100)		
Weekly (n=6)	0 (0.0)	6 (100)		
>weekly (n=7)	1 (14.3)	6 (85.7)		

4. Discussion

Facebook has an impact on the life of its users, and some people have developed an addiction to its use(14). Over past few years, Facebook has become a central, unavoidable medium for social interactions, most of its users don't realize the negative impact of Facebook on their life because they are already addicted to it(15). Since Facebook use is increasing very rapidly, this study was conducted to assess the rate and determinants of Facebook addiction among medical students.

This study reported that all of the students had ever used Facebook in the last year, which is similarly reported by Reda et al. among a group of Egyptian adolescents(16). The same also had been observed recently in a study carried out among Egyptian and Malaysian medical students(15).

In the present study, 9.5% of the medical students had Facebook addiction based on the cut-off value of BFAS(12). This figure is slightly higher than that reported among medical students in Białystok, Poland (5%)(14)and Bengaluru, India (7.25%) using the Facebook Addiction Test (FAT)(17).

Very low rates of Facebook addiction were reported in Egypt (2.7%),(15)using Young Internet Addiction Test (YIAT) and Also, in another Indian study (1.2%)(18). In other studies carried out in the Middle East, the prevalence of internet addiction varied between 1 and 12%(19–21). Higher rates

(13.2%) were reported in a study held in Menofia University, Egypt(22). Among German university students (2013), the prevalence of Facebook addiction was 8.6%(23)while among Philippine university students (2013), it was 4.2%(24), while among Turkish undergraduate students (2011), 7.6% of students stayed on Facebook more than 3 hours a day(25). Variation in rates observed between the present study and others can be attributed to the different criteria used to identify addiction.

Lusk reported in his study that one of the positive features of Facebook is its utilization for academic assistance and support(26). In the current study, 20.5% of medical students claimed that they spent more than 80% of their time on work-related issues. In another similar study carried out among Egyptian medical students, 72.1% stated that they used the internet for studying issues(15). Also, Tayeeh reported that 72.6% of Egyptian students used the internet as a source of information(27).

Daily use of Facebook was reported by 62.7% of the students. In another similar study, 58% of Egyptian students and 72.6% of Malaysian ones reported using Facebook daily(15). Farooqi et al(28). reported daily use in 64% of medical students in a study carried out among students of Dow University of Health Sciences in Pakistan. Despite that the population of this study and the population of the others are medical students, variations in the daily

access to Facebook between students from different countries might be attributed to the variable lifestyles, daily activities, access to internet services, and other social variables.

The present study revealed no difference between male and female students regarding Facebook addiction. Others reported the same finding(19–28). However, in another study carried out in Egypt(15), male students showed a higher prevalence of internet addiction than females. Also, Reda(16), Mok(29) and Al-Saif(30) reported higher prevalence among male students.

The present study revealed that Facebook addiction was significantly associated with student's age and percentage of work-related time spent on Facebook. Regarding the association between Facebook addiction and frequency of checking Facebook account, a higher rate of addiction was reported among students who check their Facebook account daily compared to none among those who were checking account every two days or weekly. However, the association between Facebook addiction and frequency of checking Facebook account did not reach significance level. In a study conducted among Philippine university students, most of the Facebook addicts stayed online for up to 3.5 hours a day, while others stayed online for up to 7 hours a day(24). Also in a study carried out in Bangkok, Thailand Facebook addicts stayed online 4.7±3.8 hours per day during the weekdays(31). The significant association between the daily use of Facebook and Facebook addiction may represent an area for intervention to help redirecting and correcting the daily use of Facebook by the students to more helpful, safe, and beneficial online activities.

Regarding the percentage of work-related time spent on Facebook, the highest rate of Facebook addiction was reported among students who spent between 21-40% of their time spent on Facebook in work-related tasks. This finding means that Facebook addiction is mainly related to none work-related online activities, such as chatting, sharing life experiences and ideas, tracking and updating information about popular events and uploading/sharing videos and photos.

In the present study, Facebook addiction was significantly more frequent among older students. This finding contradicts what has been mentioned by Jafarkarimi et al. (2016) that the highest rate of Facebook addiction in Malaysia was among students less than 20 years old. This difference between the two studies is difficult to be explained(32).

The study has some important limitations. First, the study was carried out among students in the sixth year at one university in the Kingdom which could affect the generalizability of results. Second, its cross-

sectional design does not permit the causal relationship between dependent and independent variables. Despite these limitations, the study included full sample size and utilized a simple valid questionnaire.

In conclusion, relatively a higher rate of Facebook addiction was reported among medical students, Umm Al-Qura University compared to most of the reported rates elsewhere. The age and percentage of work-related time spent on Facebook were the only factors significantly associated with Facebook addiction.

Conflict of interest

There is no conflict of interest.

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