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Original Research Article.

Prevalence and Risk Factors of Nomophobia among Undergraduate Students of Health Sciences Colleges at King Khalid University, Abha, Saudi Arabia

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ABSTRACT

Background: Smartphones constitute an important part of life, especially among the younger population. "Nomophobia", or no mobile phobia is on the rise worldwide.

Objective: To assess prevalence and associated risk factors of severe nomophobia among students of Health Sciences colleges at King Khalid University (KKU).

Methods: A cross sectional study was conducted at KKU, Abha City, Saudi Arabia. Following a simple random sample, 622 undergraduate Health Sciences Colleges students were selected. The validated 20-item Nomophobia Questionnaire (NMP-Q) was used for data collection. The total score for each participant was graded as "absent nomophobia" (scores of 21-59), "mildnomophobia" (scores of 60-99), or "severe nomophobia" (scores ≥ 100).

Results: Participants' age (Mean±SD) was 21.8±2.0 years. Males constituted 48.1%. Almost one fourth of students (22.2%) had severe nomophobia. All students had smartphones. Grades of nomophobia differed significantly according to students' age groups (p=0.032), with higher percentages of severe nomophobia among older students, and according to students' college (p=0.003), with highest percentage of severe nomophobia among students of Applied Sciences college and lowest among medical students (34.4% and 16.3 %, respectively). Internet users and those who use their smartphones for 4 hours or more daily had significantly higher prevalence of severe nomophobia.

Conclusions: Severe nomophobia is common among students of Health Sciences colleges at KKU. Risk factors include older age, students at Applied College Sciences, Internet access and prolonged daily use of mobile phones. Health education should be targeted to university students to prevent possible harmful effects of mobile phones.

Keywords: Nomophobia, Mobile Phone Addiction, Smartphones, Prevalence, Risk Factors.

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INTRODUCTION

With every passing day, technology is overtaking our daily lives. The phone, computer, tablet and other high-tech devices have become not just an object, but for many a best friend to the extent that some people may suffer from anxiety if they lose their phone. We rely on it to do everything, from checking bank balances to investing, and even sharing photos of the family. We can currently carry out most daily tasks, right from the palm of our hand.[1]

Information and communication technologies are becoming an increasingly indispensable part of our lives.[2] With the production of relatively inexpensive mobile phone devices, we are now living in a "mobile" age in which mobile information and communication technologies are being rapidly adopted. Nowadays, smartphones are the latest evolution of the mobile information and communication technologies.[3]

The smartphone is a mobile phone that performs many of the computer functions. It typically has a touch screen interface, internet access, and an operating system capable of running downloaded applications.[4] The number of mobile-cellular subscriptions has almost reached the total world population. Smartphones are particularly popular among young adults. In fact, college students are regarded as the early adopters of smartphones.[5] The popularity of smartphones among college students is ascribable to the numerous features and functionalities they provide. Smartphones make it possible to perform a variety of daily tasks in one device, e.g., calling and texting people, checking and sending email messages, scheduling appointments, surfing the Internet, shopping, social networking, searching for information on the Internet, gaming, entertainment, etc.[6]

Since smartphones also enable people to fulfill needs, such as learning, individual capability, safety, and human relationships. However, while smartphones can provide apparent benefits and help people satisfy their basic needs, it may also provoke several problems associated with smartphone use.[7]

The use of mobile phones has been linked with several health hazards.[8] It has been reported that 44.4% of the medical students attributed their headaches, decreased concentration, memory loss, hearing loss, and fatigue to the use of their mobile phones.[9] There has been a 4-fold increase in the risk of property damage-only crashes and injury crashes was associated with phone use. This increased risk was similar for hands-free and hand-held phones.[10] It has been suggested that pathological use of technology may exist in the form of techno-dependence.[11] Nevertheless, there has been an increasing concern regarding problematic mobile phone use, and accordingly, it has been publicized extensively as an emerging social problem.[12]

Smartphones may cause compulsive checking habits[3], frequently leading to compulsive usage and increased distress, which can be addictive.[5] Another problem exacerbated by smartphones is "nomophobia", (i.e., no mobile phone phobia), or mobile phone addiction. It is the fear of being out of mobile phone contact. In other words, it is a mobile phone addiction.[13]

Nomophobia is a relatively new concept. Therefore, a limited number of scholarly accepted and empirical treatment methods are available. The proposed treatments primarily consist of a combination of psychotherapy and some pharmacological interventions. Cognitive-behavioral psychotherapy has been suggested as an effective treatment for mobile phone addiction, in which patients are trained to undergo controlled mobile deprivation.[14]

Although there has been an increasing interest in investigating the problems emanating from smartphone use, research studies about nomophobia have been very scarce.[15] Therefore, the aim of this study was to identify the magnitude of nomophobia among King Khalid College of Medicine students.

SUBJECTS AND METHODS

This study was conducted during the Academic years 2016-2017. A total of 622 Health Sciences Colleges students at King Khalid University, Abha City, Saudi Arabia. A simple random sample was followed for including the study sample.

The researchers designed a data collection tool which included students' personal characteristics (age, gender, scholastic year, GPA), mobile phone use and the validated 20 items Nomophobia Questionnaire (NMP-Q).

Participants responded to each of the 20 items NMP-Q on a 1-7 scale (i.e., strongly disagree = 1 to strongly agree = 7). The 20 NMP-Q scores were summed up.Then, the total score for each participant was graded as "no nomophobia" (scores of 21-59), "mild nomophobia" (scores of 60-99), or "severe nomophobia" (scores ≥ 100).Those with "severe nomophobia" were considered as "mobile phoneaddicts".[16]

All the necessary official permissions were fully secured before data collection. Written informed personal consents were obtained from participants prior to distribution of the data collection sheets. Students with severe nomophobia were advised by a family and community medicine physician and were referred to a consultant psychiatrist.

Table 1: Personal characteristics of study sample (n=622)

Personal characteristics	No.	%
Age		
<20 years	179	28.8
20-25 years	428	68.8
>25 years	15	2.4
Mean±SD	21.8±2.0	
Gender		
Male	299	48.1
Female	323	51.9
College		
Medicine	240	38.6
Dentistry	180	28.9
Pharmacy	112	18.0
Applied Medical Sciences	90	14.5
Grade point average (GPA)		
<3	66	10.6
3-4	335	53.9
>4	221	35.5
Having a smartphone	622	100.0%

Table 2: Characteristics related to using their mobiles

Characteristics	No.	%
Having a smartphone	622	100.0
Internet access to through mobile	528	84.9
Duration of daily mobile use		
<3 hours	56	9.0
3-4 hours	239	38.4
>4 hours	327	52.6

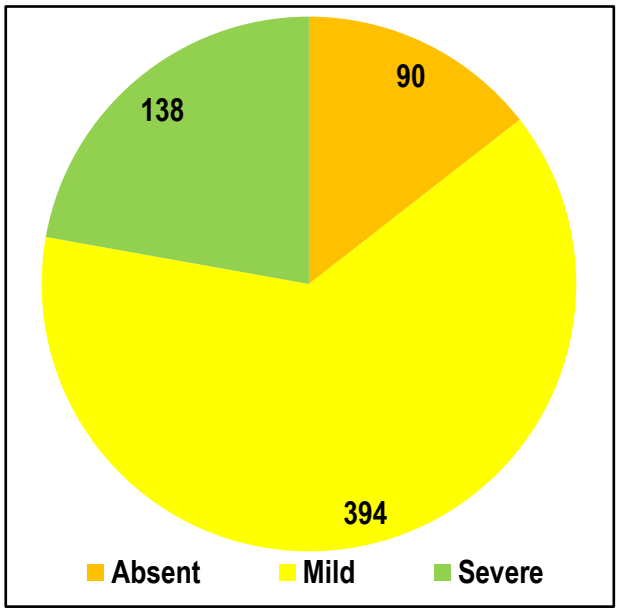

Fig 1: Grades of nomophobia among undergraduate students of Health Sciences colleges, King Khalid University

Table 3: Grades of nomophobia according to characteristics of participant students'

Personal Characteristics	Absent		Mild		Severe		P Value
	No.	%	No.	%	No.	%	
Age							
<20 years	27	15.1	120	67.0	32	17.9	
20-25 years	62	14.5	268	62.6	98	22.9	
>25 years	1	6.7	6	40.0	8	53.3	0.032
Gender							
Male	42	14.0	195	65.2	62	20.7	
Female	48	14.9	199	61.6	76	23.5	0.626
College							
Medicine	36	15.0	165	68.8	39	16.3	
Dentistry	25	13.9	120	66.7	35	19.4	
Pharmacy	13	11.6	66	58.9	33	29.5	
Applied Medical Sciences	16	17.8	43	47.8	31	34.4	0.003
Grade point average (GPA)							
<3	9	13.6	41	62.1	16	24.2	
3-4	45	13.4	209	62.4	81	24.2	
>4	36	16.3	144	65.2	41	18.6	0.557
Internet access through mobile							
Yes	69	13.1	335	63.4	124	23.5	
No	21	22.3	59	62.8	14	14.9	0.025
Duration of daily mobile use							
<3 hours	16	28.6	36	64.3	4	7.1	
3-4 hours	43	18.0	163	68.2	33	13.8	
>4 hours	31	9.5	195	59.6	101	30.9	<0.001

RESULTS

Table (1) shows that 68.8% of participant students aged 20-25 years, with a mean age (SD) of 21.8 (2) years. Almost half of participants (48.1%) were males. About one third of participants (38.6%) were medical students, 28.9% were dentistry students, 18% were pharmacy students while 14.5% of participants were students of applied medical sciences. About half of participants had a GPA of 3-4, while 35.5% had a GPA > 4. Table (2) shows that all participant students (100%) had smartphones. The great majority of students (84.9%) had access to internet their personal mobile phones and most of them (52.6%) use their mobile phones for more than 4 hours daily. Figure (1) shows that 22.2% of students had severe nomophobia, 63.3% had mild nomophobia, while 14.5% had no nomophobia. Table (3) shows that older students (>25 years) had highest percentage of severe nomophobia (55.3%). Nomophobia grades differed significantly according to students age groups (p=0.032). Moreover, students of applied medical sciences had thehighest percentage of severe nomophobia while students of medicine had the lowest percentage (34.4% and 16.3%, respectively). Nomophobia grades differed significantly according to study colleges (p=0.003). Percentages of students with severe nomophobia was significantly higher among those who have internet access through their personal mobile phones (p=0.025) and also among those who spend more than 4 hours daily with their mobile phones (p<0.001). However, grades of nomophobia did not differ significantly according to students' gender, although female students had a higher prevalence of severe nomophobia than males) or GPA (although those with lower GPA had higher prevalence of severe nomophobia).

DISCUSSION

Results of this study showed that all participant students. The great majority of these students (84.9%) had Internet access through their mobile phones and most of them (52.6%) used their mobile phones for more than 4 hours daily.

These findings reflectthe growing personal demandamong university studentstoward using mobile phones. Lee[5] argued that use of mobile phones has almost reached the total world's population. College students are considered as the early owners of smartphones. In China, Long et al.[17] reported that 99.2% of undergraduate students were smartphone users.

In Kenya, Ndung'u and Waema[18] noted that growth of Internet and mobile phones usage has been exponential. Internet and mobile phones have become the basic means of communication for all people regardless of their economic status and geographical location. In Riyadh, Saudi Arabia, Alosaimi et al.[4] reported that 27.7% of students at King Saud University spent more than 8 hours daily with their smartphones. This study revealed a high prevalence rate of mobile phone addiction among students of Health Science collegesat King Khalid University, where 22.2% had severe nomophobia. The high prevalence of severe nomophobiawas reported by several studies. Nikhita et al.[19] found that 31.3% of secondary school students at Navi Mumbai (India) were mobile phone addicts. Similarly, Aggarwal et al.[20] found that 23.4% of resident doctors in north India had mobile phone dependence. In Changsha, China, Long et al.[17] reported that prevalence of smartphone addiction among Chinese undergraduate students was 21.3%.

Findings of the present study showed that prevalence of severe nomophobia was highest among older students (>25 years old), and among students of Applied Sciences college, but it was least among medical students. Severe nomophobia was also significantly higher among those who have internet access through their personal mobile phones and among those who spend more than 4 hours daily with their mobile phones. Moreover, grades of nomophobia differed significantly according to study colleges.

In this study, severe nomophobia among female students was higher than those among male students. In addition, severe nomophobia was higher among students with lower GPA. However, grades of nomophobia did not differ significantly according to students' gender or GPA.

The higher prevalence of mobile phone dependence among older students may indicate that this problem grows among university students with their age, while being less among medical than other university students reflects the possible impact of relatively heavy study load among medical students compared with students in other health sciences colleges.

Moreover, it was quite expected from results of the present study that higher prevalence of mobile phone dependence occurred among those who have Internet access within their smartphones and among those who spend more than 4 hours daily using their phones. In China, Long et al.[17] found no significant differences in mobile phone addiction among undergraduate students according to their age or gender, but differed significantly according to students' colleges (p=0.001), with highest prevalence among students of Science. They also found that mobile phone addiction differed significantly according to students' duration of daily use of mobile phones (p<0.001), being highest among those who use their mobile phones for 4 hours or more daily. They added that the top most-often-used functions by undergraduate students were social networking services, Internet surfing, and video watching.

Bragazzi and Del Puente[14] stated that nomophobia is a result of the development of new technologies that enable virtual communication by using regularly a mobile phone and to spend a considerable time on it.

Findings of the present study are similar to those of Alosaimi et al.[4], who found that gender was not significantly related to nomophobia scores. However, in Madrid, Spain, Sánchez-Martínez and Otero[21] reported that intensive cell phone use among adolescent students was significantly associated with female gender and lower academic achievements.

In conclusion, mobile phone addiction is common among undergraduate students of Health Sciences colleges at King Khalid University, Saudi Arabia. Health education should be targeted to university students so as to prevent possible harmful effects of excessive use of mobile phones.

Health education is needed to promote correct and effective mobile phone use among undergraduate university students. Risk factors associated with mobile phone addiction should be considered for planning of future intervention activities to minimize nomophobia among undergraduate university students.

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