



NOMOPHOBIA: A CROSS-SECTIONAL STUDY TO ASSESS MOBILE PHONE USAGE AMONG AL AZHAR DENTAL STUDENTS, KERALA

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ABSTRACT

Introduction-Mobile phone is considered as an important communication tool and became the integral part of the society, it is not only a communication device but it also a necessary social accessory. This study investigates the current knowledge about technology and learning methods using the internet among dental students. Smart phones have now become an essential part of life.

Materials and Methods: A total of 200 students from Clinical and Preclinical stream having smartphones were surveyed regarding the usage of smartphone. A well-structured and administered questionnaire was used to elicit the responses. The study was conducted during March 2018 to April 2018. Statistical analysis was done using t-test. Significance level was kept at 5%.

Results: Nomophobic levels were observed among 35.34 % of participants and the risk of nomophobia were more in males (55.27%) as compared to females (39.69%). Majority of students felt uncomfortable without their smart phone, got irritated by frequent notifications of smart phone and got angry when someone interrupts them while using smart phone.

Conclusion: Smartphones make students lives more sedentary, dry eyes and headache, feel disturbances in their sleep. Also, they spend excess money on mobile recharges although they prefer to use internet over their own creativity for any project.

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INTRODUCTION

Worldwide technology and its changes play a major role in each individual's life. The current trend of the society is to adopt every change in the field of communication technology. Mobile phone is considered as an important communication tool and became the integral part of the society, it is not only a communication device but it also a necessary social accessory. People are increasingly using mobile phones rather than the fixed telephones. The cell phone today is a lifeline for many. It is estimated that around 4.5 billion people uses mobile phone worldwide.⁽¹⁾ The utilization of technical knowledge has a worldwide importance due to its contributions to human existence and due to the strengthening of socioeconomic relations universally. ⁽²⁾ The adoption of the mobile phone by young people is a global phenomenon in recent years.

This gadget has been transformed from a technological tool to a social tool and now fully integrated into daily lives of people of all walks of live, especially the adolescents.⁽³⁾ The students become disturbed without their mobile phone, when there is no network coverage or battery has drained out or balance is not there and thus, losing their contact with the mobile definitely affects the concentration level of persons in a negative way. This is known as Nomophobia which refers to discomfort, anxiety, nervousness or anguish caused by being out of contact with mobile phone.⁽²⁾ Their benefits are incomparable but at the same time, they have some negative effects too.⁽⁴⁾ Nowadays, mobile phones have become one of the essential accessories in our social and professional life, and the uses of mobile phones with health care workers have increased. Mobile phones hasten the communication and contact within healthcare institutions, result in faster and more efficient health-care delivery. Although, the use of mobile phones in hospitals (that the percentage presence of bacteria is high) may cause in spread of pathogens. Mobile phones are usually stored

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in bags or pockets and handled frequently and held close to the face. Moreover, the use of mobile phones often occurs in hospitals, by patients, visitors and health care workers.⁵⁻⁷ There is not much information available regarding mobile phone usage among dental students of Kerala. Hence, this study was carried out to understand the usage pattern of mobile phones and its effects on the self perceived academic performance of students among dental students of Al Azhar dental college.

Aims

Assess the pattern of usage of mobile phones and its effect on the academic performance of dental students.

Objectives

- To assess the use of mobile phone among dental students.
- To compare the use of mobile phones among preclinical and clinical group of dental students

MATERIALS AND METHODS

A study was conducted to know the knowledge and attitude of dental students towards the usage of mobile phone among students of Al -Azhar dental college Thodupuzha, Kerala. Students of all the year were considered. Ethical approval was obtained from the Institutional review board. Informed written consent was obtained. Participants with only mobile phones were selected. Data collection was done by distributing questionnaire. Among the students studying in first, second third and fourth year. The questionnaire included 20 questions to evaluate the usage of mobile phone which was previously used in a study done by Prasad M et al.⁸ At first, a questionnaire was completed by participants, including the onset of mobile usage. The questionnaire was modified and pretested by a pilot study on 20 of the study participants which comprised of 10% of the total study sample. Reliability of the questionnaire was analyzed by using Test-Retest conducted over two week duration, and the intra-rater reliability of the participants for the questions was assessed using kappa ($k=0.82$). All questions were based on five point Likert scale ranging from strongly disagree to strongly agree. The individual responses thus, obtained were then compiled, processed and analyzed. Scoring was allotted depicting maximum to minimum mobile phone association. Participants having score of ≥ 40 were categorized as nomophobic, 34-39 score - at risk of nomophobia, < 34 score - normal. Descriptive statistical method (mean \pm standard deviation) were applied. T- test was applied to compare the attitude of phone usage among the students. The level of significance was set at $p<0.05$

RESULTS

Out of 200 students, there were 100 preclinical and 100 clinical students. Preclinical students (54%) strongly disagree that they frequently SMS or use social networking while studying or doing clinical work. One third of the clinical students (30%) disagree that they frequently SMS or use social networking while studying or doing clinical work. Similarly Preclinical students (36%)disagree that they will scare/worry, if they are running out of their battery or out of signal in

phone. 30% of clinical students agree that they will scare/worry, if they are running out of their battery or out of signal in phone. For the question "I keep my phone with me at all the times" was disagreed by 30% of preclinical students and Agreed by 35% of Clinical students. Thirty one percentage of the preclinical students and 22% of the clinical students disagreed that they hardly use mobile phones to download or view educational materials. Thirty three percentage of the preclinical students and 26% of the clinical students neither agrees nor disagree that they study better if they don't use phone. Mean responses for the questions ranging from 1.1-4.4.

Table 1. Gender distribution of participants

Characteristics	n=200(%)
Males	30(15%)
Females	170(85%)

Table 2. Educational category of participants

Education	n=200(%)
Preclinical	100
Clinical	100

Table 3. Age at which participants started using the mobile phone

Age (in years)	
≤ 16 Years	94
17 Years	42
18 Years	52
19 Years	12

DISCUSSION

AS per the study based on "The use of mobile phone among dental students" revealed majority of nomophobes were from preclinical (45.25%) and the rest were from clinical (32.75%). This could be due to being away from the family and becoming homesick thus making them more dependent on the mobile phone. The prevalence of nomophobia were higher among females (37.22%) when compared to males (30.43%) whereas, the risk of nomophobia were more in males (55.27%) as compared to females (39.69%). The study revealed 34.1% students disagreed and 36.6% students strongly disagreed that they spend more than three hours for phone calls per day by which is lesser than the finding of Li M et al., which shows that 50.8% students spent their time about more than four hours on cell phone usage.¹ Different culture and study timing could be a possible explanation for this. Our study shows that 24.1% of students agreed and 8.5% of students strongly agreed that they will go anxious while running out of battery or out of signal in phone. A overrated response from a study in United Kingdom by Katherin B in 2008 on 2163 people revealed that 53% of the subjects tend to be anxious when they lose their mobile phone, run out of battery or credit or have no network coverage.² This shows that the young adults has become reliant on mobile phone which has affected their social behaviour as well as their mental health. In a study conducted by Department of community medicine, Bhaskar medical college, Moinabad, Hyderabad on "some of the common health effects of cell-phones amongst students"³ reveals that headache was found to be the commonest symptom (51.47%) followed by irritability/anger (50.79%).

Table 4. Response of the participants to the questionnaire

Questions	groups	Strongly Disagree n (%)	Disagree n (%)	Neither agree nor Disagree n (%)	Agree n (%)	Strongly agree n (%)	n	Mean Score (Mean±SD)	p-value
1) I frequently SMS or use social networking while studying or doing clinical work.	Total	70(35.2)	56(28.1)	24(12.1)	29(14.6)	20(10.1)		2.43±1.08	0.53
	Preclinical	54(54)	26(26)	8(8)	4(4)	8(8)		2.49±1.10	
	Clinical	16(16.2)	30(30.3)	16(16.2)	25(25.3)	12(12.1)		2.37±1.05	
2) I frequently check my cell phone while the classes are going on or while doing clinical.	Total	79(39.7)	70(35.2)	20(10.1)	18(9)	12(6.0)		3.23±1.26	0.01*
	Preclinical	47(47)	38(38)	6(6)	8(8)	1(1)		3.53±1.23	
	Clinical	32(32.3)	32(32.3)	14(14.1)	10(10.1)	11(11.1)		3.01±1.77	
3) I feel nervous if I fail to receive timely response.	Total	70(35.2)	57(28.7)	41(20.6)	22(11.1)	9(4.5)		2.23±1.03	0.24
	Preclinical	38(38)	28(28)	26(26)	7(7)	1(1)		2.22±1.05	
	Clinical	32(32.3)	29(29.2)	15(15.1)	15(15.1)	8(8.1)		2.27±1.04	
4) It will scare/worry me if I am running out of my battery or out of signal in phone.	Total	51(25.6)	51(25.6)	32(16.1)	48(24.1)	17(8.5)		1.86±1.21	0.46
	Preclinical	23(23)	36(36)	19(19)	18(18)	4(4)		1.77±1.43	
	Clinical	28(28.3)	15(15.1)	13(13.1)	30(30.3)	13(13.1)		1.91±0.97	
5) I would be annoyed if I could not use my phone and/or its capabilities when I wanted to do so.	Total	40(20.1)	51(25.6)	43(21.6)	51(25.6)	14(7)		3.42±0.23	0.65
	Preclinical	20(20)	34(34)	25(25)	18(18)	1(1)		3.63±0.42	
	Clinical	20(20.2)	17(17.2)	18(18.2)	29(29.3)	13(13.1)		3.22±0.33	
6) I would be uncomfortable because I could not stay up to date with social media and online networks.	Total	57(28.6)	61(30.7)	35(17.6)	30(15.1)	16(8)		1.28±0.46	0.02*
	Preclinical	31(31)	34(34)	21(21)	12(12)	2(2)		1.56±0.33	
	Clinical	26(26.3)	27(27.3)	14(14.1)	18(18.2)	14(14.1)		1.04±0.64	
7) I keep my phone with me at all the times.	Total	38(19.1)	43(21.6)	31(15.6)	60(30.2)	27(13.6)		3.67±0.43	0.01*
	Preclinical	25(25)	30(30)	13(13)	25(25)	7(7)		3.18±0.66	
	Clinical	13(13.1)	13(13.1)	18(18.2)	35(35.3)	20(20.2)		4.24±0.30	
8) If I were to run out of credits or hit my monthly data limit, I would panic.	Total	50(25.1)	47(23.6)	41(20.6)	44(22.1)	17(8.5)		3.16±0.54	0.01*
	Preclinical	24(24)	26(26)	28(28)	15(15)	7(7)		2.65±0.41	
	Clinical	26(26.3)	21(21.2)	13(13.1)	29(29.2)	10(10.1)		3.36±0.22	
9) I answer immediately when my phone rings at inappropriate time.	Total	65(32.6)	59(29.6)	26(13.1)	38(19.1)	11(5.5)		1.93±1.15	0.43
	Preclinical	34(34)	29(29)	16(16)	19(19)	2(2)		1.49±1.07	
	Clinical	31(31.3)	30(30.3)	10(10.1)	19(19.1)	9(9.1)		1.37±1.09	
10) I would be in stress if I could not use my phone for a week.	Total	51	40(25.6)	40(20.1)	40(20.1)	28(14.1)		4.67±0.43	0.17
	Preclinical	26(26)	23(23)	26(26)	18(18)	7(7)		4.59±0.66	
	Clinical	25(25.2)	17(17.1)	14(14.1)	12(12.1)	21(21.2)		4.77±0.30	
11) I spend more than three hours for phone calls per day.	Total	73(36.6)	68(34.1)	19(9.5)	18(9)	21(10.5)		4.37±0.43	0.31
	Preclinical	32(32)	35(35)	13(13)	11(11)	9(9)		4.28±0.66	
	Clinical	41(41.4)	33(33.3)	6(6.1)	7(7.1)	12(12.1)		4.44±0.30	
12) I score low marks in my professional exams if I spend more time on phone.	Total	54(27.1)	45(22.6)	25(12.5)	52(26.1)	23(11.5)		2.93±1.15	0.03*
	Preclinical	20(20)	22(22)	13(13)	33(33)	12(12)		2.49±1.07	
	Clinical	34(34.3)	23(23.2)	12(12.1)	19(19.1)	11(11.1)		3.37±1.09	
13) I have sleep loss due to use of cell phone in nights.	Total	60(30.1)	60(30.1)	28(14.1)	33(16.5)	18(9)		3.23±1.26	0.04*
	Preclinical	23(23)	32(32)	20(20)	18(18)	7(7)		3.07±1.23	
	Clinical	37(37.3)	28(28.3)	8(8.1)	15(15.1)	11(11.1)		3.53±1.77	
14) I take phone calls while studying or doing clinical work.	Total	43(21.6)	48(24.1)	36(18.1)	54(27.1)	18(9)		2.05±1.03	0.43
	Preclinical	22(22)	31(31)	20(20)	19(19)	8(8)		2.36±1.05	
	Clinical	11(11.1)	17(17.2)	16(16.1)	25(25.2)	10(10.1)		2.17±1.04	
15) I use cell phone as study or clinical work aides (ex: Listening to music while studying an exam).	Total	43(21.6)	40(20)	36(18.1)	51(25.6)	29(14.6)		3.67±0.43	0.03*
	Preclinical	23(23)	26(26)	21(21)	18(18)	12(12)		3.18±0.66	
	Clinical	20(20.2)	14(14.1)	15(15.1)	33(33.3)	17(17.2)		4.24±0.30	
16) I hardly use mobile phones to download or view educational materials.	Total	37(18.6)	53(26.6)	32(16)	54(27.1)	23(11.5)		3.16±0.54	0.03*
	Preclinical	13(13)	31(31)	20(20)	25(25)	11(11)		2.75±0.41	
	Clinical	24(24.2)	22(22.2)	12(12.1)	29(29.2)	12(12.1)		3.26±0.22	
17) I feel distracted by my mobile phone during examination.	Total	47(23.6)	56(28.1)	33(16.6)	48(24.1)	15(7.5)		3.52±0.23	0.26
	Preclinical	17(17)	31(31)	25(25)	21(21)	6(6)		3.63±0.42	
	Clinical	30(30.3)	25(25.2)	8(8.1)	27(27.2)	9(9.1)		3.72±0.37	
18) Examination fraud becomes more rampant with the use of mobile phone by students.	Total	38(19.1)	39(19.6)	52(26.1)	42(21.1)	28(14.1)		2.28±0.26	0.03*
	Preclinical	18(18)	25(25)	20(20)	23(23)	14(14)		2.56±0.13	
	Clinical	20(20.2)	14(14.1)	32(32.3)	19(19.1)	14(14.1)		2.04±0.54	
19) I use my phone to not to feel lonely in a public place.	Total	27(13.5)	30(15.1)	38(19.1)	68(34.2)	36(13.1)		3.67±0.43	0.44
	Preclinical	17(17)	21(21)	22(22)	29(29)	11(11)		3.59±0.66	
	Clinical	10(10.1)	9(9.1)	16(16.1)	39(39.3)	25(25.2)		3.77±0.30	
20) I study better if don't use phone.	Total	35(17.6)	41(20.6)	59(29.6)	39(19.6)	21(10.5)		3.37±0.43	0.02*
	Preclinical	12(12)	22(22)	33(33)	22(22)	11(11)		3.28±0.66	
	Clinical	13(13.1)	19(19.2)	26(26.2)	17(17.2)	10(10.1)		3.94±0.30	

Response of students regarding the pattern of usage of mobile phones based on academic year. * - Significant; n - No of dental students

Other common mental symptoms included lack of concentration and poor academic performance, insomnia, anxiety etc. among physical symptoms-body-aches (32.19%), eye strain (36.51%), digital thumb (13.8%) was found to be frequent. Grosseck et al⁴ and Rosen et al⁹ in their study found that the majority of students spend significant time on Facebook more for social uses (to stay in touch with friends and family, to share/tag photos, to engage in social activism, volunteering etc.) and less for academic purposes, even if they take part in discussions about their assignments, lectures, study notes or share information about research resources etc.

Mean values of responses shows that for the questions “I would be in stress if I could not use my phone for a week and ‘I spend more than three hours for phone calls per day were having values >4 (on a 5 point likert scale) reflect the “real” problem the students face is a matter of concern. Significant difference ($p < 0.05$) in responses was observed between the preclinical and clinical students for the questions like ‘Downloading educational videos’, Study better without phone, Score low marks in exam, Keeping the phone all the time. Visibly a possible explanation for a difference is difficult, still the loss of initial enthusiasm and accumulated stress over the period may have resulted in phone dependency. Nomophobic levels were observed among 35.34 % of participants which is a concern parents and college authorities to ponder upon. In their research titled “Smartphone addiction in University students and its implication for learning” Lee et al¹⁰ found that the higher the addiction level is, the lower level of self-regulated learning the students have, as well as low level of flow when studying. Further interview for smartphone addiction group was conducted, it has been found that the addict-learners are constantly interrupted by the other applications on the phones when they are studying, and does not have enough control over their smartphone learning plan and its process. Smartphone’s addiction is a major impact on academic and social life. As per Sarwar et al¹¹ surveys show that Smartphone addiction is interfering with our night sleep. According to the survey, 33% of mobile workers admitted that they check their phones for email and message throughout the night. Nearly 50% of those surveyed said, they wouldn’t even think of going to bed without have their Smartphone’s tucked under their pillows.^{6,7}

Limitation

1. The study evaluated the students of one particular college, therefore further studies involving larger sample over a wide geographic area can be carried out to facilitate generalisability of the findings.
2. Social desirability to the self administered questionnaire.
3. Academic performance was assessed based on the self perception of the study participants. Thus, further studies with objective assesment of academic performance should therefore be carried out. Thus, the finding from the study proves significantly that the mobile phones has a great impact on the social life and academics of students

Recommendation

1. Institutions must enforce the students to refrain from using mobile phones in classes or preclinical or clinical work.
2. Dental students need to be re-orientated to set their priorities which should be guided by the institution as well as with the parents/guardians of the students.
3. It is also recommended that students should dedicate much of their mobile phone usage time to research and academic activities rather engaging in social networking and ping-pong.

Conclusion

Present study revealed that Overuse of smartphone will certainly affect students’ academic performance and health. Nomophobic levels were observed among 35.34 % of participants whereas and the risk of nomophobia were more in males (55.27%) as compared to females (39.69%). The pattern of usage of mobile phone showed self perceived poor academic performance among the study population and majority of the students having the risk of being nomophobes. Thus, the students must be made aware of the positive and negative effects of excessive usage of mobile phones.

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