



FREQUENCY AND ASSOCIATED FACTORS OF SMARTPHONE ADDICTION AMONG NURSING STUDENTS

Rukhsana Zulfiqar¹, Raja², Badil³

ABSTRACT

INTRODUCTION For people all across the world, smartphones have significantly impacted their daily lives. **OBJECTIVE:** To ascertain the prevalence and contributing variables of smartphone addiction among nursing students at Jinnah Sindh Medical University and Ziauddin University Faculty of Nursing and Midwifery in Karachi. **METHODOLOGY:** Over three months, from October to December 2021, 360 BS Nursing students of both sexes participated in a cross-sectional study. Using a non-probability purposive sampling technique, the respondents were approached. The Smartphone Addiction Scale (SAS), a structured and tested technique, was utilised to collect the data. An independent sample t-test was used to compare SAS mean scores for gender and academic failure outcomes. These mean scores were contrasted with other baseline features and examined factors using one-way ANOVA. Statistics were considered significant for P-values under 0.05. **RESULTS:** There were 360 participants in the study, of which 183 (50.8%) were female and 247 (68.6%) were students. Just 21 (5.8%) of the individuals had a history of academic failure. 163 people, or 45.3%, were living with family, while the remaining 197 people, or 54.7%, were staying with friends, family, or hostels. The average score for smartphone addiction was 123.318.16. No statistically significant findings were found for the study variables associated with smartphone addiction. **CONCLUSION:** In both public and private settings, nursing students exhibit a remarkably high prevalence of smartphone addiction.

KEYWORDS: Smartphone, Nursing Student, Addiction

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INTRODUCTION

For people all across the world, smartphones have significantly impacted their daily lives. ¹ Academic performance, scholarly execution, family relationships,

daily exercise, and routine activities, & social interactions have all begun to change as a result of smartphone use. ² Cell phones have taken on a significant role in the lives

of teenagers who are savvy about media use and creation.³

The use of smartphones may interfere with pupils' ability to learn and think critically.⁴ Smartphones offer a variety of sophisticated, helpful features and functions. In addition to promoting the ability to make calls and send text messages instantly, Users can also create and access emails, network, play games, use applications for social networks and the internet, and browse the web with smartphones, showing photographs, and playing videos, as well as creating and accessing recordings using the built-in camera, audio, and recording.⁵ Cell phones' flexibility, accessibility, availability, and affiliation also enable users to get data and entertainment wherever they are and whenever they want. Many students utilise their cellphones as a standard type of computer to carry out a variety of tasks, including multitasking, social networking, information seeking, internet access, and online and offline learning.⁶ Current study confirms that excessive smartphone use can result in poor grades.⁷ It is well known that cellphones negatively affect biophysiological functions. The pineal glands specifically create the melatonin hormone during nighttime when it is dark during sleep. As a result, reduced sleep quality may be significantly influenced by light visible at a distance.⁸ According to recent study, 60.9% of mobile phone users say that using their phones leaves them typically busy and distracted, while 44.8% of users say that their phones are becoming more and more vital in their life.⁹ Recent studies have revealed that 48% of people use their cell phones for around 5 to 7 hours every day. Also, it has been noted that a majority of students (65%) use their cell phones for social rather than academic purposes. Additionally, 60% of students access social media platforms like Facebook, WhatsApp, and Instagram while working on class projects and homework. According to the

research report, 85% of pupils are reliant on and addicted to mobiles.¹⁰

The total score on mobile phone reliance and regular habitual usage hours were shown to be significantly correlated. Additionally, a statistically significant correlation was found between daily usage hours and the overall smartphone addiction score. Additionally, cell phone use has a significant impact on students' GPAs (grade point average).¹¹ This study sought to ascertain the prevalence of smartphone addiction and its contributing variables among nursing students at the Jinnah Sindh Medical University and Ziauddin University Faculty of Nursing and Midwifery in Karachi.

MATERIALS AND METHODS: The Institute of Nursing at Jinnah Sindh Medical University and the Ziauddin University Faculty of Nursing and Midwifery (ZUFONAM) (ION-JSMU) were the locations of this analytical cross-sectional study. During October to December 2021, a three-month period, the study was carried out. Participants of both sexes were contacted using a non-probability purposive sampling method. The population that was being studied was every Bachelor of Science in Nursing (BSN) student registered at ZUFONAM and ION-JSMU. Using the percentage method, OpenEpi version 3.0 determined the sample size. The sample size was determined to be 360 people of both sexes using the prevalence of smartphone addiction¹² of 36.5%, a 95% confidence level, a 5% sampling error, and a 50% chance of occurrence. The survey comprised smartphone users and those who were open to taking part. The study excluded Post RN BSN and Master's in Nursing students. All participants gave their assent in writing after being fully briefed. Participants in the survey did so willingly. The data's confidentiality was guaranteed. In accordance with the Helsinki Declaration of 2000, the research was conducted. The Ziauddin University in

Karachi's Ethics Review Committee (ERC) provided ethical approval for the project (Ref code: 4240921RZNUR). Prior to data collection, each participant received a detailed explanation of the questionnaire's goals. The Smartphone Addiction Scale (SAS), which has been adopted, organized, and validated, was used to collect the data. SAS's internal consistency and concurrent validity were confirmed with a Cronbach's alpha of 0.96. The SAS Questionnaire's internal validity was determined using Cronbach's alpha 0.96 ($r=0.96$). The following categories are broken down into the 33 items and six subscales of the questionnaire: 1) Disturbing aspects of everyday life; 2) positive anticipation; 3) withdrawal; 4) relationships focused on cyberspace; 5) excessive use; and 6) tolerance. All items are scored on the Likert Scale, which includes strongly disagree, disagree, weakly disagree, agree, and strongly agree. The range of total SAS scores is 33–198. The more acute smartphone dependence is shown in the higher scores. While entering and analysing data, SPSS version 23 was used. The frequency and percentages of each category variable were shown. The means and standard deviations of all quantitative variables were calculated. The SAS mean scores for gender and outcomes related to academic failure were compared using an independent sample t-test. Using one-way ANOVA, these mean scores were compared to other baseline characteristics and investigated factors. P-values below 0.05 were considered statistically significant.

RESULTS

Table 1 displays the participant baseline characteristics. There were 360 people in the current study; of them, 68.6% were between the ages of 20 and 24 and 50.8% were female. Just 5.8% of the research participants had academic failure. About half of them, or 45.3%, were residents; the remainder were housed with friends, family members, or hostels.

Table 2 showed the mean comparison of SAS scores with baseline characteristics of the studied samples. The mean SAS of the 15–19 year old samples was 119.96–16.72, the mean SAS of the 20–24 year old samples was 123.93–18.94, and the mean SAS of the 25–and-above samples was 123.71–15.92, which was found statistically insignificant using one way ANOVA ($p=0.34$). Using an independent sample t-test, the mean (SD) SAS of the female samples was 125.0216.85 and that of the male samples was 121.7119.31; however, these differences were not statistically significant ($p=0.06$). The mean SAS of the single samples was 123.0218.31, that of the married samples was 123.9416.92, and that of the widow samples was 103.504.95; however, this difference was not significant ($p=0.29$), Muslim samples' mean (SD) SAS was 122.8318.48, Christian samples' was 125.0714.93, and Hindu samples' was 146.5043.13. The mean (SD) SAS of residents who were from the hostel was 120.87, whereas those who were from family or a relative were 123.65, 17.62, and friends were 131.74. These differences, however, were statistically unimportant ($p>0.05$). As we had all "yes" instances in our data for smartphone addiction, it was not able to do a T-test between groups (smartphone addiction yes/no). Nonetheless, the mean scores on the smartphone addiction scale were compared for academic failure and gender. The results of Table 3 showed that the mean SAS of first-year students was 121.76 19.36, that of second-year students was 126.36 22.19, that of third-year students was 122.17 15.13, and that of fourth-year samples was 122.58 12.15; the increase in scores was not statistically significant ($p=0.25$); samples with academic failure had a mean SAS of 124.29 15.51, and The mean SAS for samples with a GPA of 3.6 to 4.0 was 121.8730.56, for samples with a GPA of 3.0 to 3.5 it was 124.1616.88, and for samples with a GPA of 2.0 to 2.9 it was 123.06317.14. With a $p>0.05$, these

variables were shown to be statistically insignificant.

Table 1: Baseline Characteristics of Studied Samples (n= 360)

Demographic Characteristics		n	%
Age (Years)	15-19	54	15.0
	20-24	247	68.6
	25-Above	59	16.4
Gender	Male	177	49.2
	Female	183	50.8
Study Year	1st Year	108	30.0
	2nd Year	100	27.8
	3rd Year	76	21.1
	4th Year	76	21.1
Academic Failure	Yes	21	5.8
	No	339	94.2
Marital Status	Single	322	89.4
	Married	36	10.0
	Widow	2	0.6
GPA of Last Semester	3.6-4.00	114	31.7
	3.00-3.5	153	42.5
	2.00-2.9	93	25.8
Religion	Muslim	304	84.4
	Christian	54	15.0
	Hindu	2	0.6
Residency	With Family	163	45.3
	With Relative	45	12.5
	With Friends	19	5.3
	Hostel	133	36.9

Table 2: Mean Comparison of Smart Phone Addiction Scores with Baseline Characteristics (n= 360)

Characteristics		Smartphone Addiction Score		P-value
		Mean	SD	
Age (Years)	15-19	119.96	16.72	0.34
	20-24	123.93	18.94	
	25-Above	123.71	15.92	
Gender	Male	121.51	19.31	0.06*
	Female	125.02	16.85	
Marital Status	Single	123.35	18.31	0.29
	Married	123.94	16.92	
	Widow	103.50	4.95	
Religion	Muslim	122.83	18.48	0.13
	Christian	125.07	14.93	
	Hindu	146.50	43.13	
Residency	With Family	123.65	18.62	0.06*
	With Relative	125.62	17.75	
	With Friends	131.74	20.35	
	Hostel	120.87	17.09	

*p<0.05 was considered statistically significant

Table 3: Mean Comparison of Smart Phone Addiction Scores with Studied Factors (n= 360)

Factors		Smartphone Addiction Score		p-value
		Mean	SD	
Study Year	1st Year	121.76	19.36	0.25
	2nd Year	126.36	22.19	
	3rd Year	122.17	15.13	
	4th Year	122.58	12.15	
Academic Failure	Yes	124.29	15.51	0.06
	No	123.24	18.33	
GPA of Last Semester	3.6-4.00	121.87	20.56	0.58
	3.00-3.5	124.16	16.88	
	2.00-2.9	123.63	17.14	

*p<0.05 was considered statistically significant

DISCUSSION

With a mean of 123.93 18.94, which was statistically insignificant, the current study found that 100% of participants between the ages of 20 and 24 suffer from smartphone addiction. These findings were consistent with previous research conducted in 2017 by Parasuraman, which revealed that more than 95% of survey respondents between the ages of 21 and 25 used smartphones.¹² A substantial correlation between smartphone use and age was also discovered by another study.¹³ In contrast, a research from Switzerland showed that smartphone addiction is more prevalent in those between the ages of 15 and 16 than in people over the age of 19.¹⁴

The importance of this information is clear given the disproportionate demand for the phone associated with these age-related research. Also, this is the age at which kids are often permitted to have smartphones, and as they transition into adulthood and

live independently, their use of these devices increases to the point of addiction.

The current study finds a negligible (p -value >0.06) link between students living in a dorm or hostel and their friends or families. Similar findings were seen in the earlier study, which found that no participants' accommodations affected whether or not they remembered changing their behaviour as a result of using smartphones.¹⁵ Another recent study claimed that young people living in hostels are more likely to be addicted than those living with families.¹⁶

Similar to Celikkalp's study from 2020, the ratio of academic failure samples to non-failure samples in the current study had mean SD, SAS values of 124.29 15.51 and 123.24 18.33, respectively.¹⁷

Also, the results of the present study showed that women were more likely than men to use cellphones often. This result was inconsistent with a previous study that revealed a greater proportion of male smartphone users.¹⁸

The majority of students, according to the findings of the survey, had difficulty concentrating on studying, paying attention in class, or performing any other task due to their use of smartphones. The findings were consistent with another study's finding that undergraduate students were continually texting or making phone calls during lectures or study sessions, which was a key factor in their short attention spans and distractions. These results support the idea that when someone is fully engaged in one task at a time, they give it their full attention; however, multitasking activities like studying or working while using the internet or making calls divert students' attention, resulting in subpar exam performance as well as mental disorders.¹⁹

According to the current study, the wrist, neck, and back of nearly three-quarters of the patients experienced discomfort. Yet, the earlier study discovered that roughly

34% of the sample experienced same symptoms.²⁰ Our findings unequivocally demonstrated a link between physical signs of smartphone addiction and those symptoms. Since people are self-ignorant due to addiction, lack of awareness of body mechanics, and avoidance of physical symptoms due to smartphone usage, these results are constant.²¹

According to the results of the present survey, the majority of undergraduate students (60%) claim that their smartphones help them cope with stress. On the other hand, this result is at odds with a South Korean research study that found a clear link between stress and problematic smartphone use. The gap may be connected to people's subjective emotions since some students find that social media, gaming, and other networking outlets help them decompress. Some, on the other hand, believe it to be distracting and stressful in their everyday lives.²²

The majority of students exhibit anxiety, according to the results of the current study when they are not holding their cellphones. This result was consistent with earlier studies, according to which 77% of students experienced anxiety when their smartphones were absent. Nomophobia, as this conduct is known in the scientific community, is thought to be the root of youthful age, poor self-esteem, a negative self-image, or personality problems.²³ The parental usage of phones by parents or older siblings of this age is one of the less-examined issues. According to studies, parental cell phone use increases the likelihood that teens would become friends with troublemakers and reduces the amount of time parents spend with their children. This immediately causes smartphone addiction, which in turn leads to misbehavior.

Young people experience social marginalization as a result of this.²⁴ This study emphasizes the numerous elements connected to widespread smartphone usage. Exploratory studies, however, which

must look into the calibre of the kids' abilities, their interactions with classmates or family, and their mental health, can examine the cultural and geographical setting in the future.

CONCLUSION

It is demonstrated that there is a very high rate of smartphone addiction among nursing students in both public and private academic settings. Despite the fact that the results were not statistically significant, factors associated with smartphone addiction were discovered.

CONFLICT OF INTEREST: None

ETHICS APPROVAL: The ERC gave ethical review approval

CONSENT TO PARTICIPATE: written consent was taken from all study subjects

FUNDING: None

Author's Contribution:

Rukhsana Zulfiqar: Conceived and designed the study, collected the data

Raja: performed the analysis and interpretation of data and supervised the whole project.

Badil: Literature review, manuscript writing

All authors reviewed critically and final approved for publication.

REFERENCES

1. Soldatova G, Chigarkova S, Geneva A. Features of Media Multitasking in School-Age Children. *Behavioral Sciences*. 2019; 9:130-38.
2. Han S, Yi YJ. How does the smartphone usage of college students affect academic performance? *Journal of Computer Assisted Learning*. 2019; 35:13-22.
3. Jeong HS, Lee YS. Factors influencing smartphone addiction in nursing students: Focused on empathy. *International Information Institute Tokyo*. Information 2015; 18:2885-90.
4. Ahmed RR, Salman F, Malik SA, Streimikiene D, Soomro RH, Pahi MH. Smartphone Use and Academic Performance of University Students: A Mediation and Moderation Analysis. *Sustainability* 2020; 12:439. <https://doi.org/10.3390/su12010439>.
5. Parasuraman AT, Yee SW, Chuon BL, Ren LY. Smartphone usage and increased risk of mobile phone addiction: A concurrent study. *International journal of pharmaceutical investigation*. 2017; 7:125-131.
6. Beaugard P, Arnaert A, Ponzoni N. Nursing students' perceptions of using smartphones in the community practicum: A qualitative study. *Nurse Education Today*. 2017; 53:1-6. PMID: 28324823.
7. Ding X, Xu J, Chen G, Xu C. Beyond smartphone overuse: identifying addictive mobile apps. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems* 2016; 2821-28. <https://doi.org/10.1145/2851581.2892415>
8. Lepp A, Barkley JE, Karpinski AC. The relationship between cell phone use and academic performance in a sample of US college students. *Sage Open* 2015; 18:2158244015573169.
9. Lin PH, Lee YC, Chen KL, Hsieh PL, Yang SY. The Relationships between Sleep Quality and Internet Addiction among Female College Students. *Frontiers in neuroscience*. 2019;13: 599. Doi: [10.3389/fnins.2019.00599](https://doi.org/10.3389/fnins.2019.00599).
10. Singh MK, Samah NA. Impact of Smartphone: A Review on Positive and Negative Effects on Students. *Asian Social Science*. 14 (11):83-9.
11. Nayak JK. Relationship among smartphone usage, addiction, academic performance and the moderating role of gender: A study of higher education students in India. *Computer Education*. 2018; 123:164-73.
12. Osei Frimpong K, Otoo-Arthur D, Asare S. The effects of mobile phone usage on the academic performance of Ghanaian students, a case of Presbyterian University College

- Asante-Akyem campus. *International Journal Innovation*. 2016; 3: 33-43.
13. Sunhee LE, Hye-Jin KI, Han-Gyo CH, Yoo YS. Smartphone addiction and interpersonal competence of nursing students. *Iran J Public Health* 2018; 47:342-49.
 14. Haug S, Castro RP, Kwon M, Filler A, Kowatsch T, Schaub MP. Smartphone use and smartphone addiction among young people in Switzerland. *Journal of behavioral addictions*. 2015;4(4):299-307. Doi:10.1556/2006.4.2015.037.
 15. Samaha M, Hawi NS. Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in human behavior*. 2016; 57:321-5.
 16. Chaudhury P, Tripathy HK. A study on the impact of smartphone addiction on academic performance. *Journal of Engineering Technology*. 2018; 2.6: 50-3.
 17. Celikkalp U, Bilgic S, Temel M, Varol G. The smartphone addiction levels and the association with communication skills in nursing and medical school students. *Journal of Nursing Research*. 2020; 28(3): e93.
 18. Ifeanyi IP, Chukwuere JE. The Impact of Using Smartphones on the Academic Performance of Undergraduate Students. *Knowledge Management & E-Learning*. 2018;10: 290-308.
 19. Alhassan AA, Alqadhib EM, Taha NW, Alahmari RA, Salam M, Almutairi AF. The relationship between addiction to smartphone usage and depression among adults: a cross-sectional study. *BMC Psychiatry* 2018; 18:1-8.
 20. AlAbdulwahab SS, Kachanathu SJ, AlMotairi MS. Smartphone use addiction can cause neck disability. *Musculoskeletal Care* 2017; 15:10–2.
 21. Pearson C, Hussain Z. Smartphone addiction and associated psychological factors. *Turkish journal on addictions*. 2016; 3(2): 1–15.
 22. Kwak JY, Kim JY, Yoon YW. Effect of parental neglect on smartphone addiction in adolescents in South Korea. *Child abuse & neglect*. 2018; 77:75-84.
 23. Bhattacharya S, Bashar MA, Srivastava A, Singh A. Nomophobia: No mobile phone phobia. *Journal of family medicine and primary care*. 2019; 8:1297-1300.
 24. Gezgin DM, Cakir O, Yildirim S. The relationship between nomophobia prevalence and internet addiction among high school students: The factors influencing Nomophobia. *International Journal of Research in Education and Science*. 2018; 4(1): 215-25.