Available online at http://www.ijbms.org

International Journal of Business and Management Sciences
Volume 03(01) 2022

Received 15 February, 2022, Accepted 14 March 2022, Published 30 March 2022

Smartphone: Are we heading toward a new social phobia?

[1] *Umm-e-Habiba,* [2] *Dr. Robina Yasmeen,* [3] *Dr. Khalid Khan*

Keywords:
Smartphone, Social Phobia, Nomophobia

ABSTRACT

This research was conducted to investigate the nomophobia levels of individuals working in telecom sector of Pakistan. A total of 377 telecom sector employees in Islamabad, Pakistan completed demographics and the Nomophobia Questionnaire (NMPQ). All employees reported moderated to high levels of nomophobia with the largest proportion reporting high levels. There was no significant difference between age and gender on nomophobia levels. Due to insignificant difference, further sub-dimensions of nomophobia were examined. Men reported to be different on factor I "not being able to communicate" and female on factor II "Losing Connectedness". The result of this study presents that due to excessive use of internet-enabled devices in telecom sector, nomophobia is on higher levels. The telecom sector needs to monitor nomophobia as it is of great importance and have its implications at individual, societal and university level.

INTRODUCTION

Mobile phones have evolved from basic communication devices to useful smart gadgets due to advancements in digital technology. These smart devices now enhance voice and text communication by providing access to more engaging activities, important information, user-friendly interpersonal communication capabilities, and more effective instant messaging/calling services (Hong et al., 2012; Elhai et al., 2017). This revolutionary transformation supported the increase in smartphone ownership from emerging, developing economies to developed economies. Its uses have spilled into schools, universities, offices, restaurants, and while travelling. Smartphones have affected the students, work, and lifestyle in developed countries and have also impacted under-developed countries. Users develop different habits and behaviors while participating in various smartphone activities (Anshari et al., 2019). These internet-based smart devices have helped organizations improve productivity and increase the efficiency of work teams (Elhai et al., 2016). On the other hand, users also start to

[1] *Ph.D. Scholar- Iqra University Islamabad Campus.*
[2] *Assistant Professor- Iqra University Islamabad Campus.*
[3] *Assistant Professor- Federal Urdu University of Arts, Sciences & Technology*

overuse their devices regardless of time and develop an association with their smart devices. This association has recently become an issue of concern for the public, researchers and practitioners.

Excessive dependence on the smartphone has negative consequences for the user. Using smartphones at inappropriate times and places brings various health-related issues such as insomnia (Rodríguez-García et al., 2020), attentional blindness (Chen & Pai, 2018), and decreased attention in classrooms (Adnan & Gezgin, 2016; Al-Hariri & Al-Hattami, 2015; Aljomaa et al., 2016; Alosaimi et al., 2016; Chóliz, 2012; Ercengiz et al., 2020; Yildirim et al., 2016; Yildiz Durak, 2019). There is enough evidence that has reflected that high dependence on smartphones negatively influences the quality of interpersonal relationships (Jenaro et al., 2007; Misra et al., 2016).

Despite the negative side of smartphone usage, people are still unwilling to separate from their smartphones. There is a chance that users can develop "nomophobia" when they separate from their smartphones. Nomophobia is a situational phobia (Bragazzi & Del Puente, 2014; King et al., 2014; Rodríguez-García et al., 2020) resulting in anxiety caused by separation from the smartphone. Researchers advocate that attachment theory is a base for explaining that users develop emotional connection and attachment with their smartphones (Fullwood, Quinn, Kaye, & Redding, 2017). However, their attachment to their smartphones is associated with habitual mobile phone use (Adnan & Gezgin, 2016; Yıldız Durak, 2018), mobile phone addiction (Herrero et al., 2019; Rodríguez-García et al., 2020; Thomée et al., 2011; Toda et al., 2006), and smartphone separation anxiety (Tams et al., 2018).

Smartphones have unshackled the power of the computer from the desk (Adepu & Adler, 2016). According to the data aggregation service Statistica it was estimated that by 2020 smartphones would reach a global penetration rate of 78.05 percent in 2020, based on a global population of 7.8 billion with 6.055 billion smartphone subscriptions (Smartphone Penetration Worldwide, 2021). According to official sources Pakistan has one of the world's highest teledensity rate of 85.01 percent, with a total of 186 million cellular subscribers, among which 47.47% are subscribers of 3G/4G services (Telecom Indicators, 2021).

LITERATURE REVIEW

Smartphones are emerging as ubiquitous for our daily lives. They are not only changing daily routines but also becoming reason of inconsistent social behavior. Young smartphones users are increasing exponentially and consider themselves inseparable from smartphones. There is substantial literature available on smartphone use by university students from Australia, Labenon, Spain, Taiwan, Korea, China, Japan, India, and United States (Chiu, 2014; Hawi & Samaha, 2017; Herrero et al., 2019; Igarashi et al., 2008; K. E. Lee et al., 2016; Perry & Lee, 2007). Most of the literatures focusing on problematic mobile phone use (PMPU) (Young, 1998) and smart phone addiction (Kuss et al., 2018; Yildiz Durak, 2019).

Nomophobia

Nomophobia (no-mobile-phobia) is defined as "the fear or worry at the idea of being without your mobile phone or unable to use it" (Bhattacharya et al., 2019). Nomophobia is considered a phobia of the 21st century and is related to problematic mobile phone use (Gezgin & Çakır, n.d.) and smartphone addiction (Yildiz Durak, 2019). Nomophobia is common among young adults aged between 18-35, and the presence is between 75% to 100% in developing and developed nations (Ozdemir et al., 2018). The symptoms of nomophobia include using a smartphone in inappropriate places, reduced quality of relationships, always using a smartphone, development of withdrawal symptoms like tension, anger, depression, especially when they are unable to use smartphones. Scholars classified nomophobia as a situational phobia and called it into the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5). People at high levels of nomophobia have a greater tendency to check their mobile phones at low intervals.

Nishad and Rana (2016) conducted meta-analysis and postulated that smartphones plays pivotal role in any individual life. The smart devices magnify connectivity and allow users to use multiple application simultaneously. There are numerous studies that highlighted smartphone addiction, excessive smartphone use, problematic smartphone use and its effects on students (Bian & Leung, 2015; Chou et al., 2005; Haug et al., 2015; Kuss et al., 2018; Lopez-Fernandez et al., 2018; Samaha & Hawi, 2016; Young, 1998). Similarly, Shin (2014) establish excessive dependence on smartphone among Koreans and US users. The study further elaborated that young adults especially unemployed appeared to be more inclined toward using smart devices. Moreover, Korean females reflected higher dependency on smartphone; whereas, problematic smartphone use is more common among students and young adults in US.

Tavolaaci et al (2015) reported in their study that one third of the college students suffer from nomophobia. Furthermore, insomnia and cyber addiction also appeared to be associated with use of smartphone among females. In similar vein, study condeucted by Gezgin and Cakir (2016) revealed that problematic mobile use and nomophobic behavior is common among students. Their study revealed interesting facts that students use smart phones and mobile internet for accessing different social media platforms. Spitzer (2015) reported negative effects for excessively using smartphones. These include low academic performance, low quality of social relationships, suffering from depression, anxiety, loneliness, personality disorder, and aggression.

The psychological disorders are referred as nomophobia (Bragazzi & Del Puente, 2014; Hossain & Ahmed, 2016; King et al., 2014; W.-J. Lee & Shin, 2016). Several studies has confirmed the adverse effects of nomophobia on social, psychological, academic and professional life of an individual. Individuals high on nomophobia or experience anxiety, depression when staying away from smartphone often fear missing out on information such as messages, social events, and experiences of other people posted on social media. They feel anxious when they do not have access to their smartphones in situations like low battery or unavailability of mobile network. The attachment of nomophobic individuals with their smartphones comes to a level that affects their daily behavior

(Dixit et al. 2010). Excessive use of smartphones increases the likelihood of stress, anxiety, depression, and sleeping disorder (Thomée et al., 2011).

Nawaz et al (2017) indicated that youth have high level of nomophobia as compared to older people. Schwaiger, E., & Tahir, R. (2020) reported gender differences in level of nomophobia as females were found to be displaying high levels of nomophobia. According to studies on university students, they waste a considerable amount of time on social media, watching movies, and playing games rather than doing their assignments. Addiction to smartphones affects academic performance, distracts and irritates classmates and instructors, and leads to poorer marks and a greater incidence of dropout (Elhai et al., 2020; Nie et al., 2020; Wang et al., 2015).

Yildrim (2014) conducted mix-method study to gain deeper insights into phenomena. The study reported nomophobia as "modern age phobia" because of increased use of smart devices in oour daily lives (King et al., 2014). Yildrim (2014) study was the first study, where the study identified four dimensions of nomophobia i.e. "not being able to communicate, losing connectedness, not being able to access information and giving up convenience" (p. iv, 40, 56). It is obvious from the above discussion that nomophobia is an emerging issue which may not only be a source of physical and social problems but is becoming a challenging issue for the organizations too, and therefore, needs to be investigated properly.

This study used NMPQ scale developed by Yildirim, and Correia, (2015) and aims to bring new perspective on research in nomophobia field by addressing following questions:

1. Does Females use their smartphone more frequently than males?
2. Does level of nomophobia differ according to gender?
3. Does level of nomophobia differ according to age?

RESEARCH METHODOLOGY

Sampling

For the purpose of data collection, online survey was conducted through LinkedIn. In this study convenience sampling is used to select participants. Participants shared insight by responding to questionnaire. The sample selected for this study was 377.

Measurement Tool

The NMPQ is self-report measure that is used to assess the severity of nomophobia. The scale composed of 20-items with 7-point Likert type statements as (1=Strongly Disagree; 2 = Somewhat Disagree; 3 = Disagree, 4= No opinion, 5 = Agree, 6= Somewhat Agree, 7=Strongly Agree). The scale provide score ranging from 20-140, with higher scores indicating high levels of nomophobia. The scale have four sub-dimensions: not being able to communicate (6 items), Losing connectedness (5 items), not being able to access information (4 items), giving up convenience (5 items). Each of the dimension showed good internal consistency (α= 0.894, 0.845, 0.844, and 0.928), similar to previous findings of (α = .939, .874, .827, and.814, respectively). NMPQ scale has been shown high internal

consistency (α = 0.945) and construct validity (r= 0.710) (Yildirim & Correia, 2015). In the present study, the reliability score was α = 0.907.

ANALYSIS

General characteristics of Participants

Out of the 377 participants, 73% were male and 27% were female. The age of the participants ranged between 20 to 51 years. All the employees reported some level of nomophobia. Almost 40% employees reported moderate levels of nomophobia (40%; NMPQ total= 60- 99), followed by high levels of nomophobia (59%; NMPQ total > 100), remaining 1% reported low levels of nomophobia. No employee reported absence of nomophobia.

Table 1

Variables	**M**	**SD**	**Frequency (%)**	**Reliability**
Nomophobia Level				
Absence of Nomophobia			0 (0.00)	
Low levels			2 (1%)	
Moderate			149(40%)	
High			226(59%)	
NMPQ total Score	401.27	18.795		0.907

Note. NMPQ = Nomophobia Questionnaire

Gender and Smartphone use

Independent samples t-test was used to compare males and Females on average times per day checking their smartphone and hours spent on smartphone. There was no difference between Males (M= 2.79, SD= 1.511) and Females (M= 2.95, SD= 1.541) on number of times they check smartphone during the day [t= 0.910, p= 0.364]. The number of hour spent on smartphone is also no significant [t= -1.887, p= 0.16] with males reporting average of 7.07 h and females with an average of 6.25 hour per day.

Gender and overall Nomophobia score

An independent sample t-test was used to compare Male and Females on average NMPQ score. There was insignificant difference in males (M= 104.26, SD= 18.40) working in telecom sector as compared to Female employees (M= 104.27, SD=19.97) on nomophobia levels [t= 0.123, p=0.902, Cohen's d= 0.019]. Females reporting low to moderate level of nomophobia.

Table 2

	N	**1**		**2**		**3**		**4**		**NMPQ**	
		M	SD	M	SD	M	SD	M	SD	M	SD
Male	278	5.19	2.27	4.83	1.38	5.37	1.15	5.55	1.20	104.26	18.40
Female	99	5.40	1.14	4.60	1.58	5.31	1.20	5.61	1.21	104.27	19.97
T		-0.026		0.118		-0.305		-0.286		-0.123	
Df		375		375		375		375		375	
P		0.98		0.90		0.76		0.77		0.90	

For the purpose of further investigation Mann-Whitney U test, a non- parametric test was executed. The test further revealed that NMPQ scores are observed same for males (Md= 5.25, n=278) compared to females (Md= 5.35, n= 99), U statistic = 13489.500, z= 0.292, p= 0.771, which is not significant.

Gender differences within factors of nomophobia scale

Given the insignificant differences between male and females on overall NMPQ scores and nomophobia levels, further investigation were explored to compare both gender on the underlying factors of nomophobia scale. Independent sample t-test was used to computer the gender difference within the factors of nomophobia (Table 3). The first two factors, not being able to communicate (factor-I) and losing connectedness (factor-II) were significant. For factor-I males (M= 5.19, SD=2.27) experiencing higher levels of fear of not being able to communicate than females (M= 5.40, SD= 1.14), and for factor-II females (M=4.60, SD= 4.58) experience more fear of losing connectedness as compared to their counterparts (M=4.83, SD=1.38), though the effect size of differences was small (Cohen's d= 0.0005). The rest of two factors were not significant.

Table 3

	Male		**Female**		**t-test**	**Effect**
	M	SD	M	SD		Size
Not being able to communicate	5.19	2.27	5.40	1.14	-0.026	0.0005
Losing connectedness	4.83	1.38	4.60	4.58	0.118	
Not being able to access information	5.37	1.15	5.31	1.20	-0.305	
Giving up convenience	5.55	1.20	5.61	1.21	-0.286	
NMPQ	104.26	18.40	104.27	19.97	-0.123	

Note: Effect size was computed using Cohen's d. on NMPQ = Nomophobia Questionnaire.

To further investigate the significance of factor I and II, Mann Whitney u test was computed. The test further revealed that there is no significant difference in all sub-dimensions of nomophobia, further for factor I, males (Md= 5.40, n= 278) as compared to females (Md= 5.60, n=99) U= 12509.00 z= 1.347 and p= 0.178. For factor II males (Md= 5, n= 278) compared to females (Md= 4.83, n=99) U= 12888.50, z= 0.938, p=0.348. Factor III presented males (Md= 5.50, n= 278) and females (Md= 5.50, n=99) U= 13420, z= 0.368, p= 0.713, and factor IV males (Md= 5.80, n= 278) almost same in females (Md= 5.60, n=99) U= 12962, z=0.862, p= 0.389. The effect size of all four factor are also very small at 0.06, 0.04, 0.018, and 0.044 respectively.

Does Nomophobia levels differ according to age?

One-way Analysis of Variance was conducted to test whether the participant being working employees; Age has impact on their nomophobia level. The results indicated that there is no significant difference between employees age nomophobia level [F ()=0.061, p= 0.941] computed.

There was also no significant difference observed in behavior according to their working status in overall nomophobia and factor of the scale.

The mean score of NMPQ scale was M= 5.24. The results indicated that the majority of young people who participated in this study had high levels of nomophobia. Further 40% (n= 150) reported moderate level of nomophobia, and 1% (n=5) reported low levels of nomophobia. This significant result highlights the need to research further the psychological consequences of smartphone ownership in the specific Pakistani population. The current study unfolds the need to increase research and awareness into the excessive/problematic smartphone use and its effects on health-related issues in developing nations and developed nations as it is a growing phenomenon. According to the World Health Organization, mental health receives just 0.4% of total health expenditures in Pakistan. This scarce allocation of resources looms as a barrier to facilitating these campaigns at educational and organizational levels to slim down the use of smartphones. Awareness campaigns are required to be initiated regarding the detrimental effects of smartphones at government, provincial, and individual levels.

Interestingly, there is no significant difference observed in smartphone use (numbers of times checked, hours of use) and no significant differences between males and females. The findings are in line with previous research findings in other contexts reporting no difference in gender to report nomophobia (Farooqui et al., 2018; Nawaz et al., 2017; Yildirim et al., 2016). However, there are evidence present that found that females report having higher levels of nomophobia. The majority of the previous literature of nomophobia have collected data from students presenting significant gender differences reporting nomophobia (Arpaci, 2020; Ozdemir et al., 2018; Schwaiger & Tahir, 2020).

The present study also endeavoured further to explore gender differences within the sub-dimensions of nomophobia. Though no difference was observed in overall nomophobia scores , the factor I “not being able to communicate” and factor II “losing connectedness” demonstrated a significant difference. This gender difference in two sub dimensions highlights an important aspect related to communication and connectedness that females try to contact their families and friends through their smartphones. Research suggests that females in Pakistan are defined by their relationships, such as mother, wife, and daughter (Rizvi et al., 2014). It is plausible to conclude that the high rate of anxiety females face is due to “not being able to communicate” and “losing connectedness” is because of their strong-tie relationships in society. Smartphones serve as a source of comfort and safety because they enable them to contact their close one. Around 31.2% of the female population in Pakistan uses WhatsApp, 23.5% use Facebook messenger for communication purposes (we are social, 2021). Given the female status and higher levels of nomophobia relating to communication and connectedness, it has become essential to create targeted awareness and intervention toward females.

In this research, no significant difference among employees is noted. It could be because all employees working in the telecom sector are exposed to excessive use of technology, so the mean scores of nomophobia were the same among different age groups. This is one primary reason for not having any statistically significant difference in findings, which is in line with previous research

studies (Yildirim et al., 2016). In light of the current research study, appropriate policies are needed to be formulated by telecom organizations by taking into account job autonomy and employee well-being. It is essential because of the rapid increase in the use of internet-enabled devices at the workplace to respond to e-mail, messages and calls, and monitoring and reduce use (eg. Note-taking, scheduling, information sharing) of smartphones during work hours. However, the increased use of technology enables them to perform variety of tasks anytime and anywhere (Wang and Suh, 2018). Therefore, nomophobia levels of employees working in organizations where there is excessive use of technology, especially the telecom sector, are expected to be higher than other populations.

CONCLUSION

Nomophobia has now emerged as a psychological symptom, and extensive research is now being conducted on the issue. However, the studies investigating the phenomena undertake using different labels like smartphone addiction, problematic smartphone use, internet addiction, and social media addiction. The results of the study confirm that telecom sector employees suffer moderate to high levels of nomophobia.

There are several limitations of this research study. The first limitation is that data is only collected from telecom sector employees in Islamabad and Rawalpindi so generalizations cannot be made to other groups or country areas. This study targeted limited socio-demographic factors. Future studies should consider collecting data from a diverse sample and adding more socio-economic variables to support findings.

REFERENCES

Bian, M., & Leung, L. (2015). Linking Loneliness, Shyness, Smartphone Addiction Symptoms, and Patterns of Smartphone Use to Social Capital. *Social Science Computer Review*, *33*(1), 61–79. https://doi.org/10.1177/0894439314528779

Bragazzi, N. L., & Del Puente, G. (2014). A proposal for including nomophobia in the new DSM-V. *Psychology Research and Behavior Management*, *7*, 155.

Chiu, S.-I. (2014). The relationship between life stress and smartphone addiction on taiwanese university student: A mediation model of learning self-Efficacy and social self-Efficacy. *Computers in Human Behavior*, *34*, 49–57. https://doi.org/10.1016/j.chb.2014.01.024

Chou, C., Condron, L., & Belland, J. C. (2005). A Review of the Research on Internet Addiction. *Educational Psychology Review*, *17*(4), 363–388. https://doi.org/10.1007/s10648-005-8138-1

Haug, S., Castro, R. P., Kwon, M., Filler, A., Kowatsch, T., & Schaub, M. P. (2015). Smartphone use and smartphone addiction among young people in Switzerland. *Journal of Behavioral Addictions*, *4*(4), 299–307. https://doi.org/10.1556/2006.4.2015.037

Hawi, N. S., & Samaha, M. (2017). The relations among social media addiction, self-esteem, and life satisfaction in university students. *Social Science Computer Review*, *35*(5), 576–586.

Herrero, J., Urueña, A., Torres, A., & Hidalgo, A. (2019). Smartphone addiction: Psychosocial correlates, risky attitudes, and smartphone harm. *Journal of Risk Research*, *22*(1), 81–92. https://doi.org/10.1080/13669877.2017.1351472

Hossain, Md. E., & Ahmed, S. M. Z. (2016). Academic use of smartphones by university students: A developing country perspective. *The Electronic Library*, *34*(4), 651–665. https://doi.org/10.1108/EL-07-2015-0112

Igarashi, T., Motoyoshi, T., Takai, J., & Yoshida, T. (2008). No mobile, no life: Self-perception and text-message dependency among Japanese high school students. *Computers in Human Behavior*, *24*(5), 2311–2324. https://doi.org/10.1016/j.chb.2007.12.001

King, A. L. S., Valença, A. M., Silva, A. C., Sancassiani, F., Machado, S., & Nardi, A. E. (2014). "Nomophobia": Impact of cell phone use interfering with symptoms and emotions of individuals with panic disorder compared with a control group. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, *10*, 28.

Kuss, D. J., Kanjo, E., Crook-Rumsey, M., Kibowski, F., Wang, G. Y., & Sumich, A. (2018). Problematic Mobile Phone Use and Addiction Across Generations: The Roles of Psychopathological Symptoms and Smartphone Use. *Journal of Technology in Behavioral Science*, *3*(3), 141–149. https://doi.org/10.1007/s41347-017-0041-3

Lee, K. E., Kim, S.-H., Ha, T.-Y., Yoo, Y.-M., Han, J.-J., Jung, J.-H., & Jang, J.-Y. (2016). Dependency on Smartphone Use and its Association with Anxiety in Korea. *Public Health Reports*, *131*(3), 411–419. https://doi.org/10.1177/003335491613100307

Lee, W.-J., & Shin, S. (2016). A Comparative Study Of Smartphone Addiction Drivers' Effect On Work Performance In The U.S. And Korea. *Journal of Applied Business Research (JABR)*, *32*(2), 507–516. https://doi.org/10.19030/jabr.v32i2.9592

Lopez-Fernandez, O., Männikkö, N., Kääriäinen, M., Griffiths, M. D., & Kuss, D. J. (2018). Mobile gaming and problematic smartphone use: A comparative study between Belgium and Finland. *Journal of Behavioral Addictions*, *7*(1), 88–99. https://doi.org/10.1556/2006.6.2017.080

Perry, S. D., & Lee, K. C. (2007). Mobile phone text messaging overuse among developing world university students. *Communicatio*, *33*(2), 63–79. https://doi.org/10.1080/02500160701685417

Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, *57*, 321–325. https://doi.org/10.1016/j.chb.2015.12.045

W Lee, & S Shin. (n.d.). *A Comparative Study Of Smartphone Addiction Drivers' Effect On Work Performance In The U.S. And Korea—ProQuest*. Retrieved January 7, 2020, fromhttps://search.proquest.com/openview/76cfd512e6137910591c140b85709874/1?pq-origsite=gscholar&cbl=30135

Yildirim, C., & Correia, A.-P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, *49*, 130–137.

Yildiz Durak, H. (2019). Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: Demographic variables and academic performance. *The Social Science Journal*, *56*(4), 492–517. https://doi.org/10.1016/j.soscij.2018.09.003

Young, K. S. (1998). Internet Addiction: The Emergence of a New Clinical Disorder. *CyberPsychology & Behavior*, *1*(3), 237–244. https://doi.org/10.1089/cpb.1998.1.237