Prevalence of Coronavirus Anxiety, Nomophobia, and Social Isolation Among National and Overseas Pakistani Students

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Abstract

The COVID-19 pandemic during initial lockdowns created a problematic situation in which individuals were forced to remain within their homes and were forced to follow social distance restrictions for the well-being of themselves and others. In response, people use social networking sites on mobile phones to gather information about the COVID-19 epidemic. This study aims to investigate the influence of lockdowns on mobile phone usage among university students. Moreover, the harmful effects of COVID-19, such as anxiety, social isolation, and nomophobia among national and international students, are also investigated. The total sample size for this cross-sectional study is 438 individuals. The sample consists of Pakistani students studying at local universities (58.7%) and Pakistani students studying abroad (41.3%). The indigenous data is gathered through convenience sampling. The snowball sampling approach is adopted to acquire data from overseas. The findings show that the excessive use of mobile phones for browsing social networking sites to get information about the pandemic caused COVID-19 anxiety, nomophobia ("no-mobile-phone" phobia), and feelings of social isolation. Our results indicate that the COVID-19 outbreak greatly impacted students' massive mobile phone use and psycho-social well-being, regardless of their geographic location.

Keywords

Cell phone addiction; COVID-19; lockdown; mental health; social isolation

Introduction

The novel coronavirus 2019, commonly known as COVID-19, is an acute respiratory syndrome discovered in late 2019. The first COVID-19 case was identified in Wuhan (China), and soon after, the deadly coronavirus spread worldwide (Jiang et al., 2020). On March 11, 2020, the World Health Organization declared COVID-19 as a pandemic. A total number of 4,098,018 confirmed cases and 283,271 verified deaths were reported across the globe by May 12, 2020 (World Health Organization, 2021). The COVID-19 pandemic has dramatically affected people's lives worldwide.

Pakistan has the second-highest number of COVID-19 cases in South Asia, the fifth-highest number in Asia (after Iran, India, Russia, and Saudi Arabia), and the 14th-highest number of documented cases in history. Pakistan responded admirably throughout the second wave of the COVID-19 outbreak (Abbas et al., 2021). Unprecedented measures were adopted to slow down the spread of the virus in Pakistan, such as imposing lockdowns, but these procedures caused adverse psychological effects upon the public (Abbas, 2021). As an additional safety measure, the public, especially young people, spent most of their time at home and remained busy 'surfing the web' (Louragli et al., 2018). The individuals' mental and emotional health was at risk due to social interaction and social support (Razai et al., 2020).

The COVID-19 pandemic has led to several severe challenges, including economic shock, worldwide health issues, social behavior shifts, and operational challenges for enterprises. Likewise, COVID-19 has presented unique obstacles concerning personal and social life, such as the call for the immediate closure of educational facilities and the primary use of digital technology to continue educational activities as a preventive measure (Maqsood et al., 2021).

The novel coronavirus was a new disease that swiftly changed the world and spread fear and anxiety among the public. For the prevention of COVID-19, the government, front line workers (e.g., doctors, medical staff, and police), media, and celebrities requested the public to stay at home. They advised the general public to avoid social gatherings and religious ceremonies (McCloskey et al., 2020; NeJhaddadgar et al., 2020). During the early lockdowns, people used social networking to access information about COVID-19. The level of panic due to social media varies among people depending on their gender, age, and educational level (Booker et al., 2018). Social media played a critical role in spreading fear about the COVID-19 outbreak (Ahmad & Murad, 2020). Fear was one of the earliest emotional reactions to the COVID-19 pandemic. As a result, people evolved both practical and irrational concerns regarding the spread of the disease, such as dying, losing a loved one, and harming others by infecting them (Ornell et al., 2020). Few studies investigated the relationship between nomophobia ("no-mobile-phone phobia" or the anxiety caused by not having a working mobile phone) and smartphone addiction during the COVID-19 pandemic (Al. Qudah et al., 2021; Fidanci et al., 2021).

Elhai et al. (2020) conducted a study in Middle Eastern countries concerning the problematic use of mobile and COVID-19 related anxiety. They found a significant positive relationship between smartphone addiction and anxiety related to COVID-19 infection. Due to lockdown, Pakistani students studying in local national and overseas universities were confined and unable to travel because borders were closed, and flight operations were suspended. Marzilli et al. (2020)

concluded that staying at home reduced the risk of coronavirus infection. Still, at the same time, it reduced the mobility, job opportunities, leisure, and socialization of a person. Gezgin et al. (2019) found that students were active during the lockdowns via online courses, e-quizzes, webinars, e-workshops, etc. Students from all age groups spent a lot of time on the internet and mobile phones. During this period of social distancing, the advent of mobile technology to connect and communicate with people contributed to nomophobia.

Several mental health issues have been associated with the COVID-19 pandemic (Rizwan et al., 2021), such as coronavirus anxiety. Coronavirus anxiety is defined as a physiologically based dread or anxiety response to coronavirus knowledge, showing a high rate of somatic symptoms such as tonic immobility and faintness (Lee, 2020). The coronavirus has an immense influence on students too. In the lockdown situation, educational institutes were closed, creating uncertainty. Therefore, the postponement of exams was a stressor for students (Ebrahim et al., 2020). Individuals who lived in quarantine or isolation suffered from psychological distress and anxiety (Brooks et al., 2020).

On top of the above issues, the availability of smartphones and the cost of internet access have been linked to several health concerns. Xanidis and Brignell (2016) reported that smartphone addiction or pathological internet use impacted sleep quality; thus, online dependency was highly correlated to sleep deprivation. Mushtaque et al. (2021) investigated the issues of attending online classes during COVID-19 in a developing country like Pakistan. According to the findings, students' health was negatively impacted by online classes due to their excessive use of gadgets and smartphones. Students experienced poor vision, weight gain, sleep deprivation, and behavioral issues. A study by Aqeel et al. (2021) revealed that anxiety and depression disorders were common among students. The student's mental health was linked to illness perception, anxiety, and depressive disorders. Furthermore, it was revealed that during the COVID-19 lockdown, sickness perception was linked to a worse level of mental health a higher level of depression and anxiety disorders in students.

Due to various advantages and ubiquitous use, mobile phones have become a vital part of people's lives in the twenty-first century. As mobile phones are smart devices with multiple uses, people use multiple social sites such as Facebook, WhatsApp, Instagram, and many more platforms for gathering information about COVID-19. Hence, social media plays a crucial role in changing people's perceptions and disseminating information and misinformation concerning the COVID-19 outbreak (Fidanci et al., 2021). Although social media is an essential tool and source of timely information on important topics and health dangers, it is unreliable. Numerous social media platforms disseminate unreliable information, making it difficult to discern between rumors and truths (Fidanci et al., 2021).

The spread and risk of COVID-19 infection have primarily been averted by lockdowns (Su et al., 2020). However, mobile phone users reported distress and anxiety symptoms when they could not use certain features to expand the user association with their smartphones (Yildirim & Correia, 2015). In the United Kingdom, adolescents between the ages of 12 to 19 constantly have access to their mobile phones, and youths between the ages of 17–24 frequently check their mobile phones five minutes after waking up (Ofcom, 2016). The first large-scale study was conducted in Bangladesh by Saiful Islam et al. (2020) to investigate problematic internet use (PIU) during the initial COVID-19 outbreak. It was found that PIU was substantially related to an individual's

socio-demographic characteristics, lifestyle factors, and online behaviors (smartphone usage, internet browsing hours, playing online games, social media purposes, and recreational activities). According to the findings of Asghar et al. (2021), adolescents' use of social media sites and streaming services has increased overall.

Furthermore, Fernandes et al. (2020) found that people with high ratings on gaming addiction, compulsive internet usage, and social media use also had high scores on sadness, social loneliness, escapism, poor sleep quality, and coronavirus associated anxiety due to the epidemic. Individuals who are already lonely may engage in other maladjusted activities related to reducing perceived loneliness, such as problematic smartphone use (Aktaş & Yılmaz, 2017). Lonely people commonly utilize smartphones to alleviate their feelings of isolation (Jiang & Shypenka, 2018). As a result of the COVID-19 epidemic, people may spend more time at home. Therefore, smartphone usage may increase as a strategy or way of passing the time. Hence, increased smartphone usage to exclude everything else is a significant component of addiction (Elhai et al., 2017). Consequentially, Shuja et al. (2020) reported that loneliness and COVID-19 fear might increase smartphone use, potentially leading to problematic smartphone use and addiction. Apart from this, people may use their smartphones to cope with their dread of COVID-19 and loneliness, increasing smartphone addiction.

Just as with the entire world, Pakistan is also facing challenges from COVID-19. A national emergency was declared on March 22, 2020. In response, people spent more time on their phones, increasing their chances of developing nomophobia (i.e., discomfort, anxiety, nervousness, or anguish caused by being out of contact with a mobile phone) (Bragazzi & Del Puente, 2014, p. 156). Although nomophobia is not formally recognized as a psychiatric disease, Bragazzi and Del Puente (2014) have called for it to be added in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V).

In January 2021, almost 80% of Pakistanis owned mobile phones, with many individuals owning more than one device. In December 2021, Pakistan had 110 million broadband subscribers and 108 million 3G and 4G subscribers (Pakistan Telecommunication Authority, 2021). Consequently, smartphones and tablets have become indispensable in young people's lives in Pakistan (Asghar et al., 2021). During COVID-19, social media exposure has increased the public's prevalence of mental health problems (Gao et al., 2020). Therefore, the purpose of the present study was to comparatively measure the level of coronavirus pertinent anxiety, nomophobia, and social loneliness among the students studying in Pakistan and abroad. This is the first study to investigate the prevalence of coronavirus anxiety and nomophobia among Pakistani students. The present study also examined gender differences, coronavirus anxiety, nomophobia, and social loneliness among Pakistani students studying locally and abroad. It was anticipated that students would experience significant social isolation and coronavirus associated anxiety. Eventually, whether or not students' feelings of loneliness lead to addictive behaviors such as excessive use of smartphones was investigated. It was also discussed whether or not the educational level has a statistical impact on coronavirus associated anxiety, nomophobia, and loneliness among the students studying in Pakistan and abroad?

Methodology

Design and sampling

A quantitative relational survey method was employed to gather data. When studying the relationship and interaction between two or more variables, Cohen (2002) recommended using the relational survey method. The study comprised two samples: Pakistani students studying in local institutions and Pakistani students studying abroad. A comparative research design was established, and convenient sampling techniques were used to collect data from Pakistani students, while snowball sampling was used to collect data from overseas students. The study's total sample comprised 438 Pakistani students, and the sample size was calculated through G*Power analysis.

Procedure

An online self-administered survey was conducted due to COVID-19 social distancing restrictions. All data were collected from September 2020 to December 2020, when the government declared a lockdown and closed the borders, and students were restricted to their respective locations. Because of this lockdown, the confined students could only communicate with their families via smartphones and obtain COVID-19 related information using different social sites. The online survey data was collected using Google Forms. It was a more convenient, faster, and more secure implementation method in various locations.

In Pakistan, the target population was from Bahauddin Zakariya University (BZU), Punjab University, and Government College University, while the target population from abroad was Pakistani students at universities in China, Malaysia, and Uzbekistan. The exclusion criteria for the study were medical students, school-going or teenage students, and nationalities other than Pakistani. The participants ranged in age from 20 to 40 years. The participants were informed about the purpose of the research. Informed consent was received from the students participating in the survey. The required information included gender, age, education, study country, mobile frequency (hour), and frequently used social apps. Most importantly, the useful items for the survey, such as anxiety about the coronavirus, nomophobia, and social isolation, were assured to be followed strictly by the participants.

Ethical approval

Prior to data collection, ethical approval (Ref# 291120) was received from the research and ethical review committee of the BZU Bahadur Sub Campus, Layyah, Pakistan. The original authors also received approval from the Institutional Research Committee and permission to use the instruments in this research. Throughout the data collection process, institutional and national ethical requirements were followed. The data remained anonymous and undisclosed.

Materials used in the study

Coronavirus Anxiety Scale. The present study employed a self-report Coronavirus Anxiety Scale (CAS) developed by Lee (2020). This scale has five items, and each item is based on a 5-point Likert scale. Additionally, the CAS boasts a Cronbach alpha coefficient value of 0.90.

Nomophobia Scale. A self-report measure called the Nomophobia Scale with twenty items and four sub-dimensions was utilized in this study. Its Cronbach alpha coefficient value is 0.95 (Gezgin et al., 2019).

Social Isolation Scale. A self-report measure loneliness scale was applied to assess the feelings of loneliness and social isolation. It consists of 20 items, and its retest reliability is 0.73 (Russell et al., 1978).

Statistical analysis

The descriptive statistics, Pearson product-moment correlation, independent sample t-test, and multivariate analysis of variance (MANOVA) were applied to the collected data. The SPSS-25 version for Windows was used for all data analysis. A p value less than 0.05 was considered significant.

Results

Table 1: Demographic Data of the Participants (N = 438)

Variable	f (%)
Gender	
Male	249 (56.8)
Female	189 (43.2)
Age (in years)	
21–25	159 (36.3)
26–30	165 (37.7)
31–35	76 (17.4)
36–40	38 (8.7)
Study In	
Pakistan	257 (58.7)
Abroad	181 (41.3)
Education	
Bachelor	32 (7.3)
Master	129 (29.5)
MPhil	203 (46.3)
PhD	74 (16.9)
Usage of mobile phone (in hours)	
1–5	206 (47.0)
6–10	176 (41.7)

Variable	f (%)
11–15	24 (5.5)
16–20	28 (6.4)
21–24	4 (.9)

Note: f = frequency, % = percentage

The presents study encompassed 438 participants, including 56.8% male and 43.2% female. The ages of the participants ranged from 21 to 40 years. However, 36.3% were 21–25; 37.7% were from 26 to 30; 17.4% belonged to 31–35; and 8.7% were from 36–40 years. Among the participants, 58.7% belonged to local Pakistani universities, while 41.3% were Pakistani students studying abroad. Apart from this, the participants were segregated in different levels of education, such as bachelor (7.3%), master (29.5%), MPhil (46.3%), and PhD (16.9%).

As shown in Table 1, the study revealed that the daily mobile phone usage during the lockdown period in question was as follows: 47.0% of the participants used their mobile phones for 1–5 hours per day, 41.7% for 6–10 hours, 5.5% for 11–15 hours, 6.4% for 16–20 hours, and 4 participants used their mobile phones for 21–24 hours per day.

Table 2: Correlation Among Usage of Mobile Phone, Coronavirus Anxiety, Nomophobia, and Social Isolation (N = 438)

Variables	1	2	3	4
1. Usage of mobile phone	-	.311**	.128**	.112*
2. Coronavirus anxiety	-	-	.165**	.017
3. Nomophobia	-	-	-	.161**
4. Social Isolation	-	-	-	-

*Note: **p<.001, *p<.05. 1=usage of mobile phone, 2= coronavirus anxiety, 3=Nomophobia, 4= social isolation.*

Table 2 revealed the correlation between study variables. Usage of mobile phones had a significant positive relationship with coronavirus anxiety (r = 0.311**, p < 0.001). Similarly, mobile phone usage also had a significant positive relationship with social isolation (r = 0.112*, p < 0.05). Additionally, the results demonstrated that coronavirus anxiety had a significant positive relationship with nomophobia (r = 0.165**, p < 0.001), and a positive relationship with social isolation (r = 0.017). Nomophobia and social isolation had significant positive relationships with each other (r = 0.161**, p < 0.001).

Table 3: Country-Wise Differences in the Usage of Mobile, Coronavirus Associated Anxiety, Nomophobia, and Social Isolation

Variable	Pakistan (n=257)		Overseas (n=181)				95% CL	
	M	SD	M	SD	t	p	LL	UL
Usage of mobile phone	1.66	1.08	1.91	.89	-2.54*	.043	-.44	-.054
Coronavirus anxiety	3.72	4.08	3.98	4.36	-.62	.777	-1.05	.546
Nomophobia	92.2	21.23	105.01	16.07	-6.84**	.000	-16.46	-9.11
Social isolation	33.2	3.88	31.83	2.62	4.55**	.000	.803	2.02

*Note: df = 436, ** p < .001, *p < .05, CL= class limit, LL = lower limit, UL = upper limit, M = mean, SD = standard deviation*

Table 3 shows a significant difference in local Pakistani university students and Pakistani students studying abroad on the measures of usage of mobile phones, nomophobia, and social isolation during a COVID-19 lockdown. The students studying abroad had a high score on mobile phone usage, $t(436) = -2.54^{*}$, $p < 0.05$. Similarly, the sample shows that students studying abroad had a considerable difference in the dimension of nomophobia, $t(436) = -6.84^{**}$, $p < 0.001$. The results showed that students studying in Pakistan had a highly significant difference on the social isolation scale, $t(436) = 4.55^{**}$, $p < 0.001$. On the other hand, there was no significant difference found between local Pakistani students and students studying abroad on the dimension of coronavirus anxiety.

Table 4: Gender-Wise Differences in the Usage of Mobile, Coronavirus Associated Anxiety, Nomophobia, and Social Isolation (N= 438)

Variable	Male (n=249)		Female (n=189)				95% CL	
	M	SD	M	SD	t	p	LL	UL
Usage of mobile phone	1.93	1.13	1.56	.79	3.83**	.000	.180	.561
Coronavirus anxiety	4.50	4.41	2.95	3.73	3.88**	.000	.765	2.33
Nomophobia	102.1	19.01	91.4	20.28	5.65**	.000	6.97	14.39
Social isolation	32.64	3.35	32.69	3.66	-.148	.881	-.720	.619

*Note: df = 436, **p < .001, *p < .05, CL= class limit, LL = lower limit, UL = upper limit, M = mean, SD = standard Deviation*

Table 4 shows a significant gender difference in mobile phone usage, coronavirus anxiety, and nomophobia. The male students showed a higher score than females, and the t-value showed the difference in the use of mobile phones, internalizing coronavirus anxiety, and nomophobia. On the other hand, on the dimension of social isolation, the mean score of males (M = 32.64) and females (M = 32.69) showed no differences during the COVID-19 lockdown period.

Table 5: Multivariate Effects on Study Variables Under Four Groups of Education Levels (N=438)

Variable	Bachelor (n=32)		Masters (n=129)		MPhil (n=203)		PhD (n=74)				
	M	SD	M	SD	M	SD	M	SD	f	p	Effect size
Usage of mobile phone	1.81	.96	1.74	.85	1.58	1.04	2.32	1.04	10.2**	.000	.066
Coronavirus anxiety	2.68	2.79	3.52	4.78	3.77	4.09	5.02	3.70	12.1*	.028	.021
Nomophobia	89.9	18.6	99.2	19.7	93.6	19.9	108.3	18.3	3.06**	.000	.078
Social isolation	35.3	4.6	33.4	3.1	31.9	3.49	32.0	2.61	12.9**	.000	.082

*Note: M = mean, SD = Standard Deviation, n = sample, p = significance, **p < .001, *p < .05*

Table 5 shows a considerable difference of education on study variables, Pillai's trace = .230 F (3,434) = 9.00, $p < 0.001$, n2 = .077. According to the results, PhD students who spent more time on mobile phones subsequently had higher coronavirus anxiety and nomophobia levels than

graduate, master, and MPhil students. Moreover, a high level of social isolation was found in graduate students. The results revealed that considerable use of mobile phones had a significant effect on each student's level of education, i.e., graduate, master, MPhil, and PhD.

Discussion

Throughout the COVID-19 epidemic, the growing trend of incorporating information technology into daily routines has led to some concerns, including alienation from the real world and addiction to being engaged in a virtual world. The early acquisition of mobile phones and the amount of time spent on them play a role in the development of nomophobia. According to Abbas et al. (2019), social media use had a detrimental effect on a student's behavior in Pakistan rather than a beneficial effect. According to Matar Boumosleh and Jaalouk (2017), using a smartphone for social networking and social media as a source of information and conversing with others has been linked to problematic use of a smartphone.

The current study revealed that more than half of the participants (53%) used their mobile phones more than 5 hours a day to browse social media. Our study examined the relationship between the usage of mobile phones, coronavirus associated anxiety, nomophobia, and social loneliness. The current study found that mobile phones had a highly significant positive relationship with coronavirus anxiety and nomophobia. Similar studies support our findings that the risk of addiction increases with more time spent on social networking sites (Owusu-Acheaw, 2016). Anxiety among university students over COVID-19 was linked to the pandemic's possible adverse effects on their education and professional lives.

Moreover, Yildiz Durak (2018) noted that as the coronavirus disease transmission intensified, adverse effects of social media decreased communication and increased social isolation. Ahmad and Murad (2020) demonstrated that social media created coronavirus associated anxiety in people. Regarding the country-level comparison, Pakistani students studying abroad suffered from a higher level of coronavirus anxiety symptoms and nomophobia than local Pakistani students. Living abroad and being far away from 'family and friends' social support systems were the main factors that affected mental health. In order to obtain COVID-19 related information, an increase in smartphone uses such as phone calls, online chats, social networking, and web surfing was needed (Serra et al., 2021). This usage uptake could result from the lack of physical contact and connection with family that people experienced during this period due to an enforced lockdown (David & Roberts, 2021). Our study revealed that local and overseas Pakistani students had significant differences in their scores on the social isolation scale. Individuals concerned about COVID-19 should take precautions to protect their physical health. One of these defenses is the individual's isolation from others, leading to feelings of loneliness. As a result of diminished social involvement, loneliness significantly impacts an individual's mental health. Furthermore, increased smartphone addiction has been related to poor mental health (Roberts & David, 2019).

It was found that male students have a considerable difference in coronavirus anxiety symptoms than female students. The present study's findings are consistent with Daei et al. (2019), who concluded that male university students had a higher prevalence of nomophobia than female university students. In a study conducted by Al-Rabiaah et al. (2020), males and females in Saudi

Arabia expressed comparable levels of coronavirus anxiety. The findings could be explained by the fact that they share similar environments and face similar hazards. Similarly, an Australian study found a significant difference between men and women in coronavirus anxiety and social isolation (Stanton et al., 2020). The respondents spending more time on mobile phones observed coronavirus associated anxiety symptoms, which increased loneliness in the students. Apart from this, rumors and misinformation about viruses searched through mobile phones are a common cause of distress in students (Ahmad & Murad, 2020).

A study by Ozdemir et al. (2018) reported that nomophobia and social isolation (loneliness) have a significant positive relationship with each other. Independent sample t-test result shows that abroad studying students have significantly different nomophobia dimensions than Pakistani students studying in their homes. In contrast, students studying in Pakistan have a highly significant difference on the social isolation scale since they suffer from loneliness more than students studying abroad. Male students' nomophobia score was found to be higher than female students. On the dimension of social isolation, there was no significant difference between male and female students.

The MANOVA results for the overall sample of the study indicated the statistically significant difference between education levels concerning usage of mobile phones and coronavirus anxiety, nomophobia, and social isolation. Marzilli et al. (2020) revealed that PhD students spent more time on mobile phones and showed severe symptoms of coronavirus anxiety and addiction to mobile phones (nomophobia) during the lockdown. Meanwhile, graduate students had a high mean score on the dimension of social isolation. Kaplan Akıllı and Gezgin (2016) discovered that students with higher nomophobia tend to suffer loneliness lack self-esteem, and these students face obstacles throughout their academic career. Furthermore, international university students were found to have a high degree of coronavirus anxiety and addictive behavior symptoms.

Despite the study's findings, there has been a considerable increase in problematic usage of mobile phones and cell phone addiction. This resulted in a number of negative psychological (mood changes, loss of interest, and distraction) and social (isolation, artificial learning methods) consequences (Serra et al., 2021). According to the findings, universities should prevent, recognize, and treat students' mental health problems. Eventually, it has been concluded that the impact of COVID-19 on the mental health of national and international students has been overlooked in the previous studies. We urge educators, academic institutions, and mental health practitioners to provide adequate support to their national and international students, especially students who stay at the hostel during the pandemic.

The current study has some limitations. Firstly, the comparative nature of this study precludes inferences about more specific implications from country influences. Secondly, this study was conducted among university students, including undergraduate and graduate students. The findings may not be generalizable to other populations. The results among coronavirus anxiety, nomophobia, and social isolation can be different when the research is conducted on high school or college students or employed individuals. Thirdly, the information was gathered through online self-reports. Some researchers claim that self-reported data are unreliable owing to recall bias (Althubaiti, 2016). Finally, this study did not investigate how nomophobia or coronavirus anxiety affects students' inter-peer relationships and academic engagement. In the future, it will

be necessary to explore the consequences of social isolation on individuals' psychological health and well-being and conduct longitudinal research with representative samples.

Conclusion

During the COVID-19 pandemic, students spending more time on a mobile phone were found vulnerable to coronavirus anxiety and nomophobia. During the lockdown, individuals who used social media on their mobile phones to obtain COVID-19 details suffered from coronavirus anxiety. It revealed that coronavirus anxiety, nomophobia, and social isolation exist in local Pakistani students and Pakistani students studying overseas. However, the impact of these factors depends on the gender and level of education of a person to a great extent. Our results indicate that the COVID-19 significantly impacted students' smartphone use and psycho-social well-being, regardless of their geographic location. Male students were found to have more mobile phone use, coronavirus anxiety, and nomophobia. Also, PhD students reported greater use of smartphones during COVID-19, which is consistent with psychological illness (coronavirus anxiety) and addictive behavior (nomophobia). It is, therefore, necessary to address pandemic-related suffering when stressed to mitigate the consequences of maladaptive coping strategies. Both educational stakeholders and parents should take on the responsibility to protect learners/students from nomophobic behavior.

Recommendations

The university administration must help restrict students' mobile phone usage. The universities should pay more attention to male students and higher degree students (PhD) as they are more likely to use mobile phones. In addition, students should be taught about the growing tendency of nomophobia and its negative health consequences. Counselors should take a proactive role in preventing and managing coronavirus anxiety and nomophobia among students. Consider strategies for screening for nomophobia and rapid referral to counselors. Moreover, student volunteers should screen students for social anxiety and nomophobia.

Virtual networks should only be utilized with extreme caution. Avoid expressing and sharing false and unreliable news and information based on speculation about society's number of patients and fatalities, mainly on social media. Many components of a crisis are beyond our control; we focus on the aspects under our control and avoid concentrating on the elements of the crisis over which we have no control.

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