






Description of Nomophobia Among College Students: An Interpretative Phenomenological Analysis

Rajeev Ranjan¹, Yatan Pal Singh Balhara², Biswa Ranjan Mishra³, Siddharth Sarkar⁴, Ayushi Bharti¹, Muskan Sinha⁵, Shamshad Ahmad⁶, Pankaj Kumar¹, Meha Jain⁷ and Sahadeb Panigrahi⁸

ABSTRACT

Background: Nomophobia is a situational phobia evoked by unavailability of smart phone or the thought of the possibility of not having it, not being able to use it and losing it. Currently used instruments for assessment of severity of nomophobia offers challenges of administration and have limited applicability in the Indian setting. Therefore, this study was aimed to depict and understand the lived experience of college students with nomophobia and making sense of it.

Methods: This interpretative phenomenological analysis research design study was carried out on 17 undergraduate students belonging to different academic streams including Science, Social science and Commerce from the three study sites situated in different locations of India. An in-depth interview guide was prepared. The students who scored more than go on nomophobia

questionnaire (NMP-Q Questionnaire) were included in the study. The data was recorded in audio and video format, it was transcribed, and translated from Hindi to English language. Coding was done and the theme were extracted.

Results: The findings identified six super-ordinate themes: Digital Obsession, Digital Compulsion, Approval Motivation, Digital Intensement, Digital Well-being and Insight.

Conclusion: The lived experiences of the students with nomophobia had explicitly shown a strong inclination towards the smartphone. They also focused on some of the significant aids provided by the smartphone. Further the intensive use of the smartphone was posing major challenges to the students when they were away from it.

Keywords: Nomophobia, smartphone, lived experiences, in-depth interview, interpretative phenomenological analysis

Key Messages

- Nomophobia is a situational phobia evoked by unavailability of a smartphone.
- This study tried to depict and understand the lived experience of college students with nomophobia.
- This interpretative phenomenological analysis was carried out to extract the themes of nomophobia.
- Themes: Digital Obsession, Digital Compulsion, Approval Motivation, Digital Intensement, Digital Well-being and Insight.
- Lived experiences of nomophobes were predominantly difficult posing major challenges to them.

Smartphone holds an intrinsic value in a person's life. Its manifold advantages have made humans more inclined towards it thereby resulting in psychological as well as physical maladies.^{1,2} Nomophobia as a construct can

¹Dept. of Psychiatry, All India Institute of Medical Sciences, Patna, Bihar, India. ²Dept. of Psychiatry & National Drug Dependence Treatment Centre, All India Institute of Medical Sciences, New Delhi, India. ³Dept. of Psychiatry, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India. ⁴Dept. of Psychiatry & National Drug Dependence Treatment Centre, All India Institute of Medical Sciences, Ansari Nagar, New Delhi, India. ⁵All India Institute of Medical Sciences, Patna, Bihar, India. ⁶Dept. of Community & Family Medicine, All India Institute of Medical Sciences, Patna, Bihar, India. ⁷Dept. of Pediatrics, All India Institute of Medical Sciences, Patna, Bihar, India. ⁸All India Institute of Medical Sciences, Bhubaneswar, Odisha, India.

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Address for correspondence: Rajeev Ranjan, Dept. of Psychiatry, All India Institute of Medical Sciences, Patna, Bihar 801507, India.
E-mail: rajeevranjanoo87@gmail.com

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be understood as a situational phobia evoked due to the unavailability of smart phone or the thought of not having it, not being able to use it and losing it. It was first coined in 2008 by the United Kingdom Post Office, to study anxiety levels of the mobile phone users.³ The discrepancy in reporting the prevalence of nomophobia is considerable due to lack of universal acceptance of this construct as a diagnostic entity in current nosological system, as the percentages of 'at-risk' individuals range from 13% to 79%, and those suffering from it range from 6% to 73%.⁴ Case studies reported indicated nomophobia had close relationship with panic disorder and social anxiety disorder.^{5,6} It may be also co-morbid with problematic use of smartphone.⁷ However, such self-reporting-based evidences are not very accurate.

Very few studies have been attempted to assess objective validity of Nomophobia construct. The pioneer study in this area was done by Yildirim and Correria⁸ in which they have developed Nomophobia Questionnaire (NMP-Q). NMP-Q is a standard instrument to measure the severity of nomophobia. It has four domains which were extracted through thematic analysis. Other studies demonstrated one major additional theme (dependency on social sites for approval motivation).^{9,10} Another instrument of nomophobia was developed by Ozkan et al. who extracted the themes with the expert opinion which were interwind identity (seeking validation from virtual world), attachment, conflict in using a smartphone and effective withdrawal.¹¹ Similarly, a recent study (Firat Nomophobia Scale) extracted a single dimension while assessing nomophobia.¹²

Most researchers used NMP-Q to validate a questionnaire on nomophobia worldwide.¹³⁻¹⁵ Therefore, as it is evident the nomophobic patterns of the subjects analysed through objective techniques like thematic analysis are very few. Thus, more research is warranted to investigate nomophobia as a theoretical construct and diagnostic entity. Understanding the lived experiences of Indian undergraduate students belonging to different streams and regions would support building our indigenous tool for nomophobia. Therefore, this study aimed to understand the insights gained

from the students with nomophobia and explore the theme as per their lived experiences.

Material and Methods

Participants and Setting

The present study had an interpretative phenomenological analysis (IPA) research design. It was conducted from November 2021 to October 2022. Institute ethics committee approval was taken before inclusion of the subjects in the study. The sample for the present study consisted of 17 undergraduate students ($n_1 = 8$, $n_2 = 6$ and $n_3 = 3$) where they were interviewed individually. The standards for phenomenological research were taken into consideration for the study. Undergraduate students from different streams across three different locations of India who were willing to participate in the study were included. The students from different locations of India with varied streams (e.g., Science, Social Science and Commerce) scoring more than 90 (moderate to severe) on the severity scale of Nomophobia⁸ were selected for in-depth interview.

Instruments

NMP-Q was used to screen the students with Nomophobia (20 items). It has four domains: not being able to communicate (the fear of not reaching out to family or friends instantly), losing connectedness (the apprehension of getting disconnected from the online identity), not being able to access information (the feeling of discomfort of not being able to access information through a smartphone) and giving up convenience (the fear of not able to use in case of battery running low and shortage of data). Each item scored on a 7-point Likert scale. The score range on the NMP-Q is 20 at its lowest and 140 at its highest. Scores of 20 or less are considered absence of nomophobia, 21-59 is a mild level of nomophobia, 61-99 is a moderate level of nomophobia and 100-140 is severe nomophobia.⁸

An in-depth interview guide was based on the previous severity instrument.⁸ The interview was kept open as well as close-ended if some new theme appeared during the interview for more

in-depth exploration. The main points explored during the interview were purpose of using smartphone which included few probe questions. It also included questions related to screen time consumption, insights on smartphone usage, contribution of smartphones to their everyday life, advantages and downsides of having smartphone and to share the overall experience with smartphone.

Procedure

The student's socio-demographic details along with clinical variables were recorded with semi-structured proforma. The interview was conducted in a hospital located in three different cities of India which consisted of one psychiatrist, clinical psychologist and a project technical officer. The process of interview was followed by transcription of the interview followed by translation from Hindi to English after which themes were identified and extracted accordingly.

The interview was video recorded after taking due permission from the students. Each interview was conducted in the language in which the students (English or Hindi) were comfortable. The interviews took almost 1 hour. The interviews were conducted by one psychiatrist and project technical officer who acted as the note taker. Data were collected until saturation was achieved.

Data Analysis

IPA was used to analyse the data (shown in **Figure 1**). The video-recorded interview was transcribed by the project technical officer of three different sites after listening again and again. The transcription was then translated from Hindi to English language if required. The transcribed data for each interview were read and re-read to gain conformity with the raw data. During this process of familiarization, the newly developed codes were highlighted by all three researchers (psychiatrists, clinical psychologists, and project technical officers) of individual sites independently. These emerging codes were compared with each other to identify themes. The categories were written on the left side and common themes that came out were written on the right side. This was done

many times so that no theme was left out. It was cross-checked again by the other researchers (psychiatrists). Then, similarities between categories were looked for and emerging themes were noted (focused coding). The themes were analysed along with the supporting data (quotes) to fit together in a meaningful way. The analysis of the data was done by the methods of phenomenological psychology, which were used to interpret the important meanings of the students' lived experiences of advantages and downsides of smartphones. Analytic rigour was ensured via internal reviews by the members of the research team through Zoom meetings at three different locations.

Results

Seventeen students were interviewed in our study. Majority of the participants were males (52.94%) aged between 21 and 22 years. Most of the participants were from urban backgrounds, belonging to middle socio-economic status. They were mostly Hindu (88%) except for two belonging to Sikh & Islamic backgrounds. The socio-demographic details are represented in **Table 1**.

Table 2 describes the superordinate and subordinate themes with the quotes of the students with nomophobia.

Superordinate Theme 1: Digital Obsession

This super ordinate theme consisted of the following sub ordinate themes namely: separation anxiety (it described apprehension that may occur due to not using phone or while using it), anticipatory digital grooming (prefer buying smartphone which has good battery backup so that the participants do not miss out on anything) and separation blue (feeling of gloominess when the participants were away from their smartphone).

Superordinate Theme 2: Digital Compulsion

This superordinate included nine subordinate themes. The first one is loss of control following which participants explained that due to loss of control over their smartphone usage, they could not be

FIGURE 1.

Flow Chart Showing Thematic Analysis of the Qualitative Data.

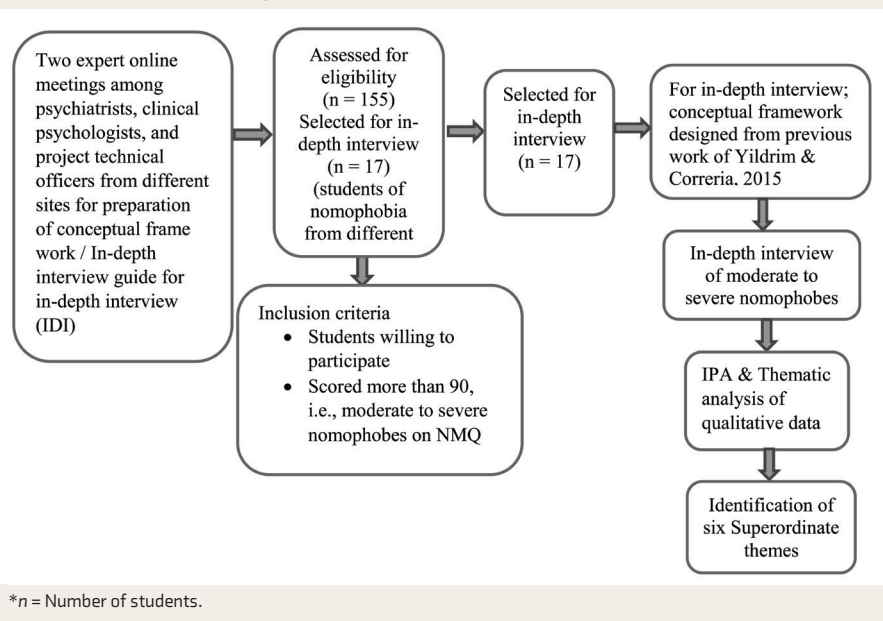


TABLE 1.

Socio Demographic Profile of the Sample Population (n = 17).

Socio-demographic Indicator		Site 1	Site 2	Site 3	Total
		n(%)	n(%)	n(%)	n(%)
Age	18–20	5(62.5)	0(0)	0(0)	5(29.41)
	21–22	2(25)	6(66.7)	1(11.1)	9(52.94)
	23–24	1(12.5)	0(0)	2(66.7)	3(17.64)
Gender	Male	4(50)	3(50)	3(100)	10(58.82)
	Female	4(50)	3(50)	0(0)	7(41.1)
Education	Pursuing graduation	8(100)	6(100)	0(00)	14(82.3)
	Graduate	0(0)	0(0)	1(33.3)	1(5.8)
	Postgraduate	0(0)	0(0)	2(66.7)	2(11.7)
Religion	Hinduism	6(75)	6(100)	3(100)	15(88.2)
	Islam	1(12.5)	0(0)	0(0)	1(5.8)
	Sikhism	1(12.5)	0(0)	0(0)	1(5.8)
Living settlement	Urban	8(100)	5(83.3)	3(100)	16(94.12)
	Rural	0(0)	1(16.7)	0(0)	1(5.8)
Stream	Science	6(75)	4(66.7)	1(33.3)	11(64.70)
	Social science	2(25)	2(33.3)	1(33.3)	5(29.41)
	Commerce	0(0)	0(0)	1(33.3)	1(5.8)

more productive. Second theme stalling explained that the participants wanted to complete their work quickly so that they could use their mobile phone again. One of the participants reported that being hooked on to mobile phone decreased their appetite or that they skipped their meals. Third subordinate theme, that is, used despite knowing the harmful consequences revealed that it disturbed the sleep cycle and deteriorated the academic

performance. Fourth subordinate theme is used in hazardous situations where participants also felt physically/mentally and emotionally drained and continued using mobile phones despite its harmful consequences. Fifth theme is social withdrawal where few participants lost their social connections because of smartphone use and they preferred staying alone than mingling up in any social gathering. Sixth theme is compulsive

TABLE 2.

Interpretative Phenomenological Analysis Showing Superordinate Themes, Subordinate Themes and Quotes of Students with Nomophobia.

Sl. No.	Superordinate Themes, Subordinate Themes and Quotes	
I	Digital obsession	
	(i) Separation anxiety <ul style="list-style-type: none"> 'I feel a need to check smartphone every day in the morning and for 5-10 minutes before going to sleep.' (n* = 2) 'I feel bad about leaving my smartphone at home. So, I borrow someone else's smartphone and ask if someone in my family can deliver it.' (n = 16) 'Even if I am not using it, I just want it in my hand or in my pocket near me.' (n = 17) 'I have a constant desire to check my smartphone to keep myself updated. I think accessibility to smartphone makes life sorted, no matter where you are in the world.' (n = 14) 	
	(ii) Separation blue <ul style="list-style-type: none"> 'Because of too much content on smartphone a lot of dopamine gets initiated like when it's not available then it feels like life is so depressing' (n = 5). 	
	(iii) Anticipatory digital grooming <ul style="list-style-type: none"> 'I always prefer buying a smartphone with good battery backup so that I am able to deal with my anxiety if the battery runs out.' (n = 17) 'I download webseries, songs before I leave for some place, so that I am prepared even if my data doesn't work.' (n = 2) 	
II	Digital compulsion	
	(i) Loss of control <ul style="list-style-type: none"> 'I can't be productive all the time, my health deteriorates because when I am watching web series on smartphone, I forget everything or to work out'. (n = 3) 'I feel a need to be in constant touch with my smartphone because I receive urgent emails both during office and after office hours.' (n = 15) 'I went to Kashmir outdoor trip where there was no network, so when I returned to my hotel, I got Wi-Fi connection. I had trekked the whole day but despite being tired I continuously kept using my phone. I could have slept by 12 but then slept around 1.30.' (n = 17) 	
	(ii) Compulsive behaviour <ul style="list-style-type: none"> 'I do watch porn on a daily basis followed by which I masturbate as I am not able to resist it. I think it's bad. If my parents or my girlfriend get to know, I will be in trouble.' (n = 13) 'I love playing online games, like Call of Duty, it gives me a sense of superiority to kill my enemies in the virtual world from across the globe. Therefore, I cannot resist playing more and more' (n = 2) 'I also learnt shares like how to buy shares. And I, currently I have total 20 to 25 apps for online trading despite facing loss.' (n = 7) 	
	(iii) Stalling <ul style="list-style-type: none"> 'I used to delay or skip having dinner and lunch earlier when I would be glued watching movies. I used to manage having snacks or sometimes fast the whole day. I would sleep late and then get up late, skip breakfast. My chores like laundry, academic work like presentation, assignments etc used to get delayed. I used to sleep late, dream about whatever violent or horror scenes.' (n = 11) 'I used to watch 5-6 movies per day, then the very next day I spent crying realising that I have wasted my entire day but next day I watched in the same pattern.' (n = 13) 'As a person also, I can't be productive, also on other social part, my health deteriorates because when I am watching something on smartphone, I forget everything even to work out.' (n = 4) 	
	(iv) Use despite knowing the harmful consequences <ul style="list-style-type: none"> 'Late night phone calls or watching dramas would hamper my biological sleep cycle as well as my attendance. And it is pretty draining.' (n = 1) 'When I am having a severe headache, I keep looking at the screen despite knowing it would not help but I will still keep using my smartphone.' (n = 16) 	
	(v) Use in hazardous situation <ul style="list-style-type: none"> 'When I am driving and I get to know that my phone ringed or vibrated I would stop and text or reply. I feel it's dangerous and I should not do so but I end up with answering back immediately.' (n = 14) 	
	(vi) Unconscious motive <ul style="list-style-type: none"> 'I become less mindful when I use my phone.' (n = 1) 'Whenever I am watching some series on OTT platforms or anything, I won't feel like I am missing out on home and what's going in the surroundings.' (n = 16) 	
	(vii) Escapism <ul style="list-style-type: none"> 'I use my smartphone to escape from reality. When I went to my cousins wedding, I used my smartphone the entire time.' (n = 16) 	
	III	Approval motivation
		(i) Emotional validation and ii) Acceptance <ul style="list-style-type: none"> 'In one day, I receive two to three messages. If I don't get messages from anyone, I feel low. I feel that people are not valuing me on social media.' (n = 7) 'I crave for liking and people's reply in my comments on social media sites.' (n = 7)

(Table 2 continued)

(Table 2 continued)

Sl. No.	Superordinate Themes, Subordinate Themes and Quotes
IV	Digital intensement
	(i) Priority
	<ul style="list-style-type: none"> • I prioritize my electronic gadgets, specifically, laptop and smartphone over everything. I feel the need to keep them in an up-to-date condition.' (n = 16) • 'If I have to choose among materialistic things then it (smartphone) is the top priority. I feel that it should always be there with me.' (n = 2)
	(ii) Attachment
	<ul style="list-style-type: none"> • 'Whenever I have been in vulnerable condition of life, I always look for smartphone.' (n = 5) • 'Lately when I realized about social media I got onto it. And then after mobile phone has become a part of my life.' (n = 7)
V	Digital wellbeing
	(i) Stress buster Apps
	<ul style="list-style-type: none"> • 'I used certain applications for meditation helping me to concentrate on studies and improved mindfulness, e.g. Atom app, I downloaded apps for journaling and fitness as well like speedometer and alcove.' (n = 1)
	(ii) Educative purpose
	<ul style="list-style-type: none"> • 'The positive aspect of smartphone is that we get instant information related to academics and knowledge gets enhanced.' (n = 5) • 'Smartphone has helped in online classes, online seminars, webinars.' (n = 8)
	(iii) Enhanced connectivity
	<ul style="list-style-type: none"> • 'I think with my relatives who are far away from me, like my uncle, he is in army, he barely comes to see us like in a year for a month/ week he comes to see us but this social media definitely it has reduced the barriers of distance communication. It has become so easy that whichever time we feel like we do video calls, we used to talk to him, so it is really good.' (n = 8)
	(iv) Digital transaction
	<ul style="list-style-type: none"> • 'I think money transaction applications such as UPI apps (Google pay, Paytm, Paypal, etc) has made life easy.' (n = 7)
	(v) Enhanced creativity
	<ul style="list-style-type: none"> • 'Any material is freely available and I am a writer so I do write and I am not so creative on paper and pen but I am very creative on digital non-pad. So, like the touch of mobile or something like that it has made me very comfortable with my imagination or creativity.' (n = 6)
	(vi) Content creators
	<ul style="list-style-type: none"> • 'Nowadays the rate of unemployment is day by day getting higher and higher, so people are earning through social media, they are getting paid, literally the content creators, the influencers/ youTubers are getting paid through the social media not only this but there many apps like stock marketing, crypto/wazirx, a platform from where people can earn and eradicate unemployment from their life. I am using also YouTube for creating and mixing educative materials and I create daily life vlogs.' (n = 8)
	(vii) E-counselling
	<ul style="list-style-type: none"> • 'Many psychologists interacted with the children as many students were in anxiety, depression at that time in my school, they definitely needed to consult the psychologists.' (n = 8)
	(viii) Digital coping
	<ul style="list-style-type: none"> • 'When I feel worried about my work, I starts scrolling on Instagram reels to get myself entertained.' (n = 12) • 'As soon as I get frustrated I start using my phone for about 2 hours continuously it relaxes me' (n = 13)
VI	Insight
	(i) Acceptance and awareness
	<ul style="list-style-type: none"> • 'I have learnt so many things from my phone. I used to think that it's all good with phone but nowadays I feel that there are many negative impacts as well like poor sleep, health. I waste a lot of time due to my phone.' (n = 14) • 'Even if I am physically sick or I am having a severe headache and I am not in a condition to use my smartphone, I will still use it.' (n = 16) • 'I felt panicked when I left my phone at home and had go back to get it. However, off late I have been feeling that I should cut down on my phone use and had left my phone at home intentionally and surprisingly I was fine with it.' (n = 14)
	(ii) Attribution
	<ul style="list-style-type: none"> • 'I am severely addicted to my smartphone. And it has been hampering my interpersonal relationships a little bit and also my sleep schedule a lot.' (n = 16) • 'I feel smartphone has affected my work. Whenever I sleep late using phone, it is difficult for me to be energetic while working for the next day.' (n = 14)

*n = Serial no. of participants.

behaviour which consisted uncontrolled online activities like gaming/ pornography/ shopping/trading and dating. The participants reported that increased use of the smartphone has made them less mindful of their surroundings which justifies the seventh subordinate theme,

that is; unconscious motive. For some of the participants, smartphones acted as a tool to escape from reality where our eighth subordinate theme escapism is concerned. Constant touch with the smartphone described our last subordinate theme instant use of smartphones.

Superordinate Theme 3: Approval Motivation

This superordinate theme consists of emotional validation and social acceptance. Participants reported that they crave likes/ comments if they tend to post something

on social media. According to them, it gives emotional acceptance from the people available on the social media platform and if they do not get desired likes they feel low. They feel attached to their social media accounts.

Superordinate Theme 4: Digital Intensement

This superordinate theme consists of two sub ordinate theme. The first theme, that is, priority where participants discussed elaborately that they have prioritised their smartphone over family. The second theme attachment shows the influence of smartphones in their lives so much so that they consider it to be their strong companion and feel there is something to rely upon.

Superordinate Theme 5: Digital Well-being

This superordinate theme describes the advantages of smartphone which consists of various subthemes. The first, second and third theme shows easy accessibility of smartphone where few students reported that cheap data has made them more attached to their phones as it has enabled them to download stress buster/ educative apps. The ease of access and instant connectivity has made smartphone more attractive to them respectively. The fourth theme namely enhanced creativity has made participants show their creativity such as writing poems on online platform and the fifth sub theme that is content creator which is resulting in employment generation through social media apps. The sixth theme is about e-counselling which has facilitated online counselling provision. The seventh theme, that is, digital transactions describes the benefits of online payments. The eighth theme is about educative purposes where smartphone use has helped in their academic growth. And the last theme is about digital coping where it has helped the participants enhance their coping mechanisms and skills

Superordinate Theme 6: Insight

It consists of three sub-ordinate themes that is acceptance, awareness, and

attribution. The first emerging theme acceptance depicts realization and need for help because of excessive use of smartphones. The second theme describes the awareness of negative impact of smartphone use on physical and mental health. In the last theme, the participants attribute that uncontrolled smartphone use has resulted in dysfunction in their interpersonal relationships, work, and privacy of life.

Discussion

The aim of this study was to understand the insights gained from the students with nomophobia and explore the themes as per their lived experiences with their smartphone use. This study helped in coherently understanding the underlying cause of perpetual smartphone use by the students and their fear of losing and being away from it.

Inclusion of nomophobia in the group of situational phobias have been proposed. Therefore, nomophobia may be co-morbid with problematic use of smartphone. Severe nomophobia often occurs along with smartphone dependence or problematic use of smartphone and both interferes with the daily life of the affected person. Previous literature has called for more in-depth, cultural research on persons with nomophobia subjective processes. We decided to conduct our study in three different locations in India to obtain the local descriptions for understanding the cultural contexts of different regions instead of presupposing the experiences from a single cultural perspective. Our study adopted a robust methodology to understand the phenomenology of nomophobia. IPA with thematic analysis was used to attach the objective meaning to lived experiences of the students with nomophobia. In order to determine the ill-effects of smartphones on the younger generation of society the nomophobia construct developed by Yildirim & Correria⁸ was our conceptual framework for our in-depth interview guide which was used conducting the in-depth interview with our study participants, which were screened by applying NMP-Q (moderate to severe students with nomophobia of different streams were selected who scores more than 90 in NMP-Q). As per the previous literature, it is still debat-

able whether nomophobia term deals with fear of not having smartphones only or applies to other gadgets as well. From our study, it was evident that the fear of not having smart phone to be considered separately as it significantly affects the users as it is more handy, easy to use than other gadgets.

From the findings of our study, we came up with the themes of digital obsession, digital compulsion, approval motivation, digital intensement, digital well-being and insight. Some cultural differences from our study using the lived experience paradigm have been highlighted across all the major themes.

Irresistible Fascination with Gadgets

Preoccupation with the thought that smart phone should be always with them and fear of losing it or not able to access it, which make them involve in all necessary preparation activities to keep them accessible always is the core construct of digital obsession of students with nomophobia. In our study participants have said that they always keep their smartphones full charged and buy smartphones with good battery backups, if they forget to take smartphone outside, they try to get it by whatever possible way. One participant said that he bought smart watch to get connected with the smartphone always. These statements of the participants suggests that there is always a fear among smartphone users of how to handle the situation when their smartphone is not with them. Other than this, students with nomophobia tend to have emotional quotients lower than non-nomophobes.¹⁶ They tend to watch too much content from their smartphone, their dependency on smartphones has constricted them to the four walls of the room. They are too uncomfortable talking to people.

The themes 'not able to access information' and 'giving up convenience' in study by Yildirim & Correria (NMP-Q)⁸ are supported by our findings under our theme of 'digital obsession' where students with nomophobia find it difficult for themselves if they are not able to access information or not being able to use the smartphone. Similarly, theme 'attachment' in another study¹¹ is similar

to our subtheme 'anticipatory digital grooming'. students with nomophobia are always in anticipatory fear of losing smartphones and to avoid that involved in activities such as always keeping the smartphone charged, spending lot of money in getting smartphones with good battery backups as mentioned above.

Compelled to use Smartphone

Despite knowing the harmful effects of smartphone use, users are facing the compulsive urge to use smart phone which are not in their control.¹⁷ In our study participants realise that their time get wasted and their productive work has been disrupted, and they are facing physical harm like headache, visual disturbances, and using smartphone as an escape mechanism to avoid social gatherings. Constant use of smartphone takes them away from their family and social life because of which they may fail to feel pleasure in the real world.¹⁸ They may seek pleasure from a completely dramatic world and may not able realize this lose while using smartphone.¹⁹ Even if they realise they may be unable to stop using smartphones in many situations. As days pass by smartphone users lose control over their smartphone use and use phone due to compulsive urges despite knowing its adverse use.²⁰

Digital compulsion theme 'conflict' mentioned in recent study¹¹ is similar to our theme of 'digital compulsion' where students with nomophobia realize the harmful effects of using mobile phones but they are still not able to control the use of smart phone. The theme 'avoidance' which correlates with our subordinate theme of 'social withdrawal' under 'digital compulsion' where introvert people use smartphones as they are reluctant to face society and this also support the finding of other studies which described smartphone usage as a maladaptive coping skill of introvert people.²¹

Seeking Happiness in the Farce World

In the current world, youngsters want themselves to be recognized by others. Smartphone may acts as a platform to

this effect where people find that their ideas are getting traction in others views. In our study participants have explained their inner pleasurable experience when they saw 'likes' for their Facebook posts and their craving for getting approval and also the feeling of discomfort when were not getting the response. Some people feel that if they get approval for any of their ideas, they are able to help others which gives them personal satisfaction. This might explain that they could be either an introvert or in much need to seek attention from the virtual world. The theme 'interwined identity' in a study¹¹ is supported by our theme of 'approval motivation' where users are waiting for acceptance of their ideas in social media.

Drifting Away from Social Milieu

The smartphone has taken priority over other productive things in life of the people. In our study people reported smartphones are like their companions and they feel it has been integrated and occupied a major part in their life. The unavailability of the smartphone causes feeling of incompleteness within them. This gives us a conclusion that people are giving a major chunk of space in their life for smartphones without which they cannot imagine their life and losing it instils a fear of losing their best companion.

Smartphone as a Social Battery

Smartphones are helping us in many ways and that creates a dependency which has made people think that their life has become very difficult without smartphones. In our study participants believe that smartphones are easy and more acceptable way to acquire any information they search for. It also helps them to connect with other people whom they meet very rarely. They also described that phones are helping them to shop things online which saves their energy, time and expenses for travelling to the market and luxury of getting everything on their doorsteps just by tapping buttons. In the current era online classes and online jobs take the upper hand for which smartphones act as

an important tool. Participants feel that they get relaxed, feel more confident and motivated by having online counselling from psychologists and going through videos whenever they get stressed. This suggests that people are not able to cut down the smartphone use as they feel that it gets added to one of their basic needs to access things.²²

Realization of Problematic use of Smartphone

It is difficult for smartphone user to cut down using it, even after being aware of negative impacts on physical health, psychological health and social behavior.²³ People are aware of mental health changes happening within them with excessive use of smartphone. Participants in our study realized that smartphone usage has brought many negative effects like health issues, separating them from the external real world, hindered interpersonal relationship, disturbing their biological functions like sleep which reduced their productivity during working hours and led to changes in their personality. They spontaneously came up with these statements without any leading question from our side and they felt bad about their inability to cut down the smartphone use. This suggests that smart phone users are very much aware about their problem behaviour of excessive smartphone use even no one is making them to realize.

Our study had few limitations. Our study relied on online interviews with few participants which we could not conduct in person due to COVID-19 restrictions at the beginning of our study. Therefore, systematic direct observations of the initial participants were not done. Also, for the homogeneity of the interview, interviewers of collaborative centres were trained by primary centre interviewers who had experience in conducting such in-depth interviews. However, still there might be variability in the conduct of interviews across all three centres. Also, we conducted interviews for moderate and severe students with nomophobia to get enriched nomophobic experiences. Mild levels of students with nomophobia were left out which might not completely reflect the experiences of persons with nomophobia.

To conclude, the lived experiences of students with nomophobia seemed to be variable. While the lived experiences were predominantly difficult for the majority of students with nomophobia, posing major challenges to them when they were away from smartphones, some of them also reported a brighter side of it, if smartphones are used with a purpose. This study finding would further help in developing a valid questionnaire in the Indian context, which would broaden the research for the construct nomophobia. Our study finding will pave way to design valuable tools and criteria to detect nomophobia and help to intervene at the earliest.

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ORCID iDs

Rajeev Ranjan  <https://orcid.org/0000-0002-2207-6749>

Yatan Pal Singh Balhara  <https://orcid.org/0000-0003-1616-6403>

Biswa Ranjan Mishra  <https://orcid.org/0000-0003-0537-9454>

Siddharth Sarkar  <https://orcid.org/0000-0002-3827-1549>

Ayushi Bharti  <https://orcid.org/0009-0009-1107-2978>

References

- Basu S, Garg S, Singh MM, et al. Addiction-like behavior associated with mobile phone usage among medical students in Delhi. *Indian J Psychol Med* 2018; 40(5): 446–451.
- Harris B, Regan T, Schueler J, et al. Problematic mobile phone and smartphone use scales: a systematic review. *Front Psychol* 2020; 11: 672.
- Envoy S. 66% of the population suffer from Nomophobia the fear of being without their phone. *Recuperado de*. 2012.
- Humood A, Altooq N, Altamimi A, et al. The prevalence of nomophobia by population and by research tool: a systematic review, meta-analysis, and meta-regression. *Psych* 2021; 3(2): 249–258.
- King AL, Valença AM, Silva AC, et al. Nomophobia: dependency on virtual environments or social phobia? *Comput Hum Behav* 2013; 29(1): 140–144.
- King AL, Valença AM, Nardi AE. Nomophobia: the mobile phone in panic disorder with agoraphobia: reducing phobias or worsening of dependence? *Cogn Behav Neurol* 2010; 23(1): 52–54.
- Bhattacharya S, Bashar MA, Srivastava A, et al. Nomophobia: No mobile phone phobia. *J Family Med Prim Care* 2019; 8(4): 1297.
- Yildirim C, Correia AP. Exploring the dimensions of nomophobia: development and validation of a self-reported questionnaire. *Comput Hum Behav* 2015; 49: 130–137.
- Jilisha G, Venkatachalam J, Menon V, et al. Nomophobia: a mixed-methods study on prevalence, associated factors, and perception among college students in Puducherry, India. *Indian J Psychol Med* 2019; 41(6): 541–548.
- King AL, Valença AM, Silva AC, et al. “Nomophobia”: impact of cell phone use interfering with symptoms and emotions of individuals with panic disorder compared with a control group. *Clin Pract Epidemiol Ment Health* 2014; 10: 28.
- Ozkan G, Gürbüz İS, Nasirov E. A greener future: the addictive role of technology in enhancing ecoliteracy in rural community. *Fresenius Environ Bull* 2020;29(6).
- Kanbay Y, Akçam A, Özbay SÇ, et al. Developing firat nomophobia scale and investigating its psychometric properties. *Perspect Psychiatr Care* 2022; 58(4): 2534–2541.
- Galhardo A, Loureiro D, Raimundo E, et al. Assessing nomophobia: Validation study of the European Portuguese version of the Nomophobia Questionnaire. *Community Ment Health J* 2020; 56: 1521–1530.
- Gao Y, Dai H, Jia G, et al. Translation of the Chinese version of the nomophobia questionnaire and its validation among college students: factor analysis. *JMIR Mhealth Uhealth* 2020; 8(3): e13561.
- González-Cabrera J, León-Mejía A, Pérez-Sancho C, et al. Adaptation of the Nomophobia Questionnaire (NMP-Q) to Spanish in a sample of adolescents. *Actas Esp Psiquiatr* 2017; 45(4): 137–144.
- Regan T, Harris B, Van Loon M, et al. Does mindfulness reduce the effects of risk factors for problematic smartphone use? Comparing frequency of use versus self-reported addiction. *Addict Behav* 2020; 108: 106435.
- Dasgupta P, Bhattacharjee S, Dasgupta S, et al. Nomophobic behaviors among smartphone using medical and engineering students in two colleges of West Bengal. *Indian J Public Health* 2017; 61(3): 199–204.
- Bianchi A, Phillips JG. Psychological predictors of problem mobile phone use. *Cyberpsychol Behav* 2005; 8(1): 39–51.
- Dixit S, Shukla H, Bhagwat AK, et al. A study to evaluate mobile phone dependence among students of a medical college and associated hospital of central India. *Indian J Community Med* 2010; 35(2): 339.
- Aoki K, Downes EJ. An analysis of young people's use of and attitudes toward cell phones. *Telemat Inform* 2003; 20(4): 349–364.
- Bragazzi NL, Del Puente G. A proposal for including nomophobia in the new DSM-V. *Psychol Res Behav Manag* 2014; 155–160.
- Imtiaz A, Wajeaha A, Ali M. Students' dependence on smart phone and its effect on purchase behavior. *South Asian J Glob Bus Res* 2014; 5(2).
- Prasad M, Patthi B, Singla A, et al. Nomophobia: a cross-sectional study to assess mobile phone usage among dental students. *J Clin Diagn Res* 2017; 11(2): ZC34.