

# An Exploration of Loneliness among Smartphone Addict Adolescent Students: A Mixed-Method Approach

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## ABSTRACT

Adolescents with psychosocial problems such as feelings of loneliness might be vulnerable to excessive use of smartphones. The present study aimed to explore the loneliness among smartphone addict adolescent students based on gender and subject stream. For the research study, a mixed-method research design was adopted. A sample of 450 smartphone addict adolescent students was randomly selected from different government higher secondary schools of Kashmir Valley. For the collection of data, the Loneliness Scale by Hamid and Parvez (2020), the Smartphone Addiction Scale by Vijayshri and Ansari (2020), and semi-structured interviews were used. Statistical techniques like percentage, t-test, and ANOVA were used to draw inferences. The results revealed that the majority of smartphone addict students have a moderate to high level of loneliness. The result based on t-test showed no significant difference between male and female smartphone addict adolescent students on loneliness. The results of ANOVA revealed no significant difference among arts, science, and commerce smartphone addict adolescent students on loneliness. Furthermore, it was found that factors like lack of social interaction, poor communication skills, lack of meaningful relationships, poor self-esteem, and unhealthy habits lead to loneliness among students due to smartphone addiction.

**Keywords:** Loneliness, Smartphone Addiction, Adolescents, Gender, Subject Stream.

## Introduction

The Smartphone with its multiple functions has increased its prominence and become an integral part of life. Individuals, particularly adolescents choose smartphones over personal computers as smartphones come with highly advanced features. A study by Newzoo (2022), reported that India ranks second in the world as far as smartphone users are concerned, followed by China which has 974 million active users. App Annie (2021) reported that in the list of maximum time spent by smartphone users on their devices, Indians are at the 3<sup>rd</sup> rank preceded by the smartphone users of Indonesia and Brazil. According to a survey conducted by Comscore (2018), individuals in India allocated 89% of their time to mobile phones, while those in Indonesia dedicated 87%, Mexico 80%, and Argentina spent 77% of their time on mobile phones. Similarly, research conducted by Aligarh Muslim University revealed that 14% of respondents utilized smartphones for less than three hours daily, 63% for 4 to 7 hours, and 23% for over 8 hours each day (Firstpost, 2018).

The prevalence of smartphones has greatly improved the efficiency and convenience of modern living. However, its perilous use has also brought up several health, social, and academic problems. (Khoury et al., 2019; Samaha & Hawi., 2016; Choi et al. 2015). This can be seen in instances such as the alarming number of car accidents caused by drivers distracted by their mobile phones (Pennay, 2006). A study conducted by MatarBoumosleh&Jaalouk (2017) highlighted that among 688 undergraduate students, 35.9% reported feeling fatigued during the day due to excessive smartphone use at night, while 38.1% experienced a decrease in sleep quality and 35.8% slept for less than 4 hours due to overuse of their smartphones. Excessive smartphone usage has also been associated with detrimental effects on academic and work performance. A study by Pierce & Vacca (2007) found that adolescent students who used their mobile phones while studying experienced lower academic performance compared to those who did not. Several previous studies have

confirmed that smartphone addiction contributes to various physical and mental health problems, such as sleep disorders, depression, and procrastination (Kee, Byun, Jung, & Choi, 2016; Enez Darcin et al., 2016; Lian et al., 2016). This is a growing concern, especially among younger individuals who are increasingly becoming dependent on their smartphones and dedicating a significant amount of time to using them (Liu, et al. 2017). This extensive engagement with modern technological devices can lead to a range of problems, such as smartphone addiction (Lian, et al. 2016). In the present study, the term “smartphone addiction” is used. This is because “smartphone” highlights the multiple functionalities of the device, a feature that makes it addictive for humans, whereas the term “mobile phone” does not. Additionally, “addiction” is more severe than “dependence” and more accurate for the objective of the present study.

According to Kim et al. (2019), smartphone addiction can lead to serious health issues like sadness, anxiety, and attention deficit disorder. These issues may all stem from feelings of loneliness, which are a common source of misery for young people. According to Perlman and Peplau (1998), a decline in the quantity and quality of social connections leads to loneliness, a subjectively unpleasant feeling. Loneliness is experienced at any age and according to research, it is mostly experienced by adolescents. Through the research, Parlee (1979) found out that about 40,000 people experience loneliness, and 79% are adolescents. Research, in particular, suggests that the notion of loneliness in adolescence makes people susceptible to pessimism which individuals may usually express as “Life without the Internet is horrible” (Ayazseven& Onder 2018). This is because the internet allows adolescents the chance to hide their true identities or act dishonestly to attract the recognition or repute that the social environment lacks. According to He’s research (2007), both social and online communication affect loneliness. Direct conversation, on the other hand, might lessen loneliness. Other studies claim that, just as loneliness may predict smartphone use, it may also be a side effect of such use. According to the research (Yayan, et al. 2019) adolescents who spend very little time on themselves, their families, and their friends as a result of their smartphone addiction become more and more lonely.

### **Rationale of the study**

Adolescence is a period of substantial physical, psychological, and social development. During this period, adolescents experience a range of emotions, including identity crisis, stress, and strain. On the one hand, adolescents are heavily reliant on their parents for guidance and support in their lives and in forming their identities. On the other hand, they are striving to become independent of their families. These crucial developmental changes have made smartphones indispensable for adolescents. Research has shown that smartphone use by adolescents has rapidly increased over the last several years and this makes them more susceptible to smartphone addiction. Adolescents are more enchanted by the new technological advancements and use their phones to stay connected with friends, access social media, play games, and watch videos. While this attachment to their phones can be beneficial in some ways, it can also be detrimental to their mental and physical health. In 2018, Catherine Price in her book “*How to Break up With Your Phone*” argued that most people use smartphones noxiously, spoiling their sleep, innovativeness, and interactions. This association is labeled as “**Nomophobia**”, from “**No-Mobile-Phone-Phobia**”. After reviewing the plethora of literature review it has been found that no empirical research has examined the loneliness among smartphone addicts in the delimited area. Thus it seems very important to investigate the loneliness among smartphone addict adolescent students of Kashmir Valley.

### **Literature Review and Hypothesis Formation**

It is a well-known reality that without looking to the past, we cannot explore new horizons of knowledge. To address the areas that have not yet been examined and to construct the hypothesis appropriately, it is crucial to review the prior work.

**a) Gender:** Studies suggested that demographical variables, such as gender do not influence loneliness and smartphone addiction (Ayandele et al., 2020; Tukul, Y, 2020; Werner, A. M. et al., 2021). Studies by Bhutia & Tariang (2016) also reported that gender has no significant impact on smartphone addiction. Geng, et al. (2021) found that male and female students do not differ significantly on loneliness and smartphone addiction. But some studies suggested that gender influence smartphone addiction and loneliness (e.g., Sonmez, Kisack&Eraydin 2020; Tan, Pamuk & Donder, 2013; Kaya, N. et al, 2012; Yıldırım, A. 2018). Studies like Alaviani et al, (2015) also reported that gender has a significant impact on the loneliness of smartphone addict students. Singh & Kumari (2021) found that female students have high loneliness in comparison to male students. Kurtuncu, Ayyıldız&KurtIt (2020) reported that students use smartphones to relieve feelings of loneliness and found it a reason for their excessive smartphone use.

**b) Subject Stream:** Studies suggested that loneliness and smartphone addiction are not influenced by subject stream (e.g., Bhatia & Tariang, 2016). Nathawat& Gawas (2020) reported that there was no mean difference on internet addiction and loneliness among arts, science, and commerce college-going students. Werner, A. M. et al. (2021) found that there was no significant difference on loneliness based on the field of study. However, some studies suggest that subject stream influences smartphone addiction and loneliness. Rao, Sethuraman & Thatkar (2019) revealed that the proportion of students with high addiction to smartphones was higher in medical college than arts students, and gender differences with regard to

smartphone addiction were also identified. Ozdemir, B. et al. (2018) found a significant difference on nomophobia and loneliness related to year of study and gender. Shehata, & Abdeldaim, (2021) reported that medical students are more addicted to the Internet than non-medical students. Therefore, based on the literature review given above, we made the null hypotheses for the present study.

### Objectives

1. To identify the Smartphone Addict adolescent students.
2. To study the prevalence of Loneliness among Smartphone Addict adolescent students.
3. To compare male and female Smartphone Addict adolescent students on Loneliness.
4. To compare arts, science, and commerce Smartphone Addict adolescent students on Loneliness.

### Null Hypotheses

Ho<sub>1</sub>: There is no significant difference between male and female Smartphone Addict adolescent students on Loneliness.

Ho<sub>2</sub>: There is no significant difference among arts, science, and commerce Smartphone Addict adolescent students on Loneliness.

## Methodology

### a. Design

The present study adopted the mixed method research design. A mixed-method research design involves the gathering, analyzing, and mixing of both quantitative and qualitative methods to gain a more comprehensive understanding of the research problems (Creswell, & Clark, 2011). When one kind of research, either quantitative or qualitative is insufficient to address the research objectives, and when more information is required to expand, develop, or elaborate the initial data, a mixed method study is undertaken, so is true about the present study. In the first phase of the present study, the results were quantified by employing different statistical methods. In the second phase of the study, the investigator adopted a Semi-structured interview to explore the loneliness among smartphone addict adolescent students. Hence, the **explanatory sequential design** was used, where a researcher collects quantitative and qualitative data sequentially in two phases.

### b. Data collection tools:

The following standardized tools were used to collect the required data:

**i. Smartphone Addiction Scale** developed by Vijayshri and Ansari (2020). The Smartphone Addiction Scale was administered to higher secondary school students to identify smartphone addicts. The students whose raw score ranged from 81 and above on the smartphone addiction scale were considered smartphone addicts. The scale consists of 23 items with 6 dimensions viz, 1) "Compulsion", 2) "Forgetfulness", 3) "Lack of Attention", 4) "Depression and Anxiety", 5) "Disturbed Hunger/Sleep", and 6) "Social Withdrawal"

**ii. Loneliness Scale** developed by Hamid and Parvez (2020). The scale consists of 34 items divided into 5 dimensions 1) "Social Relationships", 2) "Interpersonal Relationship", 3) "Distressed Reaction", 4) "Social Isolation", and 5) "Emptiness". There is a reverse scoring procedure in the Scale i.e. high score means a low level of loneliness and a low score means a high level of loneliness.

**iii. Semi-structured interviews.**

### c. Participants/Sample:

The investigator used a multistage random sampling technique to draw the sample from different government higher secondary schools of Kashmir Valley (J&K). Four hundred fifty (450) higher secondary school students enrolled in classes 11<sup>th</sup> and 12<sup>th</sup> were selected randomly as a sample from the target group. A sample of 450 smartphone addict students, comprising 205 Arts, 135 Science, and 110 Commerce students was further categorized into 240 male and 210 female smartphone addict students. For qualitative analysis, some extreme cases were identified.

### Data Analysis and Interpretation:

The collected data were analyzed by using SPSS version 26. Statistical techniques like percentage, mean, standard deviation, t-test, and ANOVA were used to find any significant difference based on gender and subject stream.

### a. Descriptive Analysis

**Table 1: Prevalence of Loneliness among Smartphone Addict Adolescent Students**

Level of Loneliness	N	Percentage
Low	23	5.1
Average	342	76.0
High	85	18.9
Total	450	100%

Table 1 depicts that in the total sample (450) majority (76%) of the smartphone addict adolescent students have an average level of loneliness while 18.9% and 5.1% of students have a high and low level of loneliness respectively.

### b. Comparative Analysis

**Table 2: Test of significance based on gender**

Dimension	Gender	n	Mean	Std. Deviation	t-value	P
Social Relationship	Male	240	24.43	4.33	.879	.380
	Female	210	24.95	4.12		
Interpersonal Relationship	Male	240	27.11	6.02	1.29	.195
	Female	210	27.35	5.51		
Distressed Reaction	Male	240	18.69	4.43	.430	.667
	Female	210	18.99	4.29		
Social isolation	Male	240	20.43	4.90	.724	.470
	Female	210	20.27	4.66		
Emptiness	Male	240	23.81	5.83	.367	.714
	Female	210	24.36	5.04		
<b>Overall Loneliness</b>	Male	240	114.49	19.12	1.07	.285
	Female	210	115.98	16.44		

The t-test result in table 2 shows no significant difference between male and female smartphone addict adolescent students across all dimensions as well as on overall score ( $t=1.07$ ,  $p>0.05$ ) of loneliness. Hence null hypothesis  $H_{01}$  stands accepted.

**Table 3: Summary of Analysis of Variance (ANOVA)**

Subject Stream	N	Mean	Std. Deviation	F	P
Arts	205	115.16	16.20	.686	.504
Science	135	116.51	19.23		
Commerce	110	113.60	19.28		
Total	450				

The ANOVA results in Table 3 show no significant difference in loneliness with respect to the subject stream ( $F=.686$ ,  $p>0.05$ ). This implies that there is no difference among arts, science, and commerce smartphone addict adolescent students on loneliness. Further, the mean score slightly favors the commerce stream ( $M=113.60$ ) more than the science ( $M=116.51$ ) and arts ( $115.16$ ) streams but statistically, no significant difference was found among them. Hence null hypothesis  $H_{02}$  stands accepted.

### Findings Based on Qualitative Assessment

The semi-structured and in-depth interview was the main tool employed to gather the pertinent data. Parents, teachers, and students were all considered when conducting the interview. To explore deeper into the aspects essential to loneliness among smartphone addict adolescent students, the questions were open-ended with lots of opportunities for both the interviewee and the interviewer. The analysis yielded that smartphone addiction among adolescent students results in moderate to extreme levels of loneliness. One of the smartphone addict students confessed that,

“It is very difficult for me to express my feelings to my friends as it is very hard for me to mingle with my friends and family members. I feel that my friends get fed up with my behavior. I also feel a sense of emptiness, a vacuum which pushes me too far and far from my colleagues/companions”.

Many other students who were using smartphones excessively also agreed that their impoverished social life and the feeling of neglect worsened their lifestyle. An increasing dependency on smartphones and other

electronic gadgets to satisfy their feeling of belongingness worsens their isolation, thus adding to their social disconnection.

It was also shared by students involved in smartphone addiction that they are not able to maintain their friendships for long. They feel suffocated in relationships due to differences in opinions and prefer to isolate themselves. They find smartphones as the only solution for all their problems as one of the students very confidently responded:

“It is better to take the help of a smartphone and solve the issues pertaining to my life than to be dependent on any of my family members or friends”.

Smartphones interfere with interpersonal relationships since individuals interact virtually rather than in person. This practice is known as "Phubbing," or using a phone while around other people. While it may appear that such behaviour is regular and even innocuous, new research indicates that it may eventually result in a loss of interpersonal communication by causing a detachment from other people. As one of the students shared that

“I prefer surfing the net, and playing games than being involved in any social activity”

### **Factors that lead to loneliness among smartphone addict adolescent students are as:**

- 1. Lack of Social Interaction:** Through interaction with different smartphone addict students it was concluded that smartphone addiction can lead to a decrease in social activities as the individuals spend more time on phones than interacting with others in person such as going out with friends, attending social events or even just having a conversation with other people.
- 2. Poor Communication Skills:** In our research, a few teachers reported that smartphone addiction can lead to a decrease in face-to-face communication, as students are more interested in communicating via text or social media instead of talking in person. It was also reported by the teachers that smartphone addiction can lead to a decrease in listening skills, as students are more likely to be distracted by their phones instead of paying attention to what others are saying.
- 3. Lack of Meaningful Relationships:** Smartphone addiction can lead to a decrease in meaningful relationships with family and friends which can make people more isolated and withdrawn.
- 4. Poor Self-Esteem:** Smartphone addiction can lead to a decrease in self-esteem leading to feelings of insecurity, inadequacy, and low self-worth. Some of the smartphone addict students in our study reported that they feel like they are not in control of their lives and are not good enough which further develops feelings of loneliness among them.
- 5. Unhealthy Habits:** Smartphone addiction leads to unhealthy habits as communicated by many students that they usually stay up late which results in increased anxiety as they have become overly reliant on smartphones for communication and entertainment.

## **Discussion**

The present study investigated the loneliness among smartphone addict adolescent students on the basis of gender and subject stream. The results of the prevalence analysis showed that the majority of smartphone addict students have moderate to high levels of loneliness. These students have obvious symptoms of loneliness like social isolation, emptiness, emotional distress, and lack of social and interpersonal relationships. These students prefer to spend time alone rather than engaging with others. These students find it difficult to express their feelings to friends and family members and feel lonely even when surrounded by people. They feel a general sense of emptiness. The result of the t-test reveals that gender does not influence loneliness among smartphone addict adolescent students. It was found that both male and female smartphone addict students exhibit similar tendencies towards different factors of loneliness. The results align with the previous studies conducted by Geng, et al. (2021) & Bhutia & Tariang (2016) who reported no significant gender differences in students' levels of loneliness and smartphone addiction. The results of the test of significance based on subject stream reveal that there is no significant difference among arts, science, and commerce smartphone addict adolescent students on loneliness. This specific finding aligns with the previous study conducted by Nathawat & Gawas (2020) who found that there was no mean difference among arts, science, and commerce students on loneliness. Furthermore, from the qualitative analysis, it was found that factors like lack of social interaction, poor communication skills, lack of meaningful relationships, poor self-esteem, and unhealthy habits lead to loneliness among students due to smartphone addiction. The findings are in line with the study conducted by Abi-Jaoude, et al. (2020).

### **Suggestions**

- Teachers and parents should encourage students to control their use of smartphones and educate them about the harmful effects of smartphone addiction on their academic and personal lives. This will help students make more informed choices when it comes to their smartphone usage.
- To promote a healthier and more balanced use of smartphones among students, it is crucial to implement a set amount of time each day.

- Every higher secondary school must have a qualified counselor, capable of dealing with the diverse and ever-changing needs of adolescents in both curricular and co-curricular activities. With the inclusion of co-curricular activities in the school curriculum, the role of a counselor becomes even more vital as they can assist students in identifying and honing their talents, while also promoting their mental and emotional well-being.
- Schools should organize educational programs and activities that enhance emotional intelligence. This will help students establish meaningful social connections, conflict resolution skills, ability to communicate effectively and empathize. This may reduce the feelings of loneliness.

### Conclusion

The present study explored the loneliness among smartphone addict adolescent students and it was found that loneliness among adolescent students is alarmingly increasing due to the overuse of smartphones. Students were found to spend more time on social media and gaming than academics and interacting with others. Consequently, this can lead to social, emotional, and mental health issues among the students. Therefore, it is important to reduce the negative impact of smartphone addiction and loneliness by developing strategies that will help students manage their time and engage themselves in more meaningful activities like reading and sports. Students also must be helped to develop healthy habits and coping strategies to manage their smartphone use. Hence, while smartphone usage is rapidly increasing, we suggest preventive measures and interventions to protect the younger generation.

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