

 Research Article

Unveiling Smartphone Addiction Among Secondary School Students in an Emerging Country

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Abstract

This study aims to investigate smartphone addiction among secondary school students in Bangladesh, along with its causes, effects, and potential preventive interventions within the socio-cultural context. The present study employed a mixed-methods approach. The Smartphone Addiction Scale Short Version (SAS-SV) was administered in eight schools from four districts, considering urban and rural schools. Then, students' data were collected randomly from each school. After that, twelve students who scored top on that scale were selected for in-depth interviews, along with twelve parents and twelve class teachers, who were chosen purposively. In addition, an educationist and a psychologist were purposively selected for the interviews. This study found that the percentage of high, moderate, and low-risk students was 23%, 22.3%, and 54.8%, respectively. The prevalence of moderate and high risk of smartphone addiction is greater among male students (57.3% and 63%, respectively) than among female students (42.7% and 37%). Besides, urban students exhibited higher percentages in the moderate (56.2%) and high-risk (68.5%) categories compared to rural students, who had lower percentages (43.8% and 31.5%, respectively). This study finds some factors, such as personal, parental, social, academic, and resource-related factors, that contribute to smartphone addiction among secondary school students. Moreover, this study finds that smartphone addiction has a detrimental effect on students' personal, social, and academic well-being. This study proposes several preventive measures, including enhancing self-esteem and determination, raising awareness among all relevant stakeholders, implementing effective parental mediation, providing teacher training and engaging them in anti-addiction activities, establishing rules and regulations, and maintaining ongoing monitoring and supervision.

Keywords: Smartphone Addiction, Self-Determination, Parental Mediation, Negative Impact, Problematic Behavior, Preventive Measures, Secondary School

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1. INTRODUCTION

Nowadays, smartphones are omnipresent, enabling students to capture audio or video of classroom lectures and to search for pertinent online resources, educational materials, and websites. It improves academic performance and significantly influences non-academic aspects, such as curiosity, self-efficacy, and growth mindset (Sun et al., 2018). However, excessive smartphone usage by students might result in addiction, adversely affecting their academic, personal, and social lives. A study has shown that excessive smartphone usage is a sign of dependence syndrome (Goswami & Singh, 2016), which is similar to substance-related disorders identified in the DSM-5; it encompasses distinct elements of compulsive behavior, functional impairment, withdrawal, and tolerance (Kempf et al., 2020). Individuals' experience of social isolation leads to a disintegration of their perception of time, ultimately resulting in an inability to control their behavior. The symptoms closely resemble drug addiction (Nikolopoulou & Gialamas, 2018). Several words have been used to describe the excessive use of mobile phones, such as “smartphone

addiction,” “compulsive mobile phone use,” “mobile phone addiction,” “mobile phone dependence,” “problematic mobile phone use,” and “mobile phone overuse” (Nishad & Rana, 2016).

There are several reasons for adolescent smartphone addiction, such as parental neglect, social anxiety, elevated emotional symptoms, loneliness, and poor parenting practices (Lian et al., 2016). Additionally, family violence and conflict lead youth to rely on digital devices (Hawi & Samaha, 2017). The factors contributing to this addiction may include personal challenges such as low self-efficacy, introspective tendencies, impulsivity, inadequate communication skills, and isolation (Baturay & Toker, 2019). However, it possesses numerous adverse side effects. It is linked to increased somatization, obsessive-compulsive behaviors, melancholy, anxiety, wrath, phobic anxiety, paranoid thoughts, and psychosis. The outcome was a decline in mental health (Yu et al., 2014). This addiction has a profound impact on the relationships between parents and children, peers, and interpersonal connections (Huang, 2017).

In emerging nations like Bangladesh, the number of smartphone users has increased drastically. According to the most recent Government Survey, 73.8 percent of individuals aged 15 and over possess a mobile device, and among mobile users, 48 percent own a smartphone (BBS, 2022). Secondary school students use smartphones for different purposes (Sarker, 2023). During COVID-19, online education spread in Bangladesh to recover learning loss (Rahman et al., 2023). In low-resource settings, online education faces various challenges (Roy et al., 2023; Islam et al., 2024), yet it increases smartphone use. As a result, students’ smartphone and device addiction is a growing concern in Bangladesh (Rahman et al., 2024).

In Bangladesh, there are very few studies regarding smartphone addiction among secondary school students, emphasizing the causes, effects, and preventive measures. This study examines the prevalence of smartphone addiction among secondary school students in Bangladesh, along with its causes, impacts, and prevention measures. The findings from this research enrich academic discourse and offer valuable guidance for implementing effective strategies and policies to promote responsible smartphone usage among secondary school students in Bangladesh and other developing and underdeveloped nations with similar socio-cultural contexts.

1.1. Literature Review

Smartphone addiction indicates the excessive reliance on smartphones (Onyeka et al., 2019). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), it is similar to obsessive-compulsive disorder characteristics such as the presence of obsessions, compulsions, or both (Kempf et al., 2020). Symptoms of smartphone addiction are excessive focus on devices, overuse, lack of control over usage, unintentional usage, inappropriate use in social contexts, conflict with others, and withdrawal symptoms such as anger, stress, anxiety, or depression when access to the phone or network is restricted, along with a pronounced craving for the device. Symptoms of tolerance (enhanced and prolonged phone usage), behavioral impairments (conflicts, academic decline, social isolation, or feigning phone usage to evade social interactions), and a replacement of activities are the severe symptoms of smartphone addiction (Nikolopoulou & Gialamas, 2018).

There are several factors that influence adolescent smartphone addiction, such as depression, anxiety, social isolation, shyness, substance abuse, inadequate sleep, poor academic performance, strained parental relationships, decreased school engagement, dissatisfaction, and adverse parenting styles (Tangmunkongvorakul et al., 2020). Moreover, individual factors such as reduced self-efficacy, introspective traits, impulsive behaviors, inadequate communication skills, and a sense of isolation facilitate the emergence of digital addiction (Baturay & Toker, 2019). Furthermore, family viewpoints and interactions may contribute to the emergence of smartphone addiction (Hawi & Samaha, 2017). Additionally, social anxiety and peer pressure contribute to smartphone addiction among teenagers (Wang et al., 2017).

Students’ physical, mental, social, personal, and academic lives are all negatively impacted by addictive smartphone use. Many students who use smartphones excessively have reported experiencing several physical and mental health problems as a result of prolonged use, including headache, wrist pain, tension, irritability or anger, insomnia, physical illness, and headache (Yu et al., 2014; Ansary & Khatun, 2025). Due to smartphone addiction, adolescents’ behavioral change is noticeable. Students who are addicted suffer from anxiety, depression, and impulsivity. They sometimes engage in criminal activity

(Semolini et al., 2025; Yang & Kim, 2015). In difficult situations, smartphone addiction may even lead to suicide attempts. Suicidal thoughts are experienced by 17.9% of regular smartphone users, compared to 35.1% of excessive smartphone users (Kim et al., 2019). Additionally, students who are addicted to smartphones receive lower grades than their non-addicted peers (Uddin et al., 2025; Yu et al., 2014). It negatively impacts students' social lives (Huang, 2017).

In several studies, some of the most effective ways to prevent students from becoming addicted to their smartphones were found. To control smartphone addiction, parents might use meditation. Parents should aim to limit their smartphone use when around their offspring to be safe. Parents should pay close attention to their youngsters and keep an eye on them. Their smartphone use should be limited in terms of time, according to Chang et al. (2019). Additionally, it is necessary to increase awareness about excessive smartphone use. Counselors must also raise awareness through print and online media on the detrimental impacts of smartphone addiction on young people (Onyeka et al., 2019). However, Hosen et al. (2021) surveyed 601 students in Bangladesh to investigate problematic smartphone use (PSU) and related factors among Bangladeshi students during the COVID-19 pandemic. The responses provided by the participants indicated that there might be connections between high PSU scores and depression, anxiety, and social media use, as well as between being in a relationship, exercising less, using the Internet for more extended periods, and using special distribution types like messaging, social media, and watching videos.

Furthermore, Mondal et al. (2020) set out to determine smartphone usage patterns and investigate factors contributing to smartphone addiction among teenagers in Dhaka, Bangladesh. The study revealed that although over 50% of early teenage students use their smartphones for social networking sites like Facebook and YouTube for three hours a day, 80.9% of late adolescent students use their smartphones to play online games. There are some studies about smartphone addiction related to university and college students, but they hardly focus on the secondary school students' smartphone addiction situation, causes, impacts, and preventive measures in Bangladesh's socio-cultural contexts. As a result, this study explored the phenomenon of smartphone addiction, its causes, impacts, and preventive measures.

2. METHODOLOGY

This investigation used a sequential mixed-methods design. To obtain the existing situation of secondary school students' smartphone addiction level in Bangladesh, a quantitative approach was followed, while to obtain a thorough understanding of smartphone addiction causes, impacts, and preventive measures in the sociocultural context of Bangladesh, a qualitative approach was employed in this study. Kwon et al. (2013) developed the Smartphone Addiction Scale Short Version (SAS-SV), which consists of ten items with a six-point Likert scale. This scale has been translated into Bangla and validated by two language experts and two educational psychologists. Cronbach's alpha of this translated version is .95, which indicates the high reliability of this scale. This study followed a multistage sampling to collect quantitative data through a survey. This questionnaire was administered in eight schools from four districts (Dhaka, Rajshahi, Lakshmipur, and Jessore) covering four old divisions of Bangladesh, considering an urban and a rural school based on stratified sampling. Then, data were collected randomly from each school. Data were collected from 400 students, of whom 208 were male (52%), and 192 were female (48%). Among all participants, 57 (14%) were 11 years old, 69 (17%) were 12 years old, 112 (28%) were 13 years old, 94 (24%) were 14 years old, and 68 (17%) were 15 years old. After that, the survey data were analyzed using descriptive statistical techniques, specifically frequencies and percentages, to understand the number and level of students regarding smartphone addiction. SPSS (version 27) was used to analyze the data of this study.

Later, the data were analyzed, and 12 students who scored highest on that scale were conveniently selected for in-depth interviews. Then, twelve parents and twelve teachers of these top-scoring students who appeared to have the highest smartphone addiction were recruited purposively, based on their relationships and active engagement with these students, and their capacity to provide detailed information pertinent to the research objective. Moreover, an educationist and a psychologist were also interviewed purposively. All participants were informed of the research objectives, and interviews were conducted with their consent. Throughout the study, participants received assurances that all ethical protocols, including their privacy, would be strictly adhered to. The interviews were recorded for almost thirty minutes with the participants' consent. Later, in-depth interview data were transcribed and coded, and a thematic analysis was followed to determine themes.

3. FINDINGS

3.1. Findings from the Quantitative Analysis

According to a demographic analysis of the 400 participants, there were marginally more men (52%) than women (48%). The geographical representation of the participants was as follows: 29% were from Dhaka, 25% were from Rajshahi, 22% were from Lakshmipur, and 24% were from the Jessore region. 51% of the participants lived in urban areas, while 49% lived in rural areas. When sorted by educational level, Class Eight had the most significant percentage of sample members (28%; 112), followed by Class Nine (24%; 94). Class Ten makes up 17% (68), whereas Classes Six and Seven make up 14% (57) and 17% (69), respectively.

Table 1. Demography from the Students' Survey Questionnaire

Demographics		n	(%)
Gender	Male	208	52%
	Female	192	48%
Total		400	100%
Region	Dhaka	117	29%
	Rajshahi	99	25%
	Lakshmipur	88	22%
	Jessore	96	24%
Total		400	100%
Areas	Urban	206	51%
	Rural	194	49%
Total		400	100%
Class	Six (Age-11)	57	14%
	Seven (Age-12)	69	17%
	Eight (Age-13)	112	28%
	Nine (Age-14)	94	24%
	Ten (Age-15)	68	17%
Total		400	100%

Table 2. Smartphone Addiction Level in Three Categories

Smartphone Addiction Level	n	%
Low Risk	219	54.8
Moderate Risk	89	22.3
High Risk	92	23
Total	400	100

Out of all participants, 54.8% (219 students) were classified as having a low risk of smartphone addiction, meaning they had a standard connection with their smartphones, according to the analysis. However, a significant percentage of the respondents showed greater concern, with 23% (92 students) and 22.3% (89 students) falling into the high-risk and moderate-risk categories, respectively. According to these smartphone dependency levels, around half of the participants are also classified as being at moderate or high risk, even though the great majority of individuals fall into the low addiction range.

Table 3. Smartphone Addiction Level by Gender

Student Gender		Low Risk	Moderate Risk	High Risk	Total
Male	n	99	51	58	208
	%	45.20%	57.30%	63.00%	52.00%
Female	n	120	38	34	192
	%	54.80%	42.70%	37.00%	48.00%

The findings show that there are notable disparities in the 400 participants' likelihood of smartphone addiction by gender. 45.2% (n = 99) of the male students were categorized as low risk, 57.3% (n = 51) as moderate risk, and 63.0% (n = 58) as high risk. However, only a lower percentage of female students were at moderate risk (42.7%) and high risk (37.0%, thirty-four), with the majority being low risk (54.8%, 120).

According to these findings, although women are linked to smartphone addiction, men are most at risk. This suggests that a focused, gender-sensitive approach based on trends in smartphone usage and addiction might be beneficial for preventive interventions.

Table 4. Smartphone Addiction Level by Region

Region		Low Risk	Moderate Risk	High Risk	Total
Dhaka	n	56	25	36	117
	%	25.60%	28.10%	39.10%	29.30%
Rajshahi	n	55	20	24	99
	%	25.10%	22.50%	26.10%	24.80%
Lakshmipur	n	49	23	16	88
	%	22.40%	25.80%	17.40%	22.00%
Jessore	n	59	21	16	96
	%	26.90%	23.60%	17.40%	24.00%

In Dhaka, among the 400 individuals, 25.6% (56) had low risk, 28.1% (25) had moderate risk, and 39.1% (36) had high risk, indicating that addiction is quite common in Dhaka. Similar trends were seen in Rajshahi, where 25.1% (55 students) had low risk, 22.5% (20 students) had moderate risk, and 26.1% (24 students) were assumed to be at high risk, indicating a relatively homogenous distribution. Similar but somewhat lower percentages were found in Lakshmipur, where the rates are 17.4% (16 students), 25.8% (23 students), and 22.4% (49 students) for low, moderate, and high risk, respectively. However, Jessore also had 17.4% (16 students) at high risk and 23.6% (21 students) at moderate risk, while having the highest percentage of low risk (26.9%; 59 students). According to these findings, Dhaka has the highest prevalence of high-risk addiction, whereas Lakshmipur and other locations have lower rates of serious smartphone addiction issues. Different socioeconomic circumstances, access to technology, and cultural perspectives on smartphone use could all contribute to the regional variations in smartphone addiction.

Table 5. Smartphone Addiction by Urban and Rural Areas

		Low Risk	Moderate Risk	High Risk	Total
Urban	n	93	50	63	206
	%	42.50%	56.20%	68.50%	51.50%
Rural	n	126	39	29	194
	%	57.50%	43.80%	31.50%	48.50%

According to the data from 400 respondents, there are differences in risk categories between participants who belong to urban and rural areas. Of the urban participants, 50 (56.2%) were categorized as moderate risk, 63 (68.5%) as high risk, and 93 (42.5%) as low risk. Given the prominence of technology and smartphone use in urban settings, these findings suggest that high-risk levels of smartphone addiction are highly prevalent there. On the other hand, more people (57.5%, or 126 people) were categorized as low risk in rural areas, indicating a move towards this level of risk. In rural areas, only 29 (31.5%) were categorized as high-risk, whereas 39 (43.8%) were categorized as moderate-risk. This indicates that students in rural areas are developing more connections with their smart devices but fewer than their city counterparts.

Table 6. Smartphone Addiction Level by Class-Wise

		Low Risk	Moderate Risk	High Risk	Total
Class Six	n	34	12	11	57
	%	15.5%	13.5%	12.0%	14.3%
Class Seven	n	37	19	13	69
	%	16.9%	21.3%	14.1%	17.3%
Class Eight	n	57	26	29	112
	%	26.0%	29.2%	31.5%	28.0%
Class Nine	n	58	14	22	94
	%	26.5%	15.7%	23.9%	23.5%
Class Ten	n	33	18	17	68
	%	15.1%	20.2%	18.5%	17.0%

There is a highly significant difference in the 400 participants' smartphone addiction levels when analyzed by academic class. Class Eight had the highest prevalence of addiction; students in this age range were categorized as low risk (26.0%), moderate risk (20.2%), and high risk (31.5%), indicating their developmental vulnerability. Unsettling levels were also found in Class Nine, where the low risk was 26.5%, and the high risk was 23.9%. On the other hand, Class Six had the lowest rates of addiction, ranging from 15.5% at low risk to 24.0% at moderate and high risk. This implies that students in Classes Eight and Nine should be particularly aware of this phenomenon and that similar interventions are necessary for these students to lessen the detrimental psychological effects on these adolescents.

3.2. Findings from the Qualitative Analysis

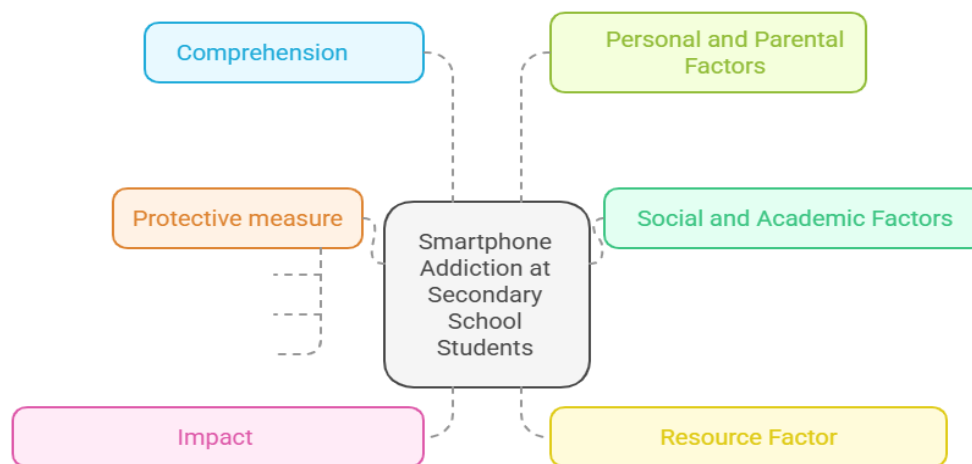


Figure 2. Themes Emerged from the Qualitative Analysis

3.2.1. Comprehension of Smartphone Addiction

The interviews with the students, teachers, and parents of secondary schools in Bangladesh provide a picture of their comprehension and understanding of smartphone addiction. Students provide diverse perspectives on smartphones, with some considering them as essential equipment for online education and online resource utilization due to the lack of computers and laptops, while some view them as tools for communication with others, entertainment, and social media usage. However, not all of the student participants feel that excessive usage of smartphones is similar to addiction to drugs or other things. They have no idea about the terminology of smartphone addiction, and they are not aware of the effects of smartphone addiction. A student from a rural area claimed,

“Smartphone addiction terminology is new to me. I do not consider the use of smartphones, whether that is used more or less comparable with addiction.”

Most of the parents are also not acquainted with the terminology of smartphone addiction, but they feel that symptoms of addiction are noticeable among their children. They consider the necessity of smartphones during this modern era, but are anxious about their children's excessive usage and craving for smartphones. They are aware of the excessive use of smartphones, but do not perceive how effectively they can control the excessive use of smartphones by their children. On the other hand, two parents have some idea about smartphone addiction and its remedy. These parents notice their children's excessive use of smartphones and withdrawal syndrome, which they consider smartphone addiction. Between them, a parent who resides on the urban side said,

“I was abroad for a job, and after returning home, I noticed my son used his smartphone excessively. I got worried and searched on YouTube to gain knowledge about the remedy for this addiction. Now I am trying to apply some tips to control my son's smartphone usage.”

On the other hand, among the class teachers who were interviewed, half of them have some knowledge about smartphone addiction. They consider excessive use of smartphones, craving for

smartphones, and misbehaving if they do not get a smartphone as addiction. Even one of the teachers among them knows the terminology of nomophobia. However, the rest of the teachers have little idea about smartphone addiction, though they are anxious about the excessive use of smartphones by their students. A teacher from an urban area said,

“One of my students one day behaved abnormally with all of his classmates, and then, after asking him, I realized that his phone was damaged by rain. That’s abnormal behavior for the phone loss is considerable to me as an addiction.”

3.2.2. Personal and Parental Factors for Smartphone Addiction

Personal factors contribute to smartphone addiction in secondary school students. Students’ personality traits are one of the major factors for smartphone addiction. Some teachers, along with a psychologist and an educationist who were interviewed, admit that students who are self-determined about their career goals, use a smartphone mainly for academic purposes, and can control themselves from the overuse of smartphones. Students who have high self-esteem and self-control are not instigated by peers or others for excessive use of smartphones. The psychologist mentioned,

“Students who have less self-esteem and less self-determination are not serious about their future. Besides, they are easily motivated by others, which can lead them towards smartphone addiction.”

Some of the students claim that their stress and anxiety for academic and personal reasons lead to their excessive use of smartphones. Some students blame boredom and loneliness, which push them to use smartphones. Some parents mention that their offspring are prone to using Facebook and other social media to stay connected with others, as they are always eager to know others’ activities. Some parents also indicate their children’s attention-seeking tendencies. A parent from an urban area said,

“My son always seeks priority from others. He has ten times more followers than me on Facebook. Every day he posts on Facebook and wants more likes and comments, which makes him engage on Facebook all day.”

Parental factors are also responsible for smartphone addiction. It is found that among those students who are smartphone-addicted, most of their parents also use smartphones excessively, which motivates them to use smartphones incessantly. Most of the teachers, including a psychologist and an educationist, indicate that lack of awareness among parents, their permissive attitudes, and parents’ education level are also the causes of smartphone addiction among students. Some teachers also indicate that parental academic pressure creates anxiety and stress among students, which pushes them to excessive use of smartphones. All of the teachers blame the lack of monitoring and supervision from parents as the main cause of smartphone addiction. A teacher from a rural area said,

“Students spend most of the time at home. If parents monitor and supervise regularly, no students will be smartphone addicts.”

Some students indicate a relationship gap with their parents. Parents are busy with their jobs and other things and do not spend sufficient time with their offspring, which leads students toward smartphones. A student also indicates parental fragile relationship pushes her to use a smartphone excessively. The Psychologist also indicates that parental bad relationships impact children’s minds, and to escape from these situations, they are prone to using smartphones. Another student mentions excessive academic pressure from their parents, and strict rules and regulations make them defiant gradually. He said,

“From my childhood, my parents put huge pressure and tight rules and regulations on me, I got punished for silly matters that suffocate me, and I started to use my cousin’s smartphone excessively.”

3.2.3. Social and Academic Factors of Smartphone Addiction

All of the parents and teachers, including the psychologist and educationist, blame peer pressure for the overuse of smartphones. Students are always motivated by their peer groups. In schools or outside of schools, students spend their time with friends, and one influences the others to use social media platforms for entertainment and play competitive video games on smartphones. A mother of a smartphone-addicted student mentioned,

"My son all-time plays video games with his school friends. Though I forbade him from playing anymore, he does not pay heed to my words and engages himself in playing virtual games with his friends."

Some teachers, including psychologists and educators, think that smartphone usage is socially acceptable to all, and there is no age limit to using a smartphone, which pushes students to use smartphones more. They also indicate that social comparison of having a smartphone or not, and whether skilled or not to use it, leads students to manage smartphones and overuse. Besides, they also mention that social validation on social media platforms also leads students towards excessive use of smartphones. Some parents indicate that they were compelled to buy smartphones for their offspring to maintain their social status. A parent from a rural area said,

"I had no intention to buy a smartphone for my son. All of his friends have smartphones, which creates a prestige issue for him that compels me to give him a smartphone."

It is found that most of the teachers advise students not to spend more time on smartphones. However, all of the parents, including the educationist, blame the school activities that push their children towards smartphone usage more. Schools provide different types of assignments and activities nowadays, which force students to rely on smartphones more. Students show a plea for the school to use smartphones. They also blame COVID-19 and online classroom practice, which gradually push students towards excessive use of smartphones. Schools do not have rules and regulations regarding the usage of smartphones. Moreover, they mention that schools do not arrange sufficient co-curricular and extracurricular activities, which also leads students to engage with smartphones. The educationist mentioned,

"The school arranges a game competition once a year. It is not sufficient. Schools put academic pressure on students, but do not engage them in other physical or mental activities that lead students to the smartphone."

3.2.4. Resource Factor for Smartphone Addiction

It is found that nowadays smartphone prices are low. If anyone wants to buy a smartphone without considering brands and extra functions, they can buy a smartphone for three to four thousand taka. The availability of smartphones is responsible for smartphone addiction. Besides, some teachers, including the educationist and psychologist, mention the addictive nature of smartphones. On a smartphone, anyone can install different types of games and apps that are addictive. There is no restriction on downloading and installing addictive games, which leads students to be prone to smartphones. The psychologist said,

"Anyone can download any app in Bangladesh. So, students download addictive games and become addicted easily."

It is found that most of the students use smartphones not only to play games but also to watch pornography and other adult movies and clips. Besides, students also use different social media sites and apps, including Facebook, Messenger, YouTube, Imo, TikTok, and Instagram etc. Even some students use different dating sites. Most teachers and parents, including the educationist and the psychologist, blame the availability of these apps and the lack of age restrictions for smartphone addiction. Besides, most of the urban parents, including the educationist, indicate the lack of playgrounds in the locality and school, and the lack of safety measures leads students to smartphone addiction. An urban parent said,

"Nowadays, there is no playground in my locality which compels my son to stay at home and spend his time with the smartphone."

3.2.5. Impact of Smartphone Addiction on Personal, Social, and Academic Life

Smartphone addiction has diverse negative impacts on students, including personal, social, and academic life. Students admit that they suffer from eye strain, neck and spine pain, hand and wrist pain, bad headaches, tiredness, sleeplessness, and obesity. Most parents and teachers notice that smartphone addiction has a negative impact on students' behavior. Students become impatient and rude. This addiction changes the lifestyle of students. They lose their time sense and lose their interest in doing their work, including timely eating, bathing, and so on. Besides, the psychologist mentions the negative impact on

mental health. He said,

“Students who are addicted can suffer from anxiety and depression. They suffer from nomophobia, and day by day they exhibit abnormal behavior with others.”

Parents and Teachers are anxious about addicted students’ social lives. Students who are addicted have a huge number of virtual friends, but in reality, they can not mix with people. They prefer to stay alone. Even, they have a lack of interpersonal relationships with their family members. They are reluctant to attend any social functions. An urban parent said,

“I am worried about my son’s social life. He can not mix with people, including relatives. He keeps silent all the time. He creates a world where he lives alone, which I am worried about.”

Smartphone addiction has a significant negative impact on students’ academic achievement. All of the parents, teachers, and the educationist mention the negative effects of smartphone addiction on students’ academic life. Students who are addicted to smartphones lose interest in studying. They prefer browsing smartphones rather than studying. They can not concentrate on studying for a long time. They suffer from procrastination in academic activities and increased absenteeism, which impacts their academic results. A teacher from a rural school said,

“I noticed that students who excessively use smartphones get comparatively bad results on the test. Because they lose the craving for studying. Even, they do not take exams seriously.”

3.2.6. Protective Measures of Smartphone Addiction

Smartphone addiction is detrimental to students’ personality development, proper socialization, and academic success. So, it is crucial to take remedial measures for smartphone addiction. It is found that all parents and teachers eagerly want to prevent smartphone addiction. But most of them lack knowledge about the proper preventive measures. The educationist and the psychologist emphasize capacity and awareness-building programs for students, parents, and teachers. They emphasize the digital citizenship training program for all stakeholders. In Bangladesh, digital citizenship is a relatively new concept, but it should be included in the curriculum and textbooks. The educationist suggested,

“As Bangladesh has entered into the digital era, digital citizenship training is necessary to disseminate knowledge of the proper use of digital devices, including smartphones. The government should take the initiative to implement digital citizenship education through curriculum, textbooks, training, and campaigns.”

All of the teachers, along with the educationist and the psychologist, emphasize the role of parents in controlling smartphone addiction among their children. Parents should set smartphone usage guidelines for their children, including limiting screen time and content restrictions, and monitoring children’s online activities. Parents need to consider with whom their children mix. Before that, they have to be role models in front of their children. They must quit excessive use of smartphones if they have. Otherwise, parental mediation will not work. Moreover, parents should spend quality time with their children and engage them more in offline activities. The psychologist urged,

“Parental mediation is the most important thing regarding smartphone addiction measures. Parents need to spend more time with their children, despite their business. Parents need to be friendly with their children, which will help to prevent smartphone addiction.”

The psychologist and the educationist also urge the parents and teachers to increase self-esteem and self-determination among students. They suggest encouraging students to make independent decisions, motivating students to give positive self-talk, and assisting students to set specific and clear career goals. The psychologist emphasized,

“As family and the school are considered the main sources of children’s personality development, parents and teachers should try to increase self-esteem, self-determination, and also provide moral education.”

According to all stakeholders’ suggestions, it is found that schools should set the rules and regulations for using smartphones on campus. School authorities should focus more on co-curricular activities, which contribute to increasing students’ skills and engage them with different activities, rather than using smartphones. Moreover, school authorities can arrange seminars and campaigns to increase awareness

against smartphone addiction and proper usage of smartphones. The educationist suggests that teachers conduct their classes in participatory approaches that will help to create face-to-face friendships among students rather than virtual friendships. Moreover, most parents feel that teachers can contribute to controlling smartphone addiction among students by inspiring and counseling. A parent from an urban area expressed,

“Students consider their teachers as role models. If teachers motivate students to the proper use of smartphones and counsel them from time to time, it would be very effective in controlling smartphone addiction.”

4. DISCUSSION

Smartphone addiction among secondary school students in Bangladesh is a concerning issue nowadays. The study revealed that the number of students at high risk was 23%, those at moderate risk were 22.3%, and the lowest percentage, representing low risk, was 54.8%. Despite a higher rate of low-risk students, a substantial issue of excessive smartphone usage affects 46.2% of students. This finding aligns with the study conducted by Mondal et al. (2020). The findings indicated that the risk of smartphone addiction among Bangladeshi adolescents who used smartphones was 29.6%, with an average usage exceeding five hours per day, surpassing the reported high risk in the present study. The findings of this study indicate that the prevalence of moderate and high risk of smartphone addiction is greater among male students than female students in secondary schools in Bangladesh, with male students exhibiting moderate risk at 57.3% and high risk at 63%, compared to female students at 42.7% and 37%, respectively. These findings differ slightly from those of Son et al. (2021), who found that female adolescents (29.9%) were more smartphone-addicted than male adolescents (28.6%).

The current study revealed that urban students exhibited higher percentages in the moderate (56.2%) and high-risk (68.5%) categories compared to rural students, who had lower percentages (43.8% and 31.5%, respectively). Sapienza et al. (2023) demonstrate that smartphone addiction is more prevalent among urban adolescents compared to their rural counterparts. This indicates that urban areas, characterized by more technological advancements and social media accessibility, experience elevated addiction rates. Furthermore, the present study indicates that Class Eight students exhibit the highest prevalence rates of moderate (29.2%) and high-risk (31.5%) addiction, whereas Class Six students demonstrate the lowest risk across all categories. This aligns with the findings of a comparative study conducted by Tangmunkongvorakul et al. (2020), which suggests that older Thai and Japanese adolescents had higher levels of addiction than their younger counterparts, showing the impact of peer pressure and cultural factors.

This study finds that students, parents, and teachers have very limited knowledge about smartphone addiction, its symptoms, and its remedies. The study of Doo and Kim (2022) found that negative parenting, their attitude to smartphone addiction, and their smartphone addiction level are correlated with their children’s smartphone addiction. In addition, this study finds that personal factors are responsible for secondary school students’ smartphone addiction. Students’ personality traits, such as self-esteem, self-determination, and self-control, are the major catalysts for smartphone addiction. Students who have low self-esteem, low self-determination, and low self-control are prone to being smartphone addicted. In line with these study findings, Hu et al.’s (2025) study indicated that adolescents’ personality traits are the major catalysts of smartphone addiction. Moreover, this study finds that students’ anxiety and stress, boredom and loneliness, and attention-seeking mentalities are also the causes of smartphone addiction, which is also supported by the study of Yun and Choi (2024).

Doo and Kim (2022) find that parental factors, including parental permissive attitudes to smartphone usage and neglect, lack of monitoring and supervision, and their excessive dependency on smartphones, impact young people’s addiction to smartphones. This present study also finds similar findings. However, this present study also finds that the parents’ education level is related to their children’s smartphone addiction. Moreover, this study finds that parents’ busyness with their jobs and lack of quality time with their children are also the cause of children’s smartphone addiction, which is in line with the findings of Zhang et al. (2022), who found that the gap in the relationship between parents and children and the lack of time parents spend with their children cause students to use smartphones. Furthermore, this study finds that peer pressure plays a vital role in students’ smartphone addiction. Students are encouraged by their

classmates and other friends to play competitive games on smartphones. Hung et al. (2025) also find the negative role of peers in instigating their friends to excessive use of smartphones. Peers push them to manage and use the smartphone. In line with these findings, the present study also finds that social comparison and social validation lead students to use smartphones excessively.

This study explores that nowadays schools do not focus on co-curricular and extra-curricular activities of students, which is one of the causes of smartphone addiction. Besides, schools do not have any rules and regulations for smartphone usage by students, which was also mentioned in the Tsai et al. (2020) study. Moreover, this study also found that the low price of smartphones in Bangladesh is available to students. Besides, the addictive nature of several apps is also responsible for smartphone addiction. There is no restriction mechanism for downloading and installing addictive games and apps, which is supported by the Ting and Chen (2020) study, where they focus on the age-based restriction mechanism for smartphone addiction. However, this present study also finds that the lack of playgrounds and safety forces students in urban areas to confine themselves to their flats, which is one of the reasons for smartphone addiction, as supported by the study of Maurya et al. (2023).

This study finds several negative impacts on the personal, social, and academic lives of secondary school students. Students who are addicted to smartphones mostly suffer from different physical problems. Moreover, it negatively impacts students' patience, lifestyle, time sense, seriousness of their activities, behavior, and mental health. These findings are in congruence with the findings of Zhu et al (2025), who find the negative effects of smartphones on students' physical and mental health, along with lifestyle changes. Additionally, this study finds that smartphone-addicted students show reluctance to meet with people. They prefer virtual friendships and communication rather than face-to-face communication, and they do not participate in social events that hamper their social life, which is supported by the study of Wang and Ma (2024). Furthermore, this study finds that smartphone addiction negatively impacts students' study habits, concentration, and seriousness about study, which leads to poor academic performance. These findings are similar to the findings of Wang et al. (2022). Smartphone addicted students' full concentration is on the smartphone, not studying, which impacts their academic results.

This study finds different suggestions from different stakeholders to take preventive measures for smartphone addiction among secondary school children. This study suggests focusing more on digital citizenship education. Digital citizenship education should be included in the curriculum and textbooks. Training for teachers and awareness campaigns for parents and students need to be arranged against smartphone addiction. Si and Lee (2023) also emphasize digital citizenship education to control smartphone addiction. In the current research, it is mentioned that parents and teachers should be aware of smartphone addiction and need to be role models for proper smartphone usage. They need to take the initiative to increase students' self-esteem, self-determination, and self-control by inspiring them to make decisions independently, use positive self-talk, and set goals, which is also supported by the study of Chang et al. (2019). Moreover, parents should play a mediating role in controlling smartphone addiction. They need to spend quality time with their children, put rules and regulations in place, and monitor and supervise children's smartphone usage, including content. Chang et al. (2019) also focus on the parental mediating role in controlling smartphone addiction among students. Furthermore, this present study suggests some roles of school authorities and teachers in arranging different co-curricular and extracurricular activities. It is also supported by the study of Islam et al. (2023) and Islam et al. (2023). Besides, class teachers need to conduct classes in participatory approaches and counsel students about the negative effects of smartphones. There is a positive side in that the new curriculum framework 2021 in Bangladesh focuses on experiential learning along with prioritizing co-curricular activities (Islam et al., 2025). These findings were also prioritized in the study of Tsai et al. (2020). As smartphones are a concerning issue, parents, teachers, and other major stakeholders need to take it seriously and apply preventive measures that will help secondary school students' positive personality development and improve their social and academic lives.

4.1. Limitation

Although this study utilized mixed-method approaches, it only focused on eight schools in Bangladesh. As a result, the findings of this study are limited in terms of generalizability. Future studies can explore the use of surveys, case studies, and other approaches to gain diverse viewpoints on smartphone addiction among secondary school students.

4.2. Practical Implication

This study findings will be useful for the parents, teachers, school administrators, curriculum developers, researchers and policymakers to identify the cause of smartphone addiction among secondary school students in the context of Bangladeshi culture, and help to take proper preventative measures to control smartphone addiction such as increasing awareness through campaign and training, inclusion in the curriculum, parent and teachers active engagement for balanced technology use and well-being program and. This study will help provide clear guidelines for parents, teachers, school administrators, and policymakers on controlling smartphone addiction.

5. CONCLUSION

Smartphone addiction among secondary school students in Bangladesh is a pressing concern for students, parents, and teachers. This study explored some factors, such as personal, parental, social, academic, and resource-related factors, which are the root causes of smartphone addiction for secondary school students, and their negative impact on students' personal, social, and academic lives. So, this study suggests some preventive measures like increasing self-esteem and determination, building awareness among all related stakeholders, parental proper mediation, teacher training and their activities against addiction, setting rules and regulations, and continuous monitoring and supervision. This study's findings can be utilized in other developing countries like Bangladesh to control smartphone addiction among secondary-level students.

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Research Ethics. The authors affirm that this study was conducted with integrity, and all ethical standards were maintained throughout. Before collecting data, a declaration form was provided to describe the research objectives, data collection, research process, privacy, and the process for maintaining privacy and confidentiality. Informed consent was obtained from the participants. Throughout the study, participants' confidentiality was maintained strictly.

Data Availability Statement. All data can be obtained from the corresponding author.

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