

# Impact of Mobile Phone (Smart Phone) on Secondary Level Students at Kotalipara Upazila, Gopalganj, Bangladesh

Mohammad Tojammel Haq, Mahamudul Hasan, & Sk. Naimur Rahman

## Abstract

Impact of mobile phone especially smart phone on secondary level students at Kotalipara Upazila of Gopalganj district was studied at Kotalipara, Gopalganj, from January 2023 to June 2023. This research was conducted to find out the existing status of using smart phones in educational and non-educational purpose by secondary level students. This study also highlighted the various adverse aspects of health damage due to excessive use of mobile phone. About 80 students were selected from 10 (Ten) secondary educational institutions or school of Kotalipara, Gopalganj. Approximately 53.75% male and 45.00% female students were going to the school at secondary level. The student of class nine and class eight was constitute almost 73.75 percent of total smart phone user and most of the students (about 67.50%) got mobile phone from his/her father. About 77.50% students used smart phone two hours/ less than two hours. Most of the students were addicted to using YouTube (40.00%) followed by the facebook (35.00%). The students were using the mobile phone for various purpose such as study (38.75%), listening music (15.0%), watching video (13.75%), playing game (17.50%) and others (15.0%) purpose. In case of academic studies most of the students (about 47.50%) used mobile phone for search the complex answer. Most of the secondary level students were suffered from lack of sleep (45.0%), eye problem (20.0%), headache (17.50%) and neck pain (11.25%). So we should ensure the rational use of mobile phone to get update education and ICT based knowledge. On the contrary, the students cannot save them from the bad effect of mobile phone.



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## Introduction

In the contemporary era, mobile phones have become ubiquitous devices with multifaceted functionalities, profoundly influencing various aspects of daily life, including communication, entertainment, and education. The rapid advancements in mobile technology have led to an increased tendency towards overuse and addiction among users, particularly among the younger demographic. Understanding the prevalence and triggering factors associated with mobile phone addiction (MPA) among university students is crucial for addressing this emerging public health concern. Several studies have shed light on the prevalence and factors contributing to MPA among the students in different contexts. For instance, Ghosh et al. (2022) conducted a study in Bangladesh to explore the prevalence of MPA and identified spending time on social media sites and experiencing sleep disturbances due to late-night internet activity as significant triggers for MPA among the students. Their findings underscore the importance of raising awareness among younger generations to mitigate MPA.

Similarly, studies by Biswas et al. (2020) and Hossain et al. (2019) investigated students' perceptions of mobile learning during the COVID-19 pandemic and the impact of mobile phone usage on academic performance, respectively, in Bangladesh. Biswas et al. (2020) highlighted the positive perception of mobile learning among university students during the pandemic, emphasizing its role in bridging the study gap caused by disruptions in traditional education systems. On the other hand, Hossain et al. (2019) revealed both positive and negative effects of mobile phone usage on academic performance, suggesting a nuanced relationship influenced by factors such as gender, age, and usage patterns. Moreover, research by Hossain et al. (2019) explored the effects of variety-seeking intention arising from mobile phone usage on students' academic performance in Bangladesh. Their findings indicated a strong positive relationship between variety-seeking tendency and academic performance, highlighting the need for a comprehensive understanding of how mobile phone usage behaviors impact educational outcomes. Furthermore, Akhter et al. (2020) investigated customer intentions to adopt mobile banking services in Bangladesh, emphasizing the significance of perceived usefulness, security, and technology competency in influencing customers' intent to use mobile banking. Their study provided insights into the factors driving the adoption of mobile banking services in a developing country context. Additionally, Kabir et al. (2023) examined the impact of mobile phone addiction on education, mental, and physical health among university students in Bangladesh. Their study revealed both positive and negative aspects of mobile phone addiction, underscoring the need for effective interventions to address its adverse effects on academic performance and well-being.

Drawing insights from these prior studies, the current research aims to contribute to the existing literature by examining the prevalence and triggering factors associated with MPA among secondary level students in Bangladesh. By identifying key determinants of MPA, the study seeks to inform the development of targeted interventions aimed at reducing MPA and promoting healthy mobile phone usage behaviors among secondary level students. Ultimately, the findings of this study may have implications for health and educational organizations in designing programs to mitigate MPA and support the well-being of secondary level students in Bangladesh.

Education serves as the cornerstone of our lives, providing us with the knowledge and skills necessary for meaningful engagement with our surroundings. It encompasses not only scholastic and academic learning but also experiential and experimental insights that enrich our intellect and contribute to our spiritual growth. Education has long been recognized as instrumental in unlocking human potential and fostering social progress (Dewey, 1899).

Beyond imparting knowledge, education cultivates awareness and sensitivity to important issues, enabling individuals to make informed choices (Cremin, 1976). Aligned with the Sustainable Development Goals (SDGs), Goal 4 emphasizes the importance of inclusive and equitable quality education and lifelong learning opportunities for all. Bangladesh has made commendable strides in its educational sector, striving towards achieving SDG 4 targets and indicators (BANBEIS, 2021).

Secondary education, following primary education and preceding higher education, typically caters to students aged 14 to 18. It encompasses lower-secondary (grades nine and ten) and higher secondary (grades 11 and 12) phases, offering general, religious, and technical streams with various specialization options. Despite a core academic curriculum comprising subjects like Bangla, Bangladesh studies, English, mathematics, and information technology, the allure of information and communication technologies (ICT) presents both opportunities and challenges in the educational landscape (WENR, 2019). Mobile phones, ubiquitous in today's society, have evolved from basic communication devices to multifunctional smartphones equipped with web browsers, cameras, and social media platforms. While smartphones facilitate educational activities and expand learning horizons, their excessive usage among secondary-level students raises concerns. Addiction to smartphones detracts students from academic pursuits, leading to decreased interest in reading and overindulgence in social media platforms such as Facebook, WhatsApp, and Instagram. This addiction not only jeopardizes decision-making abilities but also erodes moral values and exacerbates mental and physical health issues.

In light of these concerns, parents and educators must undertake awareness initiatives to curb smartphone addiction among students. The present study aims to investigate the impact of smartphone usage on secondary-level students. Specifically, the study seeks to assess the prevalence of smartphone usage among secondary-level students, examine its impact on academic engagement, explore social media usage patterns, and highlight associated health risks. Through this investigation, we aim to shed light on the adverse consequences of excessive smartphone use and inform targeted interventions to promote digital well-being among students.

### **Literature Review**

In this section, the opinions and ideas of specialists and researchers will be discussed in the light of their respective fields about the impact of information technology tools and smart phones in the field of secondary education. Furthermore, it focuses on the usage's status of smart phone among the secondary school students in Bangladesh.

The impact of mobile phone usage on students' academic performance and well-being has garnered significant attention in educational research. Several studies have explored various aspects of mobile phone usage among students, shedding light on its implications for learning, health, and behavior. Gajdics and Jagodics (2022) investigated the relationship between mobile phone separation and students' anxiety levels and class engagement. Their study found that separation from mobile phones increased anxiety levels among high school students, although it did not significantly affect class engagement. The authors highlighted the importance of understanding students' attachment to mobile devices and its implications for educational settings. In a scoping review by Ly (2016), the use of mobile phones to promote physical activity among post-secondary students was examined. While some interventions, such as text message reminders, showed promise in increasing physical activity levels, the evidence was mixed, and further research was deemed necessary to elucidate the effectiveness of mobile-

based health interventions. Rashid et al. (2020) focused on the influence of mobile phone addiction on academic performance among teenagers. Their quantitative study revealed a negative correlation between mobile phone usage and academic performance, suggesting that excessive mobile phone use could detract from students' focus on academic matters. Rodríguez-García et al. (2021) investigated the prevalence of nomophobia (no-mobile-phone phobia) among students of different ages and educational stages. Their findings indicated that students over 12 years old exhibited moderate levels of nomophobia, irrespective of their educational stage. The study emphasized the need for interventions to address nomophobia and its impact on students' well-being. Mfaume (2022) examined the use and abuse of mobile phones by teachers in Tanzanian secondary schools. The qualitative study revealed that teachers often underutilized mobile phones for academic purposes and engaged in inappropriate mobile phone use during school hours. The findings underscored the importance of establishing ethical guidelines for mobile phone use among teachers. Fook et al. (2021) explored smartphone usage patterns among university students in Malaysia. Their descriptive study revealed that students exhibited addictive behaviors related to smartphone use, which potentially affected their academic performance. The findings highlighted the need for interventions to mitigate smartphone addiction among university students. Additionally, Gómez-García et al. (2020) investigated the technological factors influencing the mathematics performance of secondary school students. Their study found that the availability of ICT resources, including mobile phones, at home was negatively associated with academic success in mathematics. The authors emphasized the importance of optimizing the use of ICT tools for educational purposes. Moreover, these studies contribute valuable insights into the multifaceted impact of mobile phone usage on students' academic performance, health, and behavior. They underscore the need for balanced and responsible mobile phone use among students, along with interventions to address potential negative consequences on learning outcomes and well-being.

Additionally, Bolkan & Griffin (2016) said that students' use of mobile phones while conducting class sessions is a negative attitude. Students would not give their full attention to the class and would have a different mindset which would prevent them from understanding the academic chapters. The use of devices created a sense of isolation among them, which kept them away from studies. Ali & Hossain (2019) recommended that Parents should be more vigilant and make their children aware of the physical, mental and social problems of school students due to the use of mobile phones. In order to increase health awareness, the health department should arrange more warning messages so that the students are more aware. Rahaman (2017) reported that School students resort to lying by using mobile phones because they cannot see each other while talking; thereby degrading the moral education they receive in the education field. Psychologically, students are more emotional as they are younger which makes them take any type of emotional decision. Addiction to mobile phone becomes a long-term habit, which makes them prone to developing dangerous diseases. Obilor (2022) reported that when students use mobile phones in class they cannot concentrate on the teacher's session. Their addiction to using mobile phones increases so much that they skip studies and are non-academic like; More attracted to playing games, social media chatting and surfing. That is why every school should discourage the use of mobile phones in class for better performance by students. Afroz & Mahmud (2016) said that students who keep their smart phones on during class become distracted during the session. For this reason, smart phones should be turned off during studies and classes. Students should not use smart phones after 12 pm. Every student should know when and how to use a smart phone. Students should be discouraged from using social media such as: Facebook, Viber, Skype, Instagram, Google+. In the present study, we investigated the status of mobile phone (smart phone) use in educational and non-educational

activities by secondary level students. It also found out the physical problem faced by using mobile phone.

### Materials and Methods

**Sampling:** The Study was conducted at the selected 10 (Ten) secondary educational institutions or school of Kotalipara, Gopalgonj. About 80 students out of 800 students were used as samples that's were randomly selected. The sample was deemed to be representative in the context of Bangladesh situation. 10% students were selected as respondents.

**Sources of Data:** All necessary information to prepare this research proposal was collected from both the primary and secondary sources of data.

**Primary data sources:** Primary information was collected by following manner: Field visit of relevant respondent's educational institution, interview of the respondent students by structured questionnaire, face to face conversation with students. The following institutes were selected for collecting data.

Sl.no	Name of Educational Institution	Location
1.	KAMALKURI BIDDYA NIKETON	Bagan Uttarpara Kotalipara, Gopalganj
2.	KOTALIPARA PUBLIC INSTITUTION	Sikirbazar Kotalipara, Gopalganj
3.	KOTALIPARA UNION GOVT. INSTITUTION (PILOT)	Baliabhanga Kotalipara, Gopalganj
4.	WEST KOTWALIPARA UNION INSTITUTION	Majhbari Kotalipara, Gopalganj
5.	TALIMPUR TELIHATI HIGH SCHOOL	Bhangarhat Kotalipara, Gopalganj
6.	KANDI HIGH SCHOOL	Kandi Kotalipara, Gopalganj
7.	SONAR BANGLA HIGH SCHOOL	Hiran Kotalipara, Gopalganj
8.	RADHAKANTA HIGH SCHOOL	Kalabari Kotalipara, Gopalganj
9.	RAJAPUR ADARSHA HIGH SCHOOL	Ramshil Kotalipara, Gopalganj
10.	VENNABARI HIGH SCHOOL	Kandi Kotalipara, Gopalganj

**Secondary sources of data:** secondary data was collected from DSHE - 2015 Learning Assessment of Secondary Institutions, DSHE - Semi-annual Monitoring Report (July - December 2015), Research Journal, National Educational Policy – 2010, National Information and Communication Technology Policy, 2018, MOE - Master Plan for Information and Communication Technology in Education, Information and Communication Technology Act, 2006, report of UNESCO, World Bank, ADB and Bangladesh Bank, BANBEIS, BBS, Different books and periodical related to ICT Equipment uses by students, Journal, newsletters, net browsing etc.

**Variables used in this research:** A variable is any characteristics, which can assume varying or different values in successive individual cases (Ezekiel and Fox, 1959). A good research usually contains at least two important variables such as dependent and independent variables. The dependent variable is the variable that is being measured in an experiment or the variables those are affect during research are called dependent variable. In this research the dependent variable was impact of mobile phone (Smart Phone) on Secondary Level Students. The independent variables are the variables that the researcher changes to test his dependent variables. The variables that can take different values and can cause corresponding changes in other variables. In this study, ten characteristics of the respondent were selected by the researchers as the independent variables. The independent variables for this investigation were- Sex, mobile phone provider, starting class of mobile phone use, per day time spent with

mobile phone (Hours), more addicted social media use in mobile phone, types of work done by mobile phone, types of academic studies done by mobile phone, physical problem by using mobile phone and behavior of students towards teacher.

### Dependent and independents variables were given below at a glance:

Variables	Types	Measuring technique
Sex	Continuous	Score (1=Female, 2= Male, 3= Others)
Mobile phone provider	Continuous	Score (1=Father, 2=Mother, 3=Elder brother, 4=Elder sister, 5=Any other relatives, 6=Purchase with own savings, 7=Others)
Starting class of mobile phone use	Continuous	1 for class 1
Per day time spent with mobile phone	Continuous	1 for 1 hour
More addicted social media use in mobile phone	Continuous	Score (1=Facebook, 2=YouTube, 3=WhatsApp, 4=Instagram, 5=TikTok, 6=Snapchat,7=Pinterest, 8=Reddit, 9=Twitter)
Types of work done by mobile phone	Continuous	Score (1=Study, 2=Listening music, 3=Watching Video, 4=Playing game, 5=Others)
Types of academic studies done by mobile phone	Continuous	Score (1=To give answer easily, 2=Search the complex answer, 3=Mathematical solution, 4=Formula proven, 5=Others)
Physical problem by using mobile phone	Continuous	Score (1=Neck pain, 2=Headache, 3=Eye problem, 4=Throat pain, 5=Earache, 6=Lack of sleep, 7=Others problem)
Behavior of students towards teacher	Continuous	Score (1=Respectful, 2=Good, 3=Petulant, 4=Grumpy, 5=Others)
Impact of mobile phone (smart phone) use	Binary	1 for having impact of mobile phone use and 0 for no impact of mobile phone use on secondary level students

**Null Hypothesis:** The null hypothesis was taken in this research. The null hypothesis was there is no impact of mobile phone (smart phone) use on Secondary Level Students.

**Data analysis:** The raw data collected underwent meticulous coding and tabulation procedures. After coding, the data and respondents were categorized based on the nature of the data distribution. Specific categories were developed for each variable to organize the data effectively. Subsequently, the data were analyzed and interpreted in alignment with the study objectives. Statistical analysis was conducted using the SPSS (Statistical Package for Social Science) computer program, version 20, to derive meaningful insights from the dataset.

## Results and Discussion

This chapter illustrated results from the research findings. Basically, it was categorized aligned with study objectives.

### Sex

According to our findings, the respondents were classified into three categories as male, female and others. The distribution of the respondents according to their sex was shown in Table-1.

**Table-1. Distribution of the students according to their sex**

Sexual status	Frequency ( n)	Percentage (%)
Male	43	53.75
Female	36	45.0
Others	1	1.25
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-1 indicate that the male student comprised the highest proportion (53.75 percent) followed by the female student (45 percent) and the lowest proportion were found by the others category (1.25 percent). Data also indicates that the proportion of male students is little higher than the female student in case of secondary education in Bangladesh.

### Mobile phone provider

According to our research findings, the respondents were classified into seven categories as father, mother, elder brother, elder sister, any other relatives, purchase with own savings, and

others. The distribution of the respondents according to their mobile phone provider was shown in Table-2.

**Table-2. Distribution of the students according to their mobile phone provider**

Mobile phone provider	Frequency ( n)	Percentage (%)
Father	54	67.50
Mother	5	6.25
Elder brother	3	3.75
Elder sister	1	1.25
Any other relatives	5	6.25
Purchase with own savings	1	1.25
Others	12	15.00
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-2 indicate that father (67.50 percent) was the main provider of the mobile phone to his daughter/son followed by the other sources (15 percent). Only 1.25 percent secondary school student were collected from her/his elder sister and purchased with own savings.

### Starting class of mobile phone use

From the investigation, the respondents were classified into five categories as Class-6, Class-7, Class-8, Class-9 and Class-10. The distribution of the respondents according to their starting class of mobile phone was shown in Table-3.

**Table-3. Distribution of the students according to their starting class of mobile phone use**

Starting class of mobile phone use	Frequency ( n)	Percentage (%)
Class-6	2	2.50
Class-7	4	5.00
Class-8	26	32.50
Class-9	33	41.25
Class-10	15	18.75
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-3 indicate that the students of class nine were comprised the highest proportion (41.25 percent) followed by the student of class eight (32.50 percent) and the lowest proportion were found by the student of class six (2.50 percent). Data also indicates that the student of class nine and class eight was constitute almost 73.75 percent of total respondents.

### Per day time spent with mobile phone (Hours)

According to our findings, the respondents were classified into four categories as 2-Hours/ Less than 2-Hours, 3-Hours, 4-Hours and More than 4 Hours. The distribution of the respondents according to their per day time spent with mobile phone (Hours) was shown in Table-4.

**Table-4. Distribution of the students according to per day time spent with mobile phone (Hours)**

Per day time spent with mobile phone (Hours)	Frequency ( n)	Percentage (%)
2-Hours/ Less than 2-Hours	62	77.50
3-Hours	10	12.50
4-Hours	5	6.25
More than 4 Hours	3	3.75
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-4 indicate that the student who gave 2-Hours/ Less than 2-Hours comprised the highest proportion (77.50 percent) followed by the 3-Hours (12.50 percent) and the lowest proportion were found by the student who gave more than 4-Hours category (3.75 percent). Data also indicates that most of the students were spent about two or less than two hours with mobile phone in case of secondary education in Bangladesh. Afroz & Mahmud, (2016) said that students should not use smart phones after 12 pm.

### More addicted social media use in mobile phone

Various social media is using now-a-days for communicating with each other. According to our collected data, the respondents were classified into nine categories on the basis of social media used in mobile phone such as Facebook, YouTube, WhatsApp, Instagram, TikTok, Snapchat, Pinterest, Reddit, Twitter. The distribution of the respondents according to their addiction in social media use in mobile phone was shown in Table-5.

**Table-5. Distribution of the students according to more addicted social media use in mobile phone**

Name of addicted social media	Frequency ( n )	Percentage (%)
Facebook	28	35.00
YouTube	32	40.00
WhatsApp	4	5.00
Instagram	2	2.50
TikTok	8	10.00
Snapchat	4	5.00
Pinterest	0	0.00
Reddit	1	1.25
Twitter	1	1.25
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-5 indicate that the YouTube comprised the highest proportion (40.00 percent) followed by the facebook (35.00 percent) and the lowest proportion were found by the pinterest (0.00 percent). Data also indicates that the YouTube and Facebook constituted almost 75.00 percent of total respondents. The student of secondary school was more addicted in YouTube and Facebook. Afroz & Mahmud (2016) said that students should be discouraged from using social media such as: Facebook, Viber, Skype, Instagram, Google+.

### Types of work done by mobile phone

According to our collected data, the respondents were classified into five categories as study, listening music, watching video, playing game and others. The distribution of the respondents according to their types of work done by mobile phone was shown in Table-6.

**Table-6. Distribution of the students according to types of work done by mobile phone**

Types of work done by mobile phone	Frequency ( n )	Percentage (%)
Study	31	38.75
Listening music	12	15.00
Watching Video	11	13.75
Playing game	14	17.50
Others	12	15.00
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-6 notify that the use of mobile phone in study comprised the highest proportion (38.75 percent) followed by playing game (17.50 percent). Data also indicates that the most of the students used the mobile phone due to study purpose but the Bolkan & Griffin,



(2016) said that the use of devices created a sense of isolation among them, which kept them away from studies.

### Types of academic studies done by mobile phone

Students are using mobile phone in their academic study. In case of our research, the respondents were classified into six categories on the basis of various academic studies such as to give answer easily, search the complex answer, mathematical solution, formula proven and others. The distribution of the respondents according to their mobile phone use in academic study was shown in Table-7.

**Table-7. Distribution of the students according to types of academic studies done by mobile phone**

Types of academic studies done by mobile phone	Frequency ( n )	Percentage (%)
To give answer easily	19	23.75
search the complex answer	38	47.50
Mathematical solution	10	12.50
formula proven	8	10.00
Others	12	15.00
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-7 indicate that “search the complex answer” comprised the highest proportion (47.50 percent) and the lowest proportion was found by the formula proven category (10.00 percent). Data also indicates that most of the students were using the mobile phone for solving the complex answer in terms of academic study but the Bolkan, S & Griffin, D.J (2016) said that students' use of mobile phones would have a different mindset which would prevent them from understanding the academic chapters.

### Physical problem by using mobile phone

According to our findings, the respondents were classified into seven categories as neck pain, headache, eye problem, throat pain, earache, lack of sleep and others problem. The distribution of the respondents according to their physical problem faced by using mobile phone was shown in Table-8.

**Table-8. Distribution of the students according to physical problem by using mobile phone**

Physical problem faced by using mobile phone	Frequency ( n )	Percentage (%)
Neck pain	9	11.25
Headache	14	17.50
Eye problem	16	20.00
Throat pain	1	1.25
Earache	2	2.50
Lack of sleep	36	45.00
Others problem	2	2.50
Total	80	100

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-8 indicate that the lack of sleep comprised the highest proportion (45.00 percent) followed by the eye problem (20.00 percent) and the lowest proportion were found by the throat pain category (1.25 percent). Data also indicates that the most of the student (about 65.00 percent) of secondary level were suffering from lack of sleep and eye problem for using the mobile phone. Ali & Hossain (2019) stated that the student should aware of the physical, mental and social problems due to the use of mobile phones. Rahaman and

Mahbobor (2017) reported that addiction to mobile phone becomes a long-term habit, which makes them prone to developing dangerous diseases. Study findings indicated that high frequency of mobile phone use had a negative association with cell phone uses could be a risk factor for developing sleep disturbances, eye problem and headache.

### Behavior of students towards teacher

According to our findings, the respondents were classified into five categories respectful, good, petulant, Grumpy and others. The distribution of the respondents according to their behavior towards teacher was shown in Table-9.

**Table-9. Distribution of the students according to per day time spent with mobile phone (Hours)**

Per day time spent with mobile phone (Hours)	Frequency ( n)	Percentage (%)
Respectful	39	48.75
Good	18	22.50
Petulant	10	12.50
Grumpy	4	5.00
Others	9	11.25
Total	80	100.00

Source: Data was collected from direct visit of the institutions and data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

Data represented in Table-9 indicate that the respectful behavior of student comprised the highest proportion (48.75 percent) followed by good behavior (22.50 percent) of the student towards teacher the (45 percent) and the lowest proportion were found by grumpy category (5.00 percent). Data also indicates that the most of the students (about 71.25 percent) in secondary level were respectful and good behavior towards teacher till now.

### Contribution of the selected characteristics of the respondents on the impact of mobile phone (smart phone) use by Secondary Level Students

For estimating the impact of mobile phone (smart phone) use on secondary level students a multiple regression analysis was done which was shown in the Table 10.

**Table-10. Multiple regression coefficients of the variables related to impact of mobile phone (smart phone) use on Secondary Level Students**

Dependent variable	Independent variable	$\beta$	P	$R^2$	F
Impact of mobile phone (Smart Phone) on Secondary Level Students	Sex	.003	.319	0.492	5.711
	Mobile phone provider	.002	.815		
	Starting class of mobile phone use	-.195	.032*		
	Per day time spent with mobile phone	.226	.004**		
	More addicted social media use in mobile phone	.188	.054*		
	Types of work done by mobile phone	.234	.006**		
	Types of academic studies done by mobile phone	.137	.068*		
	Physical problem by using mobile phone	.338	.007**		
Behavior of students towards teacher	.034	.795			

\*\* Significant at  $p < 0.01$ ; \*Significant at  $p < 0.05$

Source: Data was analyzed by using SPSS (Statistical Package for Social Science) computer program, version 20.

### Contribution of starting class of mobile phone use on the impact of mobile phone (Smart Phone) on Secondary Level Students

From the multiple regression, it was notified that the contribution of starting class of mobile phone use on the impact of mobile phone (Smart Phone) on Secondary Level Students was at 5% significance level (.032). The direction of relationship between starting class of mobile

phone use and impact of mobile phone (Smart Phone) on Secondary Level Students was negative. The b-value of starting class of mobile phone use was (-.195). So, it can be stated that as starting class of mobile phone use of students increased by one unit, impact of mobile phone (Smart Phone) on Secondary Level Students decreased by 0.195 units.

### **Contribution of per day time spent with mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students**

From the multiple regression, it was notified that the contribution of per day time spent with mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students was at 1% significance level (.004). The direction of relationship between per day time spent with mobile phone and impact of mobile phone (Smart Phone) on Secondary Level Students was positive. The b-value of per day time spent with mobile phone was (.226). So, it can be said that as per day time spent with mobile phone increased by one unit, impact of mobile phone (Smart Phone) on Secondary Level Students increased by 0.226 units. So, per day time spent with mobile phone had high significantly contributed to the impact of mobile phone (Smart Phone) on Secondary Level Students increased.

### **Contribution of more addicted social media use in mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students**

From the multiple regression, it was concluded that the contribution of more addicted social media use in mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students was at 5% significance level (.054). The direction of relationship between more addicted social media use in mobile phone and impact of mobile phone (Smart Phone) on Secondary Level Students was positive. The b-value of more addicted social media use in mobile phone was (.188). So, it can be said that as more addicted social media use in mobile phone increased by one unit, impact of mobile phone (Smart Phone) on Secondary Level Students increased by 0.188 units. As a result we can say that, more addicted social media use in mobile phone had high significantly contributed to the impact of mobile phone (Smart Phone) on Secondary Level Students increased.

### **Contribution of types of work done by mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students**

From the multiple regression, it was found that the contribution of types of work done by mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students was at 1% significance level (.006). The direction of relationship between types of work done by mobile phone and impact of mobile phone (Smart Phone) on Secondary Level Students was positive. The b-value of types of work done by mobile phone was (.234). So, it can be said that as types of work done by mobile phone increased by one unit, impact of mobile phone (Smart Phone) on Secondary Level Students increased by 0.234 units. So, types of work done by mobile phone had high significantly contributed to the impact of mobile phone (Smart Phone) on Secondary Level Students increased.

### **Contribution of types of academic studies done by mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students**

From the multiple regression, it was found that the contribution of types of academic studies done by mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students was at 5% significance level (.068). The direction of relationship between types of academic studies done by mobile phone and impact of mobile phone (Smart Phone) on Secondary Level Students was positive. The b-value of types of academic studies done by mobile phone was (.137). So, it can be said that as types of academic studies done by mobile phone

increased by one unit, impact of mobile phone (Smart Phone) on Secondary Level Students increased by 0.137 units.

### **Contribution of Physical problem by using mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students**

From the multiple regression, it was indicated that the contribution of Physical problem by using mobile phone on the impact of mobile phone (Smart Phone) on Secondary Level Students was at 1% significance level (.007). The direction of relationship between physical problem by using mobile phone and impact of mobile phone (Smart Phone) on Secondary Level Students was positive. The b-value of per day time spent with mobile phone was (.338). So, it can be said that as physical problem by using mobile phone increased by one unit, impact of mobile phone (Smart Phone) on Secondary Level Students increased by 0.338 units. So, physical problem by using mobile phone had high significantly contributed to the impact of mobile phone (Smart Phone) on Secondary Level Students increased.

Starting class of mobile phone use, per day time spent with mobile phone, more addicted social media use in mobile phone, types of work done by mobile phone, types of academic studies done by mobile phone, physical problem by using mobile phone had significant contribution to the impact of mobile phone (Smart Phone) on Secondary Level Students. Characteristics of the students like sex, mobile phone provider and behavior of students towards teacher had no significant contribution to the impact of mobile phone (Smart Phone) on Secondary Level Students. The  $R^2$  value indicated that the how much change of dependent variable by changing independent variables. Value of  $R^2 = 0.492$  means that independent variables were accounted for 49.2% of the variation with their use of best management practices. The F ratio is 5.711 which was highly significant ( $p < 0$ ).

### **Conclusion**

This was study conducted to identify the impacts of mobile phone usage among the High School students (Class 6 to Class 10) of the kotalipara upozila at Gopalganj district which is reflected the original scenario of rural areas in Bangladesh. Most of the students used smart phone two hours/ less than two hours and were addicted to using YouTube (40.00%) and facebook (35.00%). The students were use the mobile phone for study, listening music, watching video, playing game, etc. This study will helpful for future researcher to identify the positive or negative impact of mobile phone usage in case of secondary level of students. Although, the present study had some limitations such as only an upazila was selected for research area. More districts and upazila can be selected for future research. Only nine characteristics were selected for the study and it can be extended in future study. Now-a-days mobile phone is associated with education and ICT based knowledge. But the students of secondary levels were using mobile phone in both in educational and non-educational activities. By irrational use of mobile phone the students were suffering from various physical and psychological problems. So we should ensure the rational use of mobile phone to get update education and ICT based knowledge. On the contrary, the students cannot save them from the bad effect of mobile phone. It is need to embark on more extensive research related to technology use and the social impacts among school going students and young adults.

### **Applications**

Educational institutions can derive practical implications from this study's findings to enhance student well-being and academic performance. Firstly, administrators may consider implementing educational programs or workshops to raise awareness among students about the adverse effects of excessive mobile phone use. Secondly, they could introduce guidelines or

policies regulating mobile phone usage during class hours to minimize distractions and foster a conducive learning environment. These initiatives could contribute to improved student focus and engagement in academic activities. Moreover, policymakers can utilize the research outcomes to inform the development of regulations at both institutional and governmental levels. Firstly, they may advocate for the integration of digital literacy programs into school curricula to educate students about responsible mobile phone usage. Secondly, policymakers could collaborate with educational stakeholders to establish guidelines for mobile phone use in educational settings, ensuring a balanced approach to technology integration while safeguarding students' academic success and well-being.

Health professionals can leverage the study's findings to provide targeted support and interventions for individuals struggling with mobile phone addiction. Firstly, they can incorporate screening tools to assess patients' mobile phone usage habits during routine consultations. Secondly, health professionals may offer counseling and resources to help individuals develop healthy digital habits and mitigate the negative impact of excessive mobile phone use on mental health and academic performance. In addition, technology developers have an opportunity to contribute to mitigating mobile phone addiction by designing features that promote responsible device usage. Firstly, they can develop tools such as app usage trackers or screen time management features to empower users to monitor and regulate their mobile phone usage effectively. Secondly, developers may explore gamification strategies to incentivize users to reduce screen time and strike a healthier balance between digital engagement and real-world activities. Furthermore, this study's implications extend to the broader research community, providing a foundation for future investigations into mobile phone addiction and its implications. Researchers can build upon this study's findings by exploring additional factors contributing to mobile phone addiction and evaluating the effectiveness of interventions aimed at reducing its prevalence. By addressing this multifaceted issue through interdisciplinary collaboration, researchers can contribute to the development of evidence-based strategies for addressing mobile phone addiction and promoting digital well-being among diverse populations.

### **Limitations and Future Research Directions**

Despite the valuable insights gained from this study, several limitations should be acknowledged. Firstly, the research design relied on self-reported data, which may be subject to biases such as social desirability or recall errors. Future studies could employ more objective measures, such as behavioral observations or smartphone usage tracking apps, to complement self-report data and enhance the validity of findings. Secondly, the study sample primarily consisted of secondary level students from a specific geographic region. Future research could adopt a more diverse sample, including individuals from different age groups, educational backgrounds, and cultural contexts, to explore variations in mobile phone addiction and its correlates across diverse populations. Additionally, the cross-sectional nature of the study precludes establishing causal relationships between variables. Longitudinal studies are needed to investigate the temporal dynamics of mobile phone addiction and its impact on academic performance, mental health, and well-being over time. Such research could provide valuable insights into the trajectory of mobile phone addiction and inform the development of targeted interventions. Furthermore, the study focused primarily on individual-level factors associated with mobile phone addiction, overlooking potential contextual and environmental influences. Future research could explore the role of social, cultural, and environmental factors in shaping mobile phone usage patterns and addiction behaviors. Understanding the broader socio-ecological context of mobile phone use could inform more holistic intervention strategies. Moreover, the study predominantly examined the negative consequences of mobile phone

addiction, neglecting potential positive aspects such as social connectivity, information access, and learning opportunities. Future research could adopt a more balanced approach by investigating both the benefits and drawbacks of mobile phone usage, considering its multifaceted impact on individuals' lives.

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