

A Cross-sectional Study on Purpose of Smartphone use among Urban Girls' School Students

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Abstract

Background: Smartphones have become an integral part of students' daily lives, particularly among secondary school students. With easy access to the internet, social media, and various applications, smartphones offer powerful tools for communication, learning, and entertainment. Excessive smartphone use among school children therefore raises concern about academic performances, sleep pattern and mental health. As a result the balance between educational benefits and negative impacts of smartphone use has become an area of concern to study.

Methods: This descriptive cross-sectional study was conducted from 6th to 20th March 2023. An urban girls' school was selected and data were collected from the students of class VIII, class IX and class X using purposive sampling technique. A semi-structured questionnaire was used to collect data and the final sample size was 275. The data were analyzed via SPSS (version 25.0).

Results: The mean $\pm$ SD (Standard Deviation) age of the girls was 14.55 ± 0.99 years. The majority of the students were in class VIII (49.8%) and Muslim (87.2%). More than one-fourth of the students' fathers were graduates (26.6%) and mothers were educated up to SSC (27.6%). The majority of the students' fathers were involved in business (33.8%) and mothers were housewives (85.5%). More than four-fifths (85.5%) of the students represented nuclear families and two-fifths (43.3%) had a monthly family income of below Tk. 30,000. The majority (44%) first started using a smartphone from class V or VI. Nearly half of them (42.1%) used their mothers' phone. Majority used android phones (78.2%), anytime (51.6%) during holidays, after school (86.9%), 1 to 2 hours (41.5%) a day. Only one-tenth of the students (10.5%) usually brought their smartphones to school depending on the situation. The majority of the students used smartphones for knowledge and education (77.5%), social media (54.2%), communication with friends and relatives (52%) purposes and frequently used YouTube (74.2%), WhatsApp (65.8%) and Instagram (35.6%) as social media sites.

Conclusion: Mobile phone has a significant influence on the young generation which leads to create a networked society. This study was conducted in order to better interpret the usage pattern of mobile phone among secondary school students.

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Introduction

A smartphone is a mobile device that combines the functionality of a traditional mobile phone with advanced computing capabilities. Smartphone usage involves using a mobile device, for wide range of tasks beyond just calls, such as accessing the internet, running mobile apps for communication like internet and social media, knowledge & education, news, online business, games etc.^{1,2}

The smartphone is a name of a silent revolution in Bangladesh. As the telecommunication industry in Bangladesh is growing fast, the amount of smartphone users is also increasing rapidly. The younger generation, especially students, is that the prime customer of smartphone. To the students, smartphone could be a part of their way of life. They use it for

various purposes along with for personal and private communication. The smartphone is contributing active role in receiving and sending information.³

The smartphone has become a mainstream product for young generations to maintain communication. They are using it for socialization with their friends, families and peer groups. Although no one could deny the benefits of smartphone, it has some negative impacts on youth society. In a study conducted on participants (between 20 to 24 years) by the University of Gothenburg, Sweden, researchers found that high smartphone use was associated with sleep disturbances and stress for women, whereas high smartphone use was associated with sleep disturbances and symptoms of depression in men.^{4,5}

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Although there are many benefits of employing a mobile phone, there may be negative effects on the users and education. Lectures and classes are disrupted when mobile phones are used at inappropriate times. Students showed signs of cognitive salience, whereby students consider their phones once they are not using them, similarly as behavioral salience, whereby the students constantly check their mobile phones for missed calls or messages. Other negative consequences of mobile phone use include addiction, over dependency, which might cause problems like emotional stress, damaged relationships, and falling literacy.⁶⁻⁸

So, this study was conducted to determine the purpose of smartphone use among secondary school students of an urban girls' school of Bangladesh. Socio-demographic characteristics and usage pattern of smartphone was assessed among 275 students of class VIII to X of Dhanmondi Government Girls High School, Dhanmondi, Dhaka.

Materials and methods

A descriptive cross-sectional study was conducted at Dhanmondi Government Girls High School, Dhaka from 6th to 20th March 2023. A structured, pre-formed questionnaire was used which contained the following 2 parts-socio-demographic profile, patterns of smartphone use. Data were collected from the students of class VIII, class IX and class X using purposive sampling technique and the final sample size was 275. The data were analyzed via SPSS (version 25.0) and presented in the form of tables and graphs.

Data collection and Ethics: After giving verbal informed consent, the participants filled up a questionnaire on the purpose of smartphone use. The Northern International Medical College Ethical Review Board approved the study.

Result

In this study we found that the mean $\pm$ SD (Standard Deviation) age of the girls was 14.55 ± 0.99 years ($n = 275$).

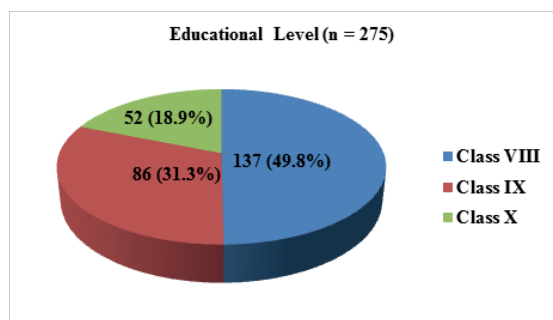


Fig. 1: Distribution of students according to their educational level ($n = 275$)

Among the girls who participated in this study half (49.8%) of them were studying in class VIII, while almost one-third (31.3%) were in class IX. The rest (18.9%) of the girls were in class X (Fig. 1).

Table I: Distribution of students according to their religion ($n = 275$)

Variable	Number (n)	Percentage (%)
Muslim	240	87.2
Hindu	33	12
Christian	1	0.4
Buddhist	1	0.4

The majority of the students (87.2%) were Muslim, while only 12% were Hindu. Only one student each was Christian and Buddhist (Table I).

Table II: Distribution of students according to their parents' educational level ($n = 275$)

Variable	Number (n)	Percentage (%)
Father's educational status		
Primary	44	16
SSC	68	24.7
HSC	44	16
Graduate	73	26.6
Other	46	16.7
Mother's educational status		
Primary	54	19.6
SSC	76	27.6
HSC	64	23.3
Graduate	49	17.8
Other	32	11.7

The distribution of the students according to their parents' educational level is shown in Table II. One-fourth (26.6%) of the students' fathers were graduates while another one-fourth (24.7%) were educated up to SSC. The majority (27.6%) of the students' mothers were educated up to SSC, while almost one-fourth (23.3%) were educated up to HSC.

Table III : Distribution of students according to their parents' occupation ($n = 275$)

Variable	Number (n)	Percentage (%)
Father's occupation		
Govt. service	24	8.7
Private job	89	32.4
Business	93	33.8
Other	69	25.1
Mother's occupation		
Housewife	235	85.5
Govt. service	7	2.5
Private job	21	7.6
Business	0	0
Other	12	4.4

One-third (32.4%) of the students' fathers were engaged in various private jobs while another one-third (33.8%) were involved in business. The majority (85.5%) of the students' mothers were housewives (Table III).

Table IV: Distribution of students according to monthly family income (n = 275)

Variable	Number (n)	Percentage (%)
≤ Tk.30,000	119	43.3
Tk.30,001-60,000	97	35.3
Tk.60,001-1,00,000	44	16
> Tk.1,00,000	15	5.4

The majority of the students' (43.3%) families had a monthly income below Tk. 30,000 while more than one-third (35.3%) had a family income between Tk. 30,001 and Tk. 60,000 per month (Table IV).

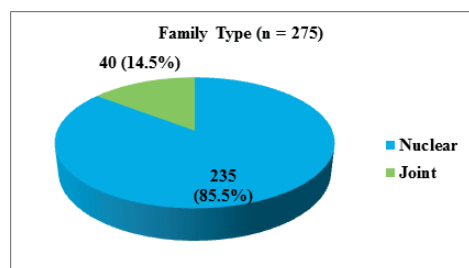


Fig 2: Distribution of students according to type of family (n = 275)

More than four-fifths (85.5%) of the students represented nuclear families, while less than one-fifth (14.5%) represented joint families (Fig. 2).

Table V: Distribution of students according to their smartphone use (n = 275)

Variable	Number (n)	Percentage (%)
Q.1: When did you first start using a smartphone?		
Before primary school	15	5.4
Class I-II	17	6.2
Class III-IV	59	21.5
Class V-VI	121	44
Other	63	22.9
Q.2: How did you obtain your smartphone?		
My parents bought it for me	64	23.3
My parents gave me their old smartphone	91	33.2
I bought it saving my pocket money	4	1.4
Other	116	42.1
Q.3: At what time of day do you most frequently use your smartphone on holidays?		
Day time	69	25.1
Nighttime	54	19.6
All day	10	3.7
Any time	142	51.6

The distribution of the students according to their smartphone use is shown in Table V. The majority (44%) first started using a smartphone when they were in class V or VI. Less than a quarter (21.5%) started using it from class III or IV, while another quarter (22.9%) started after class VI. One-third of the students (33.2%) received an old smartphone from their parents. On the other hand, almost a quarter (23.3%) received a new one from

them. More than half of the students (51.6%) frequently use smartphones at any time of the day during holidays.

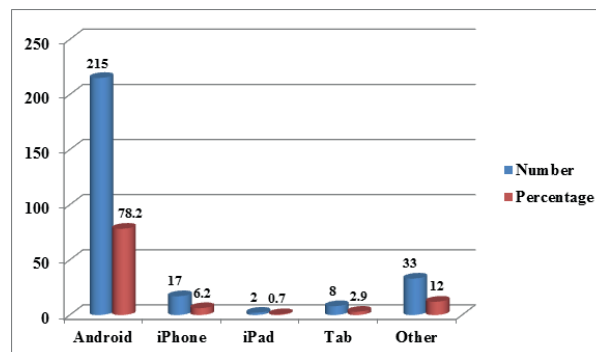


Fig. 3: Distribution of participants according to type of smartphone used (n = 275)

The majority of the students (78.2%) used Android phones, while less than one-tenth (6.2%) used iPhones (Fig. 3)

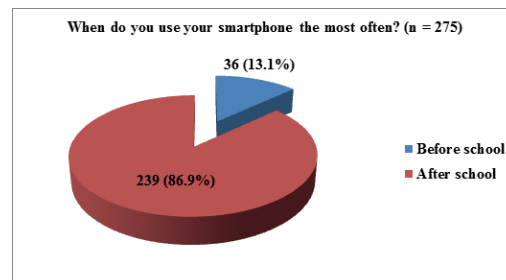


Fig. 4: Time of most frequent smartphone use among students (Before vs After School)

Almost nine-tenths of the students (86.9%) frequently used their smartphones after school, while the rest (13.1%) used them before school (Fig. 4)

Table VI: Distribution of students according to their smartphone use (n = 275)

Variable	Number (n)	Percentage (%)
Q.4: What are your parents' attitudes towards controlling your smartphone use?		
Strictly controls	98	35.6
Controls with condition	161	58.6
Never	16	5.8
Q.5: Do you usually bring your smartphone to school?		
Yes	0	0
No	246	89.5
Depends on the situation	29	10.5
Q.6: How much time do you spend on your smartphone a day?		
< 1 hour	111	40.4
1 to 2 hours	114	41.5
2 to 4 hours	29	10.5
> 4 hours	21	7.6
Q.7: How long have you been using a smartphone?		
< 2 years	89	32.4
2 to 3 years	91	33.1
> 4 years	95	34.5

Three-fifths of the students' (58.6%) parents controlled their use of smartphones with conditions, while one-third (35.6%) strictly controlled their smartphone use. The majority of the students (89.5%) did not bring their smartphones to school. Two-fourths of the students (40.4%) used smartphones less than a hour a day, while another two-fourths (41.5%) used them 1 to 2 hours a day. One-third of the students (32.4%, 33.1% & 34.5%) have been using a smartphone for less than 2 years, 2 to 4 years & more than 4 years respectively (Table VI).

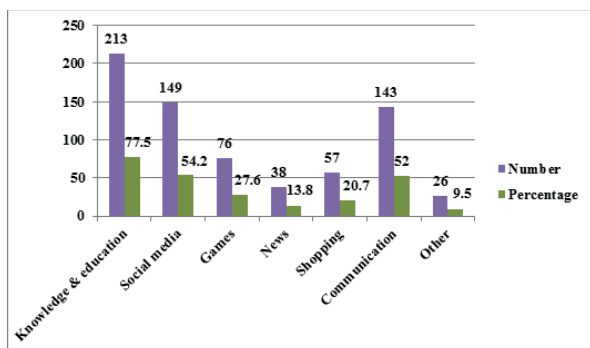


Fig 5: Distribution of the students by their purpose of smartphone use (multiple responses)

Almost four-fifths of the students (77.5%) used smartphones for knowledge and educational purposes, 54.2% for social media, 52% for communication with friends and relatives, 27.6% for playing games, 20.7% for online shopping, and 9.5% for other purposes (Fig. 5).

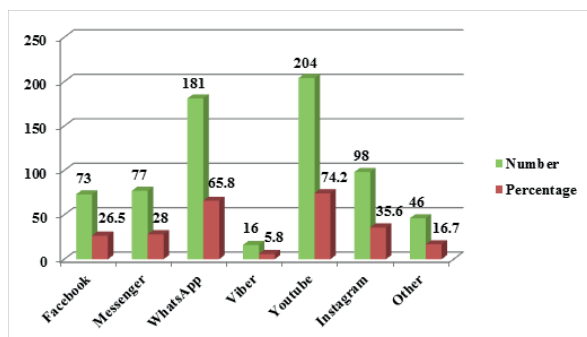


Fig 6: Frequently used social media sites on smartphone (multiple responses)

The majority of the students frequently used YouTube (74.2%) and WhatsApp (65.8%) on their smartphones, while 35.6% frequently used Instagram (Fig. 6).

Discussion

We conducted a descriptive cross-sectional study to assess the purpose of smartphone use among the students of class VIII, class IX and class X of an urban school of Dhaka city. Soci-demographic characteristics like age, religion, educational status of the students, parents' educational status and occupation, monthly family income, and type of family were assessed in this study. Purpose of smartphone use was assessed

by setting a total of 11 questions. We targeted a total of 300 students but could take data from 275 students. So, the final sample size was 275.

In this study, the majority of the students (44%) first started using a smartphone from class V or VI, using the smartphone of their parents (42.1%) as they do not have their own smartphone. In a study conducted in Taiwan the majority (42.5%) first started using a smartphone from class III or IV and used (43.3%) the old smartphone of their parents.⁶

Present study showed that, majority of the students (78.2%) used android phones. Only 6.2% used iPhones, while 12% used other smartphone devices. Similar results were shown in some other studies conducted recently.^{9,10} This study revealed that almost nine-tenths of the students (86.9%) frequently used their smartphones after school, while the rest (13.1%) used them before school. Wang JC, 2022 also showed that majority of the students (79%) frequently used smartphones after school.⁶

Three-fifths of the students' parents (58.6%) controlled their use of smartphones conditionally. The majority of the students (89.5%) did not bring their smartphones at school. Wang JC, 2022 also found similar (71.1% conditional & 78.8% did not bring smartphones at school) results.⁶

Almost four-fifths of the students (77.5%) used smartphones for knowledge and educational purposes, 54.2% for social media, 52% for communication with friends and relatives, 27.6% for playing games, 20.7% for online shopping, and 9.5% for other purposes. The majority of the students frequently used YouTube (74.2%) and WhatsApp (65.8%) on their smartphones, while 35.6% frequently used Instagram. Monika FM and Rahman MM, 2020, also showed similar type of results regarding these questions.³

Conclusion

In conclusion, the purpose of smartphone use among secondary school students extends beyond communication and entertainment. Students primarily use smartphones for educational purposes, accessing information, and staying connected with teachers. However, social media, gaming, and leisure activities also occupy a significant portion of their usage. While smartphones offer valuable learning opportunities, excessive non-academic use may distract students from their studies, highlighting the need for balanced and responsible smartphone use.

Limitations

1. The study was conducted only at a particular girls' school of Dhaka city
2. Sample size was relatively small so it may not reflect the actual picture of the country.

3. As the study was conducted only at a particular girls' school, we could not compare the purpose of smartphone use among boys and girls

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