USAGE OF SMARTPHONE BY HIGH SCHOOL STUDENTS: A STUDY ON JHIKARGACHA SUB-DISTRICT OF BANGLADESH

Md. Shahin Alam,
Sara Monami Hossain,
Mamunor Rashid[i]
Mass Communication and Journalism Discipline,
Khulna University,
Khulna -9208, Bangladesh

Abstract:
Students now have more access to online courses thanks to the COVID-19 pandemic. The current study included high school students and aimed to comprehend the drivers behind smartphone use as well as the consequences of smartphone consumption. The school-based work in the sub-district area is not seen in that way, despite the fact that there are numerous forms of research on the use of mobile phones in the context of the city, college, or university. Bangladesh's upazila (subdistricts), in particular, do not have a lot of school-related work. The study uses a quantitative approach. In order to choose Jhikargacha Upazila of Jessore District, which is situated in the Southwest of Bangladesh, purposive sampling is utilized. Additionally, three schools were purposefully selected for data collection. A further offline survey was used to collect data, and SPSS version 24 was used to analyze the findings. In addition, the facts and context of smartphone usage are analyzed using the uses and gratification theory. Most participants claimed to use their smartphones for a range of purposes and to devote varying amounts of time to each. When the corona pandemic forces all educational activities to be conducted online, they are using cellphones. Additionally, certain changes in their daily routine have been brought about by using a smartphone. Some of them think it affects their day-to-day activities by making them feel detached from reality, stay up late, experience worry and melancholy, etc.

Keywords: smartphone, usage, upazila, high school, student, Bangladesh

1. Introduction

We now live in a civilization that is heavily reliant on technology. It seems to be both our relatives and friends as well as enemies. Everything depends on how we use it. People use technology to participate in a virtual community in which they are mentally rather

[i] Correspondence: email mrashid@mcj.ku.ac.bd

than physically connected. Individuals can use each social media platform as a digital home to express themselves through the global village (Mcluhan, 1995). A Review of General Semantics asserts that media ecology and new media have widened the pool of people who can produce and consume media messages.

Among them, smartphones are a huge and significant aspect of both technology and media. Since the development of the smartphone, we have had instantaneous communication. It enhances our real and virtual life. We are aware that a smartphone is a small, portable device that incorporates functions from both a phone and a computer (Saha & Saha, 2018).

When the first cell phone came into the world, only voice calls and texts could be made with it. The first handheld mobile phone was demonstrated by John F. Mitchell and Martin Cooper of Motorola in New York City in 1973, using a handset weighing c. 2 kilograms (Teixeira & Tania, 2013). In 1979, Nippon Telegraph and Telephone (NTT) launched the world's first cellular network in Japan (CENGN, 2020). In 1983, the Dyna TAC 8000x was the first commercially available handheld mobile phone. Later, when smartphones were invented and connected to the Internet, the image of the whole world changed overnight.

With the increase in the use of mobile phones, various researches are being done on the users. In which various studies have been done on college or university-going students. According to research, college students use their phones for nine hours per day. People are more glued to their smartphones than to the internet, according to a 2012 South Korean study (Park & Lee, 2012). Due to the freedom to use different features compared to those who have parental control over smartphone use, this addiction differs in adults compared to teenagers (Fossum, Nordnes, Storemark, Bjorvatn, & Pallesen, 2014).

Overuse of smartphones may result in scholastic failure, poor health, and a life that is unbalanced. (Chung et al., 2018; Hawi & Samaha, 2016; Kee, Byun, Jung, & Choi, 2016; Samaha & Hawi, 2016). It is being told that teenagers overestimate their ability to control their online behavior and undervalue the dangers of improper smartphone use. Young people use cell phones longer than adults might expect (Kwon, Kim, Cho, & Yang, 2014) and have a low awareness of Internet risk (Lareki, Martnez de Morentin, Altuna, & Amenabar, 2017).

In this study, the researcher will find out the usage of smartphones by high school level students in Jhikargacha, to determine the actual reasons and purposes of using smartphones from students of classes six to ten. As well as measure the positive and negative sides of this usage.

According to a survey, mobile phones are used by more than 90% of Bangladeshi youths as a whole. Boys who are not married own a cell phone seven out of ten times. A quarter of unmarried women and almost half of the married women were found to have cell phones, respectively. At least half of all phones are smartphones. One-fifth of teen girls who are married or not married and nearly half of the teen boys who are not married use the internet at least once each week. Most Bangladeshi teenagers (between 76 and 85

percent) eat an adequate variety of foods, according to the first nationwide assessment on the health and well-being of adolescents. In Bangladesh, "*at least one teen resides in one of every four houses*" (ages 15 to 19 years). According to the data, more than 97 percent of these teenagers have attended a formal school at least once (Survey: Over 90% of adolescents use mobile phones in Bangladesh, 2021).

In Bangladesh, smartphones are used by 86.62 percent of college and university students. However, a lot of them struggle to pay for the internet and other connected expenses. In order to hold online classes for public universities and all other higher education institutions while the coronavirus was spreading, the University Grants Commission (UGC) conducted a survey, which revealed this information. Currently, just four of the country's 46 private and public universities are medical schools. About 825,000 people attend these universities. Additionally, 375,000 students attend one of the 105 private colleges in the nation (Ahmed, 2020).

As the coronavirus pandemic has pushed the use of digital tools for business, school, and pleasure, smartphone usage in Bangladesh is quickly surpassing 50%. 38% of mobile phone users in the nation had smartphones prior to the epidemic. At the moment, it is 48% (Hasan, 2022).

Based on these facts, the researcher on the basis of these data the researcher intends to conduct the research. The age ranges that communication technologies are largely focused on include college and high school students. They are also the most interested in possessing cellphones because they use them a lot and think a lot while using them. The number of students who own smartphones has significantly increased as a result of smartphone manufacturers' rivalry to produce affordable smart devices, which increases the likelihood that students will add smartphones to their collections (Abo-Jedi, 2008).

According to other researches most of the studies related to the tendency of using smartphones are from foreign countries and this study works with university students. There are a few works related to rural and village high school-level students. From the perspective of Bangladesh, this type of work is very necessary. For this reason, the researcher has decided to work at Jhikargacha Subdistrict of Jashore.

2. Objectives of the Study

This study's objectives are to comprehend the motivations behind and amount of time spent by school students using smartphones in the Jhikargacha sub-district and analyze both the advantages and disadvantages of their use.

2.1 Research Questions
This study is followed these research questions
1) What is the reason for students to use smartphones?
2) What are the consequences of smartphone consumption?

2.2 Literature Review

Overall, the literature confirms the global prevalence of smartphone addiction. Rahim et al. (2020) did a research on the uses of mobile phones among young people in rural mountain areas of Pakistan's Gilgit-Baltistan. They found that mobile phones have made it simple for young people around the world to communicate, including in rural mountainous locations. The majority of respondents use their mobile phones for amusement and communication with their parents, peers, and friends.

In a review of studies on the occurrence of smartphone addiction among undergraduate students from 1996 to 2013, Al-Barashdi, Bouazza, and Jabur (2015) discovered that some research, but not all, shows gender variations in smartphone addiction. The study also found a connection between smartphone addiction and students' interests as well as their academic fields. It's also important to note that parents' or family's education and socioeconomic status have no impact on smartphone addiction. Another study conducted on Australian students by James and Drennan (2005) discovered that they spent 1.5–5 hours each day on their smartphones. Additionally, they discovered a connection between excessive smartphone use and impulsivity, anxiety, loss of control, and withdrawal symptoms. Other detrimental indicators including drinking, acting depressed, having money problems, strained relationships, experiencing emotional stress, and receiving poor grades all serve to amplify these.

Walsh, White, and Young (2008) conducted another study to discover more about how individuals use their cellphones. Researchers found that university students who were partners with a behavioral preoccupation experienced conflict with other interests, enthusiasm, intolerance, and withdrawal. As Casey (2012) discovered in China, smartphone dependency has been connected to emotions of loneliness and shyness. To do so, researchers employed the five symptoms of the smartphone addiction scale: disregard for negative consequences, preoccupation, inability to regulate, loss of productivity, and emotions of dread and loss. In another study, Abid et al. (2020) found that there is a remarkable influence of psychological control on mobile phone dependency, self-regulated learning, and school adjustment. However, mobile phone dependency plays a vital role as a mediator in this regard.

Khan, Khalid, and Iqbal (2019) did another study on smartphone addiction in Pakistan, focusing on mobile phone usage and the potential for addiction. According to the findings of their study, students set their own limits when it comes to smartphone usage, with just a small percentage of students (4.8 percent–18.5 percent) exhibiting addicted behaviors toward them. The survey also found that Pakistani university students' use of mobile phones is controlled and that they do not engage in addictive behavior.

A study conducted by Jun (2016) reviewed the connection between smartphone addiction and depressive symptoms among adolescents. The study concluded that each depressive symptom and mobile phone addiction in earlier years was linked to a higher level of severity in conditions that were dependable over the three years.

3. Theoretical Framework

Within the bounds of the critical limiting assumptions, theories are developed to explain, forecast, and comprehend phenomena as well as, in many circumstances, to challenge and extend known knowledge. To analyze the data and explain the situation uses and gratification theory is used here.

3.1 Uses and Gratification Theory

Uses and gratification theory is one way to examine why and how people actively seek out different media to satisfy their needs. It is a technique for researching mass media that puts the audience first. The audience is actively involved in the interpretation and incorporation of media into their own life and has control over how much media they consume. It holds that consumers choose media to meet their preferences and needs, contrary to other theoretical approaches (Katz, Blumler, & Gurevitch, 1973).

4. Material and Methods

In this study, quantitative research methodology is used. For study objectives, a Jhikargacha upazila in Bangladesh's Jessore district has been chosen. In this region, there are ten high schools. Through the use of purposive sampling, three schools in Jhikargacha were chosen among them. These high schools are Jhikargacha Govt. M.L High School, Jikargacha B.M High School, and Tawra Azizur Rahman Secondary School. All of the high schools have a mix of male and female students. Students from class nine have been chosen. There are 153 participants in this study. Besides, SPSS version 24.0 is used to analyze data. All the collected data was provided as categorical parameters and presented as frequencies and percentages.

5. Results and Discussion

The study sought to reveal the association between usage patterns, reasons, motivations for using smartphones, and demographic factors. Here smartphone usage in Bangladesh is rapidly reaching 50%, as the coronavirus pandemic has pushed the use of digital tools for work, school, and pleasure. Prior to the outbreak, 38% of mobile phone consumers in the country owned a smart device. It currently stands at 48%. (Hasan, 2022)

In accordance with the study's initial finding, every responder is between the ages of 13 and 17, with a median age of 16. Participants make of 45% of women and 55% of men. The contestants are all ninth-graders. 66% of them have backgrounds in science, with the remainder having backgrounds in the arts and humanities. Besides, this research discovered that 60 participant families—representing the highest percentage of the sample—have two smartphones (based on the data gathered from 153 Participants). 34 families have three or more smartphones, compared to 59 families with just one.

The majority of the respondents who were students indicated that they started using smartphones for the first time in classes seven to eight. 53.6% of participants, or 82,

are in it. The minimal percentage of students who started using smartphones under the age of five is 9.8%. 13.7% of students began using smartphones in grades five and six. According to 22.9% of the participants, they started using smartphones in grades nine through ten.
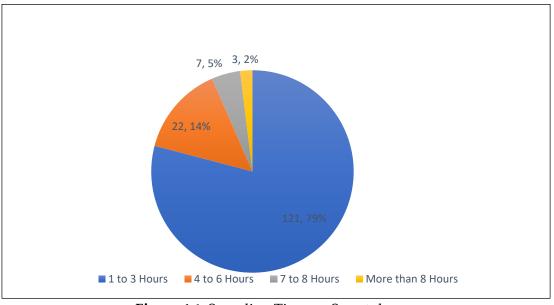

Figure 4.1: Spending Time on Smartphones

Most of the respondents (79%) spend time on smartphone one to three hours. Only 2% of respondents spend time on the smartphone more than eight hours. 14% of participants spend four to six hours and 5% spent seven to eight hours.

Figure 4.2: Main Purpose of Using Smartphones

Participants said they use their smartphones for a variety of things. Only 2% of students use their smartphones for entertainment and gaming. 6.5% of smartphone users reported using their devices for communication, 10.5% for education, and 81% for all other purposes.
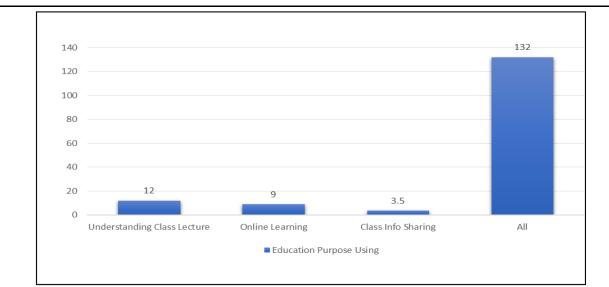
Figure 4.3: Education Purposes Using

A small percentage of participants, specifically those who claimed to be using their phones for educational purposes, said they used them to share information in class, learn online, and understand the lecturer in class. On the other hand, a maximum of 132 participants—out of all participants—are used for both reasons here. This study also found that the majority of students (97%) do not use smartphones in class, whereas only a small percentage of pupils (3%) do.

Besides these, most respondents (114, 74.5%) said they use their smartphones only seldom for voice calls, while 2% said they use them every day for one to two hours. Of all respondents, 23.5% make voice calls on their smartphones for less than an hour each day.

Again, 92.2% stated that they only use their smartphones occasionally for recording, and only 0.7% said they use them every day for one to two hours. 7.2% of all respondents use voice calls on their smartphones for less than an hour every day.

When questioned about messaging, the maximum number of respondents (131, 85.6%) claimed they use smartphones only for messaging a few times a week and a minimum of 1.3% of respondents use it daily for 1 to 2 hours. 10.5% of the total respondents use smartphone voice calls for under an hour daily and 2.6% use it daily for more than 3 hours.

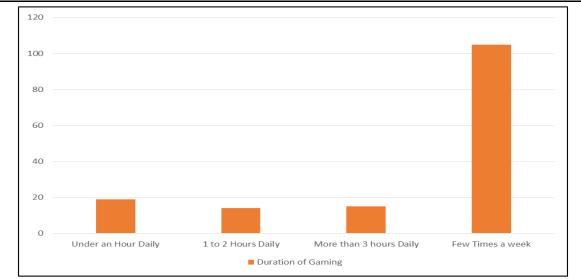Participants also used their smartphones as a gaming tool.

Figure 4.6: Duration of Gaming

Results show that 68.6% said they typically spend time playing online games a few times per week, while the lowest percentage of participants (14,9.2%) said they usually spend 1 to 2 hours per day. 9.8% of participants spend more than 3 hours every day, while the second-highest participants (19,12.4%) spend less than an hour per day.

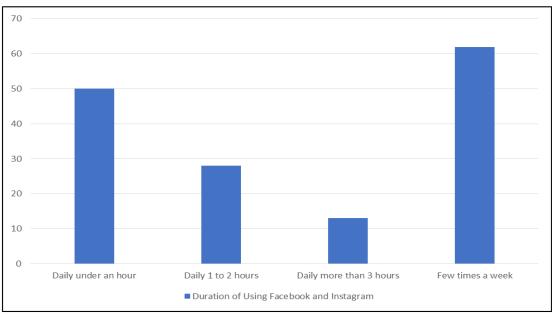In addition to the game, participants' social media usage status is also known.

Figure 4.7: Duration of Using Facebook & Instagram

Here, participants replied that 8.5% of them spend time daily on Facebook and Instagram for more than 3 hours. While the maximum number of participants (62, 40.5%) reported that they often spend time on Facebook and Instagram a few times a week. The second-highest percentage of participants (50,32.7%) spend less than an hour each day, while 18.3% spend between one and two hours each day.
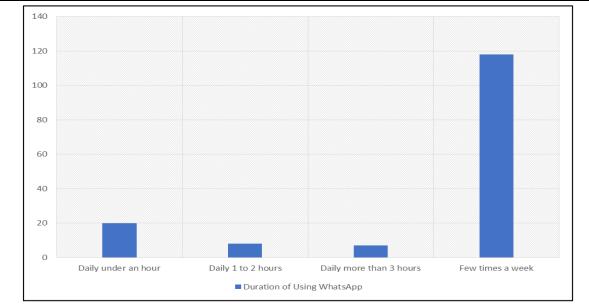
Figure 4.8: Duration of Using WhatsApp

The majority of participants (118, 77.1%) said they often use WhatsApp a few times per week, while the least amount of participants (7, 4.7%) said they use it daily for more than three hours. The second-highest number of participants (20, 13.1) spend less than an hour each day, while 5.2% spend between one and two hours each day.
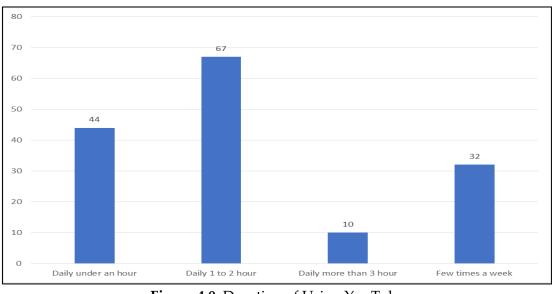

Figure 4.9: Duration of Using YouTube

Result of using YouTube, 43.8% reported that they typically spend between one and two hours per day on YouTube, while the minimum participants (9, 5.9%) claimed to spend more than three hours per day. The next-highest participants (44, 28.8%) spend less than an hour each day, while 21.6% spend only occasionally.
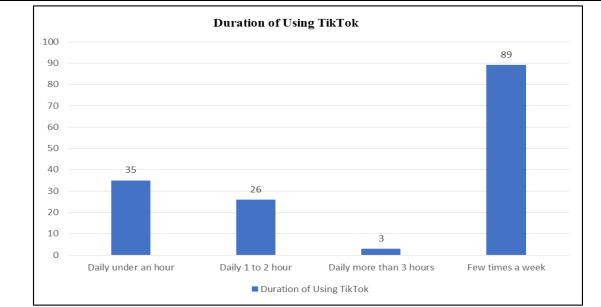
Figure 4.10: Duration of Using Tik-Tok

Maximum participants (89, 58.2%)) claimed that they normally spend time on Tik-Tok a few times a week and minimum participants (2, 1.3%) spend daily more than 3 hours. The second highest participants (35, 22.9%) spend daily under an hour and 17% of participants spend 1 to 2 hours daily.

There are some changes are identified in participants' daily life. The chart shows that,

Table 1: Changes in the Daily Life of Participant

Changes in daily life	Frequency	Percent	Valid Percent	Cumulative Percent
Developing academic knowledge & communication skill	82	53.6	53.6	53.6
Late to go to bed	18	11.8	11.8	65.4
Isolating from real life	3	2.0	2.0	67.3
All	50	32.7	32.7	100.0
Total	153	100.0	100.0	

More than half of the participants (53.6%) asserted that using a smartphone in daily life has helped them improve their academic knowledge and communication skills. When using their smartphones in various ways, at least 2% of participants distance themselves from reality. 18% of the individuals reported staying up late. And 33% of the responders experience all of these ailments. Therefore, participants are facing some health issues related to smartphones.
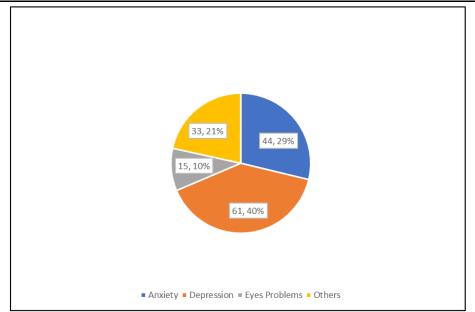
Figure 4.11: Health Issues Statistics of the Participants

According to all replies, 50% of people have depression as a result of using their smartphones differently, 36% have anxiety, 13% have eye difficulties, and 1% have various other health issues.

6. Discussion

The use of a smartphone has been demonstrated to have both beneficial and negative effects on participants. Some of them believe it enhances their academic understanding, while others believe it interferes with their daily lives by causing them to become isolated from reality, stay up late, and develop anxiety and sadness. For instance, using the phone after midnight can cause eye and sleep issues. Additionally, spending too much time online creates distance from their real-life friends and family.

The researcher also discovers from the data gathered that the majority of participants make use of both the offline and internet capabilities of their smartphones. However, more people use online features than offline services. They utilize social media as well, but not very actively; the majority just occasionally post or share on sites like Facebook, Instagram, TikTok, and Imo. According to survey results, the majority of students use their phones for one to three hours per day. They spend time online during this period on sites like Facebook, TikTok, YouTube, IMO, and other social media. Thus, the majority of the time, students use their phones for a variety of other activities, including communication and entertainment, in addition to schooling. Some students, however, assert that they just use their smartphones for gaming and that they spend too much time with them. According to studies in the literature, using smartphones is linked to how young people communicate or micro-coordinate. Additionally, these adolescents have used it for a variety of functions, such as amusement and information sharing (Ahad & Ansari, 2017). Lepp et al. (2013) and Barkley and Lepp (2013) came to the conclusion

that students saw their smartphones as a source of enjoyment rather than as a tool for study. Ugur and Turan (2015) came to the conclusion that mobile applications were only utilized for leisure.

7. Recommendations

Despite the various positives and negatives, there is no way to avoid smartphones in this age of technology. The purpose of this study was to understand the reasons and time spent by school students using smartphones in a sub-district area named Jhikargacha and analyse the positive and negative aspects of this use. In addition to this, the impact of smartphone use on students' mental health, development in the education sector of Jessore district through smart technology, the impact of smartphone use on students' behaviour, and relationship with social norms can be worked on in the future.

8. Conclusion

It is commonly known that smartphone addiction is an international epidemic. This study aims to better understand how a sub-district's high school pupils utilize their phones. The majority of high school students started using their smartphones for online coursework after the COVID-19 pandemic. They utilize smartphones for online education, social interaction and entertainment purposes. Although there are various types of research in the context of the city or college or university about the use of smartphones, school-based work in sub-district areas is not seen in that way. Especially the upazila (sub-district) under the districts of Bangladesh does not have much school-based work. As such, this type of research provides opportunities for new discussions. At the same time, it will encourage others to work with the educational institutions of the upazila (sub-districts) and the students.

Conflict of Interest Statement
Regarding the funding and ownership of the manuscript, the author has no competing interests.

About the Authors
Md. Shahin Alam is a student of Mass Communication and Journalism Discipline at Khulna University, Bangladesh. He is a first year master's student. His areas of research

interest includes global communication, communication and technology, communication and media literacy and journalism. Currently he is working on his academic research. Email: shahin.ku.mcj@gmail.com.

Sara Monami Hossain is an academician, researcher, and columnist, media professional. She is one of the first two faculty members of the Mass Communication and Journalism Discipline of Khulna University, Bangladesh. Her area of research interests are film studies, journalism, and gender and communication. She has also published a number of academic papers in both domestic and international journals. Additionally, she has also delivered a few scholarly papers at conferences that were hosted on a national scale. She completed her graduation, post-graduation and MPhil program in Mass Communication and Journalism from University of Dhaka, Bangladesh. She served as a sub-editor at Prothom Alo, a privately owned largest circulated newspaper in Bangladesh. Email: saramonami@mcj.ku.ac.bd;

Institutional link: https://ku.ac.bd/discipline/mcj/faculty/saramonami.

Mamunor Rashid is working as an academician, researcher, media practitioner, columnist, Communication expert and coordinator of Disaster Perception, a voluntary organization. Mr. Rashid is presently working as an Assistant Professor in Mass Communication and Journalism in Khulna University Bangladesh and worked as Head In-Charge (temporary) from October 2020 to June 2021 at the same discipline. His area of specialization is Mobile Journalism, Digital Media Literacy, Social Media Literacy, Children and media, Technology and Communication, Media Studies, Development Communication. He has published a number of scholarly articles in national and international journals. He has also presented many articles and papers in various national and international seminars and conferences. He has obtained graduation and post-graduation degree in Mass Communication and Journalism from University of Dhaka Bangladesh. He worked in a private radio station Radio Today and with a PR agency. He is also a regular writer of national dailies and loves to write columns on different social issues.

Email: mrashid@mcj.ku.ac.bd;

Institutional link: https://ku.ac.bd/discipline/mcj/faculty/mrashid;

Orchid ID: https://orcid.org/0000-0001-5200-3850;

Google Scholar ID: https://scholar.google.com/citations?user=mGWnts4AAAAJ&hl=en;

ResearchGate ID: https://www.researchgate.net/profile/Mamunor-Rashid.

References

Abo-Jedi, A. (2008). Cellphone addiction and its relation to self-closure in a sample of Jordanian university and Amman private university students. *The Jordanian Journal for Educational Sciences*, *4*(2), 137-150.

Abid, U., Khan, T. J., Sheikh, A., Saleem, S., Kayani, H. A., & Habib, M. A. (2020). The Relationship Between Smartphone Addiction and Depression among University

Students in Karachi: a Cross-sectional Study. *International Journal of Community Medicine and Public Health (Gujarat)*, 7(9), 3472-3479.

Ahad, A. D., & Anshari, M. (2017). Smartphone habits among youth: Uses and gratification theory. *International Journal of Cyber Behavior, Psychology and Learning (IJCBPL)*, 7(1), 65-75.

Al-Barashdi, H. S., Bouazza, A., & Jabur, N. H. (2015). Smartphone addiction among university undergraduates: a literature review. *Journal of Scientific Research & Reports*, 4(3), 210- 225.

Casey, B. M. (2012). Linking psychological attributes to smart phone addiction, face-to-face communication, present absence and social capital. *Graduation Project*, Graduate School of the Chinese University of Hong Kong.

Chung, J. E., Choi, S. A., Kim, K. T., Yee, J., Kim, J. H., Seong, J. W., . . . Gwak, H. S. (2018). Smartphone addiction risk and daytime sleepiness in Korean adolescents. *Journal of Paediatrics and Child Health*, 54(7), 800-806. doi:10.1111/jpc.13901

Hasan, M. (2022, June 22). 48% mobile phone customers in Bangladesh have a smartphone. *Daily Star*. https://www.thedailystar.net/business/telecom/news/smartphone-penetration-fast-approaching-50pc-3031216

Survey: Over 90% adolescents use mobile phones in Bangladesh. (2021, February 12). *Dhaka Tribune.* https://archive.dhakatribune.com/bangladesh/2021/02/12/survey-over-90-adolescents-use-mobile-phones-in-bangladesh?fbclid=IwAR3ytdN5p-AiKg7aFgKK3NBnwy8Tn1KrNnTVdJeSS7zZvcRdQW6ZSq3wj-s

Fossum, I. N., Nordnes, L. T., Storemark, S. S., Bjorvatn, B., & Pallesen, S. (2014). The association between use of electronic media in bed before going to sleep and insomnia symptoms, daytime sleepiness, morningness, and chronotype. *Behavioral Sleep Medicine*, 12(5), 343-357.

James, D., & Drennan, J. (2005). Exploring addictive consumption of mobile phone technology. *ANZMAC 2005 Conference: Electronic Marketing.* https://www.researchgate.net/publication/27482385_Exploring_Addictive_Consumption_of_Mobile_Phone_Technology

Jun, S. (2016). The reciprocal longitudinal relationships between mobile phone addiction and depressive symptoms among Korean adolescents. *Computers in Human Behavior*, 58, 179- 186.

Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and Gratification Research. *The Public Opinion Quarterly*, 37(4), 509-545. https://www.jstor.org/stable/2747854

Khan, A. A., Khalid, A., & Iqbal, R. (2019). Revealing the relationship between smartphone addiction and academic performance of students: Evidences from higher educational institutes of Pakistan. *Pakistan Administrative Review*, 3(2), 74-83.

Kim, H.-J., Min, J.-Y., Min, K.-B., Lee, T.-J., & Yoo, S. (2018). Relationship among family environment, self-control, friendship quality, and adolescents' smartphone

addiction in South Korea: Findings from nationwide data. *PloS one*, 13(2), 1-13. doi:10.1371/journal.pone.0190896

Kwon, M., Kim, D. J., Cho, H., & Yang, S. (2013). The smartphone addiction scale: development and validation of a short version for adolescents. *PloS one*, 8(12), e83558. doi:10.1371/journal.pone.0083558

Lepp, A., Barkley, J. E., Sanders, G. J., Rebold, M., & Gates, P. (2013). The relationship between cellphone use, physical and sedentary activity, and cardiorespiratory fitness in a sample of US college students. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 79.

Lareki, A., Martínez de Morentin, J. I., Altuna, J., & Amenabar, N. (2017). Teenagers' perception of risk behaviors regarding digital technologies. *Computers in Human Behavior*, 68, 395-402. doi:10.1016/j.chb.2016.12.004

Menon, D. (2022). Uses and gratifications of educational apps: A study during COVID-19 pandemic. *Computers and Education Open*, 3, 100076. doi:10.1016/j.caeo.2022.100076. https://www.researchgate.net/publication/358223513_Uses_and_gratifications_of_educational_apps_A_study_during_COVID-19_pandemic

Mcluhan, E. (1995). *Essential McLuhan*. Concord, Ontario: Anansi: HarperCollins.

Park, N., & Lee, H. (2012). Social implications of smartphone use: Korean college students' smartphone use and psychological well-being. *Cyber psychology, Behavior, and Social Networking*, 15(9), 491-497.

Zheng P., & Ni, L. (2006). *Smartphone And Next Generation Mobile Computing*. San Francisco: Morgan Kaufmann.

Ahmed, M. (2020, June 6). 86pc university students own smartphones in Bangladesh: Survey. *Prothom Alo*. https://en.prothomalo.com/youth/education/86pc-university-students-own-smartphones-in-bangladesh-survey

Rahaman, M. M. (2017, February 28). Secondary education: A long way to go. *Daily Star*. https://www.thedailystar.net/education-employment/secondary-education-long-way-go-1366504

Saha, A. K., & Saha, A. (2018). Smartphone as a Means of Communication & Its Influence upon College Students. *Indian Journal of Industrial Relations*, *53*(4), 560-571. https://web.s.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=4f84526a-726d-4ef1-9dba-ac08d76808ec%40redis

Rahim, S., Sahar, G., Jabeen, G., Shah, A. A., Jahan, M., & Bibi, T. (2020). Mobile Phone in the Lives of Young People of Rural Mountainous Areas of Gilgit-Baltistan, Pakistan: Challenges and Opportunities. *Information*. https://www.researchgate.net/publication/344236196_Mobile_Phone_in_the_Lives_of_Young_People_of_Rural_Mountainous_Areas_of_Gilgit-Baltistan_Pakistan_Challenges_and_Opportunities

Teixeira, T. (2010, April 23). Meet Marty Cooper - the inventor of the mobile phone. *BBC News*. http://news.bbc.co.uk/2/hi/programmes/click_online/8639590.stm

Timeline from 1G to 5G: A Brief History on Cell Phones. (2020, September 21). *CENGN*. https://www.cengn.ca/information-centre/innovation/timeline-from-1g-to-5g-a-brief-history-on-cell-phones/

International Standard Classification of Education (ISCED) 2011. (2012, n.d.) *UNESCO Institute for Statistics*. http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf

Uğur, N. G. & Turan, A. H. (2015). Acceptance and Use of Mobile Applications by University Students: Example of Sakarya University (trans). *Journal of Internet Applications and Management*, 6 (2), 63-79.

Valcanis, T. (2011). Valcanis, T. (2011). An iPhone in Every Hand: Media Ecology, Communication Structures, and the Global Village. *ETC: A Review of General Semantics*, 68, 33–45. https://www.academia.edu/17973552/An_iPhone_in_Every_Hand_Media_Ecology_Communication_Structures_and_the_Global_Village

Walsh, S. P., White, K. M., & Young, R. M. (2008). Over-connected? A qualitative exploration of the relationship between Australian youth and their mobile phones. *Journal of adolescence*, 31(1), 77-92. Retrieved from https://eprints.qut.edu.au/12413/1/12413.pdf