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The Impact of Smartphone on Undergraduate Students: An Overview

Asaduzzaman

Lecturer,

Department of Political Science

Dhaka International University, Dhaka

ABSTRACT

Smart phones have become an integral part of university students' lives. This study investigated the impact of using smart phones on students. The primary data used in the study were gathered from Dhaka International University (DIU) students. A total of 230 students from ten (10) departments and four faculties are included in this study. For this investigation, a purposeful sample of students from DIU was chosen. 50.87% of respondents use mobile for 3-4 hours a day, and 30% use it for more than 5 hours in a day. 32% of respondents use their mobile devices while studying or doing homework. 42% have experienced physical and mental discomfort due to prolonged use of mobile phones. Mitigating mobile phone usage and adapting strategies is important for maintaining a healthy balance between technology use and other aspects of life, such as setting usage limits, scheduling breaks, designating phone-free zones, and practicing digital detox.

Key Words: *Smartphone, Screen Time, Undergraduate Students*

Introduction

Nowadays, mobile phones, sometimes referred to as cell phones, are an essential component of modern telecommunications in each person's life. (Naeem, 2014). Screens are ubiquitous in today's world (LeBlanc et al., 2017). In its most recent estimate, GSMA predicted that by 2025, 62% of Bangladesh's mobile phone customers will own smart phones (Abdulla et al., 2023). Presently, there are more than 180 million mobile SIM subscribers and 130 million internet users, respectively. (Prothom Alo, 2023). Smart phones have become an integral part of university students' lives as they use them throughout the day for reasons such as communication, productivity, entertainment, utilities, social networking, and gaming (Sapci et al., 2021). Evidence of the negative effects of excessive screen time on cognitive function already exists, and the use of mobile phones has increased recently (Poujol et al., 2022). Greater amounts of time spent watching TV, playing video games, or using a mobile phone have been linked to shorter sleep lengths, according to research on the subject of electronic media use. (Hale and Guan, 2015). A person's sleep, mental, and physical health can all be negatively impacted by excessive screen time, as is well known. (Akulwar, 2020).

Objectives of the Study

The primary objective of the study is to assess the impact of mobile on students.

Specific Objectives

- To explore the student's behavior pattern of using mobile phone.
- To investigate the risk and benefit of use Smartphone of students.

Theoretical and Conceptual Framework

A smart phone, often known as a mobile phone or phone, is a portable gadget that combines sophisticated computational power with the features of a conventional mobile phone. Smart phones also come equipped with built-in cameras, GPS navigation, and support for a variety of communication methods, such as voice calls, text messaging, and internet-based messaging apps. The touch screen interface of these devices typically enables users to access a wide range of applications and services, including web browsing, email, social media, and multimedia playback and streaming. Oxford Dictionary definition of a smartphone is a device that can perform certain tasks similar to a computer, such as accessing apps and the internet. The amount of time spent using a screen-equipped device, such as a computer, television, or smartphone, is known as screen time.

Literature Review

Prothom Alo (2023) narrated there are more than 180 million mobile phone users and 130 million internet users in the whole country, according to UNB data. "At present, there are over 180 million mobile SIM users and 130 million internet users, respectively," stated Finance Minister AHM Mustafa Kamal on Thursday during the unveiling of the national budget for the fiscal year 2023–24 at the Jatiya Sangsad in Dhaka. The government is aiming to create Digital Bangladesh based on four fundamental pillars, he said: e-government, skilled resources, connectivity, and ICT industry promotion.

Poujol et al (2022) explored teenagers have been using their mobile phones more frequently in recent years. One may even argue that it occupies a central role in their lives. A study conducted by Curtin University's School of Physiotherapy and Exercise Science in Australia found that the prevalence of using a mobile phone was higher than that of using other screen devices, such as laptops, TVs, desktop computers, and tablets, in multiple large surveys. This could be because mobile phones make it simple to access the internet and perform other tasks (such as social media, messaging, games, and net surfing). They are also known for being more portable than other screen devices, which contributes to their user-friendliness. It has been shown that children from lower socioeconomic backgrounds are more likely to watch TV, whereas children from higher socioeconomic backgrounds are more likely to use other digital devices, like tablets and mobile phones, for screen time.

Sapci (2021) examined the prevalence of smart phone ownership among students in higher education, which sparked curiosity about how using a smart phone affected every area of their life, including their academic achievement. Unquestionably, technology such as the availability of smart phones, computers, and online resources makes better learning opportunities available. However, excessive or problematic smart phone use might negatively affect study-related activities.

Tajane (2020) showed how the internet is used by laptops, smartphones, and other digital gadgets of many kinds. Around the turn of the century, "Internet Addiction Disorder" emerged as a new public health concern due to the growing use and dependence on the internet. The psychological effects of screen time on youth continue to be a topic of discussion in society. In particular, there are still many people who worry about the detrimental effects of screen time on psychosocial functioning, health, and behavior. These worries are frequently expressed in governmental, academic, and media circles. However, some data consistently demonstrates that screen use and wellbeing are negatively correlated.

Foerster et al (2019) claimed after risk factors for adolescent sleep disorders were identified, studies focused more on the use of electronic media and discovered shorter sleep durations when users spent more time on their phones, playing video games, or watching TV.

Naeem (2014) stated now a day's in every person's life, mobile phones, often known as cell phones, are an essential component of modern telecommunications. More than half of people use mobile phones in several nations, and the market for these devices is expanding quickly. Considering that billions of people use mobile phones globally, even a small increase in the frequency of adverse health effects could have a big long-term effect on public health. In addition to the quantity of calls made on a daily basis, the duration of each call and the duration of cell phone use are significant variables that raise the risk of health problems.

Watson (2003) Braun and Le Chatelier first put out the concept of cause and effect, commonly referred to as feedback loops, in 18th-century research on how systems continuously find a new equilibrium in response to stimuli.

Methodology

Data Collection, Study Area, and Sampling: The method of this research is both qualitative and quantitative based on primary data. The data were gathered from Dhaka International University (DIU) students. A total of 230 students from ten (10) departments and four faculties are included in this study. For this investigation, a purposeful sample of students from DIU was chosen. The replies from the pupils were then gathered using random sampling procedures. A standardized open-ended and closed-ended questionnaire was used to obtain the data. That aids in our understanding of this paper. The period of data gathering was October 2023–November 2023.

Data Analysis: Every response that was sent in through Google forms was reviewed. Responses that were not complete or accurate were excluded from the analysis. Using a Google spreadsheet, the closed-ended data was automatically analyzed, and descriptive statistics utilizing percentage and frequency distribution were carried out. We used thematic analysis and categorization to examine the open-ended questions.

Feedback loops, or "the theory of cause and effect," were used in this study. In 18th-century groundbreaking research, Braun and Le Chatelier first developed theory regarding how systems continuously find a new equilibrium in response to stimuli (Watson, 2003).

Sample size

Table-1: Categorization of sample

Faculty	Department	Student Number	%
Arts and Social Science	Political science	40	17.4
	Economics	34	14.8
	English	5	2.2
	Sociology	5	2.2
Faculty of science and Engineering	EEE	2	0.9
	CSE	23	10
	Pharmacy	24	10.4
	Civil Engineering	13	5.7
Faculty of law	Law	21	9.1
Faculty of business studies	Business Administration	63	27.4
Total		230	100

Source: Author's Filed Survey Compilation, 2023

Table-1 provides a sample Categorization of students across different faculties and departments within a university. Here's a brief explanation:

Faculty and Department Breakdown: The table lists various faculties and their respective departments. Under each faculty, specific departments are mentioned along with the number of students sampled from each department.

Student Number and Percentage: The "Student Number" column indicates the actual count of students sampled from each department. The "%" column shows the percentage of students sampled from each department relative to the total number of sampled students.

Key Observations: The largest proportion of sampled students comes from the Faculty of Business Studies, particularly from the Business Administration department, comprising 27.4% of the total sampled students. Political Science, Economics, and Pharmacy departments also contribute significantly to the sampling distribution. Some departments, such as English, Sociology, and EEE (Electrical and Electronic Engineering), have relatively smaller representation in the sampled population. Overall, the table offers a comprehensive view of the Categorization of sampled students across different faculties and departments, providing insights into the composition of the student body within the university.

Results and Finding

Table 2: Age and Year of Schooling

	Age Range	Number	%
Age	18-20	43	18.70
	21-23	132	57.39
	24-26	51	22.17
	27-29	2	0.87
	30-31	2	0.87
Year of Schooling	13	67	29.13
	14	76	33.043
	15	57	24.78
	16	30	13.044

Source: Author's Filed Survey Compilation, 2023

Table-2 presents data on the distribution of respondents based on their age and year of schooling.

Here's a brief explanation:

Age: The table categorizes respondents into different age ranges. The most common age range is 21-23, accounting for 57.39% of respondents. The least common age ranges are 27-29 and 30-31, each representing only 0.87% of respondents. Overall, the majority of respondents fall within the age range of 21-26.

Year of Schooling: Respondents are categorized based on the number of years they have spent in school. The largest group consists of those in their 14th year of schooling, comprising 33.043% of respondents. The smallest group is those in their 16th year of schooling, representing 13.044% of respondents. The distribution indicates a relatively even spread across the different years of schooling, with a slight decrease in the percentage of respondents as the number of years increases. Overall, the table provides an overview of the age and schooling distribution among the surveyed population, highlighting the most common age range and year of schooling.

Gender of the Respondents

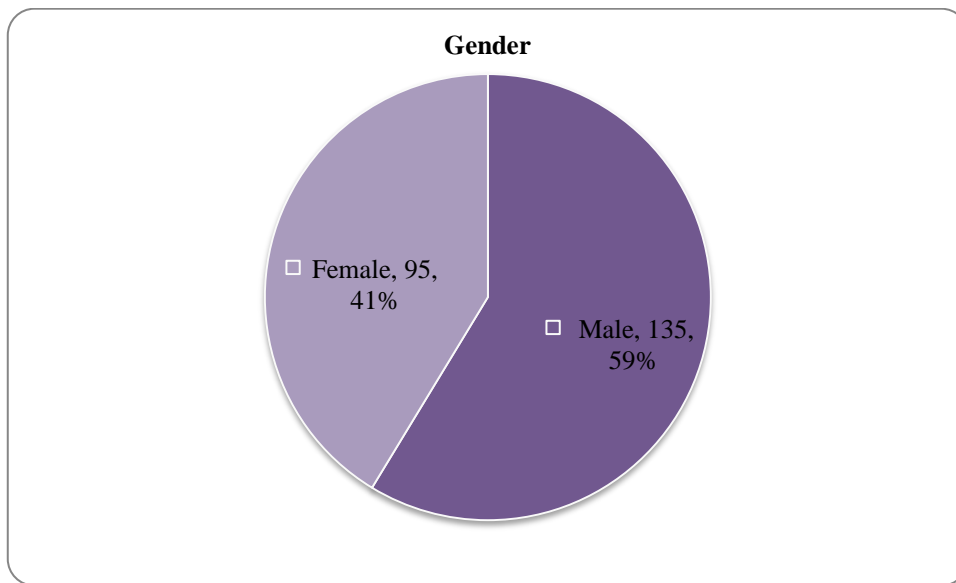


Figure 1: Gender distribution

Source: Author's Filed Survey Compilation, 2023

This figure likely represents the gender distribution of respondents in a research study. It indicates that out of the total respondents, 41% were female and 59% were male. This distribution could be important for analyzing the demographics of the participants and understanding any potential gender-related differences in the research findings.

Mobile Phone Using Time

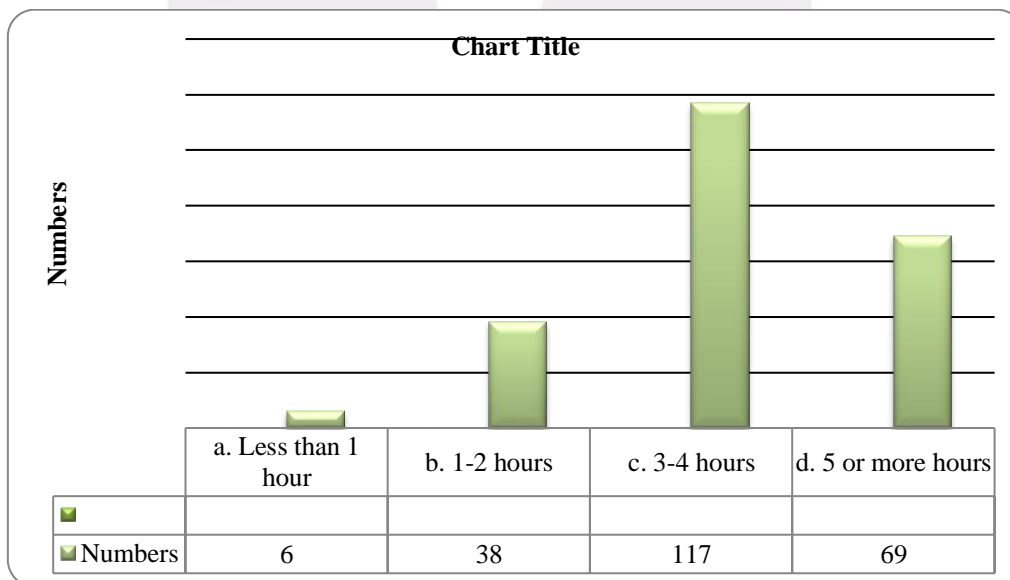


Figure 2: Screen time

Source: Author's Filed Survey Compilation, 2023

This chart appears to depict the amount of time respondents spend using their mobile devices. Here's a breakdown of the data: 6 respondents use their mobile devices for less than an hour. 38 respondents use their mobile devices for 1-2 hours. 117 respondents use their mobile devices for 3-4 hours. 69 respondents use their mobile devices for more than 5 hours. This

data can provide insights into the usage patterns of mobile devices among the surveyed population. It indicates that a significant portion of respondents spend several hours a day on their mobile devices, which could have implications for understanding their digital habits, potential screen time impacts, and preferences for mobile-based activities.

Primary Engagement with Mobile

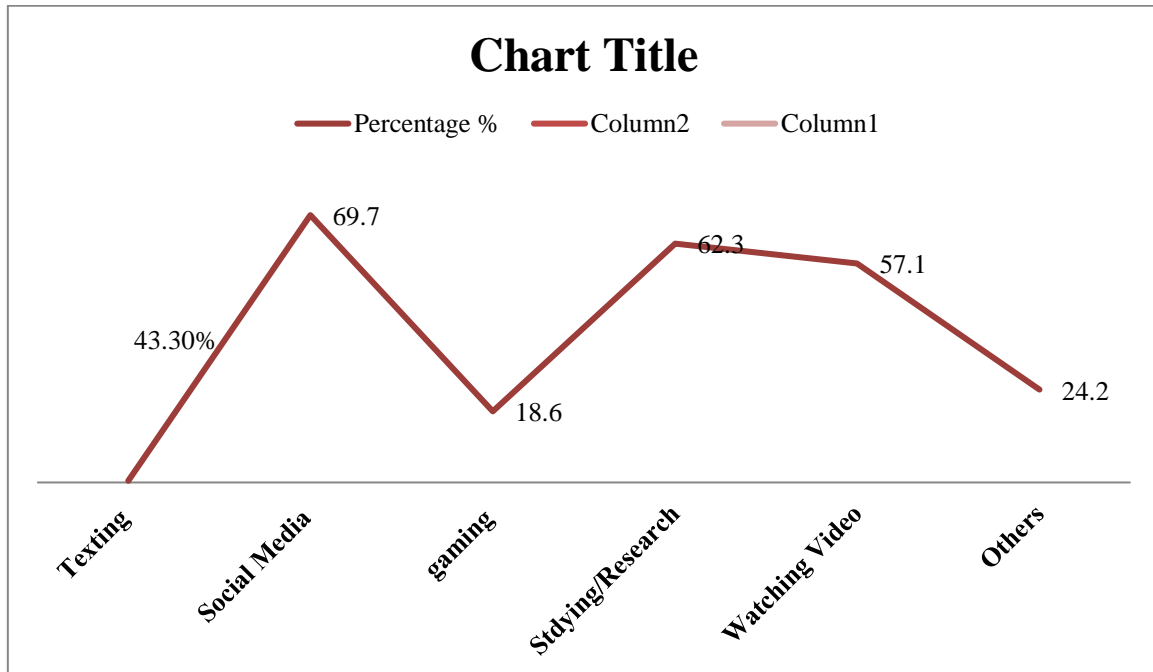


Figure 3: Primary engaging with mobile

Source: Author's Filed Survey Compilation, 2023

This data illustrates the primary activities for which individuals engage with their mobile phones. Here's an explanation of each category:

Texting (43.3%): Texting refers to sending and receiving messages through text-based communication platforms like SMS or messaging apps. It appears that a significant portion of individuals primarily use their mobile phones for texting.

Social Media (69.7%): Social media engagement involves activities such as browsing, posting, liking, and sharing content on social networking platforms like Facebook, Instagram, Twitter, etc. A large majority of respondents use their mobile phones primarily for social media interactions.

Gaming (18.6%): Gaming denotes playing mobile games on smartphones or other mobile devices. While a smaller percentage compared to social media, a notable portion of respondents engage with their phones primarily for gaming purposes.

Studying / Research (62.3%): This category includes activities related to academic pursuits, such as studying, conducting research, accessing educational resources, or reading academic materials. A considerable percentage of individuals utilize their mobile phones for educational purposes.

Watching Video (57.1%): Watching video content involves streaming or downloading videos from platforms like YouTube, Netflix, or other video-sharing services. A significant portion of respondents use their mobile phones primarily for watching videos.

Others (24.2%): The "Others" category likely encompasses a variety of additional activities not explicitly mentioned in the provided options. This could include activities like browsing the internet, listening to music, checking emails, or any other miscellaneous uses of mobile phones.

Overall, the data suggests that individuals engage with their mobile phones for a variety of purposes, with social media, studying/research, and watching videos being among the most prevalent activities. These findings reflect the diverse functionalities and utility of mobile phones in modern society, catering to both entertainment and productivity needs.

Severity of Screen addiction among students while studying/doing homework:

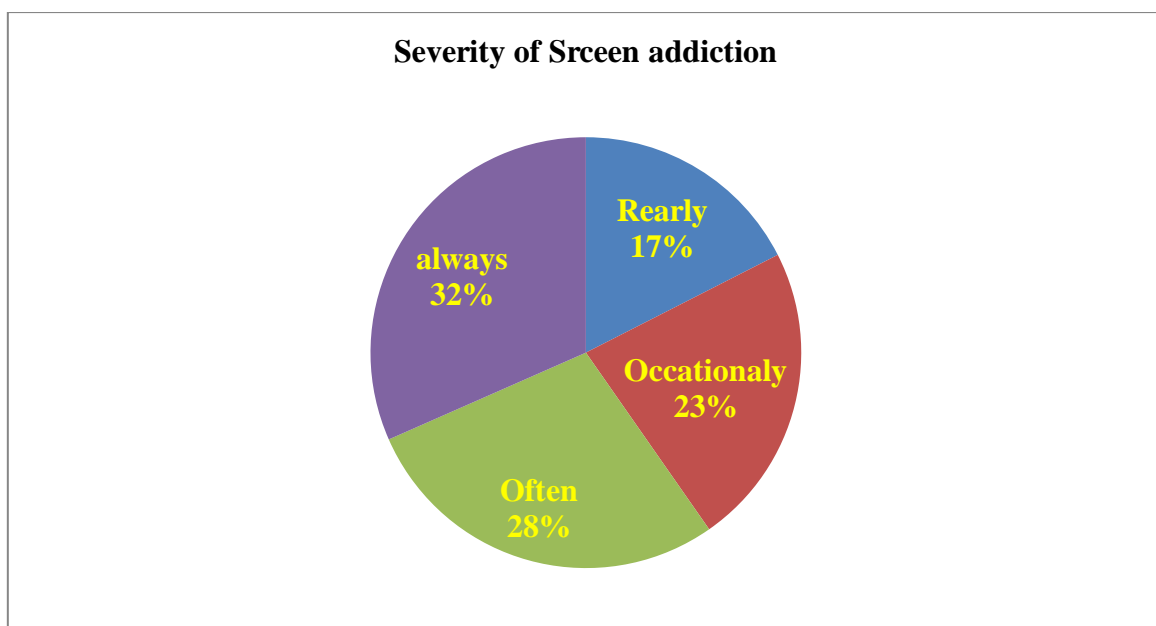


Figure 4: Severity of Screen addiction among students

Source: Author's Filed Survey Compilation, 2023

The severity of screen addiction among students while studying or doing homework appears to be quite prevalent, as evidenced by the distribution of responses:

- Rarely: 17.5%
- Occasionally: 23%
- Often: 28%
- Always: 32%

These numbers suggest that a significant portion of students may struggle with screen addiction during their academic activities. "Rarely" and "occasionally" indicate that some students may have occasional lapses or moderate usage, while "often" and "always" indicate more frequent and potentially problematic behaviors. Screen addiction can have detrimental effects on academic performance, concentration, and overall well-being. It's essential for educators, parents, and students themselves to be aware of these tendencies and take steps to promote healthy screen habits, such as setting boundaries, taking regular breaks, and incorporating offline activities into study routines.

Impact of mobile phone on academic performance:

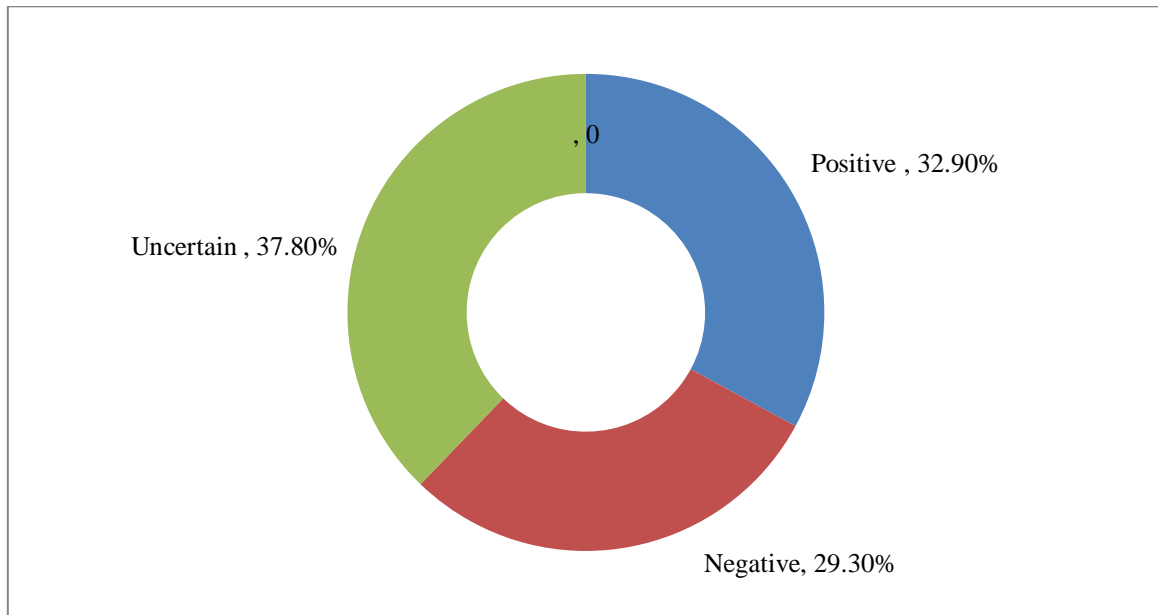


Figure -5: Impact of using mobile phone on academic performance

Source: Author's Filed Survey Compilation, 2023

Figure shows that 32.90% students think mobile phone has positive impact on academic performance, 29.30% think negative impact and 37.80% in uncertainty.

Using Mobile Phone before going to bed:

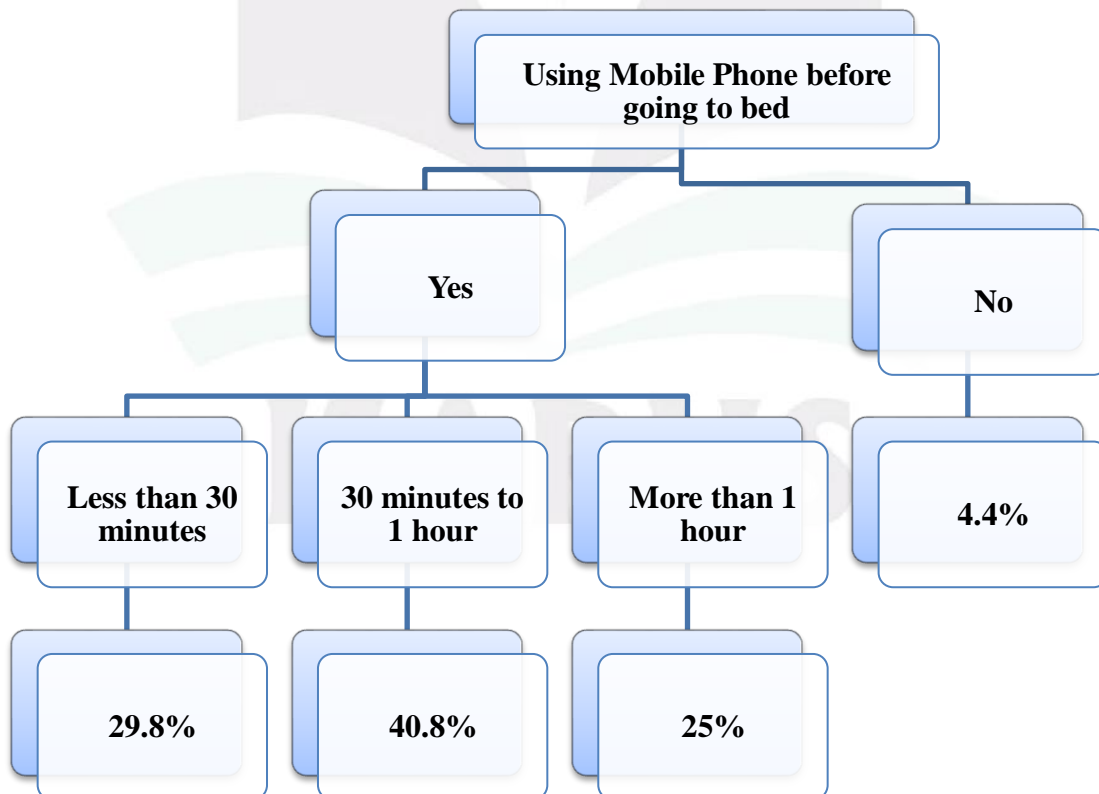


Figure 6: Using Mobile Phone before going to bed

Source: Author's Filed Survey Compilation, 2023

This data examines the usage of mobile phones before going to bed, categorized by different time intervals, along with whether individuals use their phones at all before bedtime. Here's an explanation: **Usage of mobile before Bedtime:** Yes: This category includes individuals who use their mobile phones before going to bed. No: This category includes individuals who do not use their mobile phones before going to bed. **Time Intervals for Usage:** Less than 30 minutes: Among those who use their phones before bed, 29.8% spend less than 30 minutes on their phones before going to sleep. 30 minutes to 1 hour: 40.8% of respondents who use their phones before bed spend between 30 minutes to 1 hour on their phones during this time period. More than 1 hour: 25% of respondents who use their phones before bed spend more than 1 hour on their phones before going to sleep. **No Usage before Bedtime:** 4.4% of respondents reported not using their phones before going to bed. This data provides insights into the habits of individuals regarding mobile phone usage before bedtime. The majority of respondents (Yes category) use their phones before bed, with varying durations, while a small percentage (No category) refrain from using their phones before going to sleep. Understanding these usage patterns can be important for exploring the potential impact of screen time on sleep quality and overall well-being.

Table-3: Effects of Screen time

	Yes	No	Maybe
Have you experienced any physical or mental or both discomfort?	42.7%	26%	31.3%
Do you think your mental wellbeing impacted by mobile phone?	43.6%	23.6%	32.9%
Do you use mobile phone for socializing?	89.3%	0%	10.7%
Do feel your face to face interaction hindered by mobile phone?	47.3%	23.2%	29.5%
Do you feel your study session/classes are distracted by mobile phone?	39.8%	27.3%	32.9%
Do you think your ability to concentrate on academic task is influenced by mobile phone use?	47.3%	18.8%	33.9%

Source: Author's Filed Survey Compilation, 2023

This data presents responses to a survey regarding various aspects of mobile phone usage and its impact on individuals. Here's an explanation of each question and the corresponding responses:

Analyzing the responses to the question "Have you experienced any physical or mental or both discomfort?" provides insights into the prevalence and nature of discomfort experienced by individuals due to mobile phone usage: **Physical Discomfort (42.7%):** Nearly half of the respondents (42.7%) reported experiencing physical discomfort related to their mobile phone usage. This may include symptoms such as eye strain, neck pain, headaches, or hand/wrist discomfort. The high percentage suggests that physical discomfort is a significant issue for a substantial portion of the surveyed population. **No Discomfort (26%):** A quarter of respondents indicated that they did not experience any physical or mental discomfort due to mobile phone usage. This minority suggests that a portion of the population may be less affected by the physical or mental effects of mobile phone usage, either due to their usage habits, ergonomic considerations, or other factors. **Both Physical and Mental Discomfort (31.3%):** Over 30% of respondents reported experiencing both physical and mental discomfort due to mobile phone usage. This group represents individuals who are impacted by a combination of physical symptoms (like eye strain or neck pain) and mental health

effects (such as stress or anxiety) associated with their mobile phone usage. Overall, the data underscores the multifaceted impact of mobile phone usage on individuals' well-being, highlighting the prevalence of physical discomfort and its potential co-occurrence with mental health issues. It suggests the importance of addressing both physical and mental aspects of discomfort in efforts to promote healthier mobile phone habits and mitigate adverse effects on users' well-being. Mental wellbeing is impacted by mobile phone; 43.6% of respondents answered "Yes", 23.6% answered "No", 32.9% answered "Maybe." This question explores the perceived impact of mobile phone usage on mental well-being, including potential effects on stress levels, anxiety, or mood. Use mobile phone for socializing; 89.3% of respondents answered "Yes", 0% answered "No", 10.7% answered "Maybe." This question examines the extent to which individuals utilize their mobile phones for socializing or communication with others. Face-to-face interaction hindered by mobile phone; 47.3% of respondents answered "Yes", 23.2% answered "No", 29.5% answered "Maybe." This question evaluates whether respondents believe that mobile phone usage interferes with their in-person interactions with others. Study sessions/classes are distracted by mobile phone; 39.8% of respondents answered "Yes", 27.3% answered "No", 32.9% answered "Maybe." This question assesses the perceived impact of mobile phone distractions on study sessions or academic classes. Ability to concentrate on academic tasks is influenced by mobile phone use; 47.3% of respondents answered "Yes", 18.8% answered "No", 33.9% answered "Maybe." This question investigates whether individuals believe that their mobile phone usage affects their ability to focus and concentrate on academic tasks. Overall, these responses highlight the diverse ways in which mobile phone usage can impact individuals, including physical discomfort, mental well-being, social interactions, and academic performance.

Thematic analysis (respondent's opinion):

Mitigating mobile phone usage and adapting strategies is important for maintaining a healthy balance between technology use and other aspects of life. Here are some strategies individuals might consider:

- **Setting Usage Limits:** Use features like screen time limits or app usage trackers to monitor and limit the time spent on mobile devices each day.
- **Scheduled Breaks:** Incorporate regular breaks from phone use throughout the day to reduce continuous screen time.
- **Designate Phone-Free Zones:** Establish areas or times where mobile phones are not allowed, such as during meals, family time, or before bedtime.
- **Prioritize Activities:** Identify and prioritize activities that do not involve the phone, such as hobbies, exercise, or spending time with friends and family.
- **Mindful Usage:** Practice mindfulness when using the phone, being aware of the purpose and duration of each interaction to avoid mindless scrolling or excessive usage.
- **Notification Management:** Customize notification settings to reduce distractions and interruptions, only allowing notifications for essential or priority apps.
- **Digital Detox:** Take occasional breaks from the phone, such as weekends or vacations, to disconnect and recharge mentally.
- **Seeking Support:** If phone usage becomes a significant concern, consider seeking support from friends, family, or mental health professionals to develop healthy habits and coping strategies.

These strategies can help individuals better manage their mobile phone usage and maintain a balanced approach to technology in their daily lives.

Conclusion

Graduate students experience a range of consequences from using Smartphone. Smart phones are quite convenient, on the one hand. They boost learning and study by providing users with a plethora of data, communication tools, and productivity apps. They allow graduate students to collaborate with their peers, stay organized, and access course materials at any time and from any location. However, excessive Smartphone use can also be detrimental since it can lead to addiction, decreased productivity, and distractions. The constant notifications and temptations of social networking, gaming, and entertainment apps can detract from academic pursuits, which can impair both overall well-being and academic achievement. It's critical to modify tactics and reduce mobile phone usage in order to preserve a healthy balance between technology use and other aspects of life, such as setting usage limits, scheduling breaks, designating phone-free zones, and practicing digital detox.

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