Physical Education, Health and Social Sciences

https://journal-of-social-education.org

E-ISSN: 2958-5996

P-ISSN: 2958-5988

The Effects of Social Media on Sleep Quality and Eye Health: A Comprehensive Review

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Abstract

This study explores the impact of social media on physical health we mainly focus on sleep and eyesight over the university students. It highlights the increasing use of social media with students spending most of the time on different apps on social media like Facebook and Instagram leading to disturbs the sleeping patterns and digital eye strain of youngster. Our research found that most of the time that youngster spend on social media specially before bedtime, negatively affected on sleep quality of youngsters by disrupting circadian rhythms and face difficulties in falling asleep. Additionally, screen time has directly linked to eye strain, dryness and headaches largely due to blue light exposure. The study also suggests that use of social media may cause mental fatigue, further contributing to physical health issues. By analyzing the responses of 106 students, the study confirmed that excessive social media use significantly harms sleep quality and eyesight. The results support the hypothesis that prolonged screen time has adverse effects on health. This research underscores the need to balance social media use to prevent physical health issues in the digital age.

Introduction

This study is being conducted in Sialkot at the University of Management and Technology. It focuses on the impact of social media on physical health, specifically on sleep and eyesight. Social media is a huge part of everyone's daily routine these days. For example, in America, people spend an average of 144 minutes a day on social media. It has completely changed how people communicate, share information, and stay connected with others. While there are many studies on how social media affects mental health, fewer studies focus on its impact on physical health. Social media can affect things like how much physical activity a person gets and their eating habits. It has its benefits, like helping people stay connected or informed, but it also has negative effects on health. For example, people who spend more time on social media may be less active and participate less in sports or other physical activities. It can also disturb sleep, leading to problems like restlessness. Lack of sleep is directly linked to bad physical health, including heart issues and a weaker immune system. The blue light from screens, especially at night, can mess with your sleep cycle and damage your eyesight. This study looks at how social media affects sleep and eyesight specifically. Social media has altered how individuals interact, communicate and consume information in today's digital age. Platforms like Facebook, Instagram, TikTok and Twitter have become essential parts of daily life, allowing users to stay connected, engaged and informed. The increasing adoption of social media has had a significant impact on younger generations, including university students who use these platforms for

academic, social networking and leisure activities. Despite the obvious benefits of social media, excessive use raises worries about its possible influence on physical health, specifically sleep quality and eye health. While substantial study has been conducted on the psychological and emotional effects of social media, few studies have investigated the direct physiological ramifications of chronic social media use. Excessive screen time has been linked to disrupted circadian rhythms, poor sleep quality and eye strain, which can lead to a variety of visual discomforts and disrupt natural sleep patterns. These effects are especially noticeable in adolescents and young adults but the impact is being recognized across all demographics. The widespread use of social media has changed the way people communicate, acquire information and even interpret their own lives. While these platforms promote connection and entertainment their constant demand for interaction has been linked to a variety of health issues. Among these, the impact on sleep quality and eye health has attracted considerable attention in recent years. The methods by which social media affects sleep are complex. One key problem is the effect of blue light from displays which interferes with the body's generation of melatonin, a hormone crucial for regulating the sleep-wake cycle. Furthermore, social media content which is frequently stimulating or emotionally charged, might increase tension, anxiety or excitement increasing sleep difficulties. These disruptions frequently emerge as difficulty. Excessive screen time can cause digital eye strain, a condition characterized by dryness, discomfort, blurred vision and headaches. This is due to a decrease in blinking rate while using screens which contributes to insufficient lubrication of the eyes. Additionally, the close proximity of screens and the prolonged focus required can exacerbate visual fatigue.

1.1Objective: This study aims to understand how social media affects physical health, focusing on sleep and eyesight. It looks at how spending too much time on screens can lead to sleep problems and digital eye strain.

1.2Problem Statement: While social media has many benefits, it can also harm physical health. This study focuses on how social media affects sleep patterns and eyesight. It explores how the increased use of social media disrupts sleep and causes eye problems in students.

1.3Research Questions

- How does frequent social media use affect physical health, especially sleep and eyesight?
- What are the effects of using social media before bedtime on sleep and well-being?

Literature Review

The literature review focuses on two main points: the impact of social media on sleep quality and the effect of social media on eyesight. Research shows that using social media affects sleep. Renee Garrett (2018) found that social media is linked to sleep problems, especially among college students. Cain and Gradisar (2010) also found that social media use leads to shorter sleep times. A study by Adam F. Aldhawyan (2020) found that 74.5% of first-year students experienced poor sleep quality because of social media use. Levenson et al. (2016) found that people who use social media every day are more likely to have sleep issues. They also discovered that young people spend about 30 minutes on social media before going to bed, which impacts their sleep quality. Neralie Cain and Michael Gradisar (2010) looked at 36 studies on how social media affects sleep in children and teens. They found that using social media is connected to shorter sleep durations. Their study suggests that more research is needed to figure out exactly how social media affects sleep. Getting enough sleep is very important for the brain to work properly. When people don't sleep enough, it can hurt their memory and learning, which can affect their grades and school performance. Azar Pirdehghan and others (2021) found that teens who spend too much time on their devices feel more sad and don't

sleep well. They suggest that parents and teachers should help students limit their screen time to improve sleep quality, a study by Alah M.A., Abdeen S., and others (2024) found that during the COVID-19 pandemic, when everyone used social media more, a lot of students had problems with their eyesight. Research also shows that too much screen time can lead to digital eye strain (DES). Nikhil Aggarwal and Noor Us Saba (2024) explained that the blue light from phones and computers can hurt your eyes, causing symptoms like eye strain, dryness, and difficulty focusing. They recommend following the 20-20-20 rule, which means taking a 20-second break every 20 minutes to look at something 20 feet away, to reduce the strain on your eyes.A study by Ayesha Sadiqa and others (2024) found that students who use social media a lot have worse mental well-being and eyesight. A study by Georgios D. Floros (2024) showed that excessive screen time causes digital eye strain in students. Another study by Muna Abed Alah and colleagues (2024) found that more time spent on screens leads to worse vision, especially after schools were closed during the pandemic.

2.1Hypothesis:

It is likely that Excessive social media use leads to poor sleep quality of youth.

It is likely that Prolonged social media use negatively affects eyesight, causing eye strain, dryness, irritation, and trouble focusing.

Table 2.1: variables of the study

Variables	
Independent Variables	Dependent Variables
Frequency of social media use	Sleep quality
Duration of screen time	Eye health

Table 2.1 shows that the study examines how the frequency and duration of social media use (independent variables) affect sleep quality and eye health (dependent variables). It highlights the relationship between screen time and physical health outcomes.

2.2 Theoretical Framework

The Uses and Gratification Theory helps explain why people keep using social media despite its negative effects on physical health. This theory suggests that people use social media to meet their needs, like seeking entertainment, information, or social connections. As they spend more time on social media, it leads to more screen time, which can interfere with good habits like sleep and eye care. This theory shows how people might prioritize short-term satisfaction over long-term health.

3.Research Methodology

The study focuses on two groups: one group looks at sleep issues, and the other looks at eye problems caused by social media. The population includes students from the University of Management and Technology.

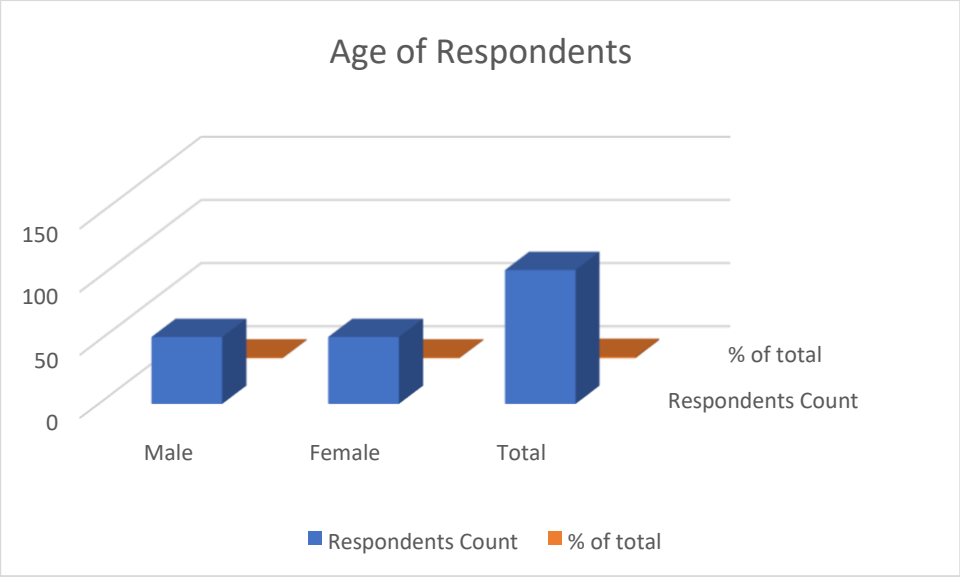
3.1Population: The study includes all students from University of Management and Technology, Sialkot campus.

3.2Sampling Size: Authors gets the response from 106 students of the university.
3.3Sampling Technique: A purposive sampling technique is used to select participants.
3.4Data Collection: Data is collected through surveys on how social media affects sleep and eyesight.
3.5Data Analysis: The data is analyzed using the Uses and Gratification Theory and statistical techniques.
3.6Data Presentation: The findings will be presented in tables, graphs, and statistical analysis.

1. **4.Data Presentation and Analysis**

Table4.1 Crosstab of respondent's age

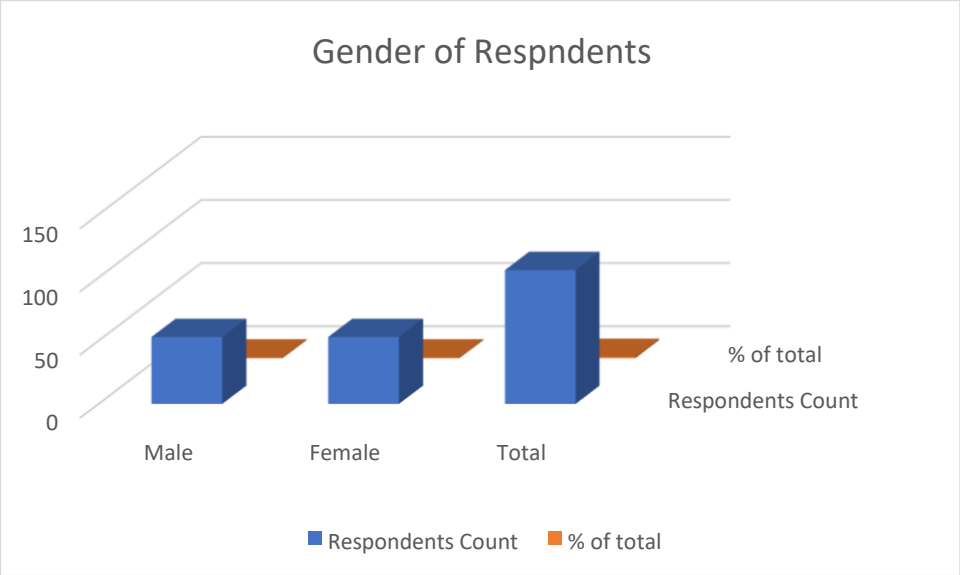
		18-20	20-22	22-24	total
Respondents	Count	40	46	20	106
% of total		37.4%	43%	19.6%	100%



Nearly 37.4% people is from age group (18-20), 43% people is from age group of (20-22) , while 19.6% is from age group of (22-24) that shown in table 4.1

Table4.2 Crosstab of respondent's gender

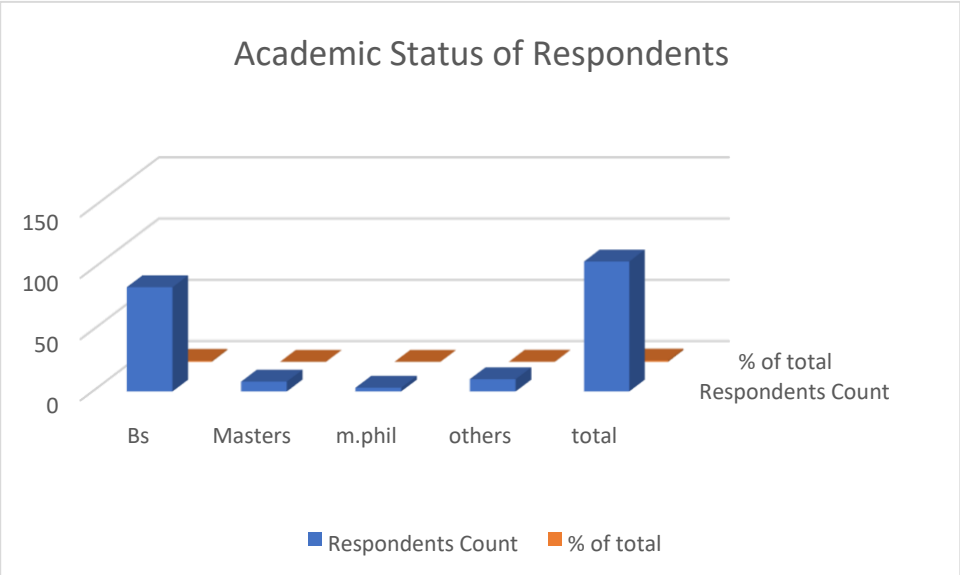
		Male	Female	Total
Respondents	Count	53	53	106
% of total		50%	50%	100%



Our collected data shown that 50 % male and 50 % female take part in this survey that shown in table 4.2

Table4.3 Crosstab of respondent's academic status

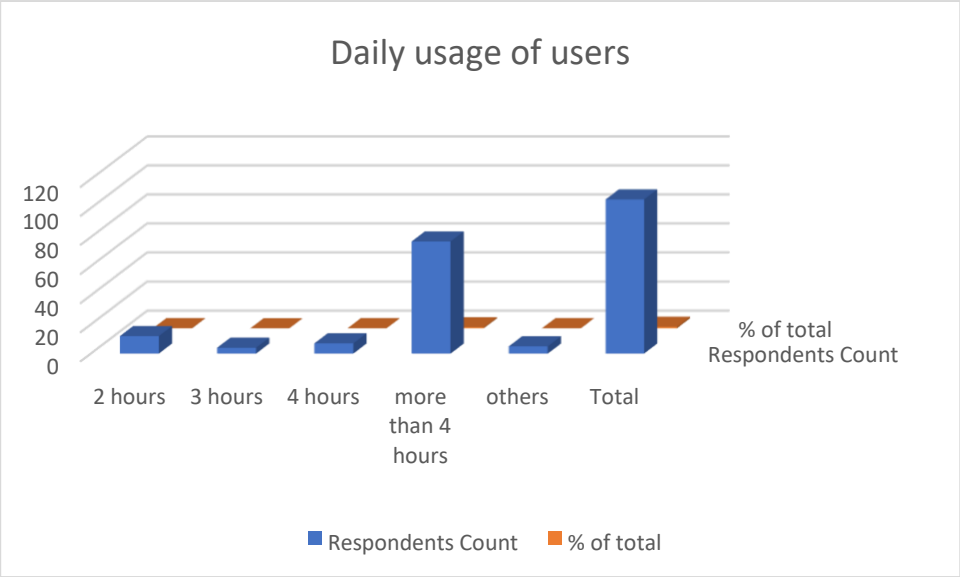
		Bs	Masters	m.phil	others	total
Respondents	Count	85	8	3	10	106
% of total		79.4%	7.5%	2.8%	9.6%	100%



Nearly 79.4% students from BS, 7.5% from masters, 2.8% from M. Phil and 9.6% is from other programs that shown in table 4.3

Table4.4 Crosstab of respondent's time spent on social media

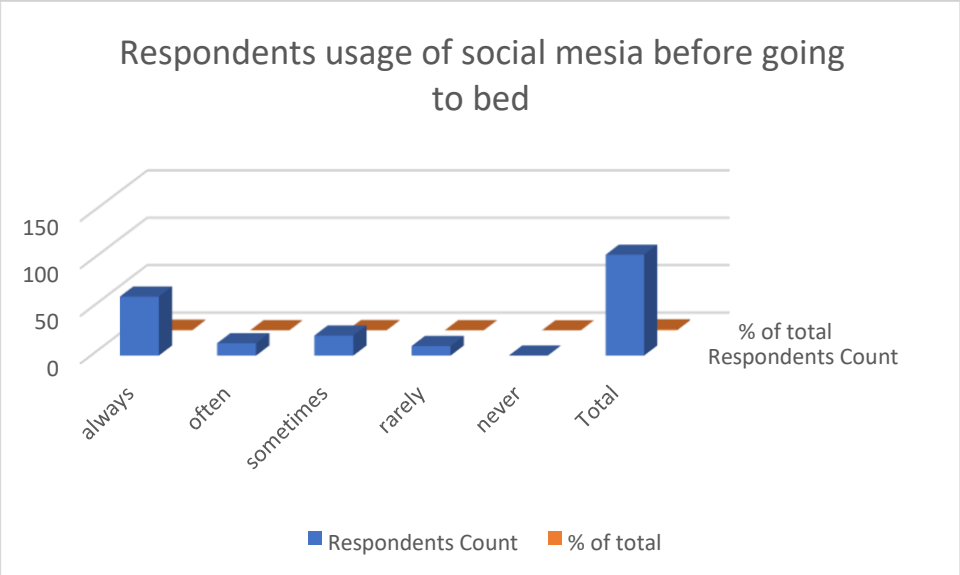
		2 hours	3 hours	4 hours	more than 4 hours	others	Total
Respondents	Count	12	4	7	77	5	106
% of total		11.2%	3.7%	6.5%	72%	4.9%	100%



Our collected data shown that 11.2% students spend 2 hours in social media, 3.7% spend 3 hours, 6.5% spend 4 hours, 72% students spend more than 4 hours in social media while others are 4.9 that shown in table 4.4.

Table4.5 Crosstab of respondent's usage of social media before going to bed

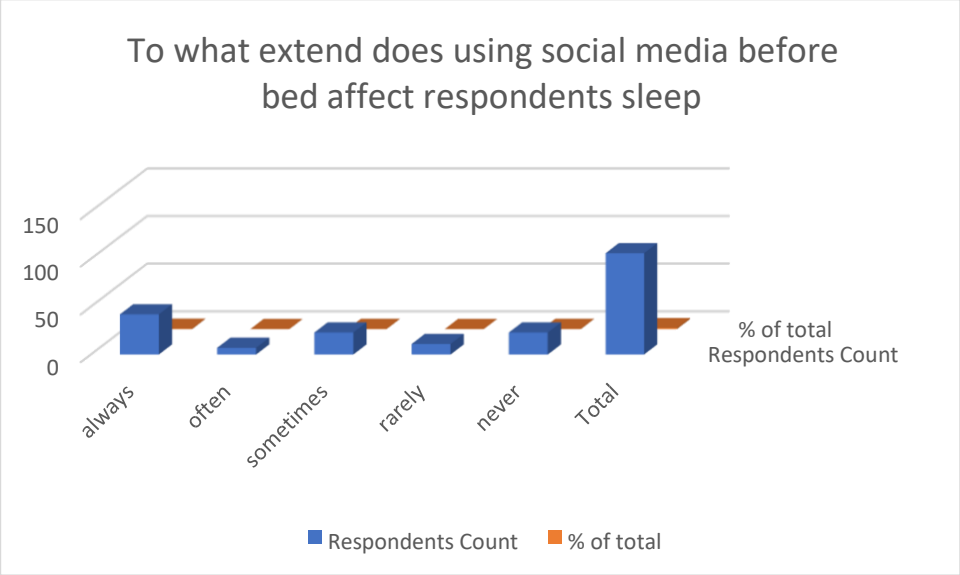
		always	often	sometimes	rarely	never	Total
Respondents	Count	62	13	21	10	0	106
% of total		57.9%	12.1%	19.6%	9.3%	0%	100%



Nearly 57.9% students always spend time on social media before going to bed , some students often use 12.1% students on social media before going to bed, some students use sometimes social media 19.6% , some students use rarely 9.3% while this survey shows 0% students use social media before going to bed shown in table 4.5.

Table4.6 Crosstab of respondents to what extent does using social media before bed make it harder for you to fall sleep

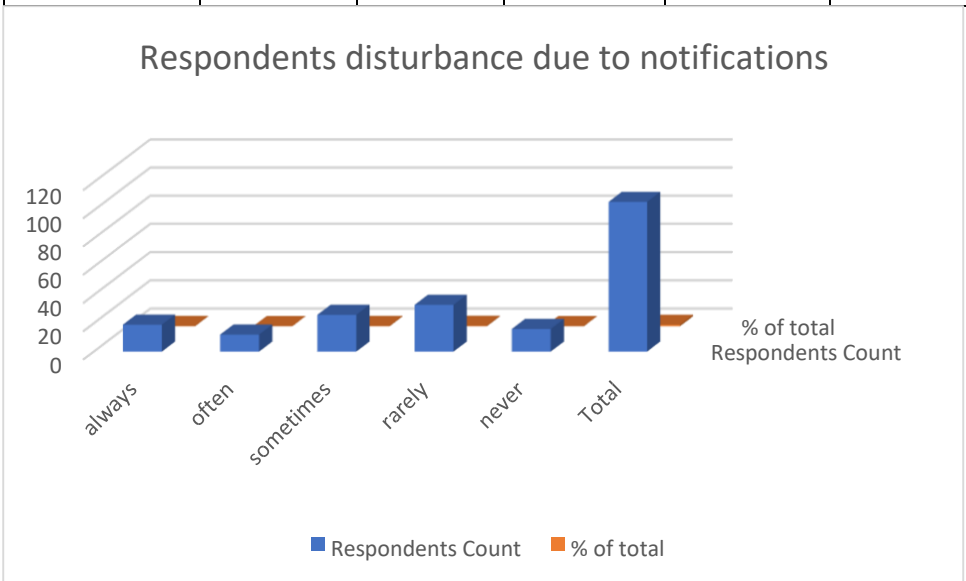
		always	often	sometimes	rarely	never	Total
Respondents	Count	42	7	23	11	23	106
% of total		39.3%	6.5%	21.5%	10.4%	21.5%	100%



Our collected data shown that using social media before going to bed make it harder to fall asleep this survey shows that 39.3% fall harder to sleep before going to bed using social media, some students often use 6.5%, some use sometimes 21.5% , some use rarely 10.4% , 21.5% students never face harder to sleep before going to bed social media shown in table 4.6.

Table4.7 Crosstab of disturbance through notifications

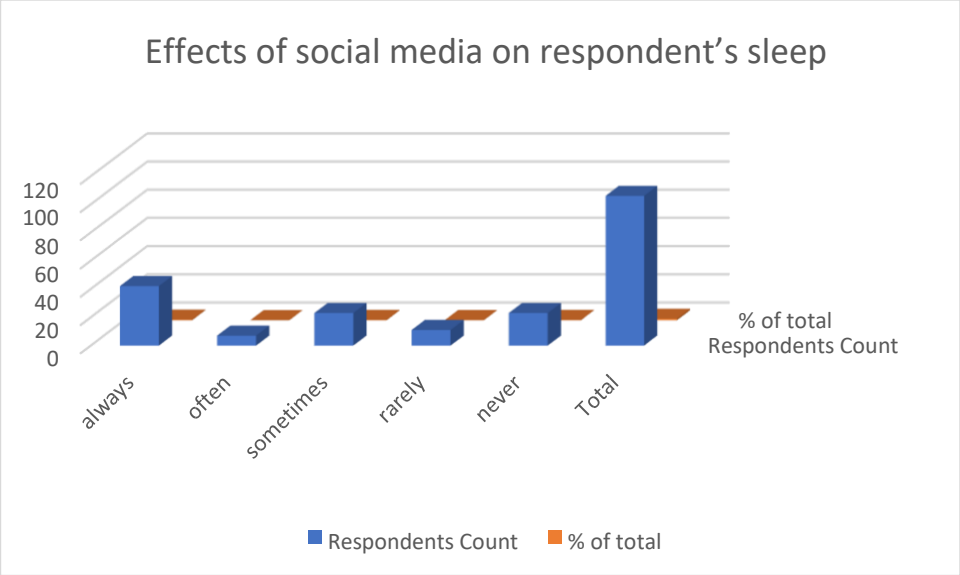
		always	often	sometimes	rarely	never	Total
Respondents	Count	19	12	26	33	16	106
% of total		17.8%	11.2%	24.3%	30.8%	15.0%	100%



Our collected data shows that 17.8% students always disturbed thorough notifications, 11.2 disturbed often, 24.3% disturbed sometimes, 30.8% disturbed rarely , 15.0% never be disturbed thorough notifications that shown in table 4.7.

Table4.8 Crosstab of effect of social media on sleep

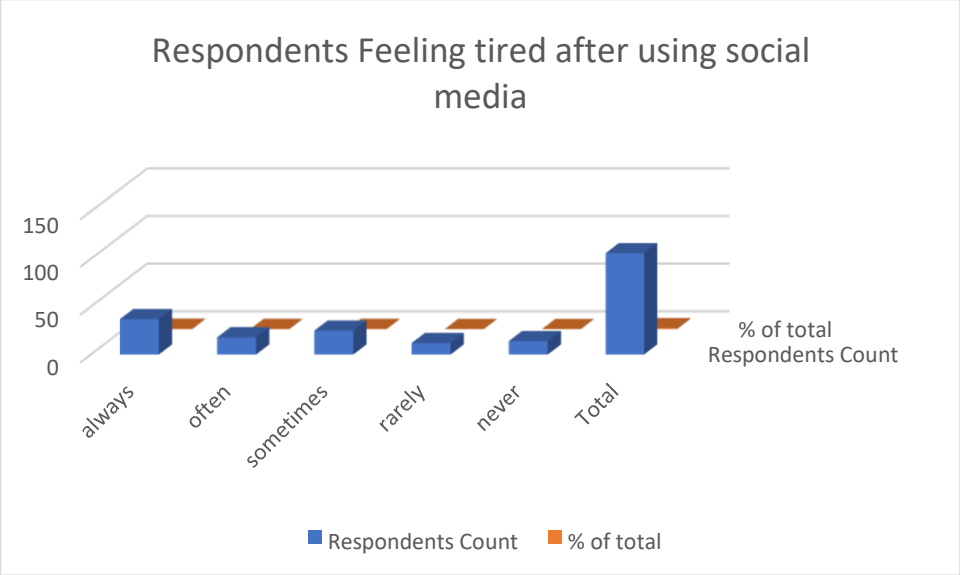
		always	often	sometimes	rarely	never	Total
Respondents	Count	42	7	23	11	23	106
% of total		39.3%	6.5%	21.5%	10.3%	21.5%	100%



Nearly 39.3% sleep always effect through social media, 6.5% often effect sleep, 21.5% sometimes effect sleep, 10.3% rarely effect sleep, 21.5% never be affected their sleep by social media that shown in table 4.8.

Table4.9 Crosstab of feeling tired after using social media

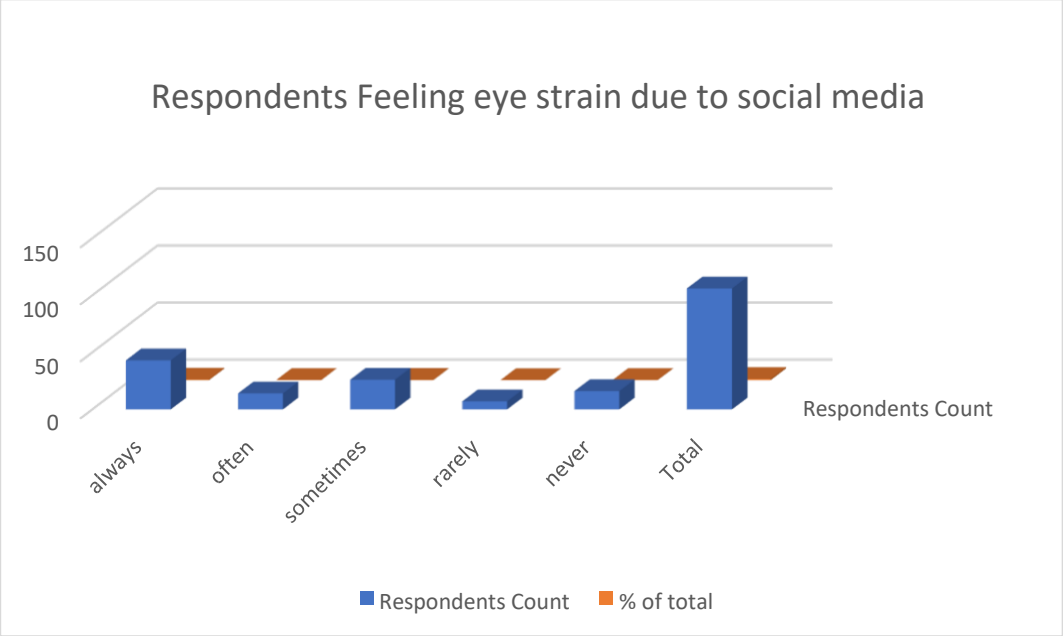
		always	often	sometimes	rarely	never	Total
Respondents	Count	37	18	25	12	14	106
% of total		34.6%	16.8%	23.4%	11.21%	13.1%	100%



Nearly 34.6% students always feeling tired after using social media, 16.8% often feeling tired, 23.4% sometimes feeling tired, 11.21% rarely feeling tired, 13.1 % never be feeling tired after using social media that shown in table 4.9.

Table4.10 Crosstab of feeling eye strain due to social media

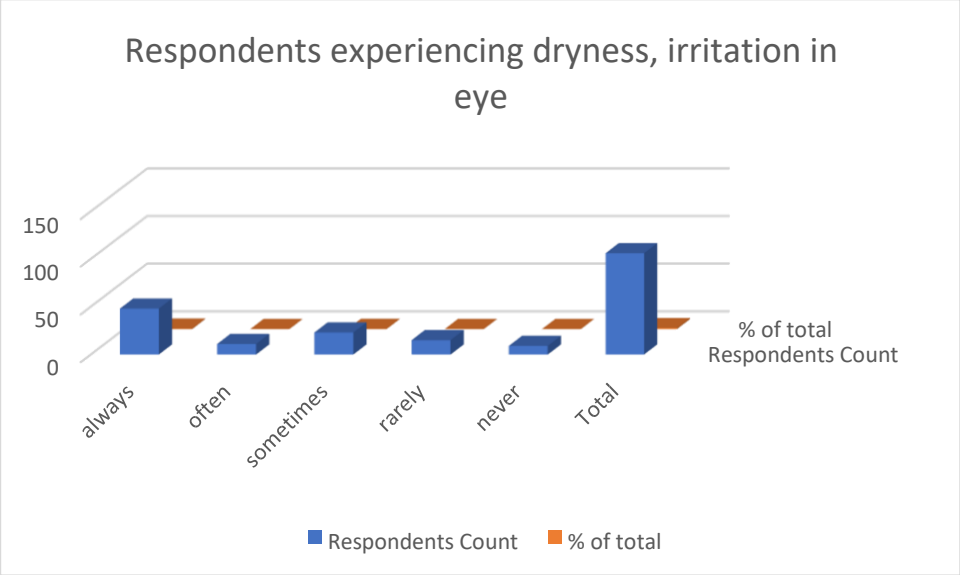
		always	often	sometimes	rarely	never	Total
Respondents	Count	43	14	26	7	16	106
% of total		40.2%	13.1%	24.3%	6.5%	15.0%	100%



Our collected data shown that 40.2% students always feeling eye strain due to social media, 13.1% often feel eye strain, 24.3% sometimes feeling that, 6.5% rarely feeling, 15.0% never be feeling eye strain after using social media that shown in table 4.10.

Table4.11 Crosstab of Respondents experiencing dryness, irritation in eye

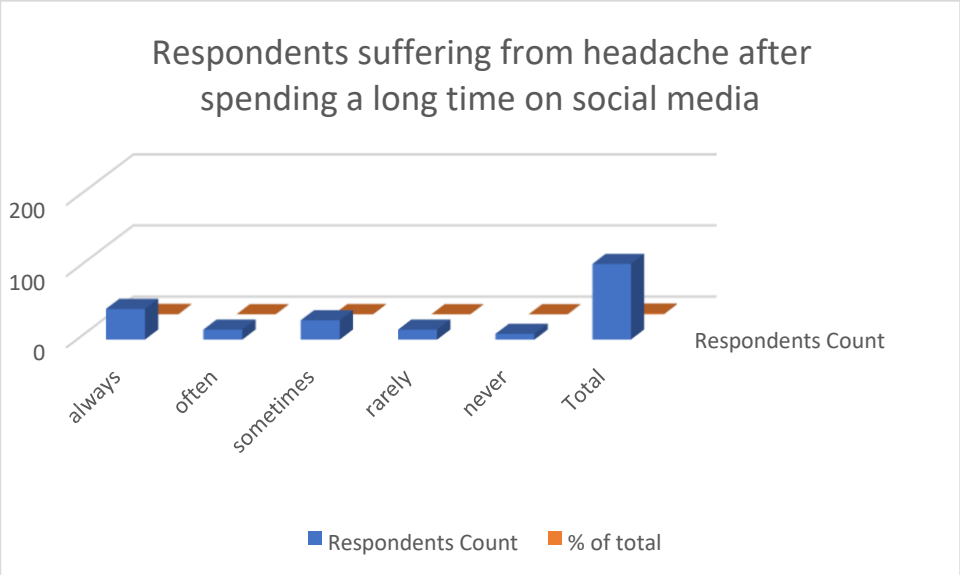
		always	often	sometimes	rarely	never	Total
Respondents	Count	48	11	23	15	9	106
% of total		44.9%	10.3%	21.5%	14.0%	8.4%	100%



Nearly 44.9% always feeling dryness and irritation after using social media, 10.3% often feeling that, 21.5% sometimes feeling that, 14.0% rarely feeling that, 8.4% never be feeling dryness and irritation after using social media that shown in table 4.11.

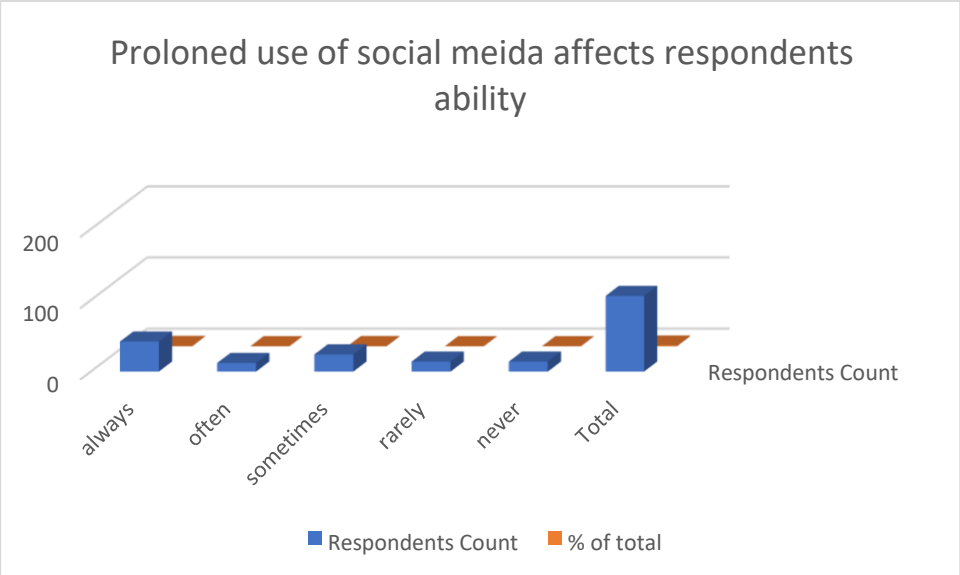
Table4.12 Crosstab of headache after spending a long time on social media

		always	often	sometimes	rarely	never	Total
Respondents	Count	43	14	27	14	8	106
% of total		40.2%	13.1%	25.2%	13.1%	7.5%	100%



Nearly 40.2% students always feeling headache after spending a long time on social media, 13.1% often feeling that, 25.2% sometimes feeling that, 13.1% rarely feeling that, 7.5 % never be feeling headache after spending a long time on social media that shown in table 4.12. Table4.13 Crosstab of prolonged social media affect your ability

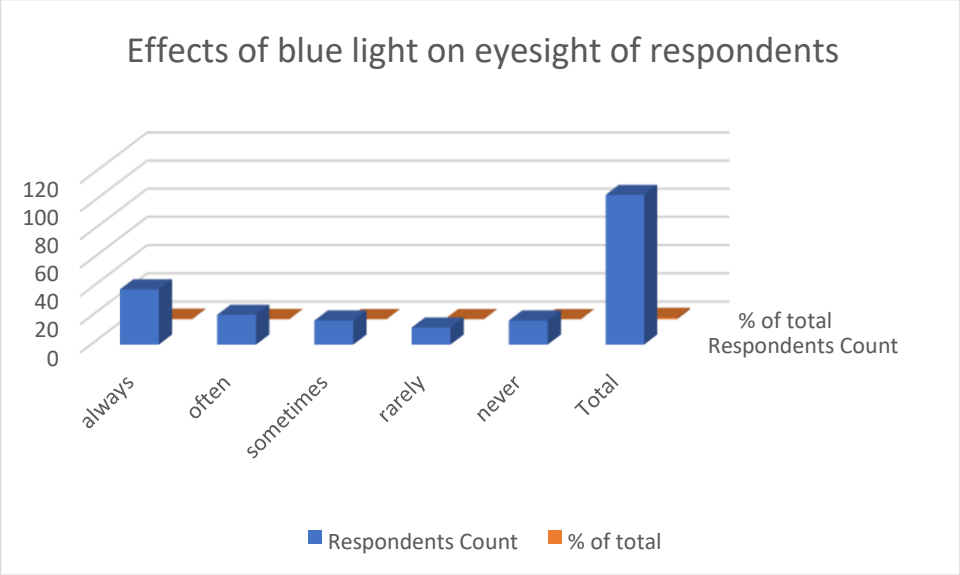
		always	often	sometimes	rarely	never	Total
Respondents	Count	42	12	24	14	14	106
% of total		39.3%	11.2%	22.4%	13.1%	13.1%	100%



Nearly 39.3% always feeling social media effects on students ability , 11.2% often feeling that, 22.4% sometimes feeling that, 13.1% rarely feeling that, 13.1% never be feeling that social media affect your ability shown in table 4.13.

Table4.14 Crosstab of effect of blue light on eyesight

		always	often	sometimes	rarely	never	Total
Respondents	Count	39	21	17	12	17	106
% of total		36.4%	19.6%	15.9%	11.2%	15.9%	100%



Our collected data shown that 36.4% always affect your eye due to blue light, 19.6% often feeling that, 15.9% sometimes feeling that, 11.2% rarely feeling that, 15.9 % never be feeling affects of blue light shown in table 4.14.

Table 4.15: Crosstab of hypothesis Interpretation

Hypothesis	
It is likely that Excessive social media use leads to poor sleep quality of youth	Accepted
It is likely that Prolonged social media use negatively affects eyesight, causing eye strain, dryness, irritation, and trouble focusing.	Accepted

Table 4.15 shows that the the data provided supports the hypothesis regarding the impact of excessive social media use on sleep quality and eyesight. So, we approved our both hypotheses.

Hypothesis 1: It is likely that Excessive social media use leads to poor sleep quality of youth
Time spent on social media: The data reveals that 72% of respondents spend more than 4 hours on social media (Table 4.4), indicating a high level of excessive use.

- **Use of social media before bed**: 57.9% of respondents **always** use social media before bed (Table 4.5). This is crucial as using social media close to bedtime can interfere with sleep patterns.
- **Difficulty falling asleep**: 39.3% of respondents **always** experience difficulty falling asleep due to social media usage before bed (Table 4.6). This supports the hypothesis that social media use leads to poor sleep quality.

- **Effect on sleep**: 39.3% **always** report that social media affects their sleep, and 6.5% report it affects them **often** (Table 4.8), reinforcing the claim that social media negatively impacts sleep.
- **Feeling tired after social media use**: 34.6% of respondents **always** feel tired after using social media, and 16.8% feel tired **often** (Table 4.9). This aligns with the hypothesis that excessive social media use causes tiredness in the morning. So on the basis of responses we accept our hypothesis

Hypothesis 2: It is likely that Prolonged social media use negatively affects eyesight, causing eye strain, dryness, irritation, and trouble focusing.

- **Eye strain**: A significant 40.2% of respondents **always** feel eye strain due to social media use, with 13.1% feeling it **often** (Table 4.10). This supports the hypothesis that prolonged social media use leads to eye strain.

- **Dryness and irritation**: 44.9% of respondents **always** experience dryness and irritation in their eyes, and 10.3% feel this **often** (Table 4.11). This aligns with the hypothesis that prolonged social media use can cause eye irritation.

- **Headache**: 40.2% of respondents **always** feel headaches after prolonged social media use, and 13.1% feel headaches **often** (Table 4.12). This further supports the claim that long hours on social media can result in physical discomfort, including headaches.
- **Blue light effect**: 36.4% of respondents **always** feel the impact of blue light on their eyesight, with 19.6% feeling it **often** (Table 4.14). Blue light exposure from screens is known to affect eyesight, reinforcing the hypothesis that prolonged social media use negatively impacts vision. So, on the basis of responses, we accept our hypothesis**.**
  Discussion

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