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A Descriptive Study to Assess the Effect of Screen Time Exposure on Sleep Pattern and Concentration Among First Year B.Sc. Nursing Students at Ganga College of Nursing, Coimbatore

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Abstract: Screen exposure is increasing among students and may affect sleep and cognitive performance. While digital technology has improved access to information and education, excessive screen time is associated with negative health impacts.

Key Words: Screen time, Sleep pattern, Concentration, Nursing, Sleep quality

I. INTRODUCTION

Today's generation is increasingly connected to screens—smartphones, laptops, tablets, and TVs. While digital technology has improved access to information and education, excessive screen time is associated with negative health impacts. Research suggests a relationship between prolonged screen use, disrupted sleep patterns, and impaired concentration. Nursing students, due to academic workload and clinical learning requirements, may be particularly susceptible to these effects. Screen exposure is increasing among students and may affect sleep and cognitive performance. This study evaluates its impact among nursing students.

II. STATEMENT OF THE PROBLEM

A Descriptive Study to Assess the Effect of Screen Time Exposure on Sleep Pattern and Concentration Among First Year B.Sc. Nursing Students at Ganga College of Nursing, Coimbatore.

III. OBJECTIVES OF THE STUDY

1. To assess the level of screen time exposure among students.
2. To evaluate the sleep pattern of students.
3. To determine the level of concentration among students.
4. To find the association between screen time and sleep pattern.
5. To find the association between screen time and concentration level.

IV. HYPOTHESES

H_1: There is a significant association between screen time exposure and sleep pattern.

H_2: There is a significant association between screen time exposure and concentration level.

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V. Operational Definitions

- Screen Time: Total hours spent daily on digital screens (mobile, laptop, tablet, etc.).
- Sleep Pattern: Quality, duration, and regularity of sleep experienced by students, measured by standardized sleep questionnaires.
- Concentration: Ability to focus on academic tasks measured by a validated concentration scale.

VI. Assumptions

- Students will respond honestly to questionnaires.
- Sleep pattern and concentration can be influenced by screen time.
- The study environment does not interfere with data collection.

VII. Delimitations

- Only 1st year B.Sc. nursing students are included.
- Conducted only at Ganga College of Nursing, Coimbatore.

Variables

INDEPENDENT	DEPENDENT
Screen time	Sleep pattern
	Concentration

VIII. Inclusion Criteria

- Registered B.Sc. Nursing 1st year students
- Present on the day of data collection
- Willing to participate

IX. Exclusion Criteria

- Students on medical leave
- Students with diagnosed sleep disorders

Conceptual Framework (IPO Model)

INPUT: Screen time exposure duration.
PROCESS: Impact on biological sleep cycle and mental focus.
OUTPUT: Sleep quality and concentration level.

X. Methodology

- Research Approach: Quantitative approach
- Research Design: Descriptive research design
- Setting: Ganga College of Nursing, Coimbatore
- Population: 1st year B.Sc. Nursing students
- Sample Size: 100 students
- Sampling Technique: Non-probability convenience sampling
- Data Collection Tool: Structured questionnaire

XI. Review of Literature

International Studies

- Twenge et al. (2017): Increased screen time correlates with poor sleep quality and delayed sleep onset.
- Cain & Gradisar (2010): Excessive screen exposure before bed reduces melatonin.

National Studies

- Indian study by Sharma et al. (2020): Students with screen time >3 hours reported poor concentration and daytime sleepiness.

Tools for Data Collection

Section A: Demographic Data

Section B: Screen Time Questionnaire

Section C: Sleep Pattern Assessment (Pittsburgh Sleep Quality Index - PSQI)

Section D: Concentration Measurement - Concentration Rating Scale for Students (CRSS)/Self-reported Focus questionnaire

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XII. DATA ANALYSIS AND INTERPRETATION

SECTION A: DEMOGRAPHIC VARIABLES

Table 1: Distribution of Students According to Gender

GENDER	FREQUENCY
Female	77
| Male	19
Total	96

Fig. 1- Age

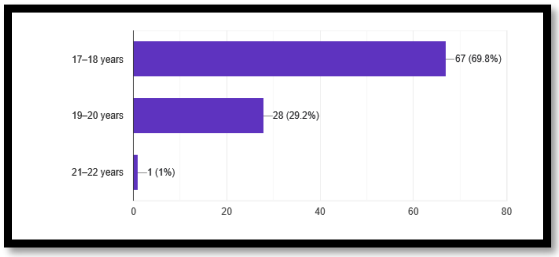
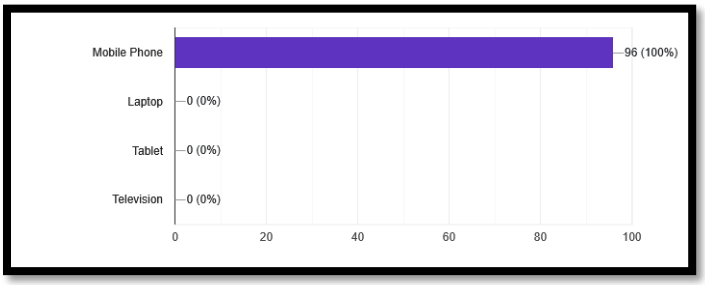


Fig. 2 - Primary Device Used



SECTION B: SCREEN TIME EXPOSURE

Table 2: Average daily screen time

SCREEN TIME	FREQUENCY
Less than 2 hours	29.2%
2 – 4 hours	62.5%
4 – 6 hours	6.3%
More than 6 hours	2.1%

Fig. 3 - Main purpose of screen use

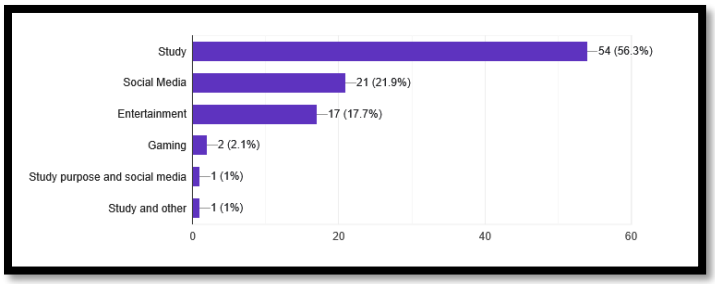


Fig. 4 – Usage electronic devices before bedtime

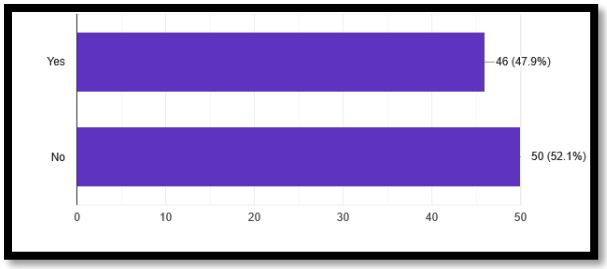
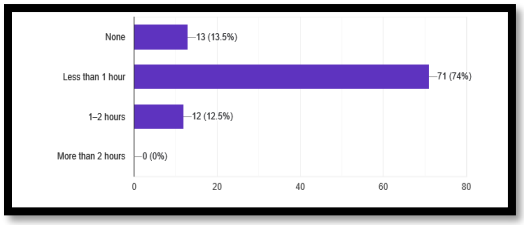


Fig. 5 - Time spent on screen after 9 PM



SECTION C: SLEEP PATTERN

Fig. 6 – Average sleep duration during night

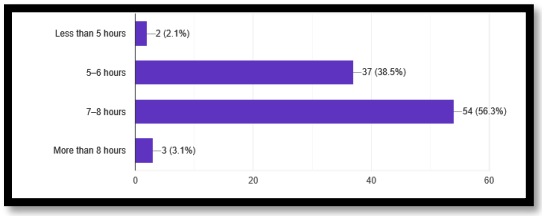


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Fig. 7 – Difficulty in falling asleep

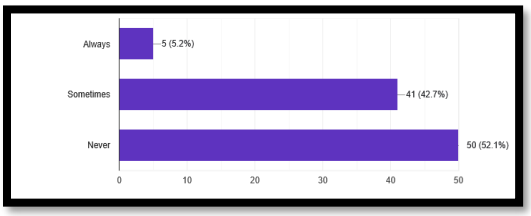

Fig. 8 – Waking up during night

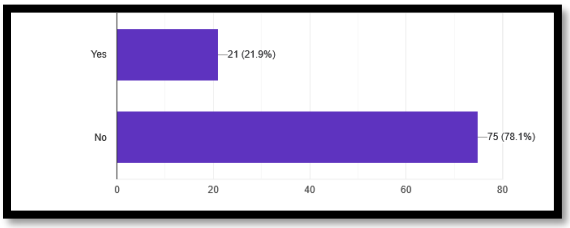

Fig. 9 – Feeling refreshed after waking up

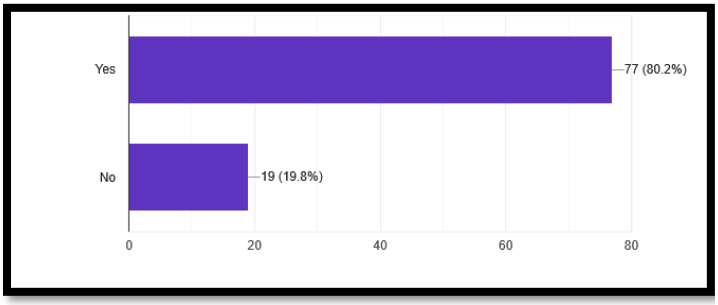

Fig. 10 – Feeling sleepy during the class

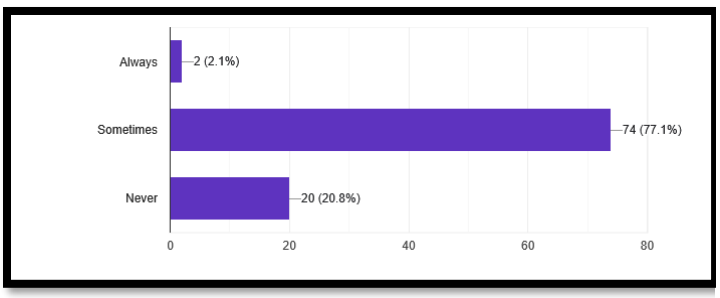

Fig. 11 – Finding difficult to concentrate during lectures

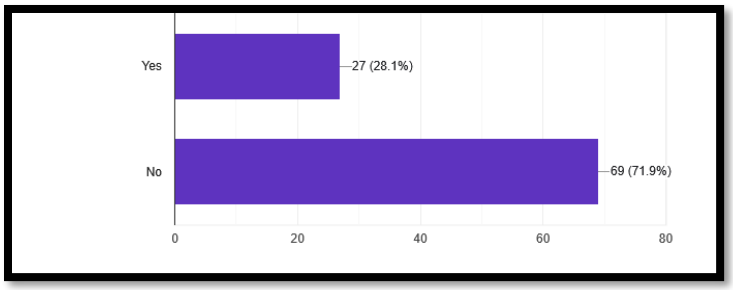

Fig. 12 – Getting distracted easily while studying

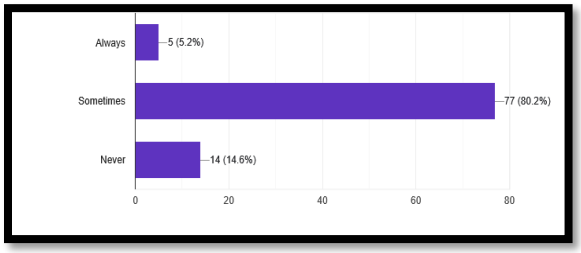

Fig. 13 – Forgetting things easily while studying

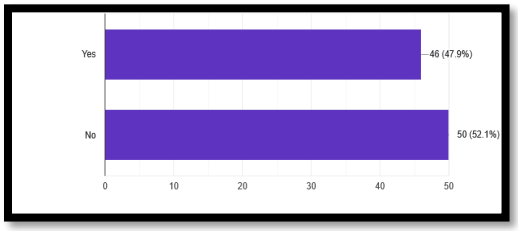

Fig. 14 – Level of Eye strain after screen use

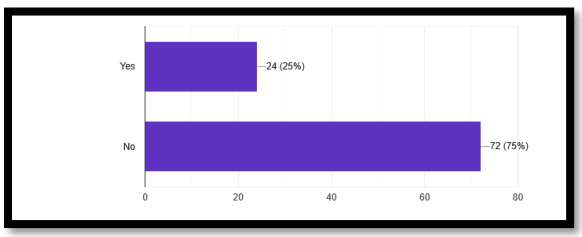

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Table: 3 – Academic performance affected by screen use

YES / NO	FREQUENCY
Yes	31.3%
No	68.7%

XIII. DISCUSSION

The present study assessed the effect of screen time exposure on sleep pattern and concentration among 1st year B.Sc. Nursing students.

The findings revealed that, the screen time usage before bed time is about 62.5% with 2 to 4 hours is seen among majority of students and very minimal of 2.1% are using more than 6 hours, among which 25% of students complained eye strain and 75% were said no eye strain.

The level of distraction is noticed with very minimal level of 5.2% and 80.2% students reported no distraction.74% students are using gadgets less than one hour after 9 pm, hence the screen time usage during bed time is minimal.

The findings revealed that most students reported **less to moderate screen exposure**, primarily through mobile phones. Students with higher screen time demonstrated **poor sleep quality**, difficulty falling asleep, and daytime sleepiness.

The study supports the hypothesis that **screen time exposure significantly influences sleep pattern and concentration with the increased screen timing and is normal with less screen timing.**

XIV. KEY FINDINGS

- Majority had low to **moderate screen exposure**
- Many students not experienced **sleep disturbances**
- Concentration difficulties were less common
- Significant association existed between screen time, sleep, and concentration

XV. SUMMARY

The study was conducted among 96 first-year B.Sc. Nursing students using a descriptive design. Data were collected using a structured questionnaire assessing screen time exposure, sleep pattern, and concentration level.

XVI. CONCLUSION

The study indicates that increased screen time among B.Sc. Nursing first year students at Ganga College of Nursing, Coimbatore is significantly associated with poorer sleep patterns and reduced concentration among very minimal students. It was found that majority of students using very minimal screen time hence the ill effects also reported less. Findings align with existing literature identifying electronic use as a risk factor for sleep disruption and cognitive challenges. Excessive screen time negatively affects sleep quality and cognitive focus among nursing students. Limiting screen exposure, especially before bedtime, can improve academic performance and overall well-being.

XVII. RECOMMENDATIONS

- Implement awareness programs on healthy screen use.
- Limit screen exposure before bedtime.
- Encourage sleep hygiene practices.
- Conduct similar studies across semesters and institutions.

XVIII. LIMITATIONS

- Self-reported data may have bias.
- Single institutional sample limits generalizability.

XIX. NURSING IMPLICATIONS

- Promote sleep hygiene education
- Conduct awareness programs on screen time control
- Early screening for sleep disorders
- Counselling for students with concentration issues

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