Effects of Smartphone Addiction on the Health of Nursing Students

N. Chinna Chadayan* and D. Melba Sahaya Sweety

Department of Nursing, Enam Nursing College, Dhaka, Bangladesh

Abstract

Introduction: Smartphones have become integral to daily life, providing extensive connectivity and convenience. However, concerns about smartphone addiction have grown, especially among student populations, due to its potential impacts on mental health and academic performance.

Objective: This research intends to evaluate the prevalence of smartphone addiction and examine its related health consequences among General Nursing and Midwifery (GNM) students at a nursing college in Murshidabad District, India.

Methods and materials: Using a cross-sectional survey design, data were collected from 50 GNM students via self-structured questionnaires. The survey covered demographic details, smartphone usage patterns, self-assessment of addiction levels and reported health impacts. Sampling was conducted through total enumeration to ensure comprehensive representation.

Results: The study found a significant prevalence of smartphone addiction among GNM students, with 57.43% exhibiting moderate addiction levels. They commonly reported usage included social networking (100%) and entertainment (81.08%), with daily usage averaging 3 to 6 hours. Health impacts such as inadequate sleep, poor concentration, headaches and mental fatigue were prevalent, with a mean health impact score of 28.05 (± 4.67).

Conclusion: These findings underscore the importance of implementing strategies to encourage responsible smartphone usage and reduce health impacts among nursing students. Taking action on these matters could improve student welfare and academic achievements significantly.

Keywords: Educational interventions • Health impacts • Nursing students • Smartphone addiction • Technology use

Introduction

The digital revolution has transformed daily life, making smartphones indispensable for communication, information and entertainment. These portable and cost-effective devices have become a constant companion for many individuals [1]. Smartphone use has grown across all economic and age groups, with university students among the largest user groups [2]. About half of mobile users in India have switched to smartphones [3]. Among adolescents, smartphone addiction rates are between 39% and 46%, which is a public health concern [4-6]. While smartphones, tablets and computers can be highly productive tools, excessive use of these devices can disrupt work, school and relationships [7]. This addiction is linked to health problems like sleep disturbances, anxiety and depression [8-10]. This study aims to assess the prevalence of smartphone addiction and its health effects among GNM students at a nursing college in Murshidabad District to better understand and address this growing issue.

Objective: To assess smartphone addiction and its health impacts among nursing students.

Literature Review

In their study, Patel R and Gupta S [11] investigated how smartphone addiction correlates with academic performance among university students. They discovered that greater smartphone addiction was associated with poorer academic outcomes, underscoring the detrimental impact of excessive

smartphone use on education. The research underscores the importance of promoting responsible smartphone habits among students. Arathi TV, et al. [12] explored the impact of smartphones, noting how they've replaced many other devices like computers, calculators, radios and cameras. While smartphones offer great benefits and convenience, especially for students, their study at Adichunchanagiri College of Nursing found that most students experienced a decline in academic performance due to spending less time on studies and library resources. This indicates that despite their advantages, smartphones can harm academic progress if not used responsibly.

Methodology

Study design

This research employs a descriptive survey approach to assess smartphone addiction and its health impacts among GNM nursing students at a specific college in Murshidabad District. This method allows for systematic data collection and analysis to depict the prevalence, patterns and consequences of smartphone addiction within this student group.

Sample

The study will involve 50 GNM nursing students selected from the designated college in Murshidabad District. Total enumeration sampling, where every GNM student will be included, ensures equitable representation and comprehensive insights into the target population.

Data collection

Data will be gathered using custom-designed, self-administered questionnaires tailored specifically for this research. The questionnaires will comprise two main sections:

Results

This (Table 1) provides a clear overview of the findings from the study among GNM nursing students revealing several noteworthy trends. Most students were from the 3rd year (39.19%), followed closely by the 2nd year (31.76%) and the 1st year (29.05%), indicating a balanced representation

across academic levels. The majority, 58.73%, indicated that their monthly family income falls within the range of INR 25,000-50,000. With significant percentages from urban areas (66.89%). Regarding smartphone usage, a majority used their phones for less than 3 hours daily (54.05%), primarily for social networking and calls (100%), with many also using them for entertainment (81.08%) and web surfing (63.51%). Health-wise, most students reported no issues (90.54%), while a small percentage noted health problems (9.46%). In terms of smartphone addiction, a majority did not perceive themselves as addicts (61.49%), though 13.51% identified as such and 25% were unsure. These findings underscore the diverse usage patterns

Table 1. Presents the distribution of personal variables among the 50 students, showing both frequencies and percentages.

Variable		Frequency (N)	Percentage (%)
Year of Study	3rd year	19	39.19
	2nd year	16	31.76
	1st year	14	29.05
Monthly Family Income (INR)	INR 25000-50000	29	58.73
	INR 10000-25000	10	19.59
	>INR 50000	7	14.20
	<INR 10000	3	7.43
Area of Residence	Urban	33	66.89
	Rural	17	33.11
Duration of Smartphone Use (hours per day)	<3 hours	27	54.05
	3-6 hours	20	39.87
	>6 hours	3	6.08
Primary Uses of Smartphone	Social Networking	50	100
	Phone Calls	50	100
	Entertainment	41	81.08
	Web Surfing	32	63.51
Health Status	No Health Problem	45	90.54
	Health Problem	5	9.46
Self-evaluation of Smartphone Addiction	Non-addict	31	61.49
	Addict	7	13.51
	Uncertain	12	25.00

Table 2. Illustrates the frequency, percentage distribution, mean, standard deviation and range of smartphone addiction levels among 50 nursing students.

Levels of Perception	Range of Scores	Frequency (f)	Percentage (%)	Mean ± SD	Range Minimum	Range Maximum
Mild	19 to 44	19	37.84%	49.13 ± 10.76	25	82
Moderate	45 to 69	29	57.43%	-	-	-
Severe	70 to 95	2	4.73%	-	-	-

and perceptions of smartphone use among GNM students, highlighting areas for potential educational and health interventions (Table 2).

The findings from the Table indicate that among the nursing students surveyed (N=50), smartphone addiction levels were predominantly moderate, with 57.43% of students falling into this category. A notable 37.84% exhibited mild addiction, while a smaller proportion, 4.73%, showed severe addiction tendencies. The mean smartphone addiction score was found to be 49.13 (± 10.76), with scores spanning from 25 to 82. This indicates that most students exhibit moderate levels of smartphone addiction, highlighting a considerable prevalence of smartphone dependency among nursing students at the institution surveyed. The variability in scores reflects differing degrees of reliance on smartphones, highlighting the need for further research and interventions to address this issue effectively. Item-wise ranking of scores of Smartphone addiction among students N=50

The (Table 3) summarizes the results concerning the health effects of smartphone addiction observed in a group of 50 nursing students. Scores ranged from 20 to 45, with an average score of 28.05 and a standard deviation of ± 4.67. These scores indicate diverse levels of health impacts related to smartphone addiction, with higher scores indicating more pronounced consequences. The findings underscore the substantial impact of smartphone use on nursing students' health, emphasizing the importance of interventions and educational initiatives to minimize these effects and encourage healthier technology habits among students.

According to the findings from the (Table 4), the primary health effects of smartphone addiction among 50 nursing students include insufficient sleep, diminished concentration, headaches and mental fatigue. These issues are prevalent, indicating a notable link between smartphone addiction and disturbances in sleep patterns, decreased ability to concentrate, frequent

Table 3. Displays the mean, range and standard deviation of the health impacts of smartphone addiction among a sample of 50 students.

Sample Size (N)	Range	Minimum	Maximum	Mean	Standard Deviation
50	25	20	45	28.05	± 4.67

Table 4. Presents the ranking of health impact scores item by item among a group of 50 students.

S. No.	Items	Mean	Ranking
1	Blurred vision	1.35	10
2	Watery eyes	1.49	5
3	Dryness in eye	1.26	14
4	Itching and burning sensation	1.49	5
5	Eye pain	1.55	6
6	Headache	1.58	7
7	Neck pain	1.32	8
8	Back pain	1.26	14
9	Pain in wrist	1.27	13
10	Difficulty in falling asleep	1.47	11
11	Restlessness	1.47	11
12	Irritation	1.39	13
13	Aggressiveness	1.26	14
14	Ringing sensation in the ear	1.23	15
15	Regret/guilt	1.39	13
16	Anxiety	1.33	17
17	Stress	1.35	10
18	Tired (mental fatigue)	1.53	9
19	Poor concentration	1.64	2
20	Inadequate sleep hours	1.64	2

headaches and overall mental exhaustion. These impacts underscore critical areas where interventions and support strategies could effectively address the negative consequences of excessive smartphone usage in this group.

Based on a sample size of N=50 nursing students, this (Table 5) illustrates the relationship between smartphone addiction and different personal variables. Significant associations were observed with the duration of smartphone use ($p<0.05$) and self-assessment of smartphone addiction ($p<0.05$). However, variables like year of study, family monthly income and place of residence and health issues did not show significant associations with smartphone addiction ($p>0.05$).

Table 5. Displays the Chi-square values indicating the association between smartphone addiction and selected personal variables among a sample of 50 individuals.

S. No.	Personal Variables	Levels of Smartphone Addiction	X² (Fisher's Exact Test)	P value	Significant
1	Year of Study	A. First year — 14 (28.00%)	16 (32.00%)	2 (4.00%)	
		B. Second year — 16 (32.00%)	12 (24.00%)	3 (6.00%)	
		C. Third year — 19 (38.00%)	22 (44.00%)	2 (4.00%)	0.17
2	Family Monthly Income	A. <10000 — 2 (4.00%)	1 (2.00%)	0 (0.00%)	
		B. 10000-25000 — 7 (14.00%)	2 (4.00%)	1 (2.00%)	
		C. 25000-50000 — 29 (58.00%)	15 (30.00%)	3 (6.00%)	
		D. >50000 — 6 (12.00%)	5 (10.00%)	3 (6.00%)	0.49
3	Place of Living of Family	A. Rural — 17 (34.00%)	11 (22.00%)	3 (6.00%)	
		B. Urban — 33 (66.00%)	22 (44.00%)	4 (8.00%)	0.17
4	Duration of Smartphone Use	A. <3 hrs — 27 (54.00%)	14 (28.00%)	2 (4.00%)	
		B. 3-6 hrs — 20 (40.00%)	13 (26.00%)	3 (6.00%)	
		C. >6 hrs — 3 (6.00%)	6 (12.00%)	2 (4.00%)	*
5	Health Problems	A. Yes — 2 (4.00%)	2 (4.00%)	1 (2.00%)	
		B. No — 48 (96.00%)	31 (62.00%)	8 (16.00%)	0.17
6	Self-evaluation of Smartphone Addiction	A. Non-addiction — 31 (62.00%)	14 (28.00%)	3 (6.00%)	
		B. Addiction — 7 (14.00%)	13 (26.00%)	2 (4.00%)	
		C. Don't know — 12 (24.00%)	13 (26.00%)	3 (6.00%)	*

Major Findings

Demographics

Year of study: The majority (39.19%) were in their third year.

Family monthly income: Most (58.73%) had an income of INR 25,000-50,000.

Smartphone use

Daily usage: 54.05% used smartphones for <3 hours, 39.87% for 3-6 hours and 6.08% for >6 hours.

Usage activities: All used smartphones for calls and social networking; 81.08% for entertainment; 63.51% for web surfing.

Self-evaluation of addiction

Addiction perception: 61.49% reported non-addiction, 13.51% reported addiction and 25% were unsure.

Levels of addiction

Severity: 57.43% had moderate addiction, 37.84% mild and 4.73% severe.

Health impacts

Common issues: Included inadequate sleep, poor concentration, headaches and tiredness.

Mean health impact score: 28.05 (± 4.67) out of a range of 20-45.

Key findings

Addiction behaviors: Common behaviors included frequent smartphone checking and feeling the need to reduce usage time.

Significant associations: Duration of smartphone use and self-evaluation of addiction were significantly linked to addiction levels.

No significant association: Monthly family income and place of living did not significantly influence addiction levels.

These reframed findings summarize the main points of each heading in a clear and concise manner.

Discussion

Demographics and smartphone use

This study focused on GNM students at an institute, revealing that 39.19% of students were in their third year of study and 58.73% reported a family monthly income between INR 25,000 to 50,000 [13]. Smartphone usage patterns showed that 54.05% used their phones for less than 3 hours daily, 39.87% for 3-6 hours and 6.08% for more than 6 hours. All students used smartphones for social networking and calls, with significant engagement in entertainment (81.08%) and web surfing (63.51%) [14,15].

Levels of smartphone addiction

The study assessed smartphone addiction levels among GNM students, finding that 57.43% had moderate addiction, 37.84% had mild addiction and 4.73% exhibited severe addiction [16]. These findings underscore the prevalent dependency on smartphones among nursing students.

Health impacts

Common health issues associated with smartphone addiction include inadequate sleep hours, poor concentration, headaches and mental fatigue [17,18]. The mean health impact score was 28.05 (± 4.67), indicating moderate health disruption caused by smartphone use.

Addiction behaviors

Students exhibited typical addictive behaviors such as frequent smartphone checking without new notifications and a persistent desire to reduce usage time, despite difficulties in doing so [19-21].

Significant associations

The study identified significant associations between the duration of smartphone use and self-evaluation of addiction with addiction levels among GNM students [5]. These factors played a crucial role in determining the severity of smartphone addiction in this demographic.

Limitations and Recommendations

Subsequent research should replicate these findings on a larger scale to improve their relevance across diverse student populations. Additionally, future studies should explore the broader impacts of smartphone addiction on behavior, psychology and academic performance among nursing students and develop effective interventions to manage and mitigate these effects [10].

Conclusion

To conclude, this study underscores the widespread problem of smartphone addiction among General Nursing and Midwifery (GNM) students. A majority of students exhibited moderate levels of addiction, impacting their health and daily functioning stayed by Ashwini KM, et al. Smartphone use was pervasive, primarily for social networking and entertainment, despite associated health issues like poor sleep and reduced concentration supported by Padmanabhan T and Mittraa K. Key addictive behaviors included frequent checking and difficulty in reducing usage time. The study underscores the need for targeted interventions to promote responsible smartphone use and support student well-being. Future research sould explore broader impacts and replicate findings across diverse student populations to inform effective intervention strategies.

Acknowledgement

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Conflict of Interest

None.

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