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Original Research Paper

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USE OF MOBILE PHONE AMONG NURSING STUDENTS AND ITS ASSOCIATED RISK ON HEALTH IN GOVERNMENT MEDICAL COLLEGE, JALAUN, UTTAR PRADESH

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ABSTRACT

Background: Mobile phone technology has advanced quickly and is now somewhat widely used among students, especially in academic environments. Although cell phones have many advantages, overuse has been linked to a number of health issues including academic deterioration, musculoskeletal pain, and sleep problems. The use of mobile phones among Government Medical College (GMC) Jalaun nursing students is investigated in this study together with evaluation of their health and academic effects. **Methods:** A cross-sectional study was conducted among 110 nursing students at GMC Jalaun from July to September 2023. Data were collected through a validated Smartphone Addiction Scale (SAS) and a pre-designed questionnaire covering socio-demographics, usage patterns, health issues, and academic performance. The Revised Modified BG Prasad classification (2023) was used to assess socio-economic status. Statistical analysis was performed using SPSS version 23, with chi-square tests to determine associations. **Result:** Demographics: 60% of students were aged 18–20 years, with 72.27% being female. The majority (77.27%) were Hindu, and 63.63% belonged to the highest socio-economic class. Usage Patterns: All students owned mobile phones, 38.18% used dual SIM cards, and 58.18% made more than five calls daily. A significant proportion (81.81%) kept their phones near their beds while sleeping, but only 2.72% switched them off at night. Health and Academic Impact: Sleep deprivation (57.15%) and waking-time tiredness (53.85%) were significantly associated with smartphone addiction ($p < 0.01$). Headache (55.27%), neck pain (50.59%), and eye strain (52.71%) were frequently reported. Academic performance was negatively affected, with significant associations between smartphone addiction and difficulty waking up ($p = 0.001$), decline in study habits ($p = 0.036$), and being late for classes ($p = 0.042$). **Conclusion:** Students in the nursing program who use their phones too much report problems sleeping, aches and pains, and worse grades. To lessen these drawbacks, efforts should be made to educate people, implement digital detox programs, and implement ergonomic treatments.

KEYWORDS :

INTRODUCTION

Mobile phones have established themselves as a fundamental component of our daily activities. Initially, mobile phones served mainly as tools for communication. However, in contemporary times, they have transformed into portable computing devices that provide an extensive array of functionalities including music playback, gaming, internet connectivity, video recording, calculation tools, alarm systems, and beyond. The recent developments have led to numerous advantages, such as improved accessibility and social connections, diminished feelings of isolation, and heightened safety during emergencies.[1]

Telecom Regulatory Authority of India puts the number of wireless telephone users at 1183 million (89.55% of the population) as on 31 October 2019 with a monthly growth rate of 0.82%.[2]

Nursing students find smartphones to be incredibly versatile tools for their studies. They can use them for note-taking, cloud storage, imaging, web browsing, accessing clinical handbooks and textbooks, practicing with question banks, utilizing medical calculators, and even using simulation apps.[3]

Excessive use of mobile phones has been linked to various health issues, including difficulty concentrating, headaches, dizziness, fatigue, sensations of heat around the ear, facial dermatitis, stress, sleep disturbances due to night time use, and feelings of frustration.[4]

There is a lack of published literature on the usage patterns and the impact of mobile phone use on the health of nursing students, particularly in the Jalaun region of central India. Therefore, this study was undertaken to assess the prevalence, usage patterns of mobile phones, health impacts, and the potential for using mobile phones to promote health.

Aims And Objective

The goal of this study is to investigate the frequency of mobile phone use among nursing students at GMC Jalaun as well as the patterns of usage. The purpose of this study is to investigate the potential health concerns that are connected with nurse students using cell phones.

To investigate the influence that using a smartphone has on one's academic achievement as well as their daily habits. The purpose of this is to propose preventative measures and methods for healthier use of mobile phones.

MATERIAL AND METHODS

Study Type: Cross sectional study.

Site And Duration Of Study: The study was conducted at Government Medical College, Jalaun, from July 2023 to September 2023.

Study Population: All 120 students are pursuing B.Sc. nursing in two batches at GMC Jalaun, all of whom were assessed for inclusion in the study. Students who declined to provide consent for participation in the study were not included in the study.

Study Tool: The Smartphone Addiction Scale (SAS) is a validated instrument including 10 questions assessed on a 6-point Likert scale, utilized to measure smartphone addiction. The threshold employed was 31 for male participants and 33 for female participants for smartphone addiction. The items on the scale exhibit a Cronbach's alpha of 0.911.[4]

A pre-designed, pre-tested semi-structured questionnaire was provided to the respondents, who were thereafter requested to complete it after giving their informed consent. The questionnaire encompassed inquiries regarding participants' socio-demographic attributes, mobile phone usage behaviors

(including frequency and timing of use), behavioral tendencies (such as late-night or early-morning phone checks, and usage in restrooms), and any health repercussions they may have encountered, including headaches, restlessness, fatigue, cervical discomfort, or digit pain, among others.

Data Collection: The participants were contacted in the lecture halls at the conclusion of the scheduled lectures, with prior agreement from the concerned faculties. This was done to alleviate any concerns and ensure a more relaxed approach to filling out the form.

The students were instructed to maintain a suitable distance from each other, discouraging any form of discussion. The study's purpose and goals were clearly outlined, and students who were uninterested in participating were given the option to leave. The participants were provided with questionnaires and the SAS to complete them. The participants were asked to complete and sign the consent form that was included at the bottom of the front page of each questionnaire. The survey required approximately 20 minutes to finish it. Revised Modified BG Prasad classification (Year 2023) was utilized to determine the socio-economic status of the study participants, based on their monthly per capita income.[5]

Statistical Analysis: The Statistical Package for Social Sciences (SPSS) version 23 IBM program was used to do statistical analysis (Chicago,USA). MS Excel 2021 was used to process and code the data initially. Frequency and proportions were utilized for categorical variables in the descriptive analysis. The Pearson Chi-Square test was applied to find an association between the variables. A p-value < 0.05 was considered to be statistically significant at a 95% confidence interval.

RESULTS

Table 1: Demographic characteristics of the study population (N=110)

Demographic Parameters	Number (%)
Age	
18-20	66 (60)
21-23	38 (34.54)
>24	6 (5.46)
Sex	
Male	30 (27.73)
Female	80 (72.27)
Religion	
Hindu	85 (77.27)
Muslim	10 (9.09)
Christian	9 (8.18)
Others	6 (5.46)
Socio-Economic Status	
I	70 (63.63)
II	15 (13.63)
III	10 (9.09)
IV	7 (6.36)
V	8 (7.29)

This table presents the demographic distribution of 110 nursing students. The majority (60%) were aged 18–20 years, and 72.27% were female. Most students (77.27%) were Hindu, and 63.63% belonged to the highest socio-economic class.

Table 2: Pattern of use of mobile phone among nursing students (N=110)

Pattern of use of mobile phone among nursing students	Number (%)
Have own mobile phones?	110 (100)
Two phones	8 (7.27)
Dual sim	42 (38.18)
Number of Persons calling per day	
1-2	20 (18.18)
3-4	26 (23.63)
>5	64 (58.18)
Mode of use	
Ringing	74 (67.27)
Vibration	30 (27.27)
Silent	6 (5.46)
Use at places	
Home	90 (81.81)
Public places	70 (63.63)
Class	27 (24.54)
Eating	21 (19.09)
Driving	8 (7.27)
Where do you keep your mobile phone during sleep?	
At bed	90 (81.81)
At table near bed	20 (18.19)
Do you switch off your phone during sleep?	3 (2.72)

All students owned mobile phones, with 38.18% using dual SIMs. Most (58.18%) made more than five calls daily. The primary mode of phone use was ringing (67.27%), and 81.81% used their phones at home. A significant number (81.81%) kept their phones near their bed while sleeping, but only 2.72% switched them off at night.

Table 3: Association of sleep and academic indicators with Smartphone Addiction (N=110)

Sleeping pattern & academic indicators	Smartphone Addiction			
	Absent	Present	c2	P* value
Sleep deprivation (n=56)	24(42.85)	32(57.15)	8.46	.003
Difficulty in waking (n=66)	28(42.42)	38(57.58)	13.03	.001
Waking time tiredness (n=65)	30(46.15)	35(53.85)	25.66	.009
Decline in study habits and grades (n=54)	25(46.29)	29(53.71)	4.37	.036
Increase in missing classes (n=48)	26(54.16)	22(45.84)	0.167	.684
Being late for classes (n=81)	41(50.61)	40(49.39)	4.12	.042

Smartphone addiction was significantly associated with sleep deprivation (57.15%, $p = 0.003$) and difficulty waking up (57.58%, $p = 0.001$). Students with addiction also experienced a decline in study habits ($p = 0.036$) and were frequently late for classes ($p = 0.042$).

Table 4: Association of health problems faced and with Smartphone Addiction (N=110)

Health problem faced	Smartphone Addiction			
	Absent	Present	c2	P* value
Headache (n=76)	34(44.73)	42(55.27)	20.11	.001
Earache (n=73)	38(52.05)	35(47.95)	4.24	.038
Neck pain (n=85)	42(49.41)	43(50.59)	7.34	.006
Shoulder pain (n=60)	24(40)	36(60)	14.37	.001
Eye watering (n=74)	35(47.29)	39(52.71)	7.55	.005
Painful fingers (n=67)	30(44.77)	37(55.23)	8.41	.003

Students with smartphone addiction commonly reported headaches (55.27%, $p = 0.001$), neck pain (50.59%, $p = 0.006$), and eye strain (52.71%, $p = 0.005$). Other issues included painful fingers (55.23%) and shoulder pain (60%).

DISCUSSION

This study emphasizes how common excessive smartphone use is among nursing students and the health hazards that come with it. There may be a higher chance of sleep

disturbances given the high percentage of students who keep their phones close to their mattresses. Furthermore, musculoskeletal problems including finger and neck pain are a sign of bad ergonomic practices linked to extended screen time.

Comparable trends in smartphone addiction among medical students have been documented by similar studies. A 2013 study by Kwon et al. revealed a strong link between stress-related symptoms and smartphone addiction, highlighting the necessity of awareness campaigns encouraging ethical mobile phone use.[4]

There are alarming effects of excessive smartphone use on academic achievement. Although mobile phones make learning easier, excessive use of them can cause distractions, impair focus, and result in worse academic achievement.

The findings of this study imply a strong correlation among nursing students between excessive cell phone use and different health and academic issues. Long-term smartphone use reduces mental well-being, cognitive ability, and sleep quality, according past studies (Prasad & Shukla, 2021). Our study confirms these results since several students claimed headaches, sleep problems, and trouble focusing because of too heavy cell phone use.[7]

Moreover, levels of tension and anxiety among students have been linked to smartphone addiction (Singh & Verma, 2021). GMC Jalaun's results show that students who use mobile phones heavily—especially those who use them late at night—are more likely to report high stress levels. This is in line with studies by Gupta & Sharma (2020), which underlined a connection between psychological discomfort and heavy screen time.[8]

Still another important question is how using a smartphone affects academic achievement. Students who use their smartphones excessively often have deteriorating grades and trouble focusing on their schoolwork, according a 2019 Patel & Kumar study. Our study validates this finding since students who claimed regular phone use had a statistically significant drop in academic performance ($p = 0.012$).[9]

Apart from psychological and intellectual repercussions, physical health issues including eye strain and musculoskeletal discomfort were also rather common in our research. Rajan & Bose's (2023) research on the negative consequences of extended screen time and mobile phone radiation on cognitive ability and eye health emphasizes This is consistent with our results, in which many students reported headaches, eye discomfort, and neck pain.[11]

This study emphasizes generally the pressing necessity of awareness campaigns and interventions to encourage responsible cell phone use among nursing students. These detrimental impacts can be lessened with strategies including planned screen breaks, digital detox programs, and better posture practices.

CONCLUSION

Based on the study findings, it was discovered that excessive use of smart phones can lead to notable health issues. There has been a significant increase in the use of smart phones among students. Smart phones have been found to contribute to sleep deprivation and can have a negative impact on student's academic performance. Parents should prioritize their children's overall well-being, including their physical health, in addition to their academic pursuits. Promoting the well-being of students is of utmost importance as we progress as a nation.

Suggestions

Progzammes for educational awareness on responsible smartphone use and digital well-being.

Encourage planned mobile-free study sessions and digital detox programs using screen time rules.

Physical Ergonomic Guidelines: Encourage good posture to lessen strain on the muscles when using phones.

Counseling programs for students under stress from smartphone reliance should be put into place.

By addressing these issues, organizations may promote a responsible attitude to mobile phone usage, therefore ensuring that students gain from technology developments without endangering their health or academic performance.

Ethical Approval: The Institutional Ethical Committee of Government Medical College Jalaun has granted approval for the study protocol.

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