



SMARTPHONE ADDICTION AMONG MEDICAL COLLEGE STUDENTS IN SANGLI CITY, MAHARASHTRA

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ABSTRACT **Background:** Mobile phone addiction is increasingly recognised as a form of non-substance behavioural addiction, and medical students are particularly vulnerable given their long working hours, academic stress and constant need for connectivity. **Objective:** To assess the pattern of smartphone use and to determine the burden of mobile phone/smartphone addiction among undergraduate medical students in Sangli city, Maharashtra. **Materials and Methods:** A cross-sectional study was conducted among medical students of a government medical college in Sangli city (predominantly first-year MBBS students, N = 227) from January-February 2023, using a pre-tested, pre-structured questionnaire covering sociodemographic details and smartphone use patterns, along with the Smartphone Addiction Scale-Short Version (SAS-SV) and the Mobile Phone Addiction Scale (MPAS). Results: Of the 227 students studied, 61.7% were male. The SAS-SV showed good internal consistency (Cronbach's alpha = 0.83); 56.9% of students were classified as being at high risk of smartphone addiction, significantly more often among males (65.0%) than females (42.5%) (p = 0.002). On the MPAS, 48.0% of students showed a higher-severity addictive-use pattern, and MPAS and SAS-SV scores were strongly correlated (r = 0.71, p < 0.001). Nearly half (48.5%) were willing to switch to a calls-only phone, and a majority (67.9%) reported actively trying to limit their own mobile use. Conclusion: A high burden of smartphone addiction-like behaviour was observed among medical students, more so in male students, highlighting the need for awareness programmes and behavioural interventions targeted at this population.

KEYWORDS : Smartphone Addiction, Medical Students, SAS-SV, MPAS, Cross-Sectional Study

INTRODUCTION

The World Health Organization has classified mobile phone addiction as a form of non-substance addiction.¹ Browsing, chat, video streaming, social networking, and image-sharing apps are the most engaging activities and account for more than 50% of the total time spent on smartphones.² There is little control over its use to the point where it becomes harmful to quality of life, and increased mobile phone usage among undergraduate medical students causes a detrimental effect on their health.

Smartphone addiction is a growing concern among medical students, as excessive usage can lead to social and psychological disturbances. Studies have shown that the prevalence of smartphone addiction among medical students ranges from 24.3% to 52.8%. The most common smartphone functions reported by medical students are social media usage, watching videos, and phone calls. Students who use smartphones for 3-4 hours/day and >5 hours/day are 3.2 and 5.7 times more likely to be addicted to smartphones compared to those who use smartphones for an average of 11-60 minutes/day. Smartphone addiction has also been shown to significantly affect subhealth and insomnia, and is associated with poor sleep quality, anxiety, depression, and neuroticism.

Objective of study: To identify the reasons for smartphone overuse and smartphone addiction, and to assess its effect on daily life among undergraduate medical students of a Government Medical College in Sangli city, Maharashtra.

METHODOLOGY

Study Design: Cross-sectional study. Study site: Government Medical College, Miraj (Sangli city). Study duration: One month, from January 2023 to February 2023. Sample size: All medical students currently studying in first-year MBBS were selected. Sample collection: Data were collected regarding sociodemographic information and knowledge, attitude, and practices regarding mobile phone use, using a prestructured questionnaire administered by interview method. To assess addiction, the Smartphone Addiction Scale-Short Version (SAS-SV) and the Mobile Phone Addiction Scale (MPAS) were used as tools; data were entered, compiled, and analysed using MS Excel.

Inclusion Criteria: All first-year MBBS undergraduate students willing to participate, who gave consent and used a smartphone, were included.

Exclusion Criteria: Those who did not have smartphones, could not be contacted after three attempts, or did not give consent were excluded.

The number of questions included in each domain was as follows:

Domain name	No. of Qs
Compromised quality of life	8
Impaired interpersonal relations	6
Reduced concentration	4
Dependence	13

RESULTS

A total of 227 undergraduate medical students completed the questionnaire. Of these, 162 (71.4%) belonged to the 2022 admission batch (the intended first-year cohort), while the remaining 65 (28.6%) were students from other batches who also participated – a deviation from the stated inclusion criterion, noted here as a limitation. Respondent age itself was not captured in the dataset and could not be analysed.

Sociodemographic Profile

The study population comprised 140 (61.7%) male and 87 (38.3%) female students. Annual family income was <Rs. 1,00,000 for 71 (31.3%) students, Rs. 1-3,00,000 for 46 (20.3%), Rs. 6-10,00,000 for 87 (38.3%), and >Rs. 10,00,000 for 23 (10.1%). Father's occupation was most often a government job (39.6%) or private job (23.3%); mother's occupation was housewife for the large majority (75.3%). Most students (59.9%) had one sibling. The mean age at first mobile phone use was 15.4 ± 3.2 years; 59.0% first used a mobile phone after age 15. The commonest reported purpose of current smartphone use was educational (89.9%), followed by entertainment (81.1%), social media (74.4%), online shopping (53.3%), online food ordering (48.5%), and gaming (33.0%) (Table 1).

Table 1: Sociodemographic Profile (N = 227)

Variable	No. (%)
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Male	140 (61.7)
Female	87 (38.3)
Income <1L	71 (31.3)
Income 1-3L	46 (20.3)
Income 6-10L	87 (38.3)
Income >10L	23 (10.1)
Siblings-0	13 (5.7)
Siblings-1	136 (59.9)
Siblings-2	54 (23.8)
Siblings ≥3	24 (10.6)
1st mobile use ≤10y	20 (8.8)
1st mobile use 11-15y	73 (32.2)
1st mobile use >15y	134 (59.0)
Batch 2022 (1st yr)	162 (71.4)
Other batches	65 (28.6)

Smartphone Addiction Scale-Short Version (SAS-SV)

Responses to the 10-item SAS-SV showed good internal consistency (Cronbach's $\alpha = 0.83$). Items in this dataset were recorded on a 5-point scale rather than the original 6-point scale; raw scores (range 10-50) were linearly rescaled to the 10-60 metric before applying Kwon et al.'s validated cut-offs (male ≥ 31 , female ≥ 33). Mean SAS-SV score was 28.3 ± 6.7 (median 28, IQR 24-32). Applying gender-specific cut-offs, 128/225 students (56.9%) were at high risk of smartphone addiction – significantly higher in males (65.0%) than females (42.5%) (χ^2 test, $p = 0.002$). No significant association was found with family income ($p = 0.61$) or age at first mobile use ($p = 0.19$).

The most endorsed item was “using my smartphone longer than I had intended” (62.6%), followed by “missing planned work due to smartphone use” (57.3%). The least endorsed items were “will never give up smartphone even if life is affected” and “feeling impatient/fretful when not holding mobile” (16.7% each) (Table 2).

Table 2: SAS-SV item responses (N = 227)

SAS-SV item	%
Using smartphone longer than intended	62.6
Missing planned work due to use	57.3
Constantly checking to not miss conversations	40.1
Hard time concentrating due to use	33.0
People say I use smartphone too much	31.7
Pain in wrists/neck while using	26.4
Won't stand not having a smartphone	22.5
Smartphone in mind even when not using	21.6
Never give up smartphone despite impact	16.7
Impatient/fretful without mobile	16.7

Mobile Phone Addiction Scale (MPAS)

For the 20-item MPAS, responses were recorded as Yes/Sometimes/No/Never rather than a 6-point Likert scale, with some multi-selected entries; items were re-coded by severity (Yes=2, Sometimes=1, No/Never=0, most severe option taken) giving a composite score (range 0-40) – a deviation from the original scoring method. Mean MPAS score was 13.9 ± 8.4 (median 12, IQR 8-19). Using a median split, 109/227 (48.0%) fell into the higher-severity group. MPAS and SAS-SV scores correlated strongly (Pearson $r = 0.71$, $p < 0.001$). No significant association was found with sex ($p = 0.24$), income ($p = 0.17$), or age at first mobile use ($p = 0.14$), though males trended higher (median 13 vs 11, $p = 0.08$).

The most endorsed item was “always thinking you should shorten mobile usage time” (61.2%); the least endorsed was “compulsively responding to calls/messages while driving/crossing road” (7.0%) (Table 3).

Table 3: MPAS Item Endorsement (N = 227)

MPAS item	%
Should shorten mobile usage time	61.2
Check phone right after waking	48.0
Check notifications as soon as received	37.4
Using mobile longer than intended	36.6
Checking so as not to miss conversations	23.8
Cannot imagine living without mobile	22.9
Checking while resting/light sleep	19.4
Hard time concentrating due to use	18.5
Tired/lack sleep due to excessive use	17.2
Impulsive checking during class/study	17.2

Prefer smartphone buddies to real friends	16.3
Lightheaded/blurred vision from use	15.4
People complain of inattention due to use	15.4
Checking phone during group participation	14.5
Pain in wrists/neck from use	14.1
Checking phone for msgs/games in class	11.0
Impatient/fretful without smartphone	11.0
Annoyed/shout if asked to reduce use	10.6
Stress when not using mobile	10.6
Responding while driving/crossing road	7.0

Impact on Daily Life

Nearly half of the students (48.0%) were willing to switch to a mobile phone used only for calling; 67.9% reported that they try to stop themselves from using their mobile phone; 61.5% said they encourage friends to reduce mobile use; and 50.2% felt that their smartphone use had reduced their offline reading.

CONCLUSIONS

A substantial proportion of undergraduate medical students in this study showed patterns of high-risk smartphone use, with over half classified as high risk on the SAS-SV and around 48% showing addiction-like behaviour on the MPAS. Male students appeared to be at higher risk than female students. These findings, along with the high proportion of students who reported wanting to reduce their own or their friends' mobile use, suggest a need for targeted awareness campaigns and behavioural interventions among medical students. Further research using validated scoring formats and larger, multi-centric samples is recommended to examine the effect of smartphone overuse on physical health and emotional wellbeing.

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