

Digital Addiction and its Effect on Social Interaction among Physiotherapy College Students

Dr. Sanat Kulkarni¹ and Rinku R Agarwal²

Assistant professor, TMV's Jayantrao Tilak College of Physiotherapy, Pune, India¹

Intern, TMV's Jayantrao Tilak College of Physiotherapy, Pune, India²

Abstract: Background:

Digital addiction characterised by excessive dependences on smartphones, gaming and social media, has emerged as a growing concern especially among young adults. Physiotherapy students who are expected to develop strong interpersonal relationship and communication skills may be particularly affected by negative social and academics consequences of prolonged digital use.

Methods:

A cross sectional, survey based study was conducted among 135 physiotherapy students aged 18-25 years from tilak Maharashtra Vidyapeeth college of physiotherapy. Patients were selected using a simple random sampling method. Data were collected using smartphone addiction scale. Statistical analysis was performed by using SPSS version 27.0 applying descriptive method to assess relationship between addiction level and social interaction.

Results: A considerable proportional of students demonstrated moderate to high level of digital addiction. Students with higher addiction scores reported poor sleep quality, increased screen time, and reduced real world connections. A negative correlation was observed between smartphone addiction and interpersonal communication. Females students scored higher on the addiction scale and participated reporting excessive use of phones and exhibited lower academic performances and social participation.

Conclusion:

Digital addiction is prevalent among physiotherapy students and that impacts social interaction, communication, and overall performances. The study emphasizes the importance of promoting digital balances through awareness campaigns counselling session and structured time management programs. Encouraging offline activities and peer interaction can help restore social engagement and support for development of physiotherapy students.

Keywords: Digital addiction, Social interaction, Smartphone Addiction Scale

I. INTRODUCTION

The world health organization [WHO] defined addiction as the ceaseless utilization of something for alleviation or incitement, which frequently causes longing when it is missing.⁽¹⁾ According to the WHO, uncontrolled use of electronic devices has reached the magnitude of public health problem in a growing numbers of countries.⁽¹⁾ Digital addiction is a umbrella term incorporating subtype of the long standing problem of internet addiction, the highly discussed issue of game addiction and the emerging topic on social media addiction or other digital media addiction.⁽²⁾

Digital addiction does not necessarily involve internet use, and thus it includes not only addiction to online activities but also addiction to offline activities using digital devices such as offline gaming.² Digital addiction has been global concern with college students becoming increasingly vulnerable to it.³ Social media platform have become a common means of communication

Digital addiction refers to a harmful dependences on digital media and devices such as smartphone, videos games, and computers.³ Internet is not new anymore for most of the people of the world.⁴ Even children, teenagers and the elderly are actively using the internet.⁴ Many teenagers today tends to play social media without realizing that there will be no more social interaction between them.⁵ Adolescents who have recently become hyperactive in cyberspace on social



media tend to show off often their daily lifestyle that does not want to look outdated.⁽⁵⁾ The time spent sitting and viewing a screen has been linked to mental health effect such anxiety and depression with this added risk, lack of sleep play a major role in a healthy mindset, but without proper rest, mental health can degrade at higher risk.⁽⁶⁾

Excessive mobile phone use has been linked to sleeping problem in cross-sectional studies in adult.⁽⁶⁾ The smartphone addiction can have several ill effects on health and safety of an individual as it can cause physical [neck and wrist pain and accidents] as well as behavioral problem {depression}.⁽⁷⁾ Users have become so dependent on this devices that they feel inadequate and useless without it and this preoccupation with the smartphone makes them ignore other important work. Internet addiction is a non-chemical behavioral addiction which involve human machine [computer -internet] interaction.⁽⁸⁾

Symptoms of internet addiction includes hides behavior from others, may display a loss of interest in other activities and relationship, neglect work, lack of control and neglect social life.⁽⁸⁾ According to Hiier et al it will be important to make the necessary information and warning for young individuals and to examine the factors related to the effect in future studies as it is seen that a significant proportion of the students have social media addiction risk.⁽⁹⁾ The atul mukand found out the result that academic performances is significantly negatively correlated with entertainment and with internet addiction.¹⁰ Internet addiction is found to be significantly negatively correlated with socialization.¹⁰ The phenomenon that occurs today shows that adolescents who have addicted to the internet show the prevalences of ignoring the quality of social interaction.⁽¹¹⁾ Interpersonal interaction plays a critical role in physical and mental health of adolescent.¹² Improper use of addiction to electronics may affect the interpersonal interaction of adolescents [ie parent child interaction].¹² Due to excessive use of internet the social life and social interaction are impacted.¹³ Using the internet for social interaction and mood regulation, poor self-control is also a predisposing factor for compulsive internet use.

II. METHODOLOGY

- STUDY DESIGN: Cross Sectional study.
- STUDY TYPE: Survey based.
- TARGET POPULATION: Physiotherapy students between the age of 18 to 25.
- SAMPLE SIZE: 135 students.
- SAMPLING METHOD: Simple random sampling.
- SAMPLING DURATION: 6 months.
- STUDY SETTING: College Of Physiotherapy.

2.1 MATERIALS

- Pen
- Paper
- Consent Form
- Smartphone addiction scale.

2.2 INCLUSION CRITERIA

- Physiotherapy Students age 18-25 years both male and female
- Students who gave consent to the study were recruited
- Students sleeping 4 hours or less at night due to smartphone used (social media, gaming)
- Students who are using smartphone for more than 1 year¹.

2.3 EXCLUSION CRITERIA:

- The study participants who are blind and severely ill were excluded from the study.
- Physiotherapy students not giving consent form



- Students having pre-existent psychological illness and those facing an upcoming exam during the study period [prefinal and final] were excluded from the study.

2.4 OUTCOME MEASURES⁽¹⁰⁾

Smartphone Addiction scale

- The Smartphone Addiction scale (SAS) is a widely used screening tool designed to identify digital addiction in students.
- For each item participants expressed their opinion on 6-point scale ranging from 1(strongly disagree) to 6(strongly agree).
- It identifies the different range for males and females.
- Males are addicted to scores higher than 31 and females are addicted to scores higher than 33.

III. LITERATURE REVIEW

A study done by Shi-Qiu Meng et al. in the year 2021, titled “Global Prevalence of Digital Addiction in the General Population: A Systematic Review and Meta Analysis.” The aim of the study was to determine the global prevalence of digital addiction and to analyze its variation across different populations. This systematic review and meta analysis compiled data from multiple studies to assess the extent of digital addiction worldwide. The study found that digital addiction is a growing global concern, with prevalence rates varying significantly by region, age group, and type of digital engagement. It concluded that increasing awareness and preventive measures are essential to reduce the rising trend of digital addiction, and highlighted the need for global policies and educational interventions to promote healthy digital use.

- A study done by Han S-J. et al. (MDPI) in the year 2023 titled “Digital Addiction and Related Factors Among College Students.” The aim of the study was to examine digital addiction among college students and identify its contributing factors. The study used a survey-based approach to assess the role of time management in digital addiction. It concluded that poor time management was a key contributing factor to digital addiction. The study emphasized that interventions should focus on improving time management skills to prevent digital addiction and suggested that educational and counseling initiatives can help address this issue among university students.

A study done by Yosef Zeneb and Kunuya Kunno et al. in the year 2021, published in BMC Psychology, titled “Prevalence and Associated Factors of Internet Addiction Among Undergraduate University Students.” The aim of the study was to determine the prevalence of internet addiction and its associated factors among undergraduate students. The study found that excessive internet use, mental distress, and online gaming were significant contributors to internet addiction. It concluded that awareness campaigns are essential in educating young adults about the risks and symptoms of internet addiction, thereby helping to reduce its impact.

A study done by Anna Yohanna et. al in the year 2020, published in the Indonesian Journal of Social Sciences, titled “The Influence of Social Media on Social Interaction Among Students.” The aim of the study was to explore how social media affects students’ social interactions. The study revealed that social media has both positive and negative impacts on social behavior. However, it also found that excessive social media use can hinder face-to-face interactions, as students tend to become absorbed in online activities. The study recommended that students develop a balanced approach by managing their social media use to prioritize real-world interactions over virtual ones.

A study done by Atul Mukand in the year 2023, published in the Indian Journal of Psychology, titled “A Study on Internet/Social Media Addiction and Academic Performance Among College Students.” The aim of the study was to examine the impact of internet and social media addiction on academic performance and socialization among college students. The results showed that internet addiction negatively affects both academic performance and social interaction. The study concluded that to address this issue, educational institutions should promote time management and digital literacy, and encourage students to regulate their screen time to maintain a healthy academic and social balance.



A study done by Rahmah Ayuningtyas et al. in the year 2022, published in the International Journal of Research, titled "The Effect of Loneliness and Depression on Internet Addiction in Students." The aim of the study was to analyze how loneliness and depression influence internet addiction among students. The study found that excessive time spent online reduces study time, leading to delays, incomplete assignments, and poor academic performance. Students with internet addiction also struggled with face-to-face communication, empathy, and conflict resolution. The study concluded that promoting a balanced lifestyle that includes offline activities, hobbies, and real-world social interactions can help mitigate internet addiction. It also recommended establishing support systems within educational institutions, such as peer support groups and mental health services, to provide a safety net for affected students. •

A study done by Akulwar-Tajane I et al in the year 2025 titled "Rethinking Screen Time during COVID-19: Impact on Psychological Well-Being in Physiotherapy Students". The aim of the study was to assess the relationship between screen time and psychological well-being among physiotherapy students during the COVID-19 pandemic. Self-administered questionnaires, including validated psychological assessment tools, were used to collect data on screen usage patterns, anxiety, stress, and sleep quality. The study concluded that excessive screen time was significantly associated with higher stress levels, poorer sleep quality, and decreased psychological well-being. The authors emphasized the importance of promoting digital balance and mental health awareness among physiotherapy students to mitigate the adverse psychological effects of prolonged screen exposure during and beyond pandemic conditions.

• A study done by Hürer C et al in the year 2025 titled "Determining the Physical Activity Level and Social Media Addiction of Physiotherapy and Rehabilitation Students Who Receive Online Education During the COVID-19 Pandemic." The aim of the study was to determine the relationship between physical activity levels and social media addiction among physiotherapy and rehabilitation students receiving online education during the COVID-19 pandemic. Standardized questionnaires were used to assess participants' physical activity levels and social media usage patterns. The study concluded that students with higher social media addiction scores tended to have lower levels of physical activity. The authors highlighted the need for interventions promoting balanced social media use and encouraging physical activity among students engaged in online learning environments. •

A study done by Zenebe Y et al in the year 2025 titled "Prevalence and Associated Factors of Internet Addiction Among Undergraduate University Students in Ethiopia: A Community University-Based Cross-Sectional Study." The aim of the study was to determine the prevalence of internet addiction and identify associated factors among undergraduate university students in Ethiopia. A community-based cross-sectional design was used, and data were collected using standardized and validated internet addiction questionnaires. The study concluded that a considerable proportion of students exhibited signs of internet addiction, which was significantly associated with factors such as male gender, urban residence, and excessive time spent online. The authors emphasized the need for awareness programs and preventive strategies to reduce internet addiction and promote healthy online habits among university students.

A study done by Han S-J et al in the year 2025 titled "Digital Addiction and Related Factors Among College Students." The aim of the study was to investigate the prevalence of digital addiction and identify factors associated with its development among college students. Standardized self-administered questionnaires were used to assess patterns of digital device usage, addiction tendencies, and psychosocial factors. The study concluded that digital addiction was moderately prevalent among college students and was significantly associated with increased screen time, poor sleep quality, and higher stress levels. The authors suggested that educational interventions and counseling programs be implemented to promote digital well-being and healthier technology use among students. •

A study done by Kim J-H et al in the year 2025 titled "Online Digital Game Addiction: How Does Social Relationship Impact Game Addiction." The aim of the study was to examine the relationship between social interactions and the development of online digital game addiction among college students. Standardized self-administered questionnaires were used to evaluate gaming behavior, social relationship quality, and psychological well-being. The study concluded that individuals with weaker real-life social connections and higher levels of social isolation exhibited a greater tendency toward online game addiction. Conversely, strong offline social support and positive peer relationships were found to reduce the risk of addiction. The authors suggested that fostering healthy interpersonal relationships and promoting balanced online-offline engagement could help mitigate the impact of social factors on gaming addiction. •



A study done by Adina Brîndușa Baciuc et al in the year 2025 titled “Medical and Social Consequences of Digital Addiction.” The aim of the study was to analyse the physical, psychological, and social effects associated with excessive digital device usage. Data were collected through structured questionnaires and observational assessments focusing on health outcomes, behavioural changes, and social interactions. The study concluded that digital addiction has significant medical and social repercussions, including sleep disturbances, visual strain, musculoskeletal issues, decreased academic performance, and social withdrawal. The author emphasized the need for awareness programs, digital literacy education, and preventive strategies to promote healthier technology habits and minimize the adverse effects of digital overuse.

IV. PROCEDURE

- Firstly, permission will be taken from institutional ethic committee [IEC] of TILAK MAHARASHTRA VIDYAPEETH, department of physiotherapy and Ethical committee of Tilak Maharashtra Vidyapeeth - College of physiotherapy
- The aims and objective of the research will be explained to the participants and those who fulfilling the inclusion exclusion criteria, will be included in study.
- The consent form will be filled for those who are willing to participate for study.
- A design google form of smart phone addiction scale will be distributed among physiotherapy student BPT 1st, 2nd, 3rd & 4th years & also MPT students.
- The whole study will be completely during the period of 6 months from the expectances of research proposal.

1. Recruitment of Participants:

Population: The study was conducted on physiotherapy college students .

Sample Size: 135.

2. Administering the EPDS:

- Timing: The Smartphone addiction scale is often administered during college hours or break time or after the college .The duration of study was 6 months.
- The smartphone is a questionnaire for each item participants expressed their opinion on 6-point scale ranging from 1(strongly disagree) to 6(strongly agree).

Scoring: Males are addicted to scores higher than 31 and females are addicted to scores higher than 33.

3. Data Collection:

- Collecting Responses: After administering the Smartphone addiction scale , responses was collected, and total scores were calculated for each participant.
- Categorizing Scores: Based on the Smartphone addiction scale cut-off scores (male 30 < 31) (female 32 < 33)

V. DATA ANALYSIS AND INTERPRETATION

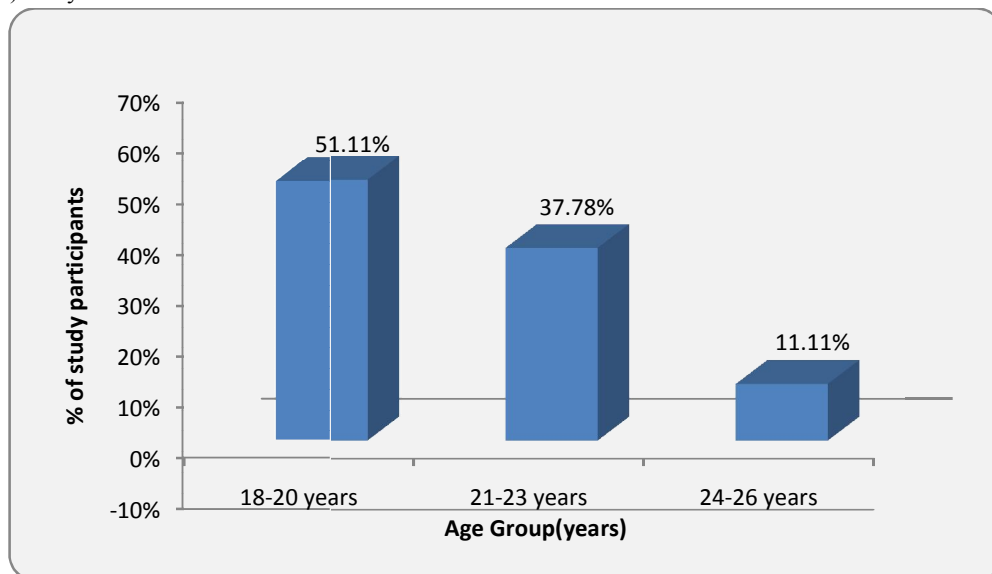
Statistical analysis was done by using descriptive statistics and software used in the analysis were SPSS 27.0 version and Excel sheet for data entry.

Table 1: Distribution of study participants according to their age in years

Age Group(yrs)	No of study participants	Percentage
18-20 years	69	51.11
21-23 years	51	37.78
24-26 years	15	11.11
Total	135	100
Mean±SD	20.74±2.06(18-25 years)	



Graph 1: Distribution of study participants according to their age in years using descriptive (frequency and percentage) analysis

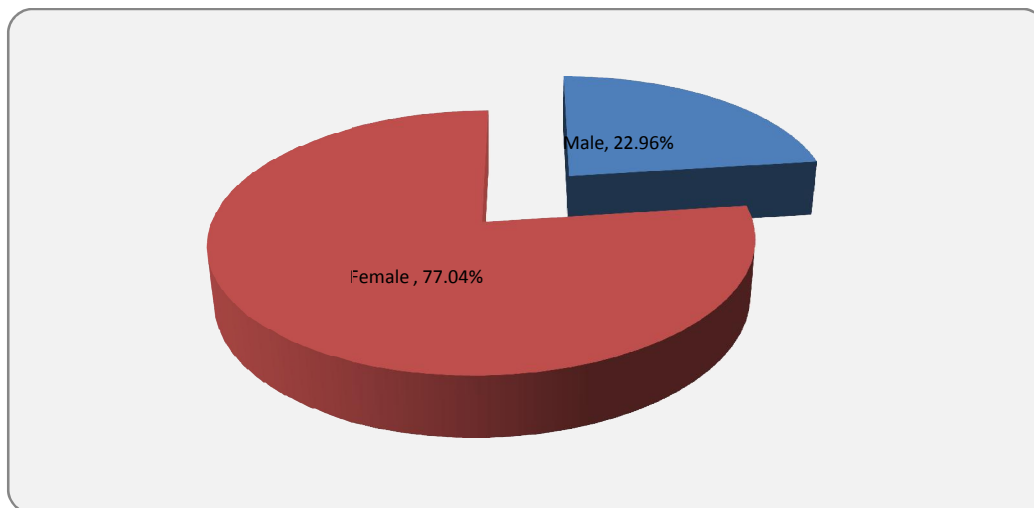


Interpretation: Using descriptive analysis 51.11% of the study participants were in the age group of 18-20 years, 37.78% of them were in the age group of 21-23 years and 11.11% of study participants were in the age group of 24-26 years.

Table 2: Distribution of study participants according to their Gender

Gender	No of study participants	Percentage
Male	31	22.96
Female	104	77.04
Total	135	100

Graph 2:



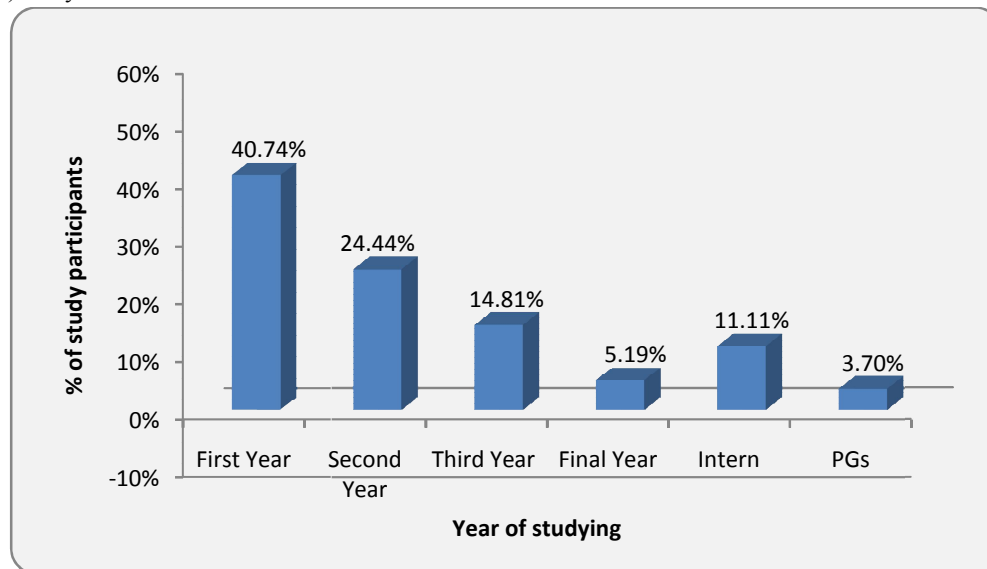
Interpretation 22.96% of the study participants were males. 77.04% of them were females.



Table 3: Distribution of study participants according to their year of studying

Year of studying	No of study participants	Percentage
First Year	55	40.74
Second Year	33	24.44
Third Year	20	14.81
Final Year	7	5.19
Intern	15	11.11
PGs	5	3.70

Graph 3 Distribution of study participants according to their year of studying using descriptive (percentage and frequency) analysis.



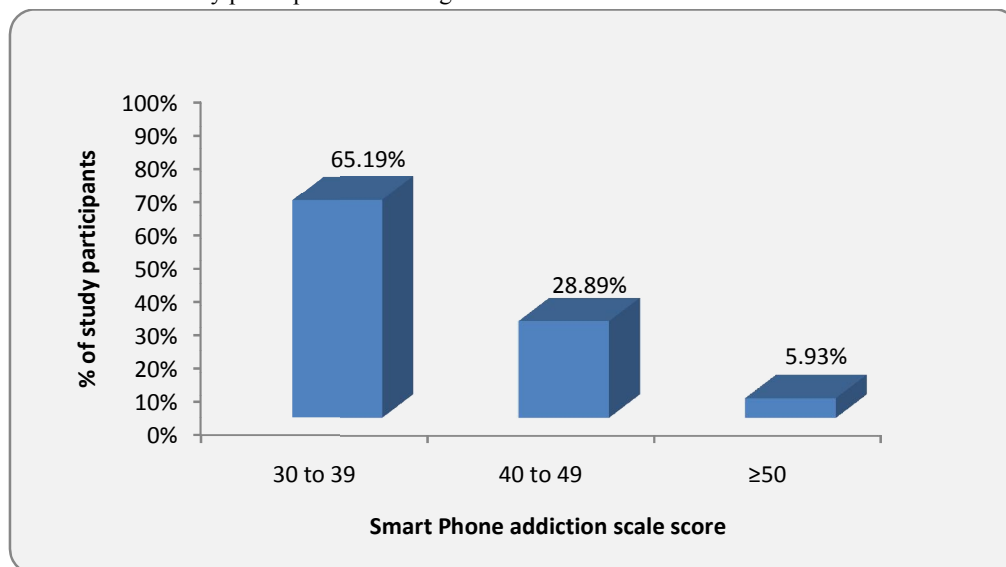
Interpretation 40.74% of the study participants were studying in first year, 24.44% in second year, 14.81% in third year and 11.11% of them were doing internship

TABLE 4: Distribution of study participants according to Smart Phone Addiction Scale Score using descriptive (percentage and frequency) analysis.

Smart Phone addiction scale score	No of study participants	Percentage
30 to 39	88	65.19
40 to 49	39	28.89
≥50	8	5.93
Total	135	100
Mean±SD	39±5.41(30-54)	



Graph 4: Distribution of study participants according to Smart Phone Addiction Scale Score

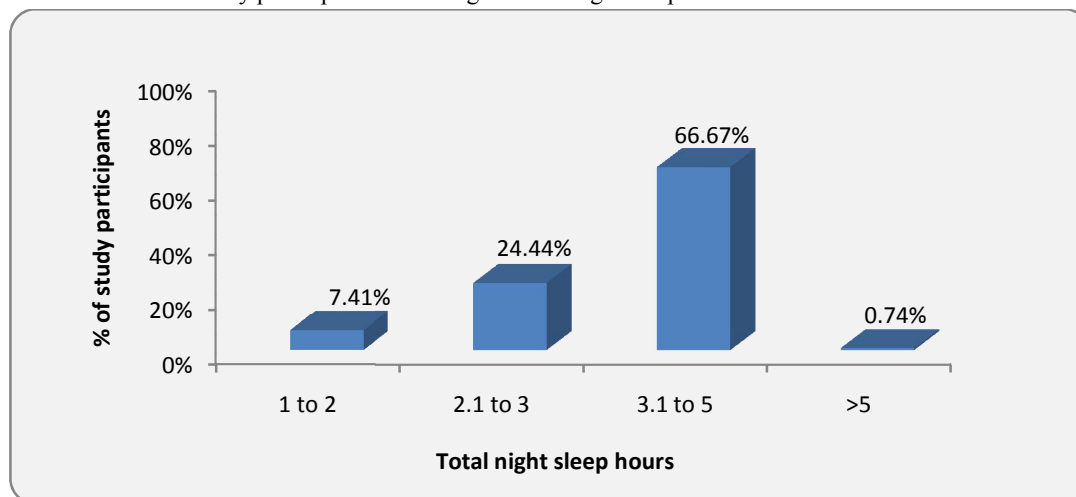


Interpretation: 65.19% of the study participants had smart phone addiction scale score of 30 to 39, 28.89% of them had 40 to 49 and 5.93% of study participants had smart phone addiction scale score of more than 50.

Table 5: Distribution of study participants according to Total night sleep hours using descriptive (percentage and frequency) analysis.

Total night sleep hours	No of study participants	Percentage
1 to 2	10	7.41
2.1 to 3	33	24.44
3.1 to 5	90	66.67
>5	1	0.74
Total	135	100
Mean±SD	3.52±0.61(2-5.50 hours)	

Graph 5: Distribution of study participants according to Total night sleep hours



Interpretation: 7.41% of the study participants had 1 to 2 sleep hours at night, 24.44% of them had 2.1 to 3 and 66.67% of study participants had 3.1 to 5 years of sleep at night.

VI. RESULT AND DISCUSSION

6.1 RESULT

The present study was conducted among 135 participants to assess the prevalence of smartphone addiction and its related factors. The mean age of the participants was 20.74 ± 2.06 years, ranging from 18 to 25 years. The majority of the respondents (51.11%) belonged to the age group of 18–20 years, followed by 37.78% in the 21–23 years group, and 11.11% in the 24–26 years group. With respect to gender distribution, the study showed a predominance of females (77.04%) compared to males (22.96%).

Regarding the academic year, most of the participants were from the first year (40.74%), followed by second year (24.44%), third year (14.81%), interns (11.11%), and final year students (5.19%), while 3.70% were postgraduate students. Based on the Smartphone Addiction Scale (SAS) scores, 65.19% of participants scored between 30–39, indicating moderate levels of addiction, 28.89% scored between 40–49, and 5.93% scored 50 or above, reflecting high addiction levels. The mean SAS score was 39 ± 5.41 (range 30–54).

Concerning sleep patterns, 66.67% of participants reported sleeping for 3.1–5 hours per night, 24.44% had 2.1–3 hours of sleep, 7.41% slept only 1–2 hours, and just 0.74% reported more than 5 hours of sleep, with a mean sleep duration of 3.52 ± 0.61 hours. This finding indicates a considerable reduction in sleep duration among the participants, possibly due to excessive smartphone use. In terms of years of smartphone usage, nearly half (48.89%) of the participants had been using smartphones for 5.1–7 years, 35.56% for 3.1–5 years, 8.89% for 7.1–9 years, and 6.67% for 1–3 years, with a mean duration of 5.71 ± 1.38 years.

Hence, the study results reveal a high prevalence of smartphone addiction among physiotherapy students, with most participants showing moderate levels of addiction. Prolonged smartphone use and reduced sleep duration were also evident, suggesting potential negative impacts on physical and mental health.

6.2 DISCUSSION

The present study aimed to assess the prevalence of smartphone addiction and its related behavioral patterns among physiotherapy students. The findings revealed that smartphone addiction is increasingly becoming a significant concern among young adults, particularly in the age group of 18–25 years. This age group represents a stage of development characterized by social exploration, emotional maturity, academic stress, and dependency on digital technology. In this context, smartphones serve as essential tools for education, communication, and entertainment; however, over-dependence can lead to addictive behaviors and negative health outcomes.

The mean age of participants in this study was 20.74 ± 2.06 years, and a majority (51.11%) were within the 18–20 years age group. This suggests that younger students, particularly those in the early years of college, are more likely to develop problematic smartphone use patterns. This finding is consistent with previous research Yao and Zhong(2014)¹²

which reported that early exposure to smartphones and lack of awareness about digital well-being make younger individuals more vulnerable to addictive behavior⁴ According to Demir and kutlu 2016 individual who experiences deep feeling of loneliness have a high risk of internet addiction.¹³ According to Ozdemir,Kuzucu And Ark et al (2014) individuals with psychological problems are inherently at risk for addiction because their choice for online interaction is more than face to face communication.¹⁴ According Andreou and svoli (2012) Depressed feelings of individual who rely on the internet for social support may persist or even worsen towards real life interpersonal relationships increasing the risk of becoming internet addicted.¹⁵

Gender distribution showed a clear dominance of females (77.04%) over males (22.96%) in the study sampling through pie chart in table 2. The predominance of female participants may partly reflect enrollment patterns in physiotherapy courses, which often have a higher proportion of females. However, existing literature also supports the idea that females tend to exhibit higher levels of smartphone engagement, especially for communication, social networking, and emotional expression (Park et al., 2018).¹⁶ Females are often more active on platforms such as Instagram, WhatsApp, and Snapchat,



which could explain their higher addiction scores¹⁶. These findings were consistent with those of previous study by Sanchez-Maartinez And Otero et al (2009) which reported that female adolescents tended to use their mobile phones more often and were more likely to depend on mobile phone devices than their male counterparts.¹⁷ According to the Galambos N.L Leadbeater et al (2004) similarly girls were more likely to have depression than boys¹⁸

As seen in table 4 the Smartphone Addiction Scale (SAS) revealed that 65.19% of participants had moderate addiction, 28.89% had high addiction, and 5.93% exhibited very high addiction levels. The mean SAS score of 39 ± 5.41 indicates that most students fall into the moderate-risk category, which still signifies frequent and prolonged smartphone use (table 4). Similar results were observed by Demirci et al. (2015), who reported that excessive smartphone use among college students leads to poor academic performance, anxiety, and disrupted daily routines¹⁹. The moderate-to-high prevalence of addiction among students in this study highlights the increasing dependency on smartphones not only for social connection but also for entertainment, information access, and academic tasks.¹⁹ According to Hwang et al (2012) Overuse of smartphone may cause various physical and psychological health problems.²⁰ Canan et al (2013) The researcher suggested that both internet use and purpose of internet use are important in terms of sleep duration.²¹ In addition, Lemola et al (2014) evaluated adolescents' electronics media usage at night along with sleep disturbances and depressive symptoms.²² Thomee Harenstam And Hagberg (2010) reported that prolonged uses of media can cause physical discomfort, such as muscle pain and headache which can negatively affect the sleep.²³ In addition, poor sleep quality has been linked with negative consequences for health and performances such as obesity and lower school grades.²⁴

Another major finding of this study was the disturbance in sleep patterns associated with smartphone use shown in table no 5. The majority of participants (66.67%) reported sleeping only 3–5 hours per night, with a mean sleep duration of 3.52 ± 0.61 hours seen in table no 5. This reduced sleep duration is alarming and reflects the negative influence of prolonged smartphone use, particularly before bedtime. Several studies have reported that exposure to blue light from smartphone screens delays melatonin secretion, disrupts circadian rhythms, and leads to insomnia or poor sleep quality (Harada et al., 2020).²⁵ The combination of late-night screen time and social media engagement often keeps students awake, leading to fatigue, poor concentration, and academic decline.²⁵ According to Li et al (2015) usage of smartphone at bed time can cause lower quality of sleep of undergraduate students.²⁶ According to Rocklein et al (2013) over use of smartphone especially in night time would make their circadian typology evening typed through the exposure to light from display of phone (including light with 460 nm length which is main wave length for absorption of melanopsin as a key light sensor to control circadian clock phase and also plasma melatonin concentration of humans).²⁷

According to the Seo Young yang et al (2021) Prolonged exposure from adolescence to adulthood increases the risk of developing compulsive behaviors, as the brain becomes conditioned to constant digital stimulation and social feedback through notifications and social media interactions.²⁸ This phenomenon is supported by neurobehavioral studies that link smartphone overuse to dopamine-driven reward cycles, similar to other behavioral addictions Andrew westbrook, et al (2021).²⁹

The findings also reveal that the majority of students were first-year undergraduates (40.74%), followed by second-year students (24.44%). table 3 This may indicate that students who are newly exposed to academic stress and independence tend to rely on smartphones as coping mechanisms for stress relief, entertainment, or social interaction. Over time, this coping strategy may evolve into a habitual or addictive pattern. According to table 3.

The overall results of this study are consistent with global trends. Research by Shi-Qiu Meng et al. (2022) reported that the global prevalence of digital addiction among young adults ranges between 20% and 50%, with Asian countries showing slightly higher rates due to rapid technological adoption and social media penetration.³⁰ This aligns with the current findings, where a significant majority of students were found to have moderate to high levels of addiction.³⁰

According to the Rathakrishna B et al (2021) The reduction in sleep duration observed among participants has further implications.³¹ Sleep deprivation is closely linked to impaired cognitive function, mood disturbances, decreased academic performance, and increased stress levels. It can also negatively affect physical health, leading to headaches, visual strain, and fatigue. Thus, smartphone addiction not only affects mental and social well-being but also has physiological consequences.³¹ Good sleep is more likely associated with good physical health which is the predictor for academic performances the finding also reported that good sleepers may experience lower anxiety, better body health and may feel more energized when studying.³¹ Poor sleep quality may also significantly relate to stress levels.³¹



According to Li Y -Zhong jia et al (2025) a behavioral standpoint, smartphone addiction has been associated with social isolation, poor interpersonal relationships, and reduced face-to-face communication skills³². Although smartphones are intended to enhance connectivity, excessive use often leads to the opposite social withdrawal and psychological dependence.³² This paradox is important to note, particularly among health science students who require strong interpersonal skills for patient care and teamwork in their future careers.³²

Given these findings, it is crucial to implement preventive strategies within educational institutions. Awareness programs focusing on digital well-being, time management, and healthy technology habits can help students recognize and reduce their dependence on smartphones. Introducing “digital detox” activities, encouraging outdoor and social engagement, and promoting mindfulness-based interventions can significantly help mitigate addiction level³³

Also, institutions can establish counselling services to address technology-related stress and anxiety. Faculty members can also integrate discussions on responsible smartphone use into the curriculum to promote holistic student health. Policymakers should consider developing guidelines on acceptable screen time limits and integrating educational campaigns at the college level.³³

VII. CONCLUSION

The study highlights that smartphone addiction is highly prevalent among physiotherapy students, with notable effects on sleep, academic focus, and overall well-being.

The findings reflect a broader societal issue driven by the overuse of digital technology.

It emphasizes the urgent need for awareness, behavioral interventions, and lifestyle modifications to promote a healthy balance between digital life and real-life responsibilities.

Addressing smartphone addiction early among students is vital for ensuring better physical, mental, and academic outcomes in the long term

VIII. LIMITATIONS OF THE STUDY

1. Small sample size (n=135) limits the applicability of results.
2. Limited time and resources restrict the sample size and depth of data analysis.

IX. FUTURE SCOPE OF THE STUDY

1. Future research can focus on correlation between smartphone addiction and anxiety, depression or social isolation among students.
2. Conduct large scale, multicentric studies including diverse populations across rural and urban regions.
3. Introduce routine SAS screening in all colleges as a standard digital car.

X. CLINICAL IMPLICATIONS

1. Reduced concentration and attention during practices sessions and clinical posting .
2. Poor development of hand on skills and reduces confidences in patient handling .
3. Increased social withdraw leading to weak interpersonal interaction.
4. Visual strain and fatigue affecting clinical performances.

XI. ACKNOWLEDGMENT

I would like to take this opportunity to acknowledge my heartfelt gratitude to my college principal, Dr. Gajanan Bhalerao (PT) for granting me the permission to carry out this project. I have had the privilege to complete this project under the supervision of Dr. Sanat Kulkarni (PT) who has reviewed my project constantly and extended her unconditional support, encouragement and guidance towards the timely completion of my project. I would like to thank all the participants who gave their consent to be a part of this study and co-operated for the data collection. Very special thanks to my father Mr. Rajkumar Agarwal, my mother Mrs. Sunita R Agarwal, and my sister Teena Agarwal for creating a friendly working atmosphere for successful completion of my project. I am thankful to and fortunate enough to get constant encouragement



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