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Relationship between Medical Students Quality of Life and Smartphone Use in the PMCH of Udaipur

Rakhi Luthra[1], Neha Jain[2], Priyanka Kulkarni[3], Vishakha Parmar[4]*

[1]Associate Professor, Department of Community Medicine, Pacific Medical College & Hospital, Udaipur, Rajasthan, India
[2]Assistant Professor, Department of Community Medicine, Pacific Medical College & Hospital, Udaipur, Rajasthan, Uttar Pradesh India
[3]Associate Professor, Department of Community Medicine, UIMS, Prayagraj, India
[4]Lecturer in Statistics, Department of Community Medicine, RNT Medical College, Udaipur, Rajasthan, India

***Address for Correspondence:** Mrs Vishakha Parmar, Lecturer, Department of Community Medicine, RNT Medical College, Udaipur, Rajasthan, India
E-mail: vishakhaparmar218@gmail.com

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ABSTRACT

Background: Smartphones, initially designed for communication, have evolved into multifunctional devices offering continuous access to information, entertainment, and social networking. Among medical students, usage has increased due to academic demands and lifestyle changes. While smartphones support learning and connectivity, excessive use may negatively affect physical, psychological, and social well-being. Medical students are particularly vulnerable due to academic stress and high digital exposure. This study aimed to assess the relationship between smartphone use and quality of life among undergraduate medical students.

Methods: A cross-sectional study was conducted among MBBS students at Pacific Medical College & Hospital, Udaipur. All consenting students present during data collection were included. Quality of life was assessed using the WHOQOL-BREF questionnaire, and smartphone addiction was measured using the Smartphone Addiction Scale–Short Version (SAS-SV). Data were analyzed to determine associations between smartphone use and QOL domains.

Results: A total of 323 students participated. About 42% were identified as smartphone addicts, while SAS-SV showed a prevalence of 43.8%. Smartphone addiction was significantly lower among the youngest and oldest academic batches ($p < 0.001$). Male students had higher odds of addiction than females (OR = 1.45, 95% CI: 0.962–2.174). A significant negative association was observed between smartphone addiction and all domains of quality of life, with p values ranging from <0.001 to 0.002.

Conclusion: Smartphone addiction is highly prevalent among medical students and is significantly associated with reduced quality of life across physical, psychological, social, and environmental domains.

Key-words: Addiction, Mobile phone, Quality of life, Smartphone, Undergraduate medical students

INTRODUCTION

The smartphone is one of the most useful products of the modern era. A smartphone differs from a traditional phone in that it has advanced hardware, software, internet, and multimedia capabilities. It has developed into a vital and necessary aspect of our everyday existence.

As of October 31, 2019, the Telecom Regulatory Authority of India estimates that 1183 million people (89.55% of the population) were using wireless telephones, with a monthly growth rate of 0.82%.[1] India has 345.916 million smartphone users, or 25.3% of the country's total population, according to the Global Mobile Market Report, 2019.[2] This expansion is a component of the "Digital India" program, a campaign started by the Indian government to guarantee that all Indian citizens can access government services electronically via smartphones and the internet.[3] Everyone now has cheaper and more widespread access

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to cellphones and the internet thanks to the 'Digital India' campaign.

Smartphones encourage social contact and make multitasking easier, but they can hinder children's learning.[4-7] Stress, sadness, lack of sleep, poor academic performance, diminished cognitive capacity, and life unhappiness are some of the other negative consequences of excessive smartphone use.[8-11] Additionally, it might be a possible way for microbes to spread in medical environments.[12] Both of these advantages and disadvantages are likely to have an impact on young people, particularly students, who are constantly curious about new technologies.

Overuse of smartphones can cause a number of changes in a person's quality of life.[13] Satisfaction of physical, emotional, psycho-social, and spiritual requirements is implied by the subjective and complex concept of quality of life (QOL). According to the World Health Organization, quality of life (QOL) is "people's perceptions of their position in life in relation to their goals, expectations, standards, and concerns as well as the culture and value systems in which they live. [14] Numerous studies have demonstrated that smartphone use, whether positive or negative, shapes a person's quality of life.[15-17] Doctors are prone to ignore the signs of smartphone addiction and classify them as typical illnesses. Therefore, doctors must understand the symptoms and how they impact the lives of individuals. In this study, we intend to find out the relationship between the use of the smartphone and the QOL of the medical students, which has not been sufficiently studied so far.

MATERIALS AND METHODS

Study setting- The cross-sectional study study was carried out at Pacific Medical College & Hospital (PMCH), Udaipur, located in the Badla Division of Udaipur district, Rajasthan, India.

Study population and sample size- The study included all undergraduate MBBS students enrolled at PMCH, Udaipur, during the study period who provided written informed consent to participate. The MBBS program admits 150 students per year and is divided into four professional phases, followed by a one-year internship. The total institutional capacity at any given time is approximately 750 students. Therefore, all students enrolled in the MBBS course during the study period constituted the study population.

Inclusion criteria- Students who were present on the day of data collection and provided written informed consent were included in the study.

Exclusion criteria- Students who did not own a smartphone were excluded. Additionally, questionnaires with more than 20% incomplete responses were not considered for analysis.

Study tools- Smartphone addiction was assessed using the Smartphone Addiction Scale–Short Version (SAS-SV), a validated 10-item instrument rated on a 6-point Likert scale. The cut-off scores used were 31 for male participants and 33 for female participants. The scale has a reported Cronbach's alpha of 0.911, indicating high internal consistency. Quality of life was assessed using the WHOQOL-BREF questionnaire, which consists of 26 items covering four domains: physical health, psychological health, social relationships, and environment. Domain scores were calculated as mean values and transformed into a 0–100 scale. A score of less than 60 was considered indicative of poor quality of life, while a score of 60 or more indicated satisfactory quality of life.

Data collection procedure- After obtaining permission from the concerned faculty authorities, students were approached in lecture halls at the end of academic sessions. The timing was adjusted to avoid disruption of classes. Participants were seated at appropriate distances to prevent discussion and ensure independent responses. The purpose and objectives of the study were explained, and participation was voluntary. Students who did not wish to participate were allowed to leave. Written informed consent was obtained, and anonymity was maintained by detaching consent forms from the questionnaires. The questionnaire required approximately 10 minutes to complete.

Statistical Analysis- Data was entered into Microsoft Excel and analyzed using IBM SPSS Statistics version 23. Results were expressed in terms of frequencies and percentages. A p-value of less than 0.05 was considered statistically significant.

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RESULTS

Out of the total students enrolled, 345 participated in the study. After excluding 22 incomplete forms, 323 questionnaires were included in the final analysis. Out of the 323 study participants, 123 (38.0%) were male and 200 (61.9%) female. Majority of them were hostellers (91.0%) and the rest were day-scholars (9%). The participant's age ranged from 17-28 years with the mean (SD) age of 21 (1.9) years. The educational status of the parents showed that 80.49% of the fathers and 65% of the mothers were either graduate or had a higher qualification. The majority of the mothers were reported to be homemakers (59.2%). Only 2% of the fathers were reported to have retired from their work (Table 1).

Table 1: General characteristics of medical students in the study

Characteristics (*N*=323)		**Number of students**	**Percentage (%)**
Batch	2020	60	18.5
	2021	75	23.2
	2022	88	27.2
	2023	100	30.9
Gender	Male	123	38
	Female	200	61.9
Age (Years)	17-20	138	42.7
	21-24	180	55.7
	25-28	5	1.5
Residence	Hosteller	294	91.0
	Day scholar	29	9
Father's Education(n=294)	0-6	4	1.4
	7-12	30	10.2
	Graduate	170	57.8
	Post Graduate	90	30.6
Mother's Education(n=294)	0-6	10	3.5
	7-12	60	21.4
	Graduate	180	64.4
	Post Graduate	30	10.7
Father's Occupation (n=294)	Govt. Sector	80	27.3
	Private Sector	208	70.7
	Retried	6	2
Mother's Occupation (n=294)	Working	120	40.8
	Housewife	174	59.2

Among all study participants, 41.4% reported feeling addicted to their smartphone use, which was comparable to the overall prevalence of smartphone addiction (34%) as assessed by the SAS-SV questionnaire (Table 2). A batch-wise analysis revealed that the prevalence of smartphone addiction among students in the 2021 and 2022 batches was 40% and 66%, respectively. These rates were significantly higher than those observed in the junior-most batch (2020: 21.6%) and the senior-most batch (2023: 30.0%) (p-value= 0.05). Additionally, smartphone addiction was found to be more prevalent among male students.

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Table 2: Smartphone addiction according to social characteristics and self-reported addiction

Characteristics	Category	Present	Absent	p-value	Test Value
Batch	2020	13(21.6%)	47(78.4%)	0.000 P<0.05	36.9
	2021	30(40%)	45(60%)		
	2022	58(66%)	30(34%)		
	2023	30(30%)	70(70%)		
Gender	Male	61(49.5%)	62(50.5%)	0.09 p>0.05	2.8
	Female	80(40%)	120(60%)		
Age (years)	17–20	30(21.7%)	108(78.3%)	0.000 p<0.05	23.08
	21–24	85(47.2%)	95(52.8%)		
	25–28	3(60%)	2(40%)		
Self-reported addiction	Addicted	100(74.6%)	34(25.4%)	0.000 p<0.05	44.4
	Not Addicted	70(37%)	119(63%)		

p<0.05 statistically significant

The distribution of quality of life (QOL) scores across different batches, age groups, and gender is presented in Table 3. The physical, psychological, social, and environmental domain scores varied across all demographic categories. Overall, a wide range of scores was observed in all four domains of QOL, indicating variability in perceived quality of life among medical students. Across batches and age groups, differences were noted in domain-wise score distributions. Similarly, variation in QOL scores was also observed between male and female participants in all four domains.

Distribution of scores of quality of life with batch and demographic characteristics

Characteristics	Physical domain (Range)	Psychological domain (Range)	Social domain (Range)	Environmental domain (Range)
Batch				
2020	(30–89)	(12–95)	(5–68)	(30–100)
2021	(30–100)	(30–95)	(20–68)	(24–100)
2022	(19–100)	(30–88)	(0–68)	(19–88)
2023	(12–95)	(12–95)	(19–69)	(30–95)
Age (years)				
17–20	(19–100)	(12–94)	(0–68)	(30–100)
21–24	(12–95)	(12–95)	(5–68)	(24–100)
25–28	(45–100)	(45–80)	(0–68)	(50–88)
Gender				
Male	(30–100)	(12–95)	(0–68)	(30–100)
Female	(12–95)	(19–95)	(20–68)	(24–100)

Table 4 shows a significant association between smartphone addiction and all domains of quality of life (physical, psychological, social, and environmental) among medical students ($p < 0.05$). Students without smartphone addiction reported better quality of life compared to those with addiction across all domains.

Table 4: Association between smartphone addiction and quality of life of medical students

Characteristics	Category	Smartphone addiction, N=323(%)		p-value	Test value
		Present (140)	Absent (183)		
Physical domain	Satisfied	100(57.8%)	73(42.2%)	0 (S)	31.7
	Not satisfied	40(26.6%)	110(73.4%)		

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Psychological domain	Satisfied	115(70.5%)	48(29.5%)	0 (S)	99.1
	Not satisfied	25(15.6%)	135(84.3%)		
Social domain	Satisfied	102(58.9%)	71(41.0%)	0 (S)	36.9
	Not satisfied	38(25.3%)	112(74.6%)		
Environmental domain	Satisfied	22(23.1%)	73(76.9%)	0 (S)	22.3
	Not satisfied	118(51.3%)	112(48.6%)		

p < 0.05 = Statistically significant

DISCUSSION

In today's rapidly evolving technological era, smartphones have become an essential part of daily life, used for communication, internet browsing, entertainment, and information. However, along with convenience, they also present certain challenges. This study examines the prevalence of smartphone addiction and its relationship with the quality of life (QOL) among undergraduate medical students and interns in a medical college [18,19].

The cost of cellphones has significantly decreased in recent years [20], making them an inexpensive commodity that encourages careless use. It was shown that 34% of the survey participants suffered from smartphone addiction. The research done by Basu e*t al.* produces similar results [21] in Saudi Arabia by Alhazmi *et al.* [22] and in North India. In a medical college in the Andaman and Nicobar Islands, Sethuraman et *al.* found a much higher frequency of 85%.[23] But, smartphone addiction was reported to be lesser by Chen *et al*. [24] in China and Ammati *et al*. [25] in South India. The reasons for higher smartphone addiction in Andaman and Nicobar Islands may include that Andaman and Nicobar Islands is a geographically secluded area from mainland India with limited avenues for other kinds of social interactions or recreational activities especially for students from mainland India. Also, place-specific cultural or individual factors may influence smartphone addiction levels – all of which are not known/have been studied. The lower prevalence in China and South India may be explained by more cohesive social structures in these regions which might limit smartphone use and its addiction.

About 70% of the study participants, who self-reported that smartphone addiction, was actually addicted to smartphone use according to SAS-SV questionnaire. Thus, the majority of the study participants were aware of their over-use of smartphones in our study. Sethuraman *et al*. have also observed self-acknowledgement as a predictor of smartphone addiction [23]. We corroborate their finding and state that there is high degree of awareness of being addicted to smartphone use among excessive mobile phone users.

The study participants included four different batches of medical students. Smartphone addiction was found to be highest among the 2022 batch and lowest among the 2020 batch and the senior-most batch (2023). This variation may be due to differences in adaptation to the medical curriculum. First-year students may not yet have fully adopted the medical student lifestyle and are still adjusting to the demanding MBBS curriculum, which may limit smartphone use. In contrast, senior students may become more accustomed to the curriculum and engage more in leisure activities and social networking through smartphones. However, increased academic pressure, examinations, clinical duties, and preparation for final exams may also limit smartphone use in senior batches.

The present study showed a significant association between non-satisfactory quality of life and smartphone addiction among participants. The psychological domain was the most affected, with only 30% of addicted individuals reporting satisfaction with their mental health. This may be due to sleep disturbances caused by excessive smartphone use, along with associated issues such as stress, anxiety, depression, and other behavioral or substance-related problems [24].

Also, studies have shown that addiction to smartphone tends to make one's life stressful and lonely and unsatisfactory relationship [16,25]. Youth tends to follow and idolize celebrities via social media and other online or offline platform and compare them with the latter and even concluded that their life is meaningless and are even embarrassed of their physical appearances [26]. The attitude of comparing and competing, fear of missing out, along with other factors mentioned earlier may be some of the reasons for unsatisfactory psychological level shown by the smartphone addicts.

People who are addicted to their cellphones are generally sedentary and mostly interact with virtual

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friends rather than the person next to them, which limits their ability to form interpersonal relationships and engage in leisure activities away from their phones. The majority of smartphone addicts also expressed dissatisfaction with themselves, their daily activities, and the support they receive from their peers.

LIMITATIONS

As this was a cross-sectional study, a temporal relationship between quality of life (QOL) and smartphone addiction could not be established. Since the study was conducted in a single medical college in Udaipur, the findings should be interpreted with caution while generalizing to other populations. Additionally, the study did not differentiate between smartphone use for academic purposes and non-academic purposes.

CONCLUSIONS

The present study demonstrates that medical students, particularly male students, are affected by smartphone addiction. Furthermore, an inverse relationship was observed between smartphone addiction and quality of life, indicating a significant negative association. Therefore, students should be guided and counseled regarding the appropriate and responsible use of smartphones and the adverse effects of excessive usage. Further studies involving multiple institutions and broader populations are recommended to better understand the issue and to evaluate possible preventive and corrective strategies.

CONTRIBUTION OF AUTHORS

Research concept– Rakhi Luthra, Neha Jain, Priyanka Kulkarni

Research design– Rakhi Luthra, Priyanka Kulkarni, Vishakha Parmar

Materials- Rakhi Luthra, Neha Jain, Priyanka Kulkarni

Data Collection- Rakhi Luthra, Neha Jain

Data analysis and interpretation – Vishakha Parmar

Literature search- Priyanka Kulkarni

Writing article- Neha Jain, Priyanka Kulkarni

Critical review- Rakhi Luthra, Neha Jain, Priyanka Kulkarni

Article editing- Rakhi Luthra, Neha Jain, Priyanka Kulkarni

Final approval- Rakhi Luthra, Neha Jain, Priyanka Kulkarni

REFERENCES

[1] Telecom Regulatory Authority of India. Available from:https://www.trai.gov.in/release-publication/reports/telecom-subscriptions-reports.

[2] Global Mobile Market Report. Available from: https://newzoo.com/insights/rankings/top-50-countries-by-smartphone-penetration-and-users/.

[3] Digital India. Available from: http://digitalindia.gov.in/.

[4] Rotondi V, Stanca L, Tomasuolo M. Connecting alone: Smartphone use, quality of social interactions and well-being? J Econ Psychol., 2017; 63: 17–26. doi: 10.1016/j.joep.2017.09.001.

[5] Gladden D. The effects of smartphones on social lives: How they affect our social interactions and attitudes. 2018 OTS Master's Level Projects & Papers 586. Available from: https://digitalcommons.odu.edu/ots_masters_projects/586.

[6] Carrillo R, Subrahmanyam K. Mobile phone multitasking and learning. Available from: https://www.semanticscholar.org/paper/Mobile-Phone-Multitasking-and-Learning-Carrillo-Subrahmanyam/587c01633ea2458f5e509fffcead32c008fedf66.

[7] Chen Q, Yan Z. Does multitasking with mobile phones affect learning? A review. Comput Hum Behav., 2016; 54: 34–42. doi: 10.1016/j.chb.2015.07.047.

[8] Wallace P. Internet addiction disorder and youth. EMBO Rep., 2014; 15: e201338222. doi: 10.1002/embr.201338222.

[9] Samaha M, Hawi NS. Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. Comput Hum Behav., 2016; 57: 321–25.

[10] Tao S, Wu X, Zhang S, Tong S, Hao J, et al. Association of alcohol use with problematic mobile phone use and depressive symptoms among college students in Anhui, China. J Public Health, 2017; 25: 103–12.

[11] Ward AF, Duke K, Gneezy A, Bos MW. Brain drain: The mere presence of one's own smartphone reduces available cognitive capacity. J Assoc Consum Res., 2017; 2: 140–54.

[12] Bisht M, Kumar M, Solanki HK, et al. Microbial contamination of mobile phones of health care providers at a teaching hospital in a Hilly North Indian State. Indian J Community Fam Med., 2018; 4: 34–39.

doi: 10.21276/SSR-IIJLS.2026.12.4.24

[13]Baek S-S, Cho J-Y. The effects of college students' life stress, depression, and smartphone addiction on their quality of life. J Korean Acad Ind Technol Soc., 2017; 18: 248–56.

[14]WHOQOL: Measuring Quality of Life. Available from: https://www.who.int/healthinfo/survey/whoqol-qualityoflife/en/.

[15]Shahrestanaki E, Maajani K, Safarpour M, et al. The relationship between smartphone addiction and quality of life among students at Tehran University of Medical Sciences. Addicta: Turk J Addict., 2020; 7: 61–66.

[16]Safa De Majeed S. Smartphone addiction, loneliness, interpersonal relationship and quality of life in adolescents and adults. Eur J Res Soc Sci., 2020; 8: 23–29.

[17]Mascia ML, Agus M, Penna MP. Emotional intelligence, self-regulation, smartphone addiction: relationship with student well-being. Front Psychol., 2020; 11: 375. doi: 10.3389/fpsyg.2020.00375.

[18]Kwon M, Kim DJ, Cho H, Yang S. The smartphone addiction scale: Development and validation. PLoS One, 2013; 8: e83558. doi: 10.1371/journal.pone.0083558.

[19]Silva PA, Soares SM, Santos JF, Silva LB. Cut-off point for WHOQOL-BREF as a measure of quality of life. Rev Saude Publication, 2014; 48: 390–397. doi: 10.1590/S0034-8910.2014048004912.

[20]Dholakia K. A study in price drops of popular smartphones. Available from: https://www.medianama.com/2015/02/223-a-study-in-price-drops-of-popular-smartphones-ankur-p-agarwal-pricebaba/.

[21]Basu S, Garg S, Singh MM, Kohli C. Addiction-like behavior associated with mobile phone usage among medical students in Delhi. Indian J Psychol Med., 2018; 40: 446–51.

[22]Alhazmi AA, Alzahrani SH, Baig M, et al. Prevalence and factors associated with smartphone addiction among medical students. Pak J Med Sci., 2018; 34: 984–88.

[23]Sethuraman AR, Rao S, Charlette L, et al. Smartphone addiction among medical college students in Andaman and Nicobar Islands. Int J Community Med Public Health, 2018; 5: 4273–77.

[24]Chen B, Liu F, Ding S, et al. Gender differences in factors associated with smartphone addiction. BMC Psychiatry, 2017; 17: 341. doi: 10.1186/s12888-017-1503-z.

[25]Ammati R, Kakunje A, Karkal R, et al. Smartphone addiction among students of medical university in South India. Ann Int Med Dent Res., 2018; 4: PY01–PY04.

[26]Lee KE, Kim SH, Ha TY, Yoo YM, Han JJ, et al. Dependency on smartphone use and anxiety in Korea. Public Health Rep., 2016; 131: 411–19.