



The Digital Distraction: Evaluating the effects of smartphone usage on academic performance of medical students

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KEYWORDS

Evaluating the effects of smartphone

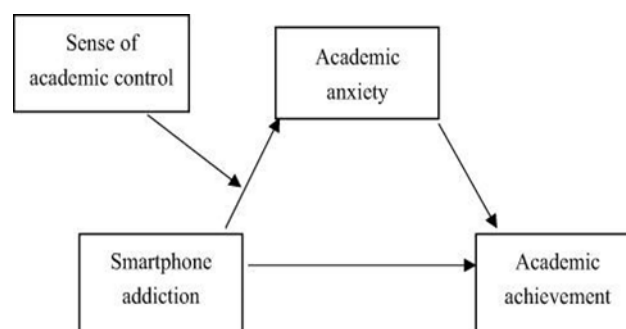
ABSTRACT:

This study examines smartphone usage habits among college students. Evaluating the impact of smartphone use on medical students' academic performance. Surveys of undergraduate students revealed an association between smartphone usage, academic stress, and sleep quality. This highlights the need for interventions to promote healthier technology habits and improve academic performance.

INTRODUCTION

Smartphones have revolutionized communication, information access, and digital world navigation. The lives of students and the rest of us have become completely dependent on these small devices. Smartphones have had a big impact on many aspects of modern education due to their incredible capabilities and broad connectivity. While cell phones have many benefits and learning opportunities, they also pose several obstacles and potential drawbacks that may influence students' academic performance¹.

In addition, excessive smartphone use might have a harmful impact on students' physical and mental health. Smartphone use that includes excessive screen time and sedentary behaviour may result in a sedentary lifestyle, a lack of physical activity, and potential health issues². Long-term exposure to blue light from smartphone screens has been associated to sleep disruption, fatigue, and impaired cognitive function, all of which have been connected to poor academic achievement. Overuse of social media on smartphones can also result in social comparison, feelings of inadequacy, and mental health issues such as anxiety and depression, all of which can impair students' academic performance³.



Today's medical students will become the doctors of tomorrow. These kids are especially susceptible to smartphone addiction, as they frequently own high-quality cell phones with fast internet connections. Furthermore, kids may live outside of parental control and suffer substantial academic pressure. It is critical to evaluate the impact of smartphone addiction on medical students' academic performance and to uncover the underlying causes, as this serves as the foundation for developing mitigation measures⁴. However, there is a general lack of research on this area, both internationally and in India. As a result, this study was conducted at multiple medical college in Haryana with the goals of determining the impact of smartphone addiction on the academic performance of undergraduate medical students and identifying risk factors linked with it.



MATERIALS AND METHODS

STUDY DESIGN- Cross- Sectional study

TYPE OF STUDY – observational, Questionnaire-based study

DURATION OF STUDY- 2025 APRIL to 2025 MAY

SAMPLE SIZE- A total of 450 students were enrolled in this study, and the sample size was determined with the aid of practical sampling techniques.

DATA COLLECTION: METHOD OF SCREENING

RESULT

The questionnaire was distributed to all participants who had consented to the study. This study analysed data from 450 respondents to determine how smartphone use the data was analysed and interpreted using checklist questions. In a checklist, respondents choose "Yes" or "No" for each question The checklist of questions asks about a lot of things, including how many smartphones they own, how long they use them, and how long they use them throughout the day and at night. patterns of behaviour such as checking late at night, using during class, sleep quality, and academic achievement.

Table 1: Impact of the Use of Smartphones on Academic Performance of Students (N = 450)

SL No.	Impact of the Use of Smartphones on Academic Performance of Students	Yes (n)	Yes (%)	No (n)	No (%)	Total
1	Use of smartphones tend to study less and maintain less concentration in completing the assignments	376	83.50%	74	16.50%	450
2	Use of smartphones affects students' ability to learn	401	89.00%	49	11.00%	450
3	Participation in non-academic activities has reduced	407	90.50%	43	9.50%	450
4	Using smartphones in class worsens memory of the students	372	82.50%	78	17.50%	450
5	It can affect students' productivity and time management skills	380	84.50%	70	15.50%	450
6	Students who use educational apps and resources on smartphones had better academic results	389	86.50%	61	13.50%	450
7	Excess use of smartphones has been linked to poor sleep	419	93.00%	31	7.00%	450
8	Excess use of smartphones can harm the eyesight of the students	425	94.50%	25	5.50%	450

The findings from a sample of 450 students show that smartphone use has a considerable perceived negative influence on academic achievement. The majority of respondents (83.5%) said that smartphone use reduces study time and focus. Furthermore, 89% of students said it hampered their capacity to learn, and 90.5% agreed that their participation in non-academic activities had decreased. Smartphone use in classroom was also deemed negative, with 82.5% claiming it impairs memory. 84.5% of students said that their productivity and time management skills had been negatively affected. Interestingly, 86.5% agreed

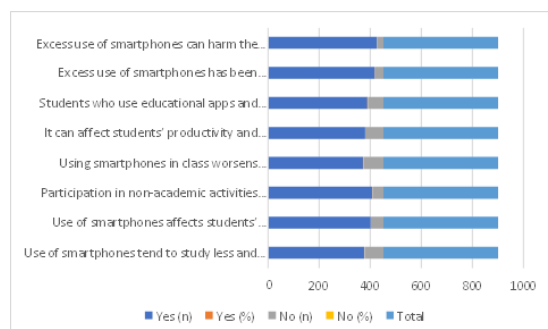
that educational apps and resources on cell phones can improve academic performance, indicating some possible academic benefits.

Furthermore, 93% of students associated excessive smartphone use with poor sleep, while 94.5% believed it could affect their vision.

Overall, while some students see educational benefits, the overwhelming agreement indicates to the negative



impact of excessive smartphone use on academic and physical well-being.



DISCUSSION

The current study emphasizes the complex effects of smartphone use on students' wellbeing and academic achievement. One notable conclusion is that almost 90% of students said using smartphones hindered their ability to learn. This implies that multitasking and continuous connectedness, which are frequently linked to smartphone use, may hinder the deep cognitive processes needed for efficient learning. Additionally, 90.5% of students concurred that they now spend less time on non-found that using smartphones in class significantly lowers concentration and memory. Kuznekoff and Titsworth (2013)⁵ discovered that students who used cell phones during lectures performed worse on a post-lecture quiz compared to those who did not use smartphones.

Junco, Cotten, and Lunsford (2012)⁶ studied the impact of smartphone multitasking on academic performance among college students. The study found that frequent smartphone uses while multitasking negatively impacts academic performance. Students who multitask on tests did worse than those who studied attentively.

Despite unfavourable outcomes, several research imply that using smartphones for educational reasons can improve academic performance. Amez S, Beart S (2020)⁷ study found that students who used educational apps and resources on their cell phones performed better academically.

Excessive smartphone use can lead to poor sleep quality, negatively impacting academic performance. Cheever et al. (2014)⁸ found that students who used cell phones regularly at bedtime experienced sleep interruptions, affecting their attentiveness and academic performance.

CONCLUSION

To prevent this addiction, students must be educated and empowered to use their smartphones appropriately, as well as encouraged to participate in extracurricular activities. Governing organizations, such as the National Medical Commission and universities, should incorporate instructional programs on smartphone addiction into curriculum while prioritizing the recognized risk factors.

REFERENCES

- Gupta N, Gang S, Arora K. Pattern of mobile phone usage and its effects on psychological health, sleep and academic performance in students of a medical university. *Natl J of Physiol Pharm Pharmacol* 2016;6(2):132-139. 2.
- Haque ATME. Usage of mobile applications at night and its association with sleep pattern and academic performance of the medical students of Uni KL - RCMP, Ipoh, Malaysia. *Journal of Global Pharma Technology* 2017;9(9):15-24 3.
- Abhishek MG, Sudha PS, Amrutha GN. A cross sectional study to determine the effect of smartphone usage on the academics, health and sleep patterns, of undergraduate medical students. *J Evid Based Med Healthc* 2020; 7(40), 2286- 2289. DOI: 10.18410/jebmh/2020/474
- Gupta R, Sant SK, Gupta RK, Rajpoot RS, Singh AK, Jaiswal K, et al. Determining pattern of smartphone usage and association of academic stress with sleep quality of first-year medical undergraduate students - a cross-sectional study. *Int. J. of Adv. Res.*2022:479-87
- Kuznekoff, J. H., & Titsworth, S. (2013). The impact of mobile phone usage on student learning. *Communication Education*, 62(3), 233–252
- unco, R., & Cotten, S. R. (2012). The Relationship between Multitasking and Academic



Performance. *Computers and Education*, 59, 505-514

7. Amez S, Beart S. Smartphone use and academic performance: A literature review. *International Journal of Educational Research*. 2020;103:101618.
8. Nancy A. Cheever ^a, Larry D. Rosen ^b, L. Mark Carrier ^b, Amber Chavez ^a Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users :*scidirect* 2014;290=297