

A SURVEY ON ELECTRONIC DEVICE DEPENDENCE IN YOUNG ADULTS OF AGE 18 TO 25 YEARS

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Abstract

The widespread adoption of electronic devices in recent years has significantly impacted various aspects of society, including the field of medical education. This research paper aims to investigate the dependence of medical students on electronic devices and its implications for their learning experiences and overall well-being. Through a mixed-methods approach, data was collected from a sample of medical students from School of Medical Sciences and Research, Sharda University (Batch 2022-2023). The study utilized a quantitative survey through a Google form containing a total of 21 questions related to the research project. The results of the study revealed that a substantial majority of medical students heavily rely on electronic devices, such as smartphones, tablets, and laptops, for various academic and personal purposes. The usage patterns indicated a high frequency of device utilization for accessing medical information, online learning platforms, communication, and entertainment. Furthermore, the research shed light on the potential benefits and drawbacks of this dependence. While electronic devices offer convenient access to a wealth of medical knowledge and resources, the excessive use of these devices was found to contribute to issues such as their Physical health & also it has been observed that the duration of screen time is also impacting. The study also explored the impact of device dependence on the overall well-being of medical students. Findings suggested that young medical students are very much dependent on their devices not only for their academics but also for their day to day schedule & life. The findings of this research project will contribute to a better understanding of the multifaceted aspects of medical students' reliance on electronic devices. It will shed light on the potential consequences of excessive device usages. Moreover, this study will identify factors that contribute to device dependence, such as accessibility, habit formation, and the influence of peers. These findings have important implications for medical educators, curriculum developers, and healthcare institutions. Recognizing the significance of electronic devices in medical education, it is crucial to strike a balance between leveraging their advantages and mitigating their potential negative consequences. By identifying potential risks and benefits, this study aims to facilitate the development of strategies that promote a healthy balance between electronic device usage and effective learning practices. In conclusion, this research contributes to the growing body of knowledge on the dependence of medical students on electronic devices. By examining the patterns, benefits, and drawbacks of device usage, this study emphasizes the need for a comprehensive approach to address the challenges and optimize the benefits associated with the integration of electronic devices in medical education.

Keywords: Medical Students, Electronic Devices, Dependence, Academic Performance, Well-Being, Mixed-Methods Approach.

INTRODUCTION

Electronic gadgets refer to specialized electronic devices that rely on electric power to function. They encompass a wide range of items such as video games, televisions, computers, PSP games, phone apps, mobile phones, and tablets. These gadgets are the outcome of inventive ideas and continuous technological advancements. The younger generation, including children, are prominent consumers and users of

electronic devices. As a result, most of these gadgets are specifically designed to cater to this age group.

Certain electronic devices play a significant role in the field of education, contributing to the enhancement of students' skills and knowledge. They also assist students in refining their teaching methods. Nevertheless, like any other inventions, these devices come with drawbacks, particularly when their usage is not regulated. In today's digital age, electronic devices have become an integral part of our daily lives, revolutionizing the way we communicate, work, and access information.

The field of medicine is no exception, as medical students increasingly rely on electronic devices for various educational and clinical purposes. This growing dependence on electronic devices among medical students has raised concerns about its potential impact on their learning experience, academic performance, and overall well-being. Research findings have shown that a significant percentage of students at various universities around the world possess smartphones.

For instance, a study conducted at Najran University in Saudi Arabia revealed that 94% of the participants owned smartphones [2]. Furthermore, it was observed that approximately 98% of medical students at the University of Toronto [3] and a minimum of 79% of British medical students [4] also owned smartphones. The situation was found to be quite similar among Malaysian medical students, with a study conducted in 2014 reporting that nearly 90% of them possessed smartphones or similar devices [5]. Several studies have investigated the prevalence and patterns of electronic device usage among medical students. According to a study [1]

Medical students use the mobile application for online textbooks (70%), medical podcasts (60%), medical calculator (75%), online lecture (50%) and notes taking (45%) This heavy reliance on smartphones and medical applications suggests a significant shift in learning strategies, with traditional textbooks being replaced by digital resources. Regarding the psychological impact of electronic gadgets, a study identified abnormal mental reactions such as anxiety, irritation, and restlessness among 46% of the participants [6]. This percentage is higher compared to the 28.2% reported in a study conducted by Wahyuni et al. [7]. Sundus (2015) also noted that excessive use of gadgets among children at certain ages can lead to depression [8].

Furthermore, this excessive gadget usage has been linked to mental health issues in children during both their childhood and adolescence. These issues may manifest as depressive behavior or the emergence of severe depressive symptoms within a short span of time. These findings also highlight the need for a comprehensive understanding of the consequences associated with excessive reliance on electronic devices in medical education.

To address the knowledge gaps in this area, the present study aims to investigate the extent of electronic device dependence among Medical students of School of Medical Sciences and Research, Sharda University Batch 2022- 23 and its impact on their academic performance, learning strategies, and overall well-being. By examining the prevalence, patterns, and consequences of device dependency, this research endeavors to contribute to the existing body of knowledge and provide insights for educators and policymakers to develop strategies that promote responsible and balanced use of electronic devices in medical education.

Aims & Objectives

The aim of the study is to assess the prevalence, usage, and dependence of electronic devices among young medical students.

The objectives of the study are:

- 1) To analyse the level of limited or excessive usage of electronic device in young medical students.
- 2) To analyse the impact of electronic devices on their daily chores.
- 3) To assess the impact if electronic devices on their health.

LITERATURE REVIEW

Introduction: The increasing use of electronic devices among individuals has become a ubiquitous phenomenon in today's digital era. Medical students, in particular, are not exempt from this trend. The dependency of medical students on electronic devices, such as smartphones, tablets, and laptops, has raised concerns regarding its potential impact on their academic performance, professional behavior, and overall well-being. This literature review aims to explore the extent of dependency on electronic devices among medical students and its implications

Theoretical Framework: Understanding the dependency of medical students on electronic devices requires a theoretical framework that can shed light on the underlying mechanisms. One such framework is the theory of addiction, which suggests that excessive use of electronic devices may lead to behavioral addiction. Behavioral addiction involves a loss of control over the use of certain behaviors or activities, leading to negative consequences. Applying this framework to medical students, it becomes essential to examine the role of electronic devices as potential addictive agents.

Prevalence and Patterns: Several studies have investigated the prevalence and patterns of electronic device use among medical students. A cross sectional survey conducted amongst medical students of private medical colleges in India, among the study population, 96% owned a smartphone -Android based 72.4%, i phone 13.0%, Windows based Nokia phones 7% and Blackberry 3.6%. Common medical applications used by the students were Anatomy and Medical Dictionary in First MBBS; Medical Dictionary, Medscape and Google/Wikipedia in Second MBBS; and Medscape, Google/Wikipedia and Prognosis/Diagnosis in Third MBBS. More than 90% students, reported to have technological skills to use smartphones, for medical education, communication and instant access during bedside teaching. Advertently, 37.2% students felt if smartphones are used for clinical purposes, they will need to spend less time with patients. Almost 79.4% felt that smartphones should be introduced in MBBS course. [9] These findings highlight the widespread ownership and high utilization of electronic devices among medical students.

Factors Influencing Dependency: Multiple factors contribute to the dependency of medical students on electronic devices. One significant factor is the integration of technology into medical education. With the growing adoption of online learning platforms, electronic textbooks, and medical apps, medical students increasingly rely on their devices for accessing educational resources and staying up-to-date with medical knowledge. Additionally, the influence of social media platforms cannot be

ignored. Studies have shown that medical students frequently engage in social media use, which may contribute to excessive screen time and distraction from academic tasks.

Effects and Implications: The dependency of medical students on electronic devices has both positive and negative effects. On the positive side, electronic devices facilitate access to medical information, enhance communication among peers and healthcare professionals, and enable efficient organization of study materials. However, the negative effects are also noteworthy. Excessive device use has been associated with decreased academic performance, decreased attention span, and increased risk of distraction during clinical activities. Furthermore, the constant connectivity and information overload may lead to elevated stress levels and negatively impact mental well-being.

Interventions and Strategies: Recognizing the potential negative consequences of dependency on electronic devices, several interventions and strategies have been proposed. Educational programs that promote responsible technology use, digital detox initiatives, and time management strategies have shown promise in mitigating the adverse effects of excessive device use. Encouraging face-to-face interactions, creating device-free zones, and providing guidelines for appropriate technology use during academic activities are additional measures that can be implemented.

Gaps and Future Research: Despite the existing body of literature on the dependency of medical students on electronic devices, several gaps and avenues for future research persist. Firstly, more qualitative studies are needed to gain deeper insights into the experiences, perceptions, and attitudes of medical students regarding electronic device dependency. Additionally, long-term studies that examine the impact of device dependency on career choices, patient interactions, and professionalism among medical students would provide valuable information. Furthermore, research exploring the effectiveness of various interventions and strategies in reducing dependency and improving overall well-being is warranted.

Conclusion: The literature review provides an overview of the dependency of medical students on electronic devices. The prevalence of device ownership and utilization is significant among this population. While electronic devices offer numerous benefits in medical education, including easy access to resources and improved communication, their excessive use can lead to negative consequences such as decreased academic performance, attentional difficulties, and increased stress levels.

Recognizing the need to address this issue, interventions and strategies have been proposed, such as educational programs and digital detox initiatives, to promote responsible technology use and mitigate the adverse effects. However, gaps in the existing literature highlight the need for further research. Qualitative studies are required to gain a deeper understanding of medical students' experiences and perspectives regarding device dependency.

Long-term studies examining the impact of device dependency on career choices, patient interactions, and professionalism among medical students would provide valuable insights. Additionally, the effectiveness of interventions and strategies in reducing dependency and improving overall well-being requires further investigation. In conclusion, the dependency of medical students on electronic devices is a prevalent issue with both positive and negative implications. While devices enhance learning and communication, excessive use can lead to adverse effects on academic

performance and well-being. It is crucial to develop interventions and strategies to promote responsible technology use among medical students. Future research should focus on addressing the gaps in the literature and exploring the long-term impact of device dependency on medical education and practice.

RESEARCH DESIGNS & METHODOLOGY

This questionnaire study was conducted for electronic device usage in first year MBBS students of Sharda University, India. A briefing and discussion on the topic was conducted with the students of first year MBBS. Followed by which a survey questionnaire was prepared. The survey enclosed the voluntary consent at the beginning of the questionnaire form and was distributed in the format of a Google form among the students of MBBS batch 2022-23.

Questionnaire is a systemic data collection technique consisting of a few personal particulars and main body.

The main body of survey contains 21 questions regarding their electronic device usage and only required basic personal particulars have been asked namely age, gender, family members and working parents at the beginning of the survey. The personal particulars are to estimate the accessibility and demographic distribution of devices under the above mentioned headings for which consent has been taken the same. 221 responses had been recorded out of a case study group of 250. Data was collected from the MBBS students of batch 2022-23.

Excel sheet was prepared and data was calculated using the responses from the students. Graphs and charts were made using the data correlating various parameters to electronic device usage. Result was generated and conclusion was drawn to the study. References were attached and study was finalised.

Observations & Result

In present study total 221 respondents had filled the questionnaire and the expanded excel sheet was prepared from the data and responses what we received.

The age group for the present study was between 18 to 25 years of medical students. Among all the respondents number of Male participants are 98 and number of female respondents are 123.

The respondents were of different gender but within the same age group. Therefore we were able to analyze the impact of electronic devices usage by an individual irrespective of their age or gender.

The other personal information which has been taken from the respondents were as how many members are there in their family, who is the working member in the family & also how many electronic devices individual own. These data were used to determine the relation between different parameters.

The questionnaire had 21 questions with multiple options, which have to be filled by them according to their own prospective.

An excel sheet was prepared for all the data we received. Data was charted in order to demonstrate relations between the problems or questions and their responses.

Each independent variable has been analyzed and graphs were plotted for each of their values.

As per the responses received on the question “Number of family members” 102(47%) respondents has answered 4, while 57(25%) have responded as 5 members in the family.

For the question on “Working parents” 144(65%) responded as the Father among parents while 73(33%) responses said as both parents are working.

Out of 221 respondents 46% individuals own 2 electronic devices, while 10% individuals have responded as they own 5 electronic devices.

Questions which have been asked in the survey questionnaire have been tabulated & their comparisons have been done.

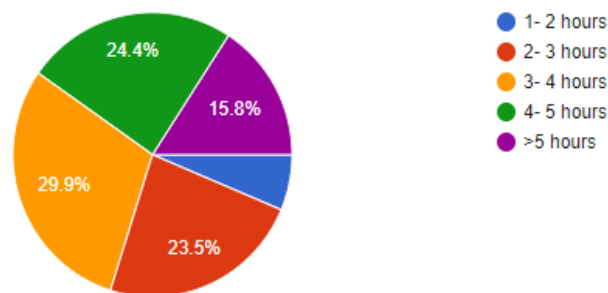
Survey on Impact of electronic devices usage in young adult

Bar diagram had been prepared for Questions & their responses & they are mentioned as below.

1. On the question asked about the daily average screen time of the youngsters more than 70% have answered more than 2hours a day. 30% have responded as 3-4 hours, while 24% & 23% have responded as 4-5 hours and 2-3 hours respectively.

What is your daily average screen time?

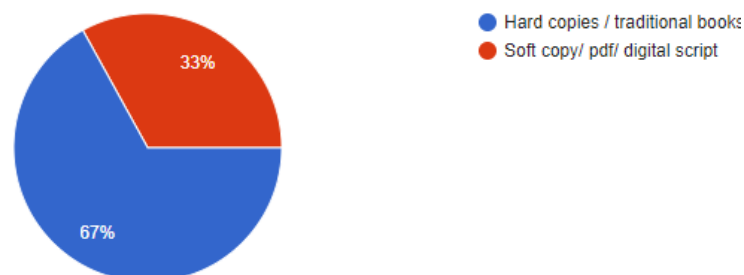
221 responses



2. When asked about which reading method preferred by youngsters for their regular academics & research purpose: 148 (67%) responded as they prefer hard copies over their pdf or Soft copies.

What is your preferred mode for research purpose or reading

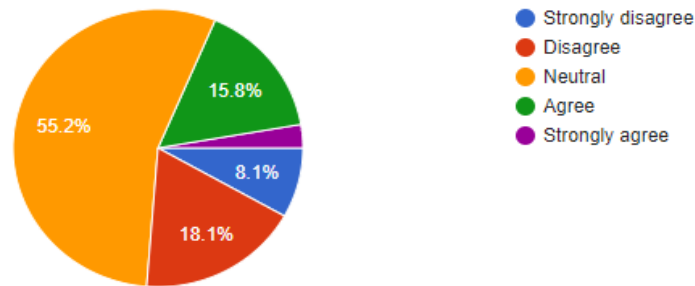
221 responses



3. More than 55% participants found their screen time to be neither beneficial or unproductive, concluding that mindless using of device without a fixed purpose or goal for about 2 or more hours a day for more than 70% participants. 27.6% participants experience phantom vibration of their device and reach for it.

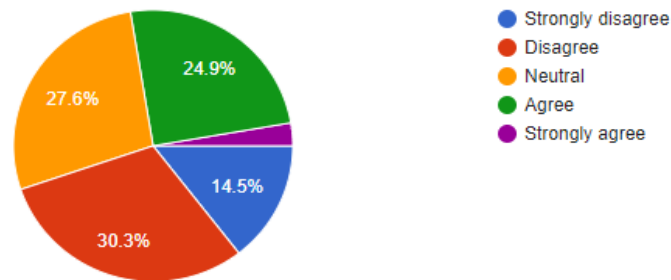
I feel that most of my screen time to be productive.

221 responses



I often feel that my device is buzzing and I reach for it even when it is not.

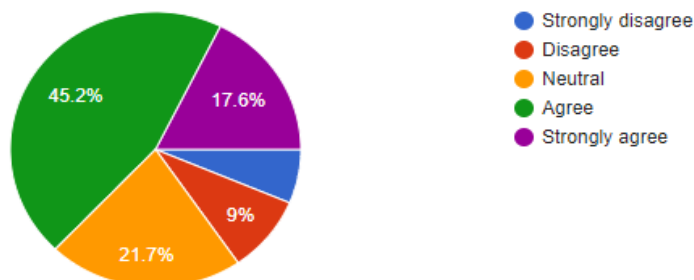
221 responses



4. 32.6% participants prefer devices for communication and 62.8% find it important to maintain relationships.

I feel devices are easier and in fact important to maintain relationship with family and friends.

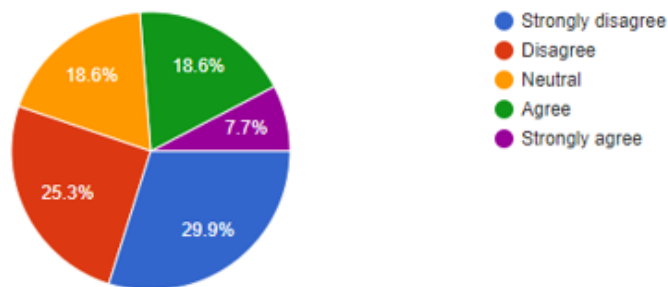
221 responses



5. 26.3% participants have difficulty waking up without their device used for assistance and 24.5% participants are unable to tell the day date or time without device. 29% even carry the device with them everywhere including the restrooms. Concluding that approximately 25% participants are dependent on device for basic day to day activities.

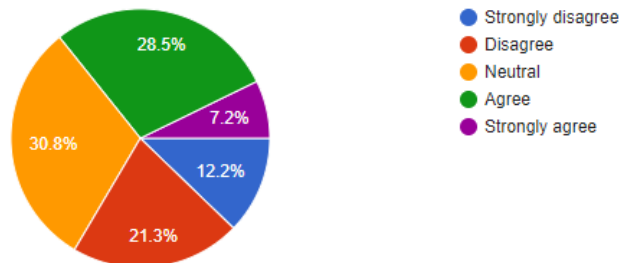
I would be able to wake up in the morning or after a nap without any alarm in my device.

221 responses



I am able to tell the date, day and time accurately without looking at devices for reference.

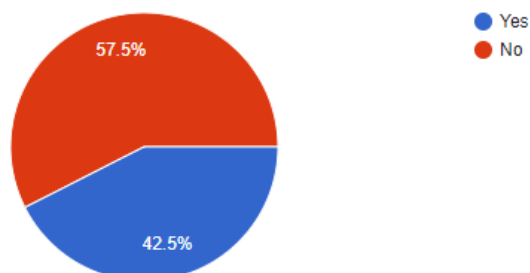
221 responses



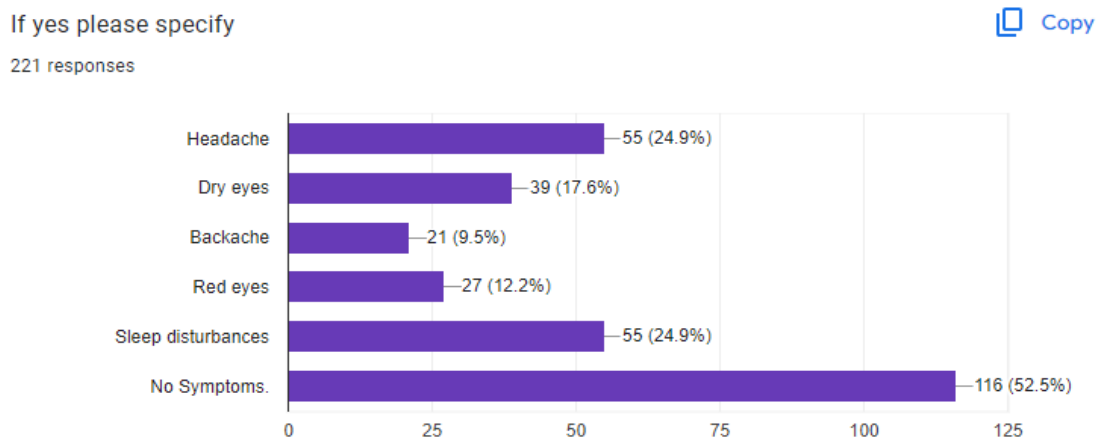
6. Approximately 50% participants experience some amount of physical discomfort after device exposure. Out of which 22.22% participants actively try to minimise screen time by various methods concluding that despite physical discomfort less than half of the participants try to minimise it's use and showing a dependence.

Do you face any physical discomfort due to device usage?

221 responses



Headache & Sleep disturbances (25% each) is the common physical discomfort faced by youngsters.



80.6% participants consider device to be an important part of education system. Approximately 41% prefer devices for recreation and 33% prefer soft copy for studying. Concluding that education cannot be independent to device dependence in students.

77.8% participants use navigation apps over asking directions or using signs, showing strong dependence on device for navigation. Concluding that young adults face difficulty navigating to places without their devices for navigation.

21.3% require device to deal with boredom where as 78.7% do not feel the requirement for device to provide ambient environment but 64.7% have responded by agreeing to listening to music while studying or doing other activities.

Students use devices for background music or entertainment while engaging in other activities.

DISCUSSION & CONCLUSION

The present study was conducted on Medical students of age group between 18 to 25 years in School of Medical sciences & Research, Sharda University, Greater Noida. In this study Questionnaire was given to MBBS Students of Batch 2022-23 & 221 responses have been received. Among all the respondents number of Male participants are 98 (44.34%) and number of female respondents are 123 (55.65%).

Out of 221 respondents 46% individuals own 2 electronic devices, while 10% individuals have responded as they own 5 electronic devices.

70% have responded as usage of electronic gadgets with more than 2 hrs a day. As the responses suggest that youngsters still prefer hard copy or traditional form of reading so it can be mentioned as the usage of device is more for their entertainment purposes. The dependency of young medical students on their electronic gadgets is much higher. The data received from the present study support few earlier studies in different countries.¹⁰

Approximately 50% participants experience some amount of physical discomfort after device exposure. Many of them have complaints about Headaches & Sleep disturbances. Out of which 22.22% participants actively try to minimise screen time by various methods concluding that despite physical discomfort less than half of the

participants try to minimise it's use and showing a dependence. The present research agrees with previous studies about the device usage & its impact on mental health by various authors. ^{11, 12, 13}

21.3% Require device to deal with boredom where as 78.7% do not feel the requirement for device to provide ambient environment but 64.7% have responded by agreeing to listening to music while studying or doing other activities.

Students use devices for background music or entertainment while engaging in other activities but do not consider it as dependance. There is no gender predisposition to electronic device dependency. It is safe to conclude that electronic device dependence is present but due to lack of awareness by participants and participant bias a stat cannot be estimated.

As in this present era, when everything is digitalized it is impossible for anyone specially young students to stay away from electronic devices or high- tech gadgets. Nowadays they need devices for their daily activities as waking up, schedule setup, reading, learning & entertainment.

After the Covid-19, when all classes and learning have been on only Online platform it had become necessity to know & learn internet teaching but it has some negative impact also on these youngsters. Their physical & mental health is also impacted.

So we can conclude it as that the uncontrolled usage of devices are either directly or Indirectly impacting the youngsters & also leading to self centered world. As it is well said by Ayn Rand , "One can avoid the reality but one can't avoid the consequences of avoiding the reality." So it will be beneficial for individual youngsters & for the community as well that they are aware of effect & impact of device usages.

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