

Impact of Smartphone Usage on the Academic Performance among Medical Students

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ABSTRACT

BACKGROUND

Mobile phones are considered as an essential part of day to day life. But its excessive use is detrimental to the mind and body; especially, for the young population. Even though there are many reports regarding the issues related to excessive use of smartphones and its impact on the academic and social life of college going students, research related to medical students is sparse. The aim of this study is to determine the impact of smartphone usage on academic performance of a selected group of medical students using a structured questionnaire.

METHODS

A survey-based study has conducted among randomly selected MBBS students (N=200), comprising of 85 males and 115 females, in the age group of 17-25 years. A self-administered and pre-tested questionnaire which includes questions on the effect of smart phone, was used.

RESULTS

Results of the survey showed that all the participants are using smart phones and agreed that it is an essential part of their life. Among these, only 12.2% of students are using it for academic purpose. Surprisingly 68.8% students use their mobile phone inside the classroom. 44.2% of the participants felt that their smartphones are distracting them from studies. They also reported that due to the overuse of smartphones they are unable to concentrate on studies (34.2%), it affects study habits and leads to poor performance in exams (40%), produces stress for the eyes (21%) and a decrease in overall academic performance (29.1%).

CONCLUSIONS

The present study group of medical students felt that overuse of smartphone is the main reason for their poor academic performance. They also realise the ill effect of overuse of mobile phones on health. The present study helped us to create awareness among the participants regarding the impact of overuse of smartphones and how it is influencing their academic activities. Universities and colleges can also create awareness regarding mobile phone use.

KEY WORDS

Smart Phone, Mobile Phone, Medical students, Poor Academic Performance

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BACKGROUND

Smartphone– a multi-purpose mobile computing devices, is an essential part of human life which has multimedia functionality along with voice calls and text messaging. As per a study in 2014, 1.85 billion people were using smart phone among the worldwide population. This number is expected to be 2.32 billion users in 2017 and in 2020 it is expected to reach 2.87 billion.⁽¹⁾ In India, the number of mobile phone users is 524.9 million as of 2013 and by 2019, it is predicted to reach 813.2 million.⁽²⁾ Any new technologies, the young people are the first one to get exposed to it. The smart phones are changing the way they communicate with one another and also it plays a major role in their academic and social lives. The smart phones became the central to the identity of the adolescents and it is an important communication tool for young people among the peer group and being a part of the peer group. It has transformed their peer relationship into a truly networked society.⁽³⁾ Nowadays, the mobile is a status symbol for many young people. The appearance of phone, features and personalised accessories attested to their phone's status and 60% of adolescents were keen to upgrade their mobile phone.⁽⁴⁾ It is also seen as a fashion accessory by the young people that satisfies the need for individualisation by choosing their mobile phone wall paper, ring tones, phone covers, carry bags and other accessories needed for the phone.⁽⁵⁾

Majority of the researchers found that the mobile phones lead to problematic use in schools and colleges. In relation to the use of mobile phone there is a conflict in priority among young people, parents and teachers. Teachers concerned about discipline issues in the classroom, but for parents, they are concerned about being contact with their ward at any time.⁽⁵⁾ According to Ling and Helmersson (2005), mobile phone "Is at cross purpose with the mission of school". In school, students are supposed to take their prescribed student role, free from contact with the world outside, with full concentration on their studies. Using mobile phones inside the school gives room to blend the student's role and finally it results in distraction and disruption from their academic work.⁽⁶⁾ With the overuse of mobile phones and internet access, one can easily see the consequences in the academic performance and lifestyle of young people. There will be a continuous downward spiralling in the academic activity, increase in the cases of drop out, massive failures in exam and also malpractices in exam with the help of cell phone.⁽⁷⁾

Kubey et al states that heavy use of technology by the adolescents for recreational purposes is highly correlated with reduced academic performance. He also states that the internet use at late night, makes them to get less sleep and miss their classes.⁽⁸⁾ In Japan, the results of a survey of youth trends showed that 68% of students received poor grades academically who owned a mobile phone.⁽⁹⁾ Bianchi and Philips in 2005 introduced the concept of addiction to mobile phone use. Smart phone addiction became a globally emerging issue and it also affects the adolescents of India. ⁽¹⁰⁾ In November 2017, a survey conducted by AIIMS, Delhi and Maulana Azad Medical College at a health camp in Pragati Maiden. In this survey on 817 people [Including college and school students, young professionals], it was found that about 56% of the participants had at least one mobile phone behavioural addiction such as gaming, internet use and social

media.⁽¹¹⁾ A new study has found out that anxiety and missing out an information makes the university students to check their mobile devices as many as 150 times in a day or an average.⁽¹²⁾ Jose de- sola et al reviewed about the problematic cell phone use with criteria similar to those established for substance addiction and pathological gambling. It has been associated with some personality variables such as extraversion, neuroticism, self-esteem, impulsive self-identity and self-image.⁽¹³⁾ A study by Hafidha et al defines smartphone addiction as a type of behaviour associated with a group of negative symptoms like disregard of harmful consequences, pre occupation, inability to control craving, productivity loss and feeling of anxiety.⁽¹⁴⁾

On 31st May 2011, the WHO confirmed that overuse of mobile phone indeed results in health risks and it classified cell phone radiation as a carcinogenic to humans.⁽¹⁵⁾ Micro wave or Electromagnetic radiations from the mobile phone alter the electrical activity of brain and it results in numerous health effects such as headache, difficulty in concentration, loss of mental attention, increased reaction time, sleep disturbances, fatigue, stress, hearing and concentration problems and also these radiations damage the areas of brain associated with learning, memory and movements.⁽¹⁶⁾ New pathological conditions like Nomophobia (No mobile phobia), FOMO (Fear of missing out), the fear of being without a cell phone, disconnect from the internet, Textaphrenia and Ringxiety- the false sensation of having received a text message or a call that leads to checking the device constantly and Textiety- the anxiety of responding immediately to a text message have been reported.⁽¹⁷⁾

Undoubtedly smart phones offer several conveniences in our life but also, we need to be aware of the negative consequences of its use particularly young adults who depends more on it. With this background, this study is focused on finding the impact of mobile phone use on academic performance of MBBS students.

METHODS

This study was conducted among medical students of Sri Lakshmi Narayana Institute of Medical sciences, Puducherry. A total sample of 200 undergraduate students were selected randomly, with 115 female participants and 85 male participants. These students came within the age range of 17-25 years. For this study, we developed a structured questionnaire with items included demographic information like age and gender, self-reported mobile phone usage and effect of its use in academic activities. After obtaining the Institutional Review Board approval, this survey was conducted online. The students of selected batches were approached in the lecture hall and they were informed about the survey and their consent to participate in the study was obtained. The questionnaire link was sent to the students and the researcher explained the procedure to answer the questions. Then the students were asked to submit the filled forms. A self-administered process was used to collect the data, whereby the respondent himself reads the questions and give the answers with more information regarding the usage of their cell phone. Each participant was given an identification code to avoid double responding.

RESULTS

The data was collected, and results were calculated by using simple statistical technique of drawing percentages and depicting graphs. As shown in Table 1, out of 200 respondents, 115 (57.5%) were females and 85 (42.5%) were males. The 127 respondents (63.5%) were of age between 17-19 years followed by 62 (31%) students from the age group 20-22 years and only 11 (5.5%) respondents belong to the age group 23-25 years. It was noteworthy to mention that all the 200 respondents (100%) were using smart phones.

Characteristics	Total (N= 200)	Percentage
Gender		
Male	85	42.5
Female	115	57.5
Age		
17-19 years	127	63.5
20-22 years	62	31
23-25 years	11	5.5

Table 1. Demographic Information

A total of 32.5% (65) students are using mobile phone for about more than 3 years. 21.3%(42) respondents use their cell phone daily for about 5-10 hrs and 20.1% (40) students use it more at late night. 39.7% (79) students keep their mobile phone on the bed while sleeping. Among these 200 respondents, 61.4% (121) of the students mostly use their phone to contact their parents and relatives and only 12.2% (24) are using it for academic purpose. 63% (120) of students reported that they feel tempted to use their mobile phone if his/her friend is using nearby them, when they were studying. 30.2% (60) students accepted that they felt addict to their phone. 30.7% (61) students are having a feel of urge to answer a call or text immediately. The common health effect in this study was eye strain reported by 21% (42) students.

57.4% (113) of students agreed that their mobile phone has more of the entertainment materials stored when compared to study materials (Figure 1). 70.5% (141) participants informed that they use mobile internet most commonly for entertainment purpose (Figure 2). 59% (118) students, it's more than half of our participants accepted that their academic performance can be increased without mobile phone usage (Figure 3). We also found some of the positive perceptions of mobile phone use by students in our study such as 46.5% students says that mobile phone is assisting them in learning new things and 41% students accepted that their mobile phone has increased their searching and learning skills. Table 2. Shows the how the mobile phone is influencing them academically.

Characteristics	Total (N= 200)	Percentage
Using mobile inside classroom	137	68.8
Distracting from studies	88	44.2
Lack of concentration in studies	68	34.2
Affecting study habits and results in exam	80	40
Academic performance is decreased because of frequent use of mobile phone.	58	29.1

Table 2. Information

The following are the figures depicting the percentage of student's response to some questions-

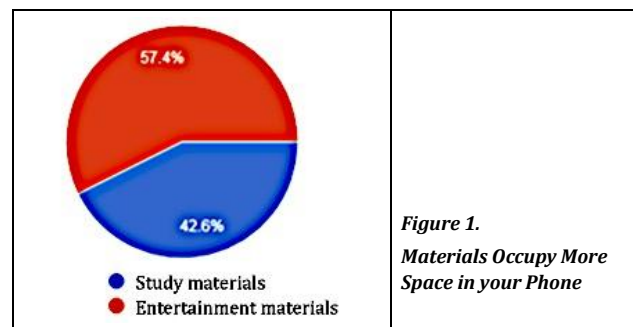


Figure 1.
Materials Occupy More Space in your Phone

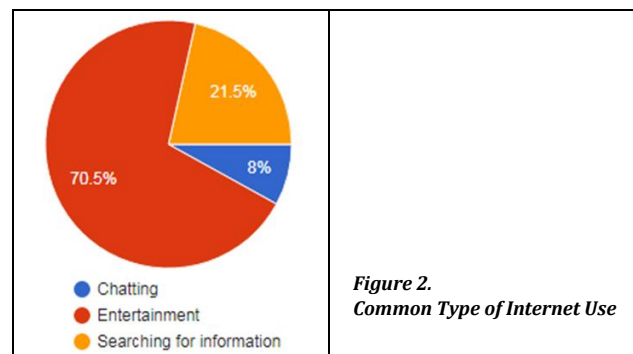


Figure 2.
Common Type of Internet Use

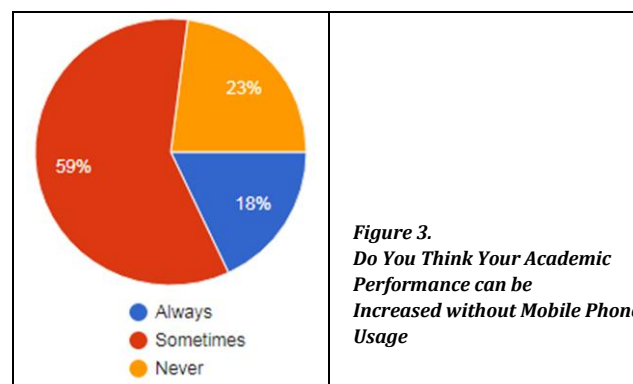


Figure 3.
Do You Think Your Academic Performance can be Increased without Mobile Phone Usage

DISCUSSION

This study aimed to reveal the impact of smart phone usage on the academic performance among the medical college students. Cell phones play an important role in our life. Along with keys and money, the mobile phone also became one of the survival tool most people carry with them.⁽¹⁸⁾ Using a mobile phone makes the communication possible anywhere at any time and it becomes a vehicle for self-expression and self-identity. The young people are now so used for doing multitasking works and also the mobile phones are influencing the communication between the young generation people, it affects the conversational skills and self-disclosure. A new way of language with short hand is becoming popular among the students.⁽¹⁹⁾

"Smart phone dependency, Hedonism and Purchase behaviour: Implications for digital India initiatives" a study conducted by Aligarh Muslim University and funded by Indian council for social science research, found that only 26% respondents indicate the primary use of smartphone for calling purpose, remaining respondents use it for other purposes. The study also finds out that 23% of people log in more than 8 hours/day.⁽¹²⁾

On September 16, 2008, the Orissa government announced that it has banned the mobile phones usage inside college campuses. The higher education minister Samir Dey said that "The mobile phones are found to be a disturbing element in college campus. Therefore, we have banned it in the campus," he also adds that the order would be implemented in both government and nongovernment colleges across the state.⁽²⁰⁾ Many researchers across the worldwide studied how the smart phones are influencing the academic as well social activities of the students. The cultural background can also impact the way the technology is perceived. Smart phones disrupt teaching and reducing the attention of students in class which results in negative educational outcomes as reported by school and educational settings.⁽²¹⁾ Most of the students are blaming their indiscriminating use of mobile phone is responsible for their poor academic performance. They use mobile phone to access social network websites more than to learn e-books.⁽²²⁾ Frequent calls and messages from the friends and other people are not allowing students to complete their academic work on time.⁽¹⁵⁾ The teenagers who stayed up late night and use their phone during sleep hours are more prone for day time sleepiness in the class rooms. This eventually results in their decreased academic performance.⁽²³⁾ The findings of Meta-analysis approach by Sanjeev reveals that smart phone usage has significant effect in causing psychological problems, affects the classroom performance of students, hindering the studies, eating habits, results in stress etc.⁽²⁴⁾

The findings of the study by Haruna et al revealed that using of mobile phone significantly influence the academic performance of both gender of secondary school students of Nigeria and also the study finds out that age difference and gender was not a significant factor in mobile phone usage, it affects equally all the students.⁽⁷⁾ In a study by Mahboub among the middle eastern youth, he points out that 67%-70% of students claimed that new information technology is distracting them from studies.⁽²⁵⁾ An exploratory study of college students in Taiwan by Yi Fen Chen, indicates that the frequent usage of smart phone affects the academic learning and he also noted that Taiwanese female students were heavy mobile users when compared to their male peers.⁽²⁶⁾ In an attempt to study the effect of smart phone usage on the university students of UK by Fowler, he noted that participants experience a sense of compulsion with the use of mobile phone, they are constantly checking their emails and texts. He also mentioned one comment by a participant that "Nothing happened in the last 5 minutes but I still check it". This clearly shows that how mobile phones are distracting the students.⁽²⁷⁾

A survey on smart phone usage among Korean people depicted that 83.6% of Koreans aged over 3 years were found to use a cell phone and the prevalence of addiction to mobile phone in Korean middle school students was 30.9%. This is very high rate when compared with the rate in other countries.⁽²⁸⁾ India stands on second place with more cell phone subscribers next to China which stands at first place. Inside the college campuses of U.S, students fill the time between classes by using their mobile phone and usage of cell phone is spilling in library, classroom and even in bathroom.⁽¹⁸⁾ Akansha et al researched on the effects of excess usage of mobile phone on the mental health and quality of life of adolescents. And it was found that the limited users of smart phones have better mental health and quality of life than the

unlimited users.⁽²⁹⁾ Subbha et al in their study report that 34.6% of students have the symptoms of ringxiety and 49.6% who had ringxiety reported that their studies were hampered as a result of talking too much on phone. A majority of students (51%) were found to communicate with their parents.⁽³⁰⁾ This was similar to our study where 61.4% students used their phone to communicate parents.

The young generation people who spend more time on their cell phone are more susceptible to psychological disturbances. Psychiatrist considered mobile phone addiction to be an obsessive compulsive disorder(OCD).⁽³¹⁾ Excessive mobile phone use was observed among medicine post graduates which results in unstable mental health status and depression.⁽³²⁾ Attila et al reported a case of 18 year old girl who has severe smart phone addiction and she fits to the criteria of behavioural addictions as well as for criteria of addiction to gambling disorders.⁽³³⁾ Agrawal et al (2008) reported that male fertility may be more vulnerable to damage as a result of cell phone radiation as they were able to degrade the quality of sperm, lower sperm motility, sperm viability and also some mutations in its DNA which changes the morphology of sperm.⁽³⁴⁾ Seong Yeol investigated that using mobile phone with forward head posture results in muscle fatigue and pain in the neck and shoulder region.⁽³⁵⁾

Some students are aware of their addiction to smart phone. They realise sometimes that their phone usage time is longer than they planned and try to shorten the time, but they fail to do so because of their addiction. In addition to poor academic performance, the smart phone usage disturbs the daily life activities and relationships with their family members also hampered.⁽³⁶⁾ Few studies proved that this mobile technology has sometimes increased the academic activities of students. They are using it as a positive tool for recording notes in the class room, to capture the scripts, hand written notes from books etc., It saves time and increase productivity, increased searching and learning skills and to create positive feeling among their peer group.⁽³⁷⁾ In a study by Tirupura Sundari, 39.3% agreed that their academic performance is increased due to mobile technology and 37.4% said it also assists them in learning.⁽³⁸⁾

90% or more of students agreed that smart phone is really helps them to achieve their educational objectives and also more or less same number of students complained the disturbance in the studies because of the smart phone.⁽³⁹⁾ According to students, the positive effects of mobile phone use is more on their study habits and social relationships than the negative effects, but for the teachers and parents the mobile phone use has more negative impact on students.⁽⁴⁰⁾ Almost half of the internet users are between 18 and 25 years of age. To these youth while this advanced technology is building bridges between them and distant from others, at the same time it is also building even stronger walls between them and their families and friends.⁽²⁵⁾ Rodney suggests that the college administrators and faculties can utilize different teaching methods that do not involve the modern technology so that, the students are forced to spend less time from the technology.⁽⁴¹⁾

Some of the measures to be taken by students as they told by themselves in our study are reported in the following-

- "I should take a decision to reduce the usage of mobile phones"

- "Cut off net connection"
- "Control myself"
- "Restrict mobile usage fixed time for using mobile per day"
- "Using phone at one particular time every day and use it for emergencies only"
- "Should conduct some awareness programmes"
- "Regular (Once in a week) seminar and obtaining statistics on mobile usage"
- "Using basic model phones"
- "I should stop or switch off my phone while studying"
- "Control ourselves from using the mobile phone. It should be used in such a way that we should not be addicted by it"

CONCLUSIONS

The present study group consisted of medical students. They felt that overuse of smartphone is the main reason for their poor academic performance. They also realise the ill effect of overuse of mobile phones on health. The present study helped us to create awareness among the participants regarding the impact of overuse of smartphones and how it is influencing their academic activities. Universities and colleges can also create awareness regarding mobile phone use.

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