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Impact of mobile phone usage on psychological health status and academic performance of under graduate students in a private medical college

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Abstract

Introduction: Mobile Phone Culture is most widely spreading in the present era. It has become an essential part of modern life and is playing a vital role in decreasing distance and increasing communication among people. Mobile phone has affected almost every field of life but its effects on students learning especially at college level are deep and are multidimensional. With the passage of time, the darker side of technology is also revealed. Mobile devices have both positive and negative effects on human health and behaviour.

Material and Methods: This is a cross-sectional study using purposive 120 sampling among newly intake of undergraduate students in tertiary care teaching hospital. Those who were absent and, withdraw during data collection as well as uncompleted questionnaire were excluded in the study. A pilot study was administered to 120 undergraduate students who were not participating in the study. Result showed that the students did not have difficulty in understanding and completing the questionnaire. Then, actual study was carried out.

Result: Result from this study found 45.0% of students spent 4-6 hours a day to use the smartphone. Meanwhile, 30% of the students spend more than seven hours on and this figure is quite worrying. This is because time allocation for smartphones more than 5 hours is inappropriate for a student who should prioritize academic issues and concentrate on learning rather than social issues as it will affect the academic achievement. The finding of this study showed that most of the students used smartphones to browse social networking sites.

Conclusion: It was observed in our study that many students use mobile phones excessively and inappropriately. They are giving more preference for mobile phone usage than their health and academics. As mobile phone usage is highly prevalent among college students their impact on mental health and academic performance should be discussed and judicious use recommended.

Keywords: psychological health, academic performance, stressed

Introduction

Mobile Phone Culture is most widely spreading in the present era. It has become an essential part of modern life and is playing a vital role in decreasing distance and increasing communication among people. This small device has done that work which was not even accomplished by great leaders and even wonderful inventions. For 2019, the number of mobile phone users is forecast to reach 4.68 billion worldwide ^[1] out of which 800 million people will be from India ^[2].

Mobile phone has affected almost every field of life but its effects on students learning especially at college level are deep and are multidimensional. With the passage of time, the darker side of technology is also revealed. Mobile devices have both positive and negative effects on human health and behaviour. Some positive and healthy impacts and effects of mobile phone on students performance include the ease to contact their teachers, classmates and parents. They can use internet to search out the useful information and use the mobile as minicomputer. Besides using mobile phones for calling and texting, it has become a mode of relaxation for them. Many students use social networking sites and play games to take a break from their routine. At times, Youngsters prefer to carry two phones with them and they easily manage to handle their both activities of playing and communicating with their second phone at one time. According to Ansari ^[3] it has a number of negative and unhealthy impacts and effects on students performances at the university level, including the wastage of time and money. Its vibration and use may be harmful for health.

According to Awaz ^[4], Sir William Stewart in his book "Mobile Phones and Base Stations" narrated that exposure of radio frequency causes great absorption of energy in the tissues of head which is harmful for nervous system. Vibration of mobile phone also has effects on the pumping of blood. Heat of mobile phone also causes skin problems. Aoki and Downes ^[5] conducted a research on students in United States. They proposed that majority of the students give preference to make calls at night. This can cause restlessness, sleep loss and other adverse outcomes. Niaz ^[6] proposed that addictive mobile use has now become an addictive public health problem and awareness about the dangers linked with extreme usage and addictive behaviours must be extended among youngsters. This study was planned to evaluate the extent of usage and its effect on behaviour and academic performance of medical students of our institute.

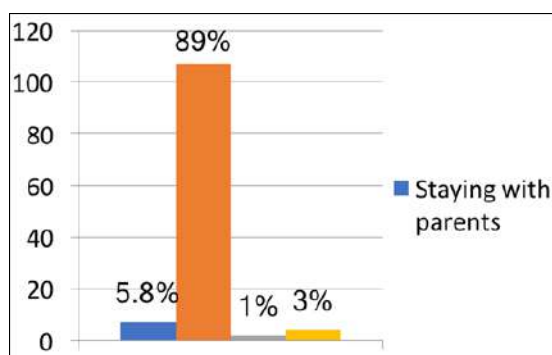
Material and Methods

This is a cross-sectional study using purposive 120 sampling among newly intake of undergraduate students in tertiary care teaching hospital. Those who were absent and, withdraw during data collection as well as uncompleted questionnaire were excluded in the study.

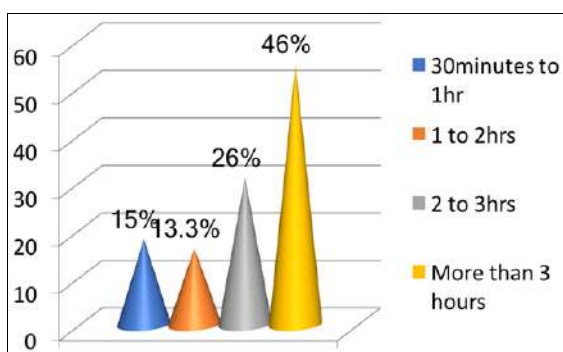
Data collection procedure and ethics: A pilot study was administered to 120 undergraduate students who were not participating in the study. Result showed that the students did not have difficulty in understanding and completing the questionnaire. Then, actual study was carried out. A brief introduction on the purpose of the study was given to the students. Those who agreed to participate were required to fill in the consent form before answering a set of questionnaire. The students took approximately 30 minutes to answer and once complete, they returned the questionnaire. Ethics approval was obtained from the Institutional Ethics Committee prior to the initiation of the study.

Statistical Analysis: All data was entered and analysed using SPSS software version 21. The descriptive statistical analysis of data was performed to determine the mean, standard deviation, frequency, and percentage. Pearson's correlation was used to determine the strength of the relationship between the variables and, Simple Linear Regression was performed to determine the effect of smartphone addiction to anxiety.

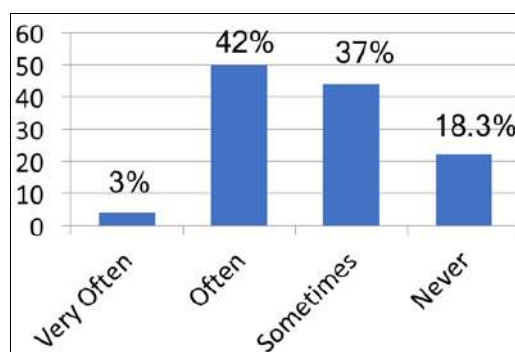
Result



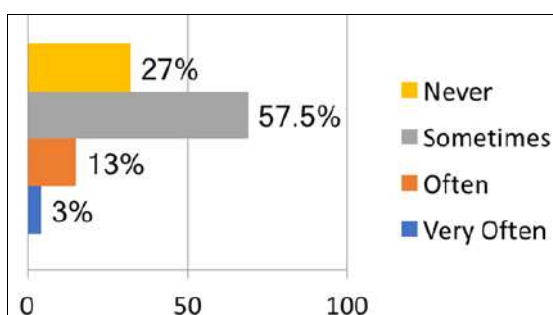
Graph 1: Living status of the subjects



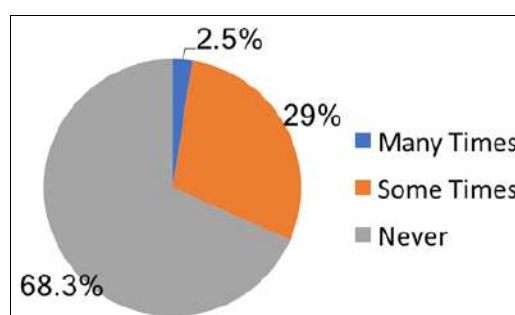
Graph 2: Time spend on mobile phone



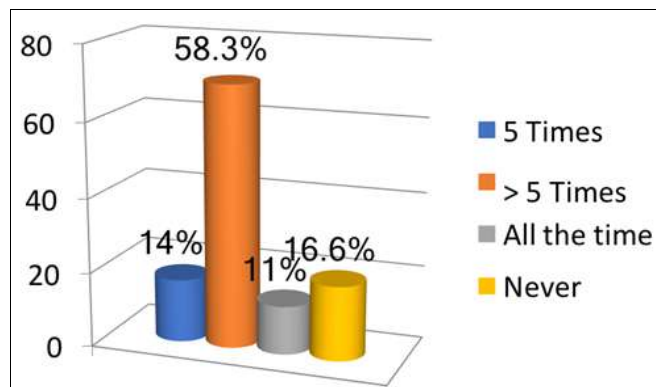
Graph 4: Neglecting important activities



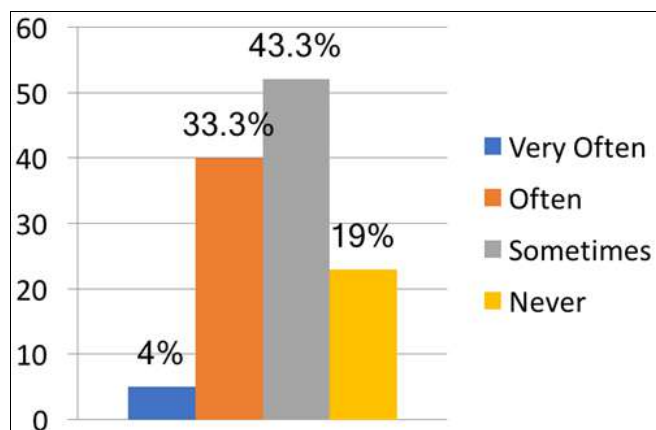
Graph 3: Stressed by using mobile phone



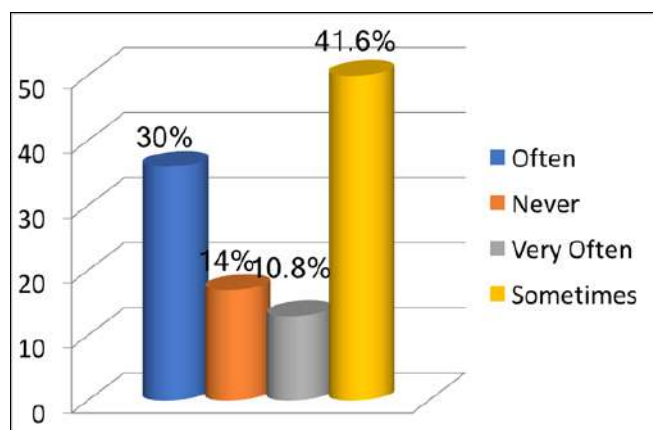
Graph 5: Ringxiety



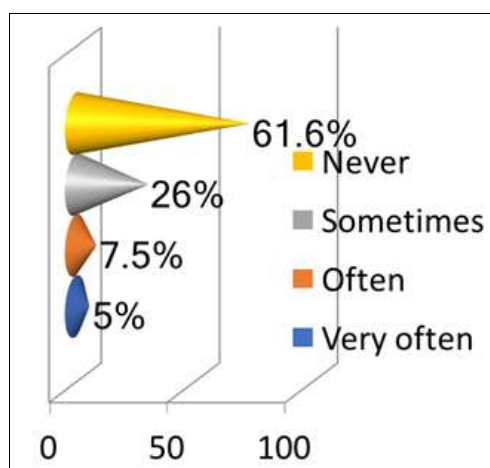
Graph 6: Checking of phone during lectures



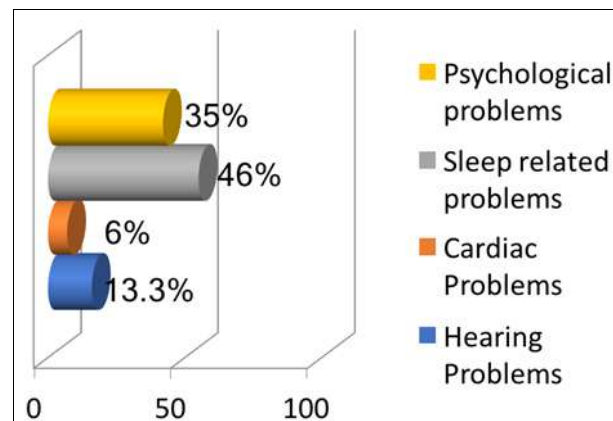
Graph 7: Decrease in concentration



Graph 8: Decline in academic performance



Graph 9: Throwing of phone owing to an angry conversation



Graph 10: Main problems caused due to usage of mobile phone

Discussion

Students tend to adapt early on electronic devices and, they can be categorized as early adopters [7]. For them, smartphone is something interesting, entertainment objects, can connect with friends and giving them a sense of autonomy, identity and credibility [8]. Result from this study found 45.0% of students spent 4-6 hours a day to use the smartphone. The findings of this study supported by Hatice *et al.* [9] who found 40.1% of students spend 4 to 6 hours a day. Meanwhile, 30% of the students spend more than seven hours on and this figure is quite worrying. This is because time allocation for smartphones more than 5 hours is inappropriate for a student who should prioritize academic issues and concentrate on learning rather than social issues as it will affect the academic achievement [10]. Amidtaher *et al.* [11] stated that an increase in smartphone dependency will decrease the academic achievement. Besides that, a cross sectional study in India found some of the students had experienced certain side effects of long term mobile use like headache, backache, eye strain [12].

The finding of this study showed that most of the students used smartphones to browse social networking sites. The finding is similar with previous study, which showed that smartphone users are now using their gadgets for social relationships. It is also supported by another studies which reported that one of the key factors of smartphone use among university students are social relationships [13]. Besides that, a study conducted by Nee and Fan [14] showed that Malaysia university students were an active social networking sites users and it becomes part of their daily activities and, they found that as the use of social networking sites increased, their psychological well-being become decreased. Roberts, Yaya and Manolis [15] and, Salehan and Negahban [16] stated that the excessive use of social networking sites can lead to smartphone addiction.

Findings of this study also found that majority of students allocate less than RM50 per month for smartphone expenses. The findings were in line with a study by Zulkefly and Baharudin [17] who found students spending the modest amount of money on smartphone usage. In India, numerous telecommunications companies offer affordable plans which enable users to choose a plan that fits in their financial capability. For smartphone addiction, the mean score for this study was higher than the previous study [18] and nearly half of the students in this study experienced high score of smartphone addiction. This study highlight that there was a relationship between smartphone addiction with anxiety and depression. The students who reported high scores of

smartphone addiction tended to report high scores of anxiety and depression. The results of this study were in line with previous studies ^[19] that there is a relationship between smartphone addiction with anxiety and depression among university student. A study by Demirci *et al.* ^[20] found that smartphone overuse may lead to anxiety and/or depression which can lead to sleep problems. Based on several studies, they also found that excessive use of smartphone lead to anxiety and create several disorders such as ringxiety, Nomophobia and fear of missing out (FoMo).

According to Subba *et al.*, ^[21] those who are suffering problems with smartphone usage experiencing phone ringing (ringxiety) problems and tend to use smartphones in prohibited areas (classes and libraries) and during meals. In 2008, Avvanavar *et al.*, ^[22] reported that this condition occurs when an individual hears the sound of the phone while it does not ring. Besides that, "Nomophobia" is increasing among young generations ^[23]. According to King *et al.*, ^[24] this syndrome occurs when an individual feels anxious or uncomfortable when parted from smartphone, computers or virtual communication devices.

According to Przybylski *et al.* ^[25] anxiety was also identified as a component of Fear of Missing Out (FoMO); it is defined as fears, anxiety, and concerns if unable to find out the latest information and, experiencing social interaction. The study reported university students with higher scores of FoMO will be more likely to check Facebook pages on smartphones during class compared to lower FoMO scores. A study by Skierkowski and Wood ^[26], found students who restricted the usage of short messages on their smartphones experienced anger, worry and anxiety. In another study, 50.0% of young people has experienced anxiety when they cannot check their smartphones, compared to only 25.0% Gen X and 15.0% Baby Boomers ^[27]. In addition, Ganganahalli *et al.* ^[28] reported during examination days, nearly 90.0% of student responded that they felt very bad or had a feeling of lost or disconnected from the world if cannot using mobile for hours.

In order to overcome the issue of smartphone addiction and anxiety, Yu and Son ^[29] conducted a study on Acceptance Commitment Therapy involving 18 participants and divided them into two groups namely the Program Group and the Control Group. Acceptance Commitment Therapy is a psychological intervention that uses acceptance and awareness strategies along with commitments and behavioural change strategies to enhance psychological flexibility. The program was supervised for eight sessions and a follow-up study was conducted after treatment. The follow-up period was carried out for four weeks. The results of the study showed the level of smartphone addiction and level of anxiety were decreased after the program and it proved that the program could be used as one of treatment methods for smartphone addiction.

In addition to determining a relationship between smartphone addiction and anxiety, findings of this study also reported significant relationship between smartphone addiction and depression. It was supported by previous studies that found individuals with smartphone addiction problems tend to have depression problems ^[30].

In 2015, Park *et al.* ^[31] has conducted a study to compare depression problems among 20 students which had been divided into two groups namely Heavy Smartphone User Groups and Control Groups; results showed that heavy users who use excessive smartphones tend to suffer depression. In

addition, the finding of this study was supported by Thomee *et al.* ^[32] which conduct a year-long follow-up analysis reported that excessive use of smartphone may be a risk factor for depression symptoms. Therefore, it can be concluded that this study supports other studies concerning the relationship between smartphone addiction with anxiety and depression among university students and shows that this phenomenon also happen among students.

Conclusion

It was observed in our study that many students use mobile phones excessively and inappropriately. They are giving more preference for mobile phone usage than their health and academics. As mobile phone usage is highly prevalent among college students their impact on mental health and academic performance should be discussed and judicious use recommended. There should be strict rules for mobile phone usage in colleges.

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