

Depression, Anxiety and Smartphone Addiction among Medical Students

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Abstract:

Introduction: A Smartphone, is a term for distinguishing mobile phones with advanced features from basic feature phones. Smart phone was introduced in the market for a new class of mobile phones that provide integrated services from communication, computing and mobile sectors such as, messaging, personal information, voice communication, management applications and wireless communication capability. Smartphone overuse or addiction may lead to negative health consequences like neck pain, accidents, anxiety, depression and sleep disturbances. **Aims:** The aim of the present study is to know the prevalence of smartphone addiction among the undergraduate medical students and to assess its impact on the quality of sleep. **Materials and Methods:** This is a cross sectional study done on undergraduate medical students of medical college. Semi-structured Proforma containing Smartphone usage characteristics of participants, Smartphone addiction scale (SAS-SV), Depression, Anxiety and Stress Scale (DASS-21) scale. The purpose of this research was explained to the participants and the informed consent was obtained. Data was collected using above mentioned instruments maintaining confidentiality. **Results:** Majority of participants in the study were females (60.4%). Prevalence of smart phone addiction among participants was 29.6%, among them 37.3% males and 24.5% females. Smart phone addiction in male students was significantly associated with gaming apps whereas usage of multimedia and social networking services for females. Anxiety and Depression was found to be higher in males whereas effect of stress was higher in female participants. **Conclusion:** With increasing popularity of smart phones, students are spending more time on smart phone thereby developing significant problems like Depression and Anxiety.

Keywords: Smart Phone Addiction, Depression, Anxiety, Stress, Medical students.

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I. Introduction

A Smartphone, is a term for distinguishing mobile phones with advanced features from basic feature phones. The term "Smartphone" first appeared in 1997, when Ericsson described its GS 88 "Penelope" concept as a smartphone^{1,2,3,4}. This term was basically introduced in the market for new class of mobile phones that provides integrated services from communication, such as messaging or texting voice communication, online gaming, online shopping, web browsing, social networking, personal information management applications and wireless communication capability.

Smart phones have led to drastic changes in human life. They have radically changed our daily life and nowadays people use smartphones very frequently and have become the first things many of us reach for when we wake up in the morning and frequently the last thing we check before going to sleep at night.⁵

Today, the world is changing rapidly with the advancement of e- technology, especially the students are getting addicted to smartphones frequently. Addiction is considered by WHO (WHO Expert Committee - 1964) as dependence, as the continuous use of something for the sake of relief, comfort, or stimulation, which often causes cravings when it is absent.⁶

Though there are lots of benefits of a smartphone if properly utilized like connectivity, increased productivity, availability of information, portability, smartphone overuse or addiction may lead to negative health consequences like neck pain, accidents, anxiety, depression, poor academic performance and sleep disturbances.

II. Objectives

- To study the prevalence of smart phone addiction among medical students
- To determine the association between overuse of smartphones and depression and anxiety in medical students.

III. Methodology

This is a cross sectional study done on undergraduate medical students of MIMS, Vizianagaram, during October - November 2018 and it has been approved by the institutional ethical committee. A final sample of 358 medical students was included in the study. Study included all the under graduate medical students in MIMS aged between 19 to 24 years and who gave valid consent. Students who are excluded from the study are with a prior history of psychiatric illness and students with major physical illness. All the students who participated in the study were given semi-structured proforma containing smartphone usage characteristics of participants, smart phone addiction scale and Depression, Anxiety and Stress Scale (DASS-21) scale.

IV. Tools Used

1. Semi-structured proforma that included socio demographic profile and smartphone usage characteristics of participants.
2. Smartphone addiction scale –Short Version (SAS-SV)
3. Depression, Anxiety and Stress Scale (DASS-21) scale.

The purpose of this research was explained to the participants and the informed consent was obtained.

V. Data Analysis

Collected data was entered in MS Excel, analysed using SPSS version 21 and results are shown in the form of percentages, tables and figures.

VI. Results

The final sample included 358 Medical Undergraduate students out of which 142 (39.6) were males, while 216 (60.4%) were females. The students were aged between 19– 24 years with mean age of 19.72 ± 1.43 years. The results showed that smartphone addiction was present in 106 (29.6%) of the total 358 participants, 37.3 % in males, and 24.5 % in females (FIGURE 1). The prevalence of anxiety was higher among males contributing to 12.8%(18) and in females around 6.8%(15) (Table 1).The psychiatric issue being the depression ,most prevalent in males around 27.9%(39) and in females around 22.7%(49)(Table 2). Smart phone addiction in male students was significantly associated with gaming apps whereas usage of multimedia and social networking services for females. Among smart phone addicted individuals the prevalence of depression was found to be higher in males 66% than females 58%, whereas anxiety seems to be higher in females 54% and in males 39%.

Figure 1: Smart Phone Addiction

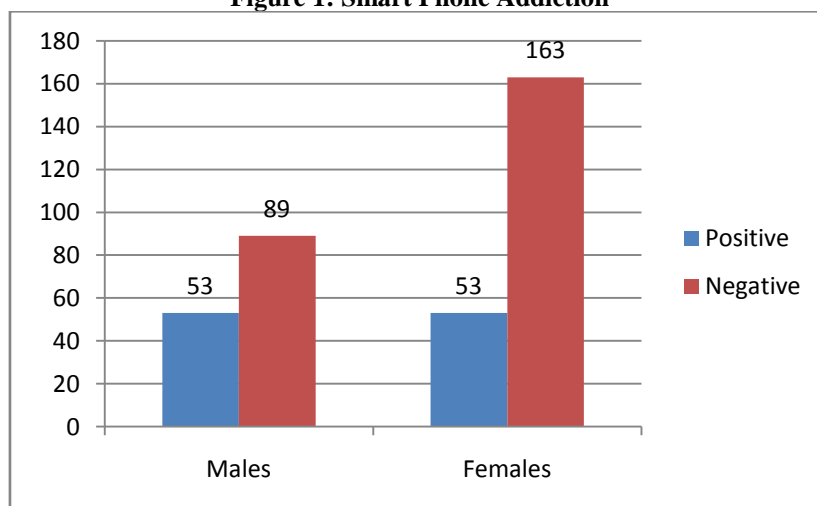


Table 1:Prevalence of Anxiety

Anxiety	Male	Female	Total
Positive	18(12.8%)	15(6.9%)	33(9.2%)
Negative	124(87.2%)	201(93.1%)	325(90.8%)
Total	142	216	358

P Value= 0.067

Table 2: Prevalence of Depression

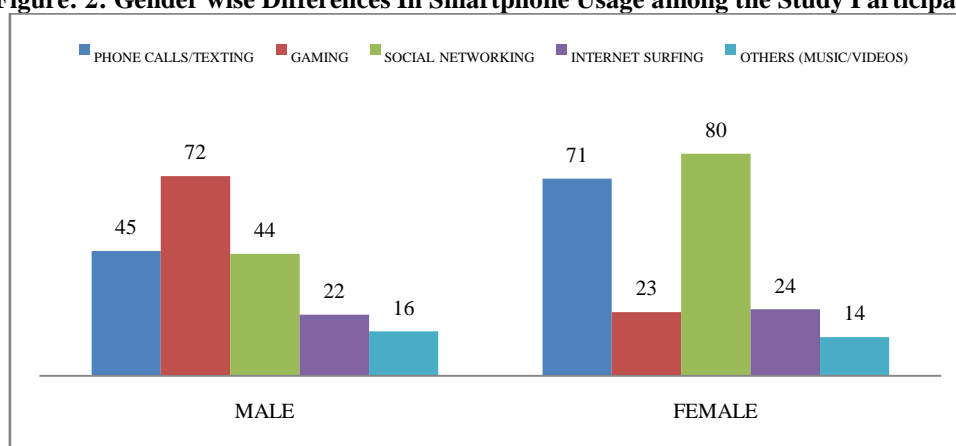
Depression	Male	Female	Total
Positive	39(27.9%)	49(22.7%)	88(24.5%)
Negative	103(72.1%)	167(77.3%)	270(75.5%)
Total	142	216	358

P value = 0.304

Table 3: Relation of Depression, Anxiety and Smart Phone Addiction.

		Males	Females	Total
Depression	Positive	35(66%)	31(58%)	66(62.2)
	Negative	18 (33.9)	22(41.5)	40(37.7)
Anxiety	Positive	21(39%)	29(54%)	50(47.1)
	Negative	32(60.3)	24(45.2)	56(52.8)

Figure: 2: Gender wise Differences In Smartphone Usage among the Study Participants



Male students was significantly associated with gaming apps whereas usage of multimedia and social networking services for females

VII. Discussion

Several studies have been conducted, among medical students with respect to Smart phone addiction. This study is about knowing the extent of Smart phone addiction and its relation with the depression, anxiety and stress among medical students. This study was conducted to assess the smart phone addiction and its relation with depression, anxiety and stress in medical undergraduate students of MIMS, Vizianagaram.

Our study found that out of 358 sample size, Majority of the participants were females 60.4% and the remaining were males. In a study conducted by Sung – YunAhnet al.,⁷ majority of the study sample was females around 89.9% which was similar to my study sample but study done by TamuraHaruka et al.,⁸ had higher proportion of study sample belonging to male gender around 173 (58.6%) and females around 122 (41.4%) which was contrary to my study.

Smartphone addiction was present in 29.6% of the total 358 participants, among them 37.3 % in males, and 24.5 % in females. The results of current study were observed to be similar to that of study conducted by Aljohara A. Alhassan et al.,⁹ 619 (66.2%) were females and 316 (33.8%) were males. An dissimilar results were observed by Demirci et al.,¹⁰ study where it was found to be higher in female students and in Baifengchenet al¹¹, study there is not much of gender variation in the prevalence of smart phone addiction in males (30.3%) and females (29.3%)

In the present study among the participants who were found having smartphone addiction, majority of them had depression in comparison with anxiety and the proportion of males (66%) was found to be higher as compared to females (58%) among the study subjects who had depression. Current study results of depression more predominant than anxiety in students having smartphone addiction were similar to several other studies conducted on medical students in relation to smartphone addiction and depression. A systematic review of 23

peer reviewed papers reported that depression was consistently associated with smartphone usage, among all the reviewed articles, depression severity was consistently related to problematic smartphone use. Anxiety was also consistently related to over usage of smartphone but less in comparison to depression. Stress was somewhat consistently related, with small to medium effects.¹² Depression in Lebanese and Austrian university students was also significantly associated with smartphone addiction or problematic mobile phone usage respectively.^{13,14,15} However, in contrary to the current study a negative association between smartphone addiction and depression was reported by Choi S et al., study.¹⁶

Recent studies on Smartphone addiction reveals that the over usage of smartphone can become a predisposing factor to depression, either indirectly or through a mediating effect. An association between smart phone addiction and altered lifestyle habits was found, with higher tendency among smart phone addicts to avoid social activity, to skip meals, to eat unhealthy diets, to gain weight, avoidance of gatherings leading to symptoms of depression, anxiety and sleep related disorders compared to less addicted smartphone users. These can be accounted as predisposing factors to depression.¹⁷ Study conducted by Tomoko Nishida et al.,¹⁸ observed that females were more prone to depression than male population which was found to have a quite difference from that of current study and reason for such preponderance towards female population might be because of usage of a different scale for assessing depression i.e. Center for Epidemiologic Studies Depression Scale (CES-D).

In our study anxiety was noted among 33(9.2%) among them, males contributing to 18(12.8%) and females about 15(6.9%). where as in smart phone addicted individuals, the prevalence of anxiety seems to be higher among females about 29(54%) and in males about 21(39%). Smartphone overuse may lead to anxiety among university students was reported by Demicri et al.¹⁰. Several studies which were conducted by Billieux et al.,¹⁹ Park et al.,²⁰ Thomee et al.,²¹ Hassanzadeh and Rezaei²² Golmohammadian and Yaseminejad,²³ Chen²⁴ and Seyed Ali²⁵ found that there is a relationship between addiction to smart phones and development of anxiety and depression. Studies conducted by elhajdet al.,¹² and Hwang KH et al.²⁶ also showed a significant relationship between the smartphone addiction with anxiety and depression among university students. In addition, Ganganahalliet al.²⁷ 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 the present study, smartphone usage differed between the two genders. Male students were more likely have a habit of playing games more often than female students and watching mobile phone videos, phone call or texting were also observed in higher proportion in males, whereas female students were more inclined to use the mobile phone communication functions and social networking services which was similar to De-Sola Gutiérrez J²⁸ and Roberts et al²⁹ studies.

VIII. Conclusion

The present study showed undergraduate students were inclined towards becoming addicted to smartphone and were exposed to anxiety and depression. Therefore, there is a need to create possible health education programs and interventions that are appropriate to deal with the addiction to the university students and improve their mental well-being.

Limitations

1. Results could not be generalized globally.
2. Impact of Smartphone addiction on sleep pattern could have been studied.
3. Personality traits of study participants could have been studied.

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