"A Cross Sectional Study on Smartphone Addiction among Students in Vadodara District, Gujarat"

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ABSTRACT

Background: India stands second for Smartphone usage in the world according to "global market" report. Smartphone addiction affects the younger generations to a greater extent. The objectives of the study was to estimate the proportion of students of age 18–24 years who were addictive to their Smartphone, to estimate the average time spent by them, to find the main reasons for usage and also to find the association between Smartphone usages and sleep quality of the students. **Method:** A cross sectional community based study was done in Vadoadra district. Two stage cluster sampling methodology was employed for selecting a random sample of 139 students. In the first stage 4 clusters were selected based on the more populous clusters and in the second stage a minimum of 35 students were interviewed from each of the selected cluster. Smartphone Addiction Scale (SAS) and Pittsburgh Sleep Quality Index(PSQI) were the tools used for assessing the association of Smartphone addiction and sleep quality of the students. Data was collected using tablet and Epi collect 5 web application. Descriptive statistics, Chi-Square for association and t-test to determine whether there exists significant difference between the means of two groups was assessed. **Results:** The proportion of students who were addict to their Smartphone was 52.7%and among them it was more in males (66.2%). On an average 6.42 hours/day was spent on their Smartphone. The major reason behind using their Smartphone was for communication (5.03 hours/day). The association between SAS and PSQI were found to be highly significant ($\chi 2 = 11.035$, p-value < 0.01). Conclusions: It is an alarming sign that students are prone to addiction to Smartphone. The younger generation must be brought awareness about their Smartphone addiction and heath impact they are prone in due course of time.

Keywords: Smartphone addiction, Sleep quality, Students

INTRODUCTION

Addiction to electronic devices has turned out to be an emerging behavioral addiction among youth[1]. According to the global market it was reported that India stood second for Smartphone usage in the world and it has brought about psychological dependency towards Smartphone leading to addiction in them[2]. addiction is considered to be a disorder involving compulsive overuse of the mobile devices usually quantified as the number of times users access their devices and/or the total amount of time they are online over a specified period. A previous study says that one of the fastest growing regional electronics is located in India. The increased usage of Smartphones has changed the modern world irreversibly.

Smartphone contribute to 24/7 aspect of life whereby one can purchase, bank, chat, study and play games online at different time zones[3]. It has been expected that the number of Smartphone users to grow from 2.1 billion in 2016 to around 2.5 billion in 2019 worldwide[3]. A study conducted in the Middle Eastern population age 18 plus years, showed that 17% were addicts and 64% were somewhat addicts[4]. The main objective of the study was to estimate the proportion of students (18-24years) who were addictive to their Smartphone and also to estimate the average time spent on their Smartphone and to find the main reasons behind the use of their Smartphone and to find the association between Smartphone usages and sleep pattern.

METHODOLOGY

Study population and study design: A cross sectional community based study was conducted among the students of Vadodara District, Gujarat, which is the field unit of the institute.

Inclusion/exclusion criteria:

- He/she should be a full time student.
- He/she should be within the age 18 to 24.
- He/she should be a resident of VadoadraDistrict,.
- He/she should own a personal Smartphone.

Sample size: The required sample size for the present study was 139 students with 95% of confidence level, 10% relative precision, assuming p=80%, design effect=1.5 and 10% allowance for non-response. Sampling Procedure: the students were selected using the two stage cluster sampling. The study area consisted of 7 clusters and among them 4 clusters which were higher populated was selected. A minimum of thirty-five student's were interviewed from each of the clusters to satisfy the required sample size of 139.

Data collection procedure: Data was collected by one-to-one interview method using Epicollect. The interviews were conducted in the local language (Guajarati) as well as in English by the post graduate students at the institute. For each cluster,one random start was generated and the required numbers of students were interviewed. In case of two or more students age 18-24 in a household, the available/willing respondent was interviewed. The study was proposed to the Institutional Ethics Committee, and also written informed consent was obtained from all the study participants.

Data Analysis: The cluster weights were assigned and data analysis was done.Descriptive statistics andChi-Square test for the association between Smartphone addiction and sleep quality and also between different characteristics like gender, age, education, branch of study and Sleep quality. The students' t-test was done for comparison of means between addicted and not-addicted groups, good sleep quality and poor sleep quality. SPSS 25 was used for all the data analysis.

RESULTS

Among the 147 students surveyed 54% were females and 67% of the students were below 21 yrs. of age. The average age of the students was 19.78±0.13SD and 86.5% of the students were undergraduates and 31.3% were currently pursuing their degree in Engineering. Overall 11.5% students were also earning through part time jobs in IT Company, teaching etc. and also 66.7% of the students bought Smartphone based on their own choice. Smartphone addicts and poor sleeper's median months of owning the Smartphone was 36 months. The Pearson's Chi-Square of association indicated the proportions of addicts among males were significantly higher than among females (Chi-Square=8.65, P-Value<0.01).

DISCUSSION

According to a study conducted in Deakin, 34% tend to lose sleep and 40% felt disoriented without Smartphone. A study conducted in Tamil Nadu among medical college students showed that 79.2% had poor sleep when they use more than 2 hours/day as compared to,65.7% who had poor sleep when they use 1 to 2 hours/ day[1].Another study in Chennai Urban area has shown that 41.4% among the age group 15-35 were at risk of addiction to Smartphone.

The present study conveys that more than half of the student's community was addicted to their Smartphone and also from the mean SAS-SV score it was also observed that almost all the studentswere in the verge of Smartphone addiction.Thus the entire surveyed students/

younger generation is in jeopardy to be Nomo Phobic which may cause serious imbalance in the physical and mental health of the younger generation.There existed a linear relationship between the time spent on Smartphone and Smartphone addiction and also between the Smartphone addition and sleep quality.Thus in due course the increase in usage of Smartphonetime might lead to more Smartphone addiction and which in turn may lead to serious health conditions such as poor sleep quality.It was also observed that students who bought Smartphone based on their choice were more addicted than that that of students who didn't buy Smartphone based on their choice. It is an alarming sign among the students who are prone to addiction to Smartphone. The students unknowingly sacrifices their mental and physical health at the cost of healthby detaching from family members spending more time over phone, sacrificing their sleep which may lead to serious health issues. The young generation must be brought awareness about their Smartphone addiction and heath impact which they are prone in due course of time.

CONCLUSION: The exact usage timings by the students for each category may be little biased for the following reasons. Students who stay at home during vacation may tend to use their Smartphone more, rather than while in class rooms. Also the Smartphone usage timings cannot be exactly attributed to any specific reason because few students simultaneously used for multipurpose like downloading/tracking and phone calls/chatting etc.

Ethical approval

Informed consent was obtained from participants and assured for anonymity. Since the study involved human subjects, a formal ethical approval was received from institutional ethical committee.

Conflict of Interest

The author declares that they have no conflicts of interest.

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