

Original Research Article

**PROBLEMATIC USAGE OF MOBILE PHONES AMONG  
ADOLESCENTS IN CHENNAI – A CROSS SECTIONAL STUDY**

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**Abstract**

**ABSTRACT: Introduction:** Mobile phones have become an essential commodity. The rate of usage of mobile phones and the addiction towards it among the adolescent age group has spiked up to a great extent after the launch of smart phones in the market. **Aims and Objectives:** To assess mobile phones usage and estimate the correlates of problematic usage among school going adolescent population. **Materials and Methods:** A cross sectional study among adolescent population of two schools in zone X of Chennai Corporation selected by simple random sampling method during the month of February 2017. Students with personalized mobile phone for more than one month were the study participants. **Study tool:** Our study has utilized the standardized and validated Problematic Usage of Mobile Phones (PUMP) questionnaire after getting the approval through email from the author. **Data collection:** Written permission from the schools principal for conducting the study was obtained and questionnaire was administered to the study participants in their class rooms on the fixed date and time assuring confidentiality. **Data Analysis:** The data analysis was done using SPSS Software version 21. The results were expressed in percentages and student 't' test was performed to test the hypothesis. **Results:** A total of 190 study participants consisting males-105(55.3%) and females-85(44.7%) with a mean age of 13.6 years and PUMP scale scoring ranged between 20 to 87 with the mean of 59 and SD of 13. The PUMP Scale based on the criteria of substance use disorders assessing the tolerance, withdrawal, craving, social or interpersonal, physical and psychological criteria showed positive correlation with male gender, joint family, living away from family and leaving besides during sleep whereas the other variables like peer group influence, using mobiles without parents knowledge were not significant. **Conclusion:** The problematic usage of mobile phones was significantly high among this study population.

**Key words:** Adolescent, Cell Phones, Substance-Related Disorders, Problematic Usage, PUMP Scale

**INTRODUCTION:**

Smart phones replaced PCs as a mean of access to the internet<sup>(1)</sup>. Smartphone addiction is closely related to Internet addiction, which is considered an impulse-control addiction. Cell phone usage is so strongly integrated into young people's behavior that symptoms of behavioral addiction, such as cell phone usage interrupting their day-to-day activities despite of the positive benefits like using cell phone to connect/call family<sup>(2)</sup>. "Problematic mobile phone use" is defined as any pattern of mobile phone use resulting in subjective distress or impairment in important areas of functioning. It is important to distinguish "problematic" use from "very frequent"

use<sup>(3)</sup>. Teens who are addicted to mobile phones tend to experience an increased likelihood to consume alcohol and use tobacco<sup>(4)</sup>, have poor dietary habits<sup>(4)</sup>, increased levels of social loneliness<sup>(5)</sup>, Digital eye strain<sup>(6)</sup>, Text neck<sup>(7)</sup>, Car accidents<sup>(8)</sup> and Decreased brain connectivity<sup>(9)</sup>. While evidence is scarce regarding a true "addiction" to mobile phones, data from recent studies suggest that some mobile phone users exhibit serious problematic behaviors analogous to the diagnostic criteria for substance use disorders or pathological gambling<sup>(10,11,12,13)</sup>.

**AIMS AND OBJECTIVES:**

1. To assess the usage of mobile phones among adolescent age group.
2. To estimate the correlates of problematic usage among adolescent population.

**MATERIALS AND METHODS:**

The study was conducted as a cross sectional study among the school going adolescent age group and the selection criteria was school students who had a personalized mobile phone for more than one month. An email for approval for the usage of Problematic Usage of Mobile Phones (PUMP) questionnaire was sent and it was accepted by the author. Simple random sampling method was adopted for selection of two schools in T-Nagar. Consent forms for getting approval of the class teachers on behalf of all the students were prepared. A permission letter was given to the head of the institutions and the study was conducted in the time allotted in their respective classrooms. Students of age group 12-16 were the study participants. The purpose of the study, and the questionnaire were explained in brief to the willing students before starting. Confidentiality of their results was assured. The students' individual queries regarding the questions were explained personally to them. The questionnaire was collected back after ensuring that it was complete and it was finished in the stipulated time. The study participants summed up to be 190 in total and it was conducted in two months January 2017-February 2017. The assumed prevalence of 50% problematic usage of mobile phones and the precision of 15%, the calculated sample size was 177. ( $p = 50, q = 100 - p = 50, 4 \times p \times q / d^2 = 4 \times 50 \times 50 / 7.5^2 = 10,000 / 56.25 = 177.77 = 178$   $d = 15 / 100 \times 50 = 7.5$ ) The calculated optimum sample size was 178. The sample data collected was 190. The collected data were entered in Microsoft Excel 2010 and analyzed using SPSS Software 21. The data were expressed in percentages and student 't' test was done to assess the hypothesis testing.

**PUMP SCALE QUESTIONNAIRE<sup>(3)</sup>:** The PUMP Scale is based on the criteria of substance use disorders assessing ten criteria such as tolerance, withdrawal, craving, social or interpersonal problems due to mobile phone usage, knowledge about physical hazard due to the usage of mobile phones, physical and psychological problems, using for longer time than intended, great deal of time spent, activities given up or reduced and failure fulfilling role obligations. The questionnaire consisted of about twenty question with two questions under each criterion. The responses were Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree with scores ranging from 5 to 1.

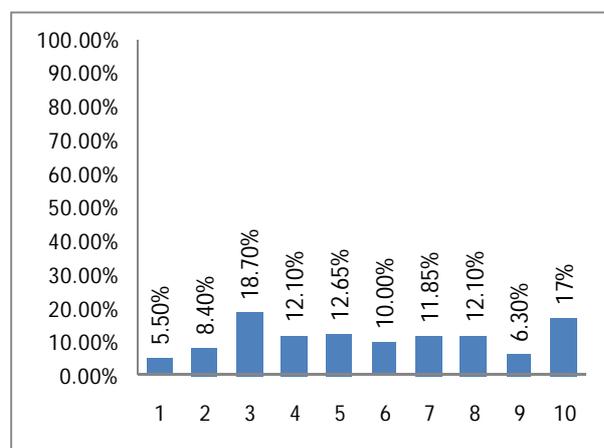
**RESULTS:**

The sample constituted about 105(55.3%) of males and 85(44.7%) is females and the frequency distribution can

**Table: 1 Frequency distribution of the study population (N=190)**

S.No	VARIABLES	RESPONSE	FREQUENCY	PERCENTAGE %
1	GENDER	MALE	105	55.3
		FEMALE	85	44.7
2	TYPE OF FAMILY	JOINT	36	18.9
		NUCLEAR	154	81.1
3	LIVING WITH FAMILY	YES	179	94.2
		NO	11	5.8
4	SIBLINGS PRESENT	YES	150	78.9
		NO	40	21.1
5	OWNS DUE TO INFLUENCE OF PEER GROUP	YES	38	20
		NO	152	80
6	LEAVE BESIDES DURING SLEEP	YES	47	24.7
		NO	143	75.3
7	USAGE WITHOUT PARENTS KNOWLEDGE	YES	40	21.1
		NO	150	78.9
8	PARENT KNOWS UNLOCK CODE	YES	145	76.3
		NO	45	23.7

**Figure: 1 PUMP Scale Criteria outcome**



Key;

1. failure fulfilling role obligations	6. tolerance
2. activities given up or reduced	7. withdrawal
3. great deal of time spent	8. craving
4. longer time than intended	9. knowledge of physically hazard
5. despite physical or psychological problem	10. despite social or interpersonal problem

be seen in Table 1. The mean age of the study participants was calculated to be 13.6 and the Mean score was 48.96 ranging from 20 to 87 and the standard deviation (S.D) is 13.461. Among the study population 154(81.1%) of them lived in a nuclear family. 11(5.8%) of them did not live with their family in the present study population. Siblings were present for 150(78.9%). The number of students who bought a mobile phone due to the influence of their peer group was assessed to be 38(20%) and those who were having mobile phones due to their parents concern summed up to 115(60.5%). Around 47(24.7%) of them left their mobile phones bedside during sleep and 150(78.9%) used their mobile phones without their parents knowledge. Only 145(76.3%) had revealed their unlock codes to their parents. The PUMP scale criteria were assessed and following are the results. The tolerance status was assessed among the participants and 19(10%) strongly agreed that they intolerably use their mobile

**Table: 2 Association between study variables and mean PUMP scale using student ‘t’ test (n=190)**

S.No	VARIABLES	RESPONSE	FREQUENCY	PERCENT AGE %	MEAN	STANDARD DEVIATION	p VALUE (<0.05)
1	GENDER	MALE	105	55.3	51.32	13.425	0.007*
		FEMALE	85	44.7	46.05	13	
2	TYPE OF FAMILY	JOINT	36	18.9	54.77	13.135	0.004*
		NUCLEAR	154	81.1	47.65	13.225	
3	LIVING WITH FAMILY	YES	179	94.2	48.21	13.017	0.002*
		NO	11	5.8	61.18	15.315	
4	SIBLINGS PRESENT	YES	150	78.9	48.78	13.221	0.717
		NO	40	21.1	49.65	14.482	
5	OWNS DUE TO INFLUENCE OF PEER GROUP	YES	38	20	51.68	14.083	0.164
		NO	152	80	48.28	13.262	
6	LEAVE BESIDES DURING SLEEP	YES	47	24.7	53.19	14.061	0.013*
		NO	143	75.3	47.57	13.011	
7	USAGE WITHOUT PARENTS KNOWLEDGE	YES	40	21.1	50.68	14.983	0.367
		NO	150	78.9	48.51	13.042	
8	PARENT KNOWS UNLOCK CODE	YES	145	76.3	49.16	13.477	0.72
		NO	45	23.7	48.33	13.543	

phones. Around 23(11.85%) strongly agreed that they cannot withdraw from the habit of using it. Surprisingly 66(33.1%) of them strongly disagreed of not having any craving towards mobile phone use and 12(6.3%) of them are using their mobile phones even after knowing that it is physically hazardous to them. Despite of social or interpersonal problems 33(17.1%) are still using their mobile phone. And 23(12.65%) are using in spite of physical or psychological problems.

**DISCUSSION:**

The original study with the PUMP scale had a mean score of 38.40 and the score ranged from 20 to 82 whereas the present study comparatively had a significantly higher mean of 48.96 with score ranging from 20 to 87 which show the increased prevalence of problematic mobile usage in the present study population. In the present study significant p values(<0.05) as seen in Table 2 were found for the following variables, male gender, family type, living away from their family and leaving besides during sleep and the Figures 1 and 2 show the Strongly Agree response percentage for the PUMP scale criteria.

It was suggested as early as 1982 in a study done in USA (i.e., well before the widespread use of mobile phones) that pathological use of technology may exist in the form of “techno dependence”<sup>(14)</sup>. A Japanese study on Cellular Phone Dependence Questionnaire (CPDQ) has shown that mobile phone use may become addictive<sup>(15)</sup>. On the basis of Mobile Phone Problem Use Scale in Australia they tried to determine the psychological predictors of illegal

or dangerous use of the mobile phone which revealed that problematic use of the mobile phone is predicted by low self-esteem and high extraversion<sup>(16)</sup>. A study conducted in 2012 at Austria indicates that chronic stress, low emotional stability, female gender, young age, depression, and extraversion are associated with problematic usage<sup>(17)</sup>. Overall prevalence of problematic mobile phone usage in the Mobile Addiction Test (MAT) was 6.3% in a study conducted among high school students in 2011 and it was associated with other behavioral addictions like compulsive buying<sup>(18)</sup>. Parents and caregivers express that teenagers are addicted and obsessed with texting, while some of them feel that it distracts the teenagers from their study time and other important activities in a study done at Unitec Institute of Technology, New Zealand<sup>(19)</sup>.

**CONCLUSION:**

Our study results had explored that there is a high mean score for Problematic Usage of Mobile Phones among the adolescent population and the risk factors which significantly associated were male gender, living in a joint family, retaining it aside during slumber in addition to distant living from family. Further large scale studies are to be conducted in order to assess exactly the current trend of mobile phone usage among this vulnerable population.

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