



# Comparative study of Smartphone Addiction among Arts and Medical College Students of Port Blair

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## ABSTRACT

**Background:** Smartphones have become an integral part of everyone's life. Smartphones can be a boon if used in correct way but if misused it can result in smartphone addiction. The objectives of the study were to compare smartphone usage among undergraduate medical college and arts college students of Port Blair and also to evaluate the demographic profile of smartphone users.

**Materials and Methods:** A cross sectional study was conducted among 149 arts students and 192 medical students. SAS scale has been used to assess the smartphone addiction. The participants were divided into low smart phone user group and a high smart-phone user group.

**Results:** Among the Arts group out of the total 149 students, 35 students (23.50%) were low smartphone users and 114 (76.50%) were high smart phone users. In the medical group 28 students (14.58%) were low smart phone users and 164 (85.42%) were high smartphone users. High smart phone usage was seen among female students in both arts (79.82%) and medical colleges (67.07%)

**Conclusion:** Proportion of Smartphone addiction was high among medical college students.

**Key Words:** Smartphones, College students, addiction, Port Blair

## INTRODUCTION

In this century the miraculous invention is the advent of mobile phones which has become an integral part of everyone's life. Smartphones keep nears and dears connected and keep them updated with the world. Smart phones can be a boon if used in correct way. It can help the students in their studies and improve their academic performance but if misused it can result in smart phone addiction.

Terms like Smartphone addiction<sup>1</sup>, mobile phone addiction<sup>2</sup>, problematic mobile phone use<sup>3,4</sup>, mobile phone dependence<sup>5</sup>, compulsive mobile phone use<sup>6</sup>, and mobile phone overuse<sup>7</sup> are all expressions which have been used to explain more or less the same phenomenon, ie. Persons engrossed in their smart phone usage to such an extent that they ignore other areas of life. Though mobile phones

have lot of advantages such as sending instant messages, e-mails, playing video games, surfing<sup>8</sup> etc but its excessive use in day to day life has made it a significant social problem. Smartphone addictions and internet addictions are technological addictions, which are behavioral addictions of a nonchemical origin which involve human-machine interaction.<sup>9</sup> Previous studies have determined four important features of smart phone addiction which are compulsion, functional impairment, tolerance, and withdrawal<sup>10</sup>. It has also given rise to new problems like musculoskeletal disorders affecting hand, wrist neck, back, ocular manifestation and psychopathologies like attention deficit, aggression and sleep disturbances<sup>11</sup>.

In Asia prevalence of Smartphone usage among adolescents is about 85% in South Korea, 65% in Japan, Philippines, more than 55% in Malaysia ,

Hong Kong and in China its over 40%<sup>12</sup>. In 2017 it has been estimated that the smart phone users in India have reached 299.24 million and worldwide smart phone users have exceeded 2.3 billion<sup>13</sup>.

The present study was conducted to see if there is any difference of Smartphone usage among medical and a non medical or Arts students with respect to age and gender and extent of usage among the two groups.

## OBJECTIVES

The study was conducted to compare smart phone usage among undergraduate medical college and Arts college students of Port Blair.

## MATERIALS AND METHODS

There is only one medical and Arts College in Port Blair. Permission was obtained from the college authorities for conducting current study. Participants in the present study were all 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year Medical College students and Arts College students who were willing to participate in the study. Importance of the study was emphasized before administering the questionnaire. Confidentiality of the students was ensured. Informed consent was obtained from all participants prior to the study. Participants who refused to provide consent were excluded. Thus final sample consisted of 192 students from Medical college and 149 students from Arts college. The study was approved by the institutional ethics committee.

**Study Instrument:** A semi-structured proforma that include socio-demographic profile and smartphone usage characteristics of participants along with a Smartphone addiction scale (SAS) was used. The SAS is consisting of 6 factors and 33 items with a six-point Likert scale developed by Kwon et al.<sup>1</sup>. Permission was obtained from Kwon via e-mail for using the scale. The options on this scale range from 1 to 6. Higher scores indicate a higher risk of smartphone addiction. The total score on the scale can vary between 33 and 198. Validated English version of the SAS was used in the present study which was self-administered.

The participants were divided into low smartphone user group (SAS score the median value of 72) and a high smartphone user group (SAS score > the median value of 72.<sup>14</sup> The Cronbach internal consistency coefficient of the present scale was calculated to be  $\alpha=0.905$

The data was cleaned & entered in MS-Excel spread sheet and analyzed using IBM SPSS 20.0 software (Chicago).

## RESULTS

A total of 149 Arts students and 192 medical students were included in the study. (Table 1)

In the arts group 115 students were in the age group between 17 to 21 years and 34 students were more than 22 years. The mean age of male arts students were 20.16 years with SD 2.201 and SEM 0.389 and mean age of female arts students were 19.85 years with SD 1.897 and SEM 0.175. In the medical group all students were in age group between 17 to 20 years. The mean age of male medical students were 18.22 years with SD 0.771 and SEM 0.097 and mean age of female arts students were 18.12 years with SD 0.725 and SEM 0.064 (Table 1).

All students were using smart phones. The median value of the SAS scores was found to be 72. Among the Arts group out of the total 149 students 35 students (23.50%) were low smart phone users and 114 (76.50%) were high smart phone users were as in the medical group 28 students (14.58%) were low smart phone users and 164 (85.42%) were high smart phone users. Proportion of students with high addiction to smart phones was higher in medical college (85.42%) than Arts students (76.50%) which was statistically significant (p value = 0.036) (Table 2)

Among the Arts students low smart phone users consisted of 9 boys (28.13%) and 26 girls (22.22%) and high smart phone users consisted of 23 boys (71.88%) and 91 girls (77.78%).

**Table 1: Descriptive Statistics for Age (in years)**

Gender	N	Mean	SD	SEM
Medical College				
Male	63	18.22	0.771	0.097
Female	129	18.12	0.725	0.064
Total	192	18.15	0.74	0.053
Arts College				
Male	32	20.16	2.201	0.389
Female	117	19.85	1.897	0.175
Total	149	19.91	1.962	0.161
Overall				
Male	95	18.87	1.694	0.173
Female	246	18.94	1.651	0.103
Total	341	18.92	1.65	0.09

SD= Standard deviation; SEM= Standard error of mean

**Table 2 Association Between Smart Phone Usage among the colleges**

SAS	Medical College (n=192)	Arts College (n=149)
Low Smart Phone Addiction	28 (14.58)	35 (23.50)
High Smart Phone Addiction	164 (85.42)	114 (76.50)

SAS= Smartphone Addiction Scale; P value = 0.036

**Table 3 Gender-wise Distribution of Smart Phone Addiction**

Smartphone Use	Medical College			Arts College		
	Male N (%)	Female N (%)	P value	Male N (%)	Female N (%)	P value
Low Smart Phone Addiction	9 (14.29)	19 (14.73)	0.935	9 (28.13)	26 (22.22)	0.485
High Smart Phone Addiction	54 (85.71)	110 (85.27)		23 (71.88)	91 (77.78)	
Total	63 (100)	129 (100)		32 (100)	117 (100)	

SD=standard deviation; SEM= standard error of mean

**Table 4 Gender-wise Comparison of Average SAS Score**

College	Gender	N	Mean	SD	SEM	t-stat	p-value
Arts College	Male	32	101	31.53	5.57	0.23	0.822, NS
	Female	117	99.62	30.25	2.8		
Medical College	Male	63	99.3	27	3.4	-0.7	.414, NS
	Female	129	102.14	26.07	2.29		
Total		341	100.645	28.164	1.525		

In comparison among medical college students low smart phone users consisted of 9 boys (14.29%) and 19 girls (14.73%) and high smart phone users consisted of 54 boys (85.71%) and 110 girls (85.27%). Gender wise distribution of smart phone addiction among medical and arts students was not statistically significant at 5% level (Table 3).

On analysis of descriptive statistics for SAS score for Arts college , for boys mean was found to be 101.00, SD=31.53 & SEM=5.57 and for girls mean was found to be 99.62, SD= 30.25 & SEM=2.80, t-stat 0.226 & p-value = 0.822 which was not significant at 5% level (Table 3).

On analysis of descriptive statistics for SAS score for medical college , for boys mean was found to be 99.30, SD=27.00 & SEM=3.40 and for girls mean was found to be 102.14, SD= 26.07 & SEM=2.29, p-value = 0.414 which was not significant at 5% level (Table 4).

The mean SAS score among Arts and medical students was 100.65, SD =28.16 and SEM =1.53 (Table 4).

**DISCUSSION**

In our study we observed that among Arts group high Smartphone users were 76.50% while in the medical group 85.42% students were high smart phone users. Proportion of students with high addiction to smart phones was higher in medical college than Arts students, which was found to be statistically significant.

Contradictory to our studies Dixit et al in his study found 19% medical students had Smartphone addiction which could be because study was done few years back and not many phone applications was present during that time as compared to today<sup>15</sup>. Similar study done among medical students

in western India observed 92.70% were highly involved with their smart phones<sup>16</sup>.

In our study we observed that high smart phone usage was seen among female arts students (77.78%) compared to the boys . The medical college high smart phone users were almost same as medical college boys which reflects that girls generally have high addictive to smart phones.

Study conducted by Demicri el al in Turkey concluded that females are more prone to smartphone addiction as compared to males <sup>17</sup>. Similar finding was reported in various other studies <sup>18,19,20</sup>. Though, some studies showed opposite findings to our study with males showing a higher mobile phone usage as compared to females<sup>3,21</sup>. There are few studies which did not find any significant gender differences.<sup>3,22</sup>

Men and women have different interest for usage of mobile phones. Studies have revealed that women seem to be more socially oriented than men<sup>18</sup>. Studies have shown that women indulge in chatting and messaging more than men and involve in gossiping or maintaining social relationships and they have a stronger attachment to their mobile phones. Online chatting, online shopping, text messaging apps, social networking apps are most alluring to women<sup>23</sup>. Women talk for longer time than men on phones which include phone calls to family members, relatives, friends, customer services, and sales calls etc<sup>24</sup>. In contrast few studies have observed that men use smartphones for different purposes like either playing games, gambling or viewing illicit sites<sup>25</sup>. Few other studies have also explored the addictive nature of smartphone and other social networking apps like twitter, whatsapp, facebook etc <sup>26</sup>. Precedent researchers in their studies have concluded that excessive use of smartphones and social media services have affected their work and academic performance detrimentally<sup>27,28</sup>.

Smartphone usage is more among students of these islands and is used as a leisure device as they don't have much of choice to engage themselves during their free time as there are no shopping malls, very few theatres present, no fitness clubs or gymnasiums. There is no source of extracurricular activities therefore the students take up to smart phones for their amusement. Availability of free night calls, instant messages, free data by service providers keep them captivated to social networking sites day and night resulting in lack of sleep and deterioration of their academic performance. Excessive use of smartphones can be disruptive to their studies and detrimental to their health.

## CONCLUSION

Researchers have observed that high smart phone usage was seen among female students in arts group when compared to the boys. High smart phone usage was almost same in case of medical college among boys and girls. Proportion of students with high addiction to smart phones was higher in medical college than Arts students was statistically significant

## LIMITATIONS

Sleep pattern, hours of time spent on smart phones, physical complaints or illnesses due to usage of smart phones have not been assessed.

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