



PATTERNS OF USE OF SMART PHONES AMONG ADOLESCENTS IN THANE CITY, MAHARASHTRA

Medical Science

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ABSTRACT

This cross-sectional interview-based study was conducted on urban adolescents (31 females & 31 males) to study the duration and patterns of use of smart phones. The mean age of female participants was 15.90 $\pm$ 2.77 years while that for their male counterparts was 16.83 $\pm$ 2.21 years and the gender difference in age distribution was not significant ($Z=0.126$; $p=0.889$). There was significant difference in education ($Z=2.265$; $p=0.023$) and occupation ($Z=2.896$; $p=0.003$) of mothers of female and male participants but no significant difference was observed in education and occupation of fathers of the respondents. The preferred time for playing video games on smart phones was in the evening for females and between 8 PM and midnight for boys, exhibiting significant gender difference ($Z=2.863$; $p=0.004$). The gender difference in smart phone usage was significant ($Z=2.243$; $p=0.025$). Interventional strategies ought to find remedies like involving adolescents in various activities during their leisure time.

KEYWORDS

Addiction, Adolescents, Smart phones

INTRODUCTION

A smart phone is an advanced mobile phone that integrates communication, computing, voice communication, messaging, personal information management applications and wireless communication capability, downloadable applications ("apps") and some have all the features of a laptop computer. [1] Modern smart phones are affordable and allow adolescents to access the Internet, communicate, and entertain themselves – these features have driven the phenomenal increase in use of smart phones. [1]

Though smart phones help in accessing information [2] and in social interactions, [3] their excessive use [2] is reported in literature to cause unrestrained behaviours, such as, constantly checking their phones, [3] depression and anxiety, [2, 4] and altered cranio-cervical posture with temporo-mandibular disorders. [5] Assortments of downloadable applications ("apps") ensnare the users into spending much of their waking hours on smart phones. Excessive smart phone use can be considered as a type of behavioral addiction, similar to gaming addiction or Internet addiction. [3, 6] Smart phone addiction is characterized by an overuse of smart phones that interferes with the users' daily routine. [6] Symptoms generally linked with behavioral addictions, such as, tolerance, withdrawal, cravings, and loss of control, are reportedly related to excessive smart phone use. [7]

The objective of the present study was to study the duration and patterns of use of smart phones by adolescents.

MATERIALS AND METHODS

This cross-sectional interview-based study was conducted on adolescent boys and girls in Thane city, Maharashtra, India. Prior to the interview, prospective participants and their parents were explained about the study, assured of confidentiality and their informed consent was taken. The participants were interviewed using a pre-validated questionnaire at a place and time convenient to them and their privacy was ensured during the interview. The data were entered in Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) and were statistically analyzed using EpiInfo Version 7.0 (public domain software package from the Centers for Disease Control and Prevention, Atlanta, GA, USA). Categorical data were presented as percentages while continuous data were presented as mean $\pm$ standard deviation. The 95% confidence interval (CI) was presented as: [Mean-(1.96)*Standard Error] to [Mean+(1.96)*Standard Error]. The standard error of difference between two means and that between two proportions were computed. Statistical significance was determined at $p<0.05$.

RESULTS AND DISCUSSION

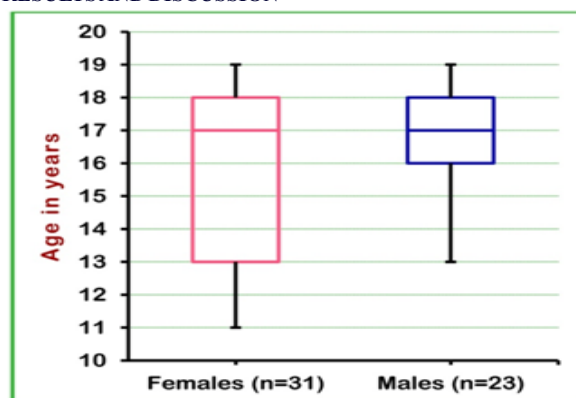


Fig-1: Box plot of age distribution of participants

Age and gender distribution: In all, there were a total of 54 participants (females=31; males=23). The mean age of female participants ($n=31$) was 15.90 $\pm$ 2.77 years (95% CI: 14.93 – 16.88 years) while that for their male counterparts ($n=23$) was 16.83 $\pm$ 2.21 years (95% CI: 15.92 – 17.73 years). The gender difference in age distribution of participants was not significant ($Z=0.126$; $p=0.889$). The maximum, third quartile and median ages for both female and male participants were identical, while the first quartile and minimum age was lower for female participants (Fig-1).

Table-1: Gender differences in responses to questions

Parameter	Female respondents (n=31)	Male respondents (n=23)	Z value	p value
Interferes with studies	26	12	2.522	0.011 *
Occasional blurred vision	17	10	0.825	0.406
Occasional wrist pain	15	11	0.040	0.968
Occasional eye strain	9	9	0.778	0.435
Occasional neck and back pain	12	11	0.669	0.502
Sleep deficit	14	9	0.443	0.659
Feels better while using smart phone	12	18	2.892	0.003 *

Use smart phone as stress buster	17	12	0.194	0.849
Difficult to live without smart phone	10	6	0.491	0.624
Constant urge to use smart phone	19	11	0.984	0.327
Hate to be disturbed while using phone	18	8	1.693	0.091
Take smart phone to the toilet	9	8	0.449	0.652
Helps meet more people	12	6	0.973	0.332
Prefer friends in the virtual world	3	10	2.872	0.004 *
Tried reducing phone time, but failed	24	11	2.251	0.024 *

Z = Standard error of difference between two proportions; *Significant

Parental profile: The mothers of the female participants were significantly more educated than that of their male counterparts ($Z=2.265$; $p=0.023$) and the difference in occupation of mothers of female and male participants was also significant ($Z=2.896$; $p=0.003$). However, the differences in education and occupation of fathers of the female and male participants were not statistically significant.

Gender differences in smart phone use: 12 (38.71%) female and 16 (69.56%) males used smart phones for more than three hours per day. The gender difference in smart phone usage was significant ($Z=2.243$; $p=0.025$). The gender differences in responses to questions are outlined in Table-1.

Gender difference in playing games on smart phones: 21 female and 18 male respondents played games on smart phones. While 61.9% of the 21 females preferred to play games after school/college, 83.33% of 18 males did so between 8 PM and midnight. The gender difference in preferred time for playing games on smart phones was significant ($Z=2.863$; $p=0.004$). However, there were no significant gender differences ($Z=0.550$; $p=0.582$) in the reasons given by the respondents for playing games on smart phones viz. relieving stress, fun and for passing time.

Some researchers [8-10] have reported that female adolescents are more prone to excessive smart phone usage. In contrast, some studies [11, 12] have found that adolescent boys were more addicted to smart phones. Some researchers [13, 14] have stated that gender is not a determinant of smart phone addiction. It has been reported that girls spend more time on social media or text messaging, while boys tend to prefer playing video games and surfing the Internet. [15]

Though some researchers [9, 16] have reported that age was not a determinant of excessive smart phone use, others [15, 17] have found that adolescents were at higher risk and that alcohol and tobacco consumption were not related to smart phone addiction. [17]

Excessive smart phone use among adolescents is reported to be for the purpose of seeking information, [18] for acceptance among peers, [19] entertainment, [20] seeking pleasure, [10] stress relief, [10] watching videos, [18] listening to music [18] and for reading e-books. [18] It has been reported that excessive smart phone use could be attributed to loneliness, depression and low self-esteem. [21]

CONCLUSION

The pattern of use of smart phones among a sample of adolescents reveals that it is necessary involve parents, psychiatrists and counsellors in intervention programmes in schools and colleges to deal with smart phone addiction and to find remedies like involving adolescents in activities, such as, sports, dance, arts, reading books during their leisure time.

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