

PATTERNS OF USE OF SMARTPHONES BY YOUNG ADULTS IN A METROPOLITAN CITY

Physiology

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ABSTRACT

This cross-sectional study was conducted during the corona virus lockdown in May 2020 to determine the patterns of use of smart phones by 161 respondents (83 females: 51.55% and 78 males: 48.45%), who were residents of a metropolitan city in Maharashtra state, India. The participants were recruited into the study by the snowball sampling technique and they answered an online questionnaire, which was administered through Google forms. The mean age of female respondents was 19.88 $\pm$ 1.31 years, while that for male respondents was 19.83 $\pm$ 1.12 years. There was no significant gender difference in mean age ($Z=0.260$; $p=0.794$). A significantly ($Z=2.092$; $p=0.036$) higher number of female respondents reported they would be anxious without their smart phones, while significantly ($Z=3.544$; $p=0.0004$) higher number of male respondents slept for less than 6 hours a day. To prevent smart phone addiction, young adults may be introduced to diverse activities to utilize their leisure time.

KEYWORDS

Addiction, Metropolitan city, Smart phones, Young adults

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] As compared to the basic "feature phone", the "smart phone" is endowed with stronger hardware and a wider range of software capabilities that provided integrated services from communication, web browsing over mobile broadband, multimedia functions computing, voice communication, messaging, and wireless communication capability [2] Modern smart phones are affordable and allow the users to access the Internet, communicate, help in accessing information, [3] facilitate social interactions, [4] and help in entertaining themselves anywhere and anytime and using the smart phone as their constant companion – these features have driven the phenomenal increase in use of smart phones. [1]

Excessive smart phone use [3] can be considered as a type of behavioral addiction, similar to gaming addiction or Internet addiction [4-6] An average smart phone user is constantly checking the phone in a bent-forward position. [4] Long-term users may have stiff backs, develop a stoop, complain of "text neck" and pain in the thumbs while texting. They are also vulnerable to tendon injuries, carpal tunnel syndrome, radiation related problems, inattention blindness and computer vision syndrome. [1] Excessive use is associated with depression and anxiety, [3, 7] and altered cranio-cervical posture with temporo-mandibular disorders. [8] The wide variety of downloadable applications ("apps") traps the users into spending much of their waking hours on smart phones. Smart phone addiction is characterized by an overuse of smart phones that interferes with the users' daily routine. [5] Symptoms generally linked with behavioral addictions, such as, tolerance, withdrawal, cravings, and loss of control, are reportedly related to excessive smart phone use. [9] The objective of this study was to determine the patterns of use of smart phones by young adults of either gender.

MATERIALS AND METHODS

This cross-sectional study was conducted using online interviews through Google forms during the corona virus lockdown in May 2020. The participants, recruited into the study by the snowball sampling technique, were young adults, of either gender, who were residents of a metropolitan city in Maharashtra state, India. The participants were interviewed using a pre-validated pre-tested questionnaire via Google forms and their informed consent was taken on the Google forms itself. 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

There were a total of 161 respondents (83 females: 51.55% and 78 males: 48.45%). The mean age of female respondents was 19.88 $\pm$ 1.31 years (95% CI: 19.60–20.16 years), while that for male respondents was 19.83 $\pm$ 1.12 years (95% CI: 19.58–20.08 years). The gender difference in age was not significant ($Z=0.260$; $p=0.794$). Though the maximum age was higher for females, the minimum, first quartile, median and third quartile of the age distribution was identical for both genders. (Fig-1).

Some studies [10, 11] reported that older adolescent girls were at higher risk for excessive smart phone use, while other studies [12-14] found that age was not a risk factor.

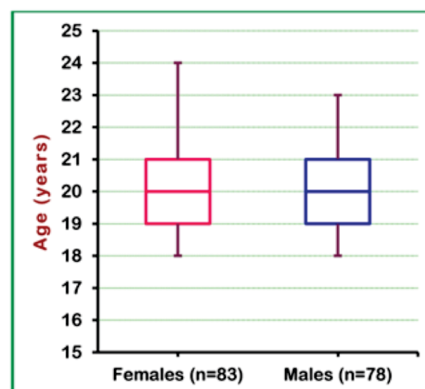


Fig-1: Box plot of age distribution

Table-1: Gender differences in use of smart phones

	Females (n=83)	Males (n=78)	Z value	p' value
Duration of use > 2 hrs / day	76 (91.57%)	73 (93.59%)	0.488	0.624
Learning material accessible	69 (83.13%)	66 (84.62%)	0.255	0.794

Helps independent study	71 (85.54%)	58 (74.36%)	1.777	0.750
Helps sharing notes	68 (81.93%)	56 (71.79%)	1.527	0.126
Anxious without smart phone	56 (67.47%)	40 (51.28%)	2.092	0.036 *
During lockdown – entertainment	64 (77.11%)	55 (70.51%)	0.952	0.342
During lockdown – education	17 (20.48%)	22 (28.21%)	1.143	0.254
Ordering food, groceries, etc	02 (02.41%)	01 (01.28%)	0.528	0.596

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

A significantly ($Z=2.092$; $p=0.036$) higher number of female respondents reported they would be anxious without their smart phones (Table-1). One study [15] has reported that female smart phone users tend to spend more time on social media or text messaging, while their male counterparts have a propensity for spending time on video gaming, media sharing and Internet searches. Several studies [13, 14, 16] identified female gender as a risk factor for excessive smart phone use, while some studies [17, 18] found that males were at higher risk. Conversely, other researchers [11, 19, 20] have reported no influence of gender.

Table-2: Gender differences in sleeping habits

	Females (n=83)	Males (n=78)	Z value	'p' value
Sleep after mid-night	48 (57.83%)	43 (55.13%)	0.345	0.726
Daily sleep < 6 hours	00 (00.00%)	11 (14.10%)	3.544	0.0004 *
Daily sleep 6-8 hours	56 (67.47%)	51 (65.38%)	0.280	0.779
Daily sleep > 8 hours	27 (32.53%)	17 (21.79%)	1.527	0.126
Afternoon sleep	22 (26.51%)	34 (43.59%)	2.274	0.023 *

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

A significantly ($Z=3.544$; $p=0.0004$) higher number of male respondents slept for less than 6 hours a day and significantly ($Z=2.274$; $p=0.023$) more male respondents slept in the afternoons (Table-2).

Among students, higher academic scores [10, 21] and reading habit, [10] family educational background [12] and monthly family income [22] seem to be negatively correlated with smart phone usage rates. Some studies found that use of smart phone for social networking [14, 23] and the duration of this usage [24] were predictors of smart phone addiction. However, another study, [25] did not find any such association. A positive correlation between loneliness and smart phone addiction was reported, [26] but another study did not find a significant relationship. [23]

Gaming, [16, 20, 23, 27] time spent on gaming [25] and habitual gaming to achieve targets [24] were also found to predict smart phone addiction. Use of smart phones for entertainment, [23] seeking pleasure, [16] watching videos, [25, 27] listening to music, [25] or reading e-books, [25] have all been found to be associated with problematic use. Those with problematic smart phone use have been shown to use the phone more for gaining peer acceptance, [21] to avoid being left out, [16] and to seek relief from body image dissatisfaction, [28] social anxiety, and depression.

Despite the substantiation, one research study [29] published in 2018 deduced that sufficient evidence was not available till date to support the existence of smart phone addiction.

CONCLUSION

Though excessive use of smart phones has adverse effects, such as, addiction and distraction at work, the positive outcomes (single device that provides 24x7 connectivity, information, entertainment, education) far outweigh the adverse effects (smart phone dependency). Hence, stakeholders in communities ought to educate and guide young

adults and adolescents on “smart” and responsible use of smart phones. Smart phones may be restricted in situations where data security is of prime concern. To prevent smart phone addiction, young adults may be introduced to diverse activities to utilize their leisure time.

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