International Journal of Humanities and Social Science Invention (IJHSSI)
ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714
www.ijhssi.org ||Volume 9 Issue 8 Ser. I || August 2020 || PP 53-57

Prevalence of Inattention among School Children with Excessive Smart Phone Use

Dr.Ramyashilpa.D.Nayak, Dr.Ashwini.Padmashali
Asst Professor Dept of Psychiatry USM-KLE IMP
Asst Professor Dept of Psychiatry USM-KLE IMP

ABSTRACT: *There is no uncertainty in the benefits of the Smartphones. Effortlessness of communication, the wherever, anytime contact – with friends, family and in theory at slightest the competence taken to busy lives. Nevertheless every technological advance that delivers such intense benefits has momentous costs too. Smartphones have turned out to be a symbol of our time. The smartphone has assisted a stream of new applications and become a topic of many discussions. Its existence is now being questioned through dinner, driving and in bed. Obviously it has an inevitable nature and far receiving influence. One of the studies published in the Journal of Psychology of Consciousness has indicated that the absent-minded use of smartphones-rather than the general use of a smartphone per se- is linked to mind wandering and lack of attention. The present study focuses on how excessive smartphone use causes inattention among school children. For the study sample 8th standard and 9th standard school children from Maratha Mandal English Medium School Belagavi city, Karnataka, India has been selected. Number cancellation test, Digit symbol Test (WAIS-PR) to test inattention and the Internet Addiction Test to find out the level of addiction among children are to be administered. It has been hypothesized that the students will exhibit high level of inattention with excessive smart phone use. 't' analysis to be carried out to test the level of significance.*

KEY WORDS: *Smartphone, inattention*

Date of Submission: 28-07-2020 Date of Acceptance: 11-08-2020

I. INTRODUCTION

In 21st century everybody uses smart phone in daily lives. For instance in United States, from 2011 to 2015 the use of smart phone has increased from 35% to 68%. There are various reasons for this increase in utility such as portability, ability to capture and share photographs, and access information via internet (1).Although smart phone has simplified the way of maintaining interpersonal relationships, the experimental studies have shown that people tend to neglect the ones with whom they are physically interacting (2).At individual level when used every day, smart phone use may be habit forming. It has been said that smart phone use has the potential to develop into an addictive behavior similar to gambling and can interfere with our daily life. There are researches which have found a correlation between excessive smart phone use with personality traits and psychiatric co-morbidities like ADHD, depression etc (3).

Nearly 9 out of 10 children in the India now have a smartphone. Though they can be beneficial in helping children stay in touch with worried parents, the health row isn't so clear-cut. Smartphones are psychologically addictive. Except we get control of the screens which now absorb so much of kids' time, it will have unsafe effects on kids. One of the research published online points out the bad effects of smartphone use on children like a 2008 study by Dr. Gaby Badre found children who used their cell phones extensively experienced more sleep disturbance, restlessness and fatigue than children who limited their cell phone usage. Too much screen time can result in digital eyestrain, which can include burning, itchy, or tired eyes. Dong (2012) proposes that Internet Addiction Disorder (IAD) is speedily becoming a predominant mental health unease in many countries around the world. Access to the internet is one of the types of mobile phone technology which is increasing especially in young people and fMRI scans showed substantial differences in brain activity from those measured to have IAD, related with those who didn't.

II. REVIEW OF LITERATURE

One of thestudies shows some associations between Mobile Phone use and inattention in Chinese adolescents. Decreasing Mobile Phone usage to less than 60 minutes per day may help adolescents to stay focused and centered. Mobile Phone has been found to be associated with inattention in a few studies. One explanation of this association could be that the head is more exposed to electromagnetic radiation from Mobile Phone rather than any other part of the body.

Instead, subjects suffering from insomnia [Carskadon MA 2011] or headaches [Milde-Busch A 2010 et.al] were found to have more inattention and many studies have reported that insomnia [SahinS,et.al 2013, Munezawa T et. al 2011] or headaches [Sudan M et.al 2012, Chu MK et. al 2011] occur more frequently with increasing exposure to Mobile Phone. Furthermore, adolescents with inattention are at a higher risk of other psychiatric illnesses such as mood and conduct disorders, and substance abuse [Childress AC et. al 2012, Breslau J et.al 2011]. Attention functions may also be differentially enhanced after exposure to the electromagnetic field emitted by Mobile Phone was found in the study conducted by Lee TM et. al (2003) Edelstyn N et.al 2002. Lee TM et.al (2001)

A Chinese population based cross sectional study by FeizhouZheng et al investigated the association between mobile phone use and inattention in adolescents. The study found a significant association between inattention and mobile phone ownership, total time spent, position of the mobile phone during day and mode at night. There was a stronger association if the total time spent was more than 60 minutes. Hosokawa R, Katsura T conducted a study to find the association between mobile technology and child adjustment in early elementary school age in Japan. A self-report questionnaire regarding the use of mobile phone in their children and emotional/behavioral adjustment were completed by parents. The study found significant association between regular use of mobile phone and conduct problems, hyperactivity/inattention. A study to find the association between mobile phone use and self-reported wellbeing in children by Zheng F et al indicated a consistent significant association between mobile phone use and fatigue in children.

Byun Y-H conducted a longitudinal study on mobile phone use, blood lead levels and attention deficit hyperactivity symptoms in children. The study concluded that there was increased ADHD symptom risk and simultaneous exposure to lead and radiofrequency from mobile phone use . It is said that there is a bidirectional relationship between Internet addiction and ADHD symptoms. Gaming looks more attractive in the presence of symptoms of ADHD and the symptom of ADHD gets exaggerated by gaming like inattention, dis-inhibition which isthe areas of concern. Montagni I conducted a cross sectional study to assess the association between screen time with self-perceived attention problems and hyperactivity level in French students. The students were evaluated using adult ADHD self-report scale and self-report of average time spent on screen across five different activities such as working on computer/tablet, playing video games, surfing internet, watching television, using smart phones and the time spent was scored as very low, low, high and very high. The study found that there was an increased risk of self-perceived attention and hyperactivity problems with increase in screen time exposure. The association was found to be stronger for self-perceived attention compared to hyperactivity.

Li C et al conducted a study to assess touch screen device usage in infants and toddlers and its correlation with cognitive development. This study used standard questionnaire which was given to the parents of high risk infants and toddlers using smart phone. The study concluded that majority of the families allowed their children to use smart phone before one year of age and many felt it had educational benefits. However there was no difference in the developmental scores between the children with and without touch screen device usage.

III. METHODOLOGY

Aim:

- To observe the effects of smartphone addiction on attention among the high school children.
- To find out the level of smartphone addiction

Purpose:

- To make children cognize about the smartphone addiction and how it is affecting their attention and further how it leads to many mental health problems.

Objective:

- To find out the level of smartphone addiction and its effects on attention high among school children.

Hypothesis:

- It has been hypothesized that smartphone addiction will affect the attention of high school children.

Variables:

- *Independent Variable:* Smart Phone use
- *Dependent Variable:* Attention

IV. MATERIALS AND METHODS:

Assessment Tools:

For the present research the Internet Addiction Test (IAT) developed by Dr. Kimberly Young has been chosen. Internet Addiction Test (IAT) is a reliable and valid measure of addictive use of Internet, developed by Dr. Kimberly Young. It consists of 20 items that measures mild, moderate and severe level of Internet Addiction.

On the other hand to test the inattention number cancellation test from Psychological Assessment of Children in the Clinical Setting of Uma Hirisave, Anna Oommen, MalavikaKapur (NIMHANS) has been included.

And another tool for inattention is one of the sub-tests from Wechsler's Adult Intelligence Scale WAIS-PR that is Digit symbol Test.

***Inclusion criteria*:** High school children from 8th and 9th standard only
***Exclusion criteria*:** Kindergarten and Primary school children
***Population under study*:** High school children from Belagavi City

V. RESULTS AND DISCUSSION

Table No1: Distribution of respondents by gender, age and class

	No	%
Gender		
0	112	55.17
1	91	44.83
Age		
13	14	6.90
14	101	49.75
15	79	38.92
16	9	4.43
Class		
8	162	79.80
9	41	20.20
Total	203	100.00

Male= 0
Female= 1

Table No: 2 Comparison of boys and girls with IAT total, DST total and NCT total by independent t test

Variable	Gender	Mean	SD	SE	t-value	P-value
IAT total	0	43.82	18.88	1.78	2.8133	0.0054*
	1	36.09	20.19	2.12		
DST total	0	44.97	15.58	1.47	-0.4046	0.6862
	1	45.79	12.61	1.32		
NCT total	0	75.49	25.11	2.37	-0.5308	0.5961
	1	77.29	22.45	2.35		

The table no.2 indicates the mean score of 43.82 for males and 36.09 for females. Even though the 't' is not significant we can observe that the mean scores are marginally high for males then for females for *Internet Addiction Test*. This mean is described with SD for male (18.88) and female (20.19) and eventually it led to the t-value of 2.81 and the obtained 'p' value is 0.0054* which is significant.

Further the mean score for Digit symbol teat is 44.97 for males and females 45.79. On the other hand the mean scores for Number cancellation test are 75.49 for males and 77.29 for females. The 't' and 'p' values are not significant for both tests used to test the attention but the changes in the scores indicated that males having high scores on Internet Addiction Test are scoring less on attention tests.Singh, (2001) found men and women in US and Australia use the Internet approximately in equal amount whereas in Japan, India and China men remain to dominate Internet use.Roy,2008) studied usesand gratifications for Indianinternet users, the study has shown that males and females differ significantly on the gratification factors like self-development, user friendliness, wide exposure and relaxation.

Table No: 3 Comparison of ages of students with IAT total, DST total and NCT total by one way ANOVA test

Variable	Summery	Age				Total	F-value	p-value
		13	14	15	16			
IAT total	Mean	36.71	41.28	39.89	39.78	40.35	0.2451	0.8647
	SD	19.42	20.87	18.87	18.56	19.81		
DST total	Mean	46.43	44.78	44.99	53.00	45.34	0.9550	0.4150
	SD	13.77	15.43	12.97	12.80	14.30		
NCT total	Mean	92.64	80.16	70.75	56.22	76.30	7.1980	0.0001*
	SD	24.34	22.65	23.92	8.30	23.91		

*p<0.05

Table No:3 shows the age wise mean scores a little higher for students of 16 years (39.78) of age and then for students of 13 years old (36.71) for *Internet Addiction test.* Statistical scores of 't'and 'p' values are not significant for *digit symbol test*. On the other hand the mean scores for *Number Cancelation Test* show statistical significance (0.001*). The mean score is (92.64) for 13 years of age and (56.22) for 16 years old. As represented in the table higher the scores on number cancelation test lesser the Internet Addiction. It is also observed that High scores on Number cancelationtest for less age group suggest that increase in age will reduce the attention level of the students and increase in Internet Addiction.

Table:4 Comparison of 8th and 9th class students with IAT total, DST total and NCT total by independent t test

Variable	Class	Mean	SD	SE	t-value	P-value
IAT total	8th class	41.45	20.67	1.62	1.5726	0.1174
	9th class	36.02	15.44	2.41		
DST total	8th class	43.57	14.36	1.13	-3.6138	0.0004*
	9th class	52.34	11.81	1.84		
NCT total	8th class	81.18	24.07	1.89	6.3160	0.0001*
	9th class	57.00	8.75	1.37		

*p<0.05

In the above table No: 4 the obtained 't' and 'p' values of *Internet Addiction Test* are not significant for 8th and 9th class. On the other hand the scores for *Digit symbol test* and *Number Cancelation Test* are also not significant.

Table: 5 Correlation between IAT total, DST total and NCT total by Karl Pearson's correlation coefficient method

Variable	Summery	IAT total	DST total	NCT total
IAT total	r-value	-		
	p-value	-		
DST total	r-value	-0.1647	-	
	p-value	0.0190*	-	
NCT total	r-value	0.0613	-0.1422	-
	p-value	0.3850	0.0430*	-

*p<0.05

In the table No: 5 the correlation between *Internet Addiction Test* and *Digit symbol Test* is significant (0.0190*). And the correlation between *Internet Addiction Test* and *Number Cancelation Test* is not significant (0.385) but it shows a positive relationship. But the correlation between *Number cancelation Test* and *Digit Symbol Test* is negatively correlated.

VI. CONCLUSION

Present research results reveal that higher the internet addiction less the attention and also increase in age will also cause more of internet addiction and reduces the level of attention.

The hypothesis "*It has been hypothesized that smartphone addiction will affect the attention of high school children*." has been accepted.

Significance of the Study

The present study was conducted to find out whether too much of internet use affects the attention levels of high school children. In this study an attempt was made to compare the scores of internet addiction test with tests of attention like number cancelation and digit symbol test. Even though the statistical analysis have not revealed very significant't' values but the mean scores reveal a correlation between internet addiction and attention tests. By conducting these types of researches will help the parents to understand the bad effects of excessive smart phone use. These researches are also helpful in providing interventions to children and internet addiction can also be prevented early.

REFERENCES

[1]. Breslau J, Miller E, JoanieChungWJ,SchweitzerJB:Childhood and adolescent onset psychiatric disorders, substance use, and failure tograduate high school on time. JPsychiatrRes2011, 45(3):295–301.
[2]. Byun Y-H, Ha M, Kwon H-J, Hong Y-C, Leem J-H, et al. (2013) Mobile Phone Use, Blood Lead Levels, and Attention Deficit Hyperactivity Symptoms in Children: A Longitudinal Study. PLoS ONE 8(3): e59742. doi:10.1371/journal.pone.0059742
[3]. Carskadon MA: Sleep's effects on cognition and learning in adolescents. Prog Brain Res 2011, 190:137–143.
[4]. Childress AC, Berry SA: Pharmacotherapy of attention-deficit hyperactivity disorder in adolescents. Drugs 2012, 72(3):309–325.
[5]. Chu MK, Song HG, Kim C, Lee BC: Clinical features of headache associated with mobile phone use: a cross-sectional study in university students.BMCNeurol 2011, 11:115.
[6]. E. Duke, C. Montag. Smartphone addiction, daily interruptions and self-reported productivity. Addictive Behaviors Reports 6 (2017) 90–95
[7]. Edelstyn N, Oldershaw A: The acute effects of exposure to the electromagnetic field emitted by mobile phones on human attention. Neuroreport 2002, 13(1):119–121.
[8]. Hosokawa R, Katsura T (2018) Association between mobile technology use and child adjustment in early elementary school age. PLoS ONE 13(7): e0199959. https://doi.org/ 10.1371/journal.pone.0199959
[9]. Lee TM, Ho SM, Tsang LY, Yang SH, Li LS, Chan CC, Yang SY: Effect on human attention of exposure to the electromagnetic field emitted by mobile phones. Neuroreport 2001, 12(4):729–731**.**
[10]. Lee TM, Lam PK, Yee LT, Chan CC: The effect of the duration of exposure to the electromagnetic field emitted by mobile phones on human attention. Neuroreport 2003, 14(10):1361–1364.
[11]. Li C, Mendoza M, Milanaik R. Touchscreen Device Usage in Infants and Toddlers and its Correlations with Cognitive Development.Ped Health Res 2017, 2: 1.
[12]. Marty-Dugas, J., Ralph, B. C. W., Oakman, J. M., &Smilek, D. (2018).The relation between smartphone use and everyday inattention. Psychology of Consciousness: Theory, Research, and Practice,5, 46-62. https://doi.org/10.1037/cns0000131
[13]. Milde-Busch A, Boneberger A, Heinrich S, Thomas S, Kühnlein A, Radon K, Straube A, von Kries R: Higher prevalence of psychopathological symptoms in adolescents with headache: a population-based cross-sectional study. Headache 2010, 50(5):738–748.
[14]. MontagniI,Guichard E, KurthT.Association of screen time with self-perceived attention problems and hyperactivity levels in French students: a cross-sectional study. BMJ Open 2016;6:e009089. doi:10.1136/bmjopen-2015-009089
[15]. Munezawa T, Kaneita Y, Osaki Y, Kanda H, Minowa M, Suzuki K, Higuchi S, Mori J, Yamamoto R, Ohida T: The association between use of mobile phones after lights out and sleep disturbances among Japanese adolescents: a nationwide cross-sectional survey. Sleep 2011, 34(8):1013–1020.
[16]. Roy, S. K. (2008) Determining Uses and Gratifications for Indian Internet Users. CS-BIGS 2(2), 78-91. http://www.bentley.edu/csbigs/vol2-1/roy.pdf.
[17]. Sahin S, Ozdemir K, Unsal A, Temiz N: Evaluation of mobile phone addiction level and sleep quality in university students. Pak J Med Sci 2013, 29(4):913–918.
[18]. Schmid MR, Loughran SP, Regel SJ, Murbach M, BraticGrunauer A, Rusterholz T, Bersagliere A, Kuster N, Achermann P: Sleep EEG alterations: effects of different pulse-modulated radio frequency electromagnetic fields. J Sleep Res 2012, 21(1):50–58.
[19]. Singh, S. (2001) Gender and the use of the Internet at home. New Media & Society.3(4), 395-416 Sage.
[20]. Sudan M, Kheifets L, Arah O, Olsen J, Zeltzer L: Prenatal and postnatal cell phone exposures and headaches in children. Open Pediatr Med J 2012, 6:46–52.
[21]. V. Rotondietal.Connecting alone: Smartphone use, quality of social interactionsand well-being.Journal of Economic Psychology 63 (2017) 17–26.
[22]. Wallace D, Eltiti S, Ridgewell A, Garner K, Russo R, Sepulveda F, Walker S, Quinlan T, Dudley S, Maung S, Deeble R, Fox E: Cognitive and physiological responses in humans exposed to aTETRA base station signal in relation to perceived electromagnetic hypersensitivity. Bioelectromagnetics 2012, 33(1):23–39.
[23]. Weiss M D et al. The screens culture: impact on ADHD. ADHD AttenDefHypDisord (2011) 3:327–334.DOI 10.1007/s12402-011-0065-z
[24]. Zheng et al.: Association between mobile phone use and inattention in 7102 Chinese adolescents: a population-based crosssectional study. BMC Public Health 2014 14:1022.
[25]. Zheng F, Gao P, He M, et al. Association between mobile phone use and self-reported wellbeing in children: a questionnaire-based crosssectional study in Chongqing, China. BMJ Open 2015;5:e007302. doi:10.1136/ bmjopen-2014-007302

Web site References

[26]. https://www.productevolution.org/2018/03/on-the-origin-of-the-smartphone/
[27]. https://www.nischint.com/harmful-effects-smartphones-children
[28]. https://www.psypost.org/2018/07/a-particular-type-of-smartphone-use-is-linked-to-everyday-inattention-51826
[29]. https://www.nischint.com/harmful-effects-smartphones-children
[30]. https://www.powerwatch.org.uk/library/downloads/children-phones-3-research-2018-08.pdf file:///C:/Users/Windows%207/Downloads/12889_2014_Article_7106.pdf
[31]. https://www.researchgate.net/publication/333843420_ROLE_OF_GENDER_IN_INTERNET_ADDICTION_AMONG_STUDENTS

Dr.Ramyashilpa.D.Nayak. " Prevalence of Inattention among School Children with Excessive Smart Phone Use." *International Journal of Humanities and Social Science Invention (IJHSSI)*, vol. 09(8), 2020, pp 53-57. Journal DOI- 10.35629/7722