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Original Research Article

A STUDY ON MOBILE PHONE ADDICTION AND ITS IMPACT ON PHYSICAL AND MENTAL HEALTH OF SCHOOL GOING CHILDREN ATTENDING OPD AT TERTIARY CARE TEACHING HOSPITAL IN JALNA, MAHARASHTRA, INDIA

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ABSTRACT

Background: Now a days mobile phone has much impact on children, affecting daily activities of children and their health as well. Hence the present study was conducted to estimate the prevalence of mobile phone addiction and associated factors among study children and to find out the impact of smart phone addiction on physical and mental health.

Materials and Methods: A cross-sectional study was conducted among 400 school going children attending OPD at tertiary care teaching hospital in Jalna, Maharashtra from July to October 2025. The questionnaire included the socio-demographic characteristics, details of pattern of mobile phone usage and its effect on physical and mental health and school performance of study participants.

Results: Study participants consists of 53% boys and 47% were girls. Study found that 53.2% children were having mobile phone addiction. Related to physical health, more than half of the children (51.7%) had reduced physical activity due to excess mobile use. Regarding different psychosocial effects, 52.2% having poor concentration on their studies and various day to day activities, 51.7% parents perceived reduced social interaction in their children and 173(43.3%) children had decreased communication with others in family and school, 154(38.5%) children are disobeying their parents or elders due to impact of mobile phones and 143(35.7%) had annoyance and irritability. There was significant association of mobile phone addiction with gender more in boys than girls and it was also associated with age of children and working status of mother.

Conclusion: Mobile phone addiction in school going children is important challenge for the parents and family, it has to address and awareness should be increased among children and their parents regarding its long term effects on health and wellbeing of children.

Keywords: Mobile phone addiction, physical health, mental health, school children.

INTRODUCTION

Smartphone are becoming an important part of life for people of all age worldwide and smartphone use has begun to change daily activities, family relations and social interactions.[1] The novel SARS- CoV2 coronavirus (COVID-19) was initially reported in China, then spread to create a global pandemic that resulted in changes in the way we are living our lives.[2] Sudden closure of schools due to coronavirus disease 2019 (COVID-19) pandemic introduced extensive use of digital technology in education, marked increase in screen time across the globe,

Children and adolescents are more exposed to smart devices for academic learning and entertainment.[3,4] The growing use of these technologies has raised concerns about how exposure patterns may affect children and adolescents' wellbeing.[5] Children of present generation because of their early initial exposure to mobile phones and longer life time duration of exposure when they grow older, hence they will have a higher cumulative exposure.[6] Smart phone overuse or dependency is a form of psychological or behavioral dependence on smartphone.[7] Addiction, by WHO (WHO expert committee-1964) is thought to be the dependence, as the continuous use of something for the sake of relief, comfort, or stimulation which often causes cravings when it is absent.[8] Mobile phone addiction not only has physical effects but also psychological and academic effect at the same time, sleep deficit, anxiety, stress and depression which are all associated with internet abuse, have been related to mobile phone usage too.[9] Parents must understand that using smart devices themselves can have a negative impact on their children and reduce the amount of time they spend with them in person.[10] As mobile phones increasingly dominate their effects comprehensively, recognizing both the benefits and drawbacks of mobile phone use can aid parents, educators and policy makers in crafting strategies to encourage healthy and responsible usage.[11]

Hence the present study was conducted with the objectives to estimate the prevalence of mobile phone addiction and associated factors among study children and also to find out the impact of addiction on physical and mental health.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted among 400 school going children (aged 6 to 12 years) attending OPD of urban health training center of field practice area of Noor hospital and IIMSR Medical College, Badnapur, Dist. Jalna, Maharashtra from July to October 2025. Study was approved by institutional ethics committee and the informed consent of parent was taken. All data were kept confidential used for study purpose only.

For calculating the sample size, prevalence of mobile phone addiction in children of 5-12 years in South Kerala, India showed as 42.3% in a study done by Sulaiman et al,[9] was taken. The formula used to calculate sample size was, $n = 4pq/L^2$, where n= sample size, p = prevalence, q = 100 – p, L =5%. Calculating the sample size as per the formula, we got, n = 4×42.3 x [100-42.3] /5 X 5 = 390. To get more accurate prevalence, the sample size was rounded of to 400.

Inclusion criteria

Study participants willing to participate and cooperative.

Exclusion criteria

Study participants not willing to participate and non-cooperative and with any already diagnosed psychiatric condition.

Interview of children fulfilling the inclusion criteria were taken till sample size of 400 achieved. Prevalence of smart phone addiction was measured using diagnostic criteria by Lin et al.[12] Diagnosis rests upon presence of 3 or more behavioral criteria or 2 or more functional criteria and in which addictive behaviour is not associated with other psychiatric illness like obsessive compulsive disorder (OCD) or bipolar disorders.[12] The questionnaire included the socio-demographic characteristics, details of pattern of mobile phone usage and its effect on physical and mental health and school performance of study participants. The data was collected in Microsoft excel sheet and analysis was done using appropriate statistical test. Frequency and percentages were calculated for categorical variables. To check for correlation, chi-square test was applied.

RESULTS

As [Table 1] shows the socio-demographic characteristics of study participants, all 400 participants were exposed to mobile phone. Boys were more in number 212(53%) than girls 188(47%). Most of the children 202(50.5%) belongs to 6 to 8 years age group followed by 8 to 10 years. Most of the children 277(69.25%) were in primary class of school. More than half 225(56.25%) children were residing in joint family. Related to socio-economic status, more children 210(52.5%) belongs to middle class followed by lower class. With regards to occupation of mother, about 242(60.2%) children's mother were working.

Table 1: Socio-demographic characteristics of study participants (n=400)

Sr. No.	Variables	Number	Percentage
1.	Gender		
	Boys	212	53.0
	Girls	188	47.0
2	Age (in years)		
	6-8 yrs	202	50.5
	8-10 yrs	125	31.2
	10-12 yrs	73	18.3
3	School class		
	Primary (class 1st to 5th)	277	69.2
	Middle (Class 6th to 7th)	123	30.8
4.	Type of family		
	Joint	225	56.2

	Nuclear	175	43.8
5	Socio-economic status		
	Upper class	72	18.0
	Middle class	210	52.5
	Lower class	118	29.5
6.	Occupation of mother		
	Working	242	60.5
	Non- working	158	39.5

Table 2: Diagnostic criteria for mobile phone addiction and the frequency distribution of each criterion among study participants

Criteria	Number	Percentage
Behavioural criteria		
1. Continued inability to resist the impulse to use mobile phone	153	38..3
2. Symptoms of dysphoria, anxiety or irritability after a period of withdrawal from use	168	42.0
3. Using mobile phone for a period longer than intended	257	64.3
4. Persistent desire and/or unsuccessful attempts to quit/reduce mobile phone use	231	57.7
5. Heightened attention to using or quitting mobile phone use	122	30.5
6. Persistent mobile phone use despite recurrent physical or psychological consequence	68	17.0
Functional criteria		
1.Excessive use resulting in persistent /recurrent physical/ psychological problems	178	44.5
2. Use in physically hazardous situations (such as driving or crossing the street) or situations that have other negative impacts on daily life	08	2.0
3. Use that impair social relationships/performance at school/work	128	32.0
4. Use that is very time consuming or causes significant distress	07	1.8

As [Table 2] depicts the diagnostic criteria for mobile phone addiction and the frequency distribution of each criterion among study participants. Out of 400 study children, 213 met the diagnostic criteria for mobile phone addiction, so 53.2% children were having mobile phone addiction. The most common behavioral criteria experienced among study children were using mobile phone for a period longer than intended 257(64.3%) followed by persistent desire and/or unsuccessful attempts to quit/reduce mobile phone use was 231(57.7%). Among functional criteria was excessive use resulting in persistent /recurrent physical/ psychological problems 178(44.5%) followed by mobile use that impair social relationships/performance at school/work was 128(32%).

Table 3: Showing pattern of mobile phone usage among study participants

Sr. No.	Variables	Number	Percentage
1	Age of first exposure		
	Below 1 year	183	45.75
	Above 1 year	217	54.25
2	Frequency of daily use		
	< 3 times	209	52.25
	> 3 times	191	57.75
3	Time duration per day		
	<1 hr	34	8.5
	1-3 hrs	132	33.0
	3- 5 hrs	213	53.25
	> 6 hrs	21	5.25
4.	Purpose of mobile usage		
	Academics/study purpose	198	49.5
	Entertainment	243	60.75
	Habituated	213	53.3
	To engage children	21	5.3
5.	Mobile phone use while eating		
	Yes	217	54.25
	No	183	45.75
6.	Mobile phone use while Charging		
	Yes	81	20.25
	No	319	79.25
7	Mobile phone use before bed time		
	Yes	84	21.0
	No	316	79.0

As seen from [Table 3] that the pattern of mobile phone usage among study participants, more than half of children 217(54.25%) were exposed to mobile after age of one year. More than half of children 191(57.75%) had frequency of using mobile phone more than 3 times day and 234(58.5%) children are having mobile duration usage of more than 3 hours per day. More than half 217(54.25%) children are using mobile phone while eating and 81(20.25%) children are using mobile phone during charging it and 84(21%) children are using mobile before bed time.

Table 4: Effect of mobile phone use on physical health of study participants

Sr. No.	Physical health problems	Number	Percentage
1	Affected vision	47	11.7
2	Headache/Musculoskeletal problems	88	22.0
3	Weight gain	32	8.0
4	Fatigue	71	17.7
5	Reduced out door physical activities	207	51.7

It was seen from [Table 4] that the effects of mobile phone use on physical health of study participants, the most common effect was in the form of reduced out door physical activities 207(51.7%) followed by experience of headache and other musculoskeletal problems 88(22%). Fatigue was another complain in 71(17.7%) of children, and 47(11.7%) children were having vision problem due to excessive use of mobile phone and 32(8.0%) children gain the weight due to continues sitting and watching mobile phone.

Table 5: Effect of mobile phone use on psycho- social health of study participants

Sr. No.	Psycho- social problems	Number	Percentage
1	Mobile phone addiction	213	53.2
2	Disturbed sleep	40	10.0
3	Delayed cognitive / language development	29	7.25
4	Reduced social interaction	207	51.7
5	Poor concentration	209	52.2
6	Reduced school performance	120	30.0
7	Annoyance/ irritability	143	35.7
8	Disobeying parents/elders	154	38.5
9	Decreased Communication	173	43.3
10	Decreased emotional attachment with family	98	24.5

As [Table 5] depicts the effect of mobile phone use on psychosocial health of study participants, more than half 213(53.2%) children are having mobile phone addiction followed by 209(52.2%) having poor concentration on their studies and various day to day activities. Parents of 207(51.7%) children perceived reduced social interaction in their children and 173(43.3%) children had decreased communication with others in family and school, 154(38.5%) children are disobeying their parents or elders due to impact of mobile phones and 143(35.7%) had annoyance and or irritability and parents of 120(30%) children feels that school performance of their children affected and there was decreased progress due to excess mobile phone use. Among other social problem, 98(24.5%) children had decreased emotional attachment with family and 40(10%) children has sleep problem due to excessive mobile phone usage.

Table 6: Association of Mobile phone addiction with sociodemographic characteristics of study participants

Sr. No.	Variables	Addiction			
		Yes (N=213)	No (N=187)	Chi- Square	P - value
1.	Gender			126.9	< 0.00 significant
	Boys	169	43		
	Girls	44	144		
2	Age (in years)			179.1	< 0.00 significant
	6-8 yrs	41	161		
	8-10 yrs	105	20		
	10-12 yrs	67	06		
3	School class			26.04	> 0.00 Not significant
	Primary (class 1st to 5th)	154	123		
	Middle (Class 6th to 7th)	59	64		
4.	Type of family			36.2	> 0.00 Not significant
	Joint	90	135		
	Nuclear	123	52		
5	Socio-economic status			72.7	> 0.00 Not significant
	Upper class	61	11		
	Middle class	124	86		
	Lower class	28	90		
6.	Occupation of mother			105.6	< 0.00 significant
	Working	179	63		
	Non- working	34	124		

It was observed from Table 6 that the association of mobile phone addiction with socio-demographic characteristics of study participants, in this study mobile phone addiction is more in boys than girls and it is stastically significant. With related to age, it was seen that as age increases mobile phone addiction increases and that is significantly associated. There is no significance in level of school class and mobile phone addiction. Mobile phone addiction is more in children residing in nuclear family as compared to

those children living in joint family but is not stastically significant. Mobile phone addition highest in upper class followed by middle than lower class i.e. increases with socio-economic status but this relation is not significant stastically. With regard to mother's education, mobile phone addiction is more among children of working mother as compared to non-working and the relation is statistically significant.

DISCUSSION

The present study was conducted to estimate the prevalence of mobile phone addiction and its associated factors among study children and to find out the impact of mobile phone addiction on physical and mental health. Out of 400 study children, 213(53.2%) met the diagnostic criteria for mobile phone addiction, which was higher than a study done by Sulaiman et al,[9] which was found 42.3% children between 5 to 12 year had mobile phone addition. In another study done by Ahmead et al,[13] also found that 57.3% study participants experienced smart phone addiction among high school, that was slightly higher than findings of our study. In this study more than half (54.25%) of children had mobile phone exposure after the age of one year, while a study done by Reddy et al,[6] found that almost 57% of children were exposed to mobile phone by the age of one year. Related to frequency of daily mobile usage, present study found 57% children uses it more than 3 times and in 58.5% children cumulative duration of mobile use was more than 3 hours, while a study by Reddy et al,[6] found that 23.39% of the children were used to screen for more than 2 hours in a day. In present study, 60% of children use mobile for entertainment purpose that was slightly higher than findings of Ravi et al,[10] they found 53.2% of children using smart phone for entertainment. Present study found 5.3% parents are giving mobile phone to their children to engage them that was lower than the findings of Reddy et al,[6] where 26% parents are giving mobile phone to children to engage when parents are busy. In the present study, 20% of children were using mobile phone even while charging, similarly a study done by Ravi et al,[10] also reported 14.4% children are using mobile phone while charging.

Present study found that more than half (54%) children are watching mobile phone while eating their food, which is higher than a study done by Wasnik et al,[11] where 15.7% of children used mobile phones during meal or family time. Another study by Reddy et al,[6] also found 24.59% parents are using mobile phone to distract the children while eating. In our study, 21% children are using mobile phone before bed time that is lower than findings of Ravi et al,[10] that was 64%. With regards to physical health effect, in the present study the most common reduced physical activates was due to excess mobile phone use that wad 51.7% more than the findings of Wasnik et al,[11] that was 24.5% of study children reduced outdoor activity.

In the present study, 11.4% children had vision problem, and 17.7% experienced fatigue due to mobile phone, similarly a study done by Wasnik et al,[11] found that 17.6% children experienced eye strain or headache and 10.78% children had sleep disturbances. Another study by Mokhtarinia et al,[14] also reported 39.7% study participants had dry eye and 39.1% had fatigue, while study by Ravi et al,[10] found that 71.4% children had physical changes such as neck pain and frequent blinking of eyes. Present study shows psychosocial problems due to excess use of mobile phone as mobile phone addiction was 53.2% which was slightly lower than Ahmead et al,[13] where it was 57.3% and higher than Sulaiman et al,[9] that was 42.3%.

In the present study, sleep was disturbed in 10% of children, 24.5% children had decreased emotional attachment with family, 52.2% children had poor concentration on their studies and various day to day activities, parents of 51.7% children perceived reduced social interaction in their children and 43.3% children had decreased communication with others in family and school, and 38.5% children are disobeying their parents or elders due to impact of mobile phones and 35.7% had annoyance and irritability and parents of 30% children feels that school performance of their children affected and decreased progress due to excess mobile phone use.

Similarly study by Soni et al,[15] found that poor quality of sleep was higher in smart phone user. Another study by Wasnik et al,[11] found irritability or frustration and reduced attention span in their study participants was 16.6%. One more study by Ravi et al,[10] also reported 25.7% of children who were expose to smartphones were having behavioral changes such as sleep delay, alteration of food habit and speech delay. Present study shows significant gender difference for mobile phone addiction i.e. boys are more addicted than girls, while a study by Zhai et al,[16] reported higher in females than males. Present study shows that mobile addiction is more in children of working mother than non-working, while a study by Ravi et al,[10] found that it was more in children of unemployed mothers.

CONCLUSION

Children are the future of nation, the excessive mobile phone use by the children is increasing day by day affecting physical and mental health and overall development of children. It is necessary to increase the awareness of the parents regarding the potential long term effects of mobile use in their children. There is need of awareness and counselling of the children limited and correct use mobile phones without hampering their health and school progress and daily activities. There is also need of social support from parents and teachers for health and wellbeing of the children.

REFERENCES

1. Samar Salah Eldin Mohamed Diab. Effect of Using Smart Mobile Device on Child Prosocial and Difficult Behaviors in School Age; Parents' Perception. Indian Journal of Forensic Medicine & Toxicology, 2021;15(4):2405-14.
2. Shah K, Mann S, Singh R, Bangar R, Kulkarni R. Impact of COVID-19 on the Mental Health of Children and Adolescents. Cureus. 2020;12(8):e10051.
3. Nayak, S. G., & Pai, M. S. Smartphone de-addiction among children and adolescents: An hour of need. Journal of Child and Adolescent Psychiatric Nursing, 2022;35(2):196-98.
4. Musa S, Elyamani R, Dergaa I. COVID-19 and screen-based sedentary behaviour: Systematic review of digital screen time and metabolic syndrome in adolescents. PLoS One. 2022;17(3):e0265560.
5. Girela-Serrano BM, Spiers ADV, Ruotong L, Gangadia S, Toledano MB, Di Simplicio M. Impact of mobile phones and wireless devices use on children and adolescents' mental health: a systematic review. Eur Child Adolesc Psychiatry. 2024;33(6):1621-51.
6. Reddy, D. P., Earan, S. K., Thambiprabagarane Kalaimani, & Arulkumaran Arunagirinathan. Mobile phones and children: exposure and pattern of usage of mobile phones among children - a descriptive cross-sectional study. International Journal of Contemporary Pediatrics, 2023;10(6):873–77.
7. Kandipudi, Kesava Lakshmi P.; Kiranmayee, K Sreevani; Kranthi, P. Prevalence of smartphone addiction in school-going adolescents and its association with depression. Journal of Dr. YSR University of Health Sciences 2023;12(3):248-52.
8. Manzoor A, Basri R, Ali I, Javaid S, Amjad M, Amin U. Smart phone addiction/ overuse and its effect on dietary behaviour and lifestyle – A systematic review. EAS J Nutr Food Sci. 2020;2(5):289-97.
9. Sulaiman R, Shaji S, Sheela VV, & Raheela AS. Mobile phone addiction among children aged 5-12 years, a hospital-based study in South Kerala. International Journal of Community Medicine and Public Health, 2021;8(12):5938–42.
10. Ravi Sheeba; Krishnamoorthy Kannan; Senthil Rajini; Dhasaram Premnath; Venkatesan Monisha; Iswarya R; Manjubairavi T. Behavioral and Functional Changes Due to Smartphone Overusage among Under-five Children in Rural Puducherry: A Community-based Cross-sectional Study. CHRISMED Journal of Health and Research 2024;11(2):80-84
11. Wasnik PP and Shende A. The effects of mobile phones on children's development and well-being. International Journal of Research in Management 2025;7(2):522-34
12. Lin YH, Chiang CL, Lin PH, Chang LR, Ko CH, Lee YH, et al. Proposed Diagnostic Criteria for Smartphone Addiction. PLoS one. 2016;11:11.
13. Ahmead M, Maqboul E, Alshawish E and Dweib M. The prevalence of Smartphone addiction and its related risk factors among Palestinian high school students: a cross-sectional study. Front. Psychiatry 2025;16:1636080.
14. Mokhtarinia HR, Torkamani MH, Farmani O, Biglarian A, Gabel CP. Smartphone addiction in children: patterns of use and musculoskeletal discomfort during the COVID-19 pandemic in Iran. BMC Pediatr. 2022;22(1):681.
15. Soni R., Upadhyay R., & Jain M. Prevalence of smart phone addiction, sleep quality and associated behaviour problems in adolescents. International Journal of Research in Medical Sciences, 2017;5(2):515–19.
16. Zhai R, Wu X, Chen T, Wang L. Gender differences in the prevalence and association between smartphone addiction and musculoskeletal disorders among vocational school students in Shanghai. Prev Med Rep. 2025;60:103295.