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# Effect of Smartphone Addiction among School Going Children (8-12 Years) during COVID-19 Pandemic

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**ABSTRACT**

**Background**

Addiction to Smartphone usage is a worldwide problem which may have negative impact on health and wellbeing of people. The period of covid 19 pandemic it has a huge effect on school going children as there is a only way for education and entertainment.

**Aim**

This study aimed to investigate the Effect of Smartphone Addiction among School Going Children (8-12 Years) during COVID-19 Pandemic in Selected CBSE Schools of Nadiad City.

**Objectives of the study were**

- To determine the level of Smartphone Addiction among School Going Children.
- To evalute the impact of Smartphone Addiction among School Going Children.
- To find the time spent by the children with Smartphone among School Going Children.
- To find out the association of Smartphone Addiction with selected demographic variables.
- To co-relate the impact of Smartphone Addiction with level of Smartphone Addiction among School Going Children.

**Methods**

The cross-sectional study was conducted in 2021 using a web-based questionnaire distributed via social media. In this study, 100 students were selected by systematic random sampling technique. Five point LikertScale was used to assess the level of smart phone addiction (15 items) and effect of smartphone addiction (15 items). Higher scores indicated higher levels of addiction and effects. Factors associated with these outcomes were identified by using descriptive, inferential and regression analysis.

**Result**

Complete questionnaires were 100, of which (52%) 52 were females and (48%)48 were males. Majority of children 31(31%) were from 5 standard and 87(87%) children living with parents. The overall percentage mean score of Smartphone Addiction five point likert scale was $44.6 \pm 12.4$, while the mean score of Effect of Smartphone Addiction five point likert scale was $54.73 \pm 14.84$. Among 100 children 49 (49%) children had severe smart phone addiction, 38 (38%) children had moderate level smart phone addiction and 13 (13%) students had mild smart phone addiction, whereas 6(6%) had mild effect of smart phone addiction 22 (22%)had a moderate level of effects and 72 (72%) has a sever effect of smart phone addiction. The simple linear regression study showed a significant increase in effects levels upon one unit increase in Smartphone addiction ($b = 0.73$, $p$-value $< 0.001$) The result showed a fair positive correlation between Smartphone addiction and its effects among school going children ($r = 0.6094$, $p$-value $< 0.001$) The study represent there was no statistical significance between smartphone addiction and demographic variables of children such as age, gender, relation with care taker, type of family living area, religion and number of family member.

**Conclusion**

During Covid 19 pandemic children were addicted to smartphone for various academic and entertaining purposes. This might lead to many health problems and the most vulnerable group was children as there is a need to organize programs to promote healthy smartphone usage to minimize the impact of smartphone addiction and its effect to health and well being of children.

**Key Words:** Smartphone Addiction, Effects of Smartphone addiction, Social Media, school going children

## Introduction

The episode of 2019 novel Covid sickness is caused tremendous effects in excess of 165 Nations/Territories and a huge number of people in different ways. [1]The authority name for smartphone dependence be Nomophobia which is characterized as having a dread of not being with your smartphone.[9]The level of school going children possessing a smartphone in regional India has expanded from more than 36 % to 61% over the most recent two years, the financial Review 2020-21. It likewise noticed that the advanced gap is probably going to decrease instructive disparities in the country. After schools, universities and other instructive organizations were shut down after the public lockdown was forced on Walk 24, 2020, children were shown web based utilizing smartphone.[2] Around 65% youngsters have become smartphone habit-forming lately and can't avoid the gadget in any event, for a large portion of an hour. Children are communicating anger, crying, not paying attention to guardians, showing peevish conduct when requested to leave the device. The overview is carried on 203 kids during Corona virus lockdown on kid health. The study says that an aggregate of 65.2% of understudies have physical problems, 23.40% have put on weight, 26.90% have endured migraine and irritability and 22.40% had eye pain and tingling. Fact is told 70.70% understudies with high screen openness during the lockdown days have social problems, 23.90% skirted their every day schedules, 36.80% become obstinate and 17.40% revealed a decreased ability to focus. [3] This existences of numerous youngsters are today progressively impacted by new innovative gadgets and mean correspondence (cell phone, tablets, and social network). Specially, in ongoing years, cell phone use has quickly expanded around the world. Its abuse might lead clinical, mental and social unfavorable results. Despite the fact that cell phone habit is excluded from the most recent rendition of the Analytic and Factual Manual for Mental issues, research studies and social mediation were led to address its connected negative impacts. [4] The utilization of cell phones has turned into a vital piece of day to day existence. Youngsters specifically can be noticed utilizing their cell phones continually, and they settle on or get decisions as well as utilize various applications or simply tap contact evaluates for a very long time. In this review, our point is to portray and examine a potential instance of cell phone dependence. [5] In nowadays, addiction isn't just shown by the utilization of medications and matter yet in addition it

suggests to betting, the Web, games and even cell phones.[6] As indicated by the World Wellbeing Association, since the Corona virus pandemic arose, (and starting at 20 August 2020), overall 21.3 million people have been tainted and roughly 762,000 people have passed on (World Wellbeing Association 2020a). Taking into account that these figures have been reached in a time of 7–8 months, Corona virus can be said to have spread quickly as far as infectiousness and has a somewhat high death rate.[7]Because of these precautionary measures, people have started to go to their work environment less as often as possible (if by any means) and stay at home more frequently. Therefore, the present circumstance has constrained people to acquire new working propensities and may have expanded their work pressure. [7] The reasonableness and simplicity of web access across the globe, is related with a few medical problems. Obsessive utilization of web, or web fixation is displayed to influence nature of rest, with reliance on web being essentially connected with lack of sleep.[8] Understudies' exorbitant reliance on cell phone use unfavorably impacts day to day existence aggravations, like interference of focus in work, interruption in day by day supper, decrease of usefulness, disturbance of the social relationship, experiencing mental issues alongside actual challenges, for example, wrist torment, neck firmness, obscured vision, and unsettling influences in resting designs. It likewise impacts their scholarly presentation, where they try to ignore during class-time through utilizing online media, informing, perusing sites, and so forth.[10]

**Objectives of the study were**

- To determine the level of Smartphone Addiction among School Going Children.
- To evalute the impact of Smartphone Addiction among School Going Children.
- To find the time spent by the children with Smartphone among School Going Children.
- To find out the association of Smartphone Addiction with selected demographic variables.
- To co-relate the impact of Smartphone Addiction with level of Smartphone Addiction among School Going Children.

**Methods**

A cross-sectional study was conducted in 2021 by distributing a pre-validated web-based questionnaire through common social media networks, among the school going children with the help of teachers. A brief description of the study objectives was explained, and by convenience, those who agreed to respond to the questionnaire confirmed their agreement electronically. Incomplete questionnaires were dropped out. Participants were requested to report their standard, class, and name of school upon submission. Participants who are not willing to participate were excluded. The data retrieved were stored in a private institutional server. This study was approved by the Institutional Research Committee of the Dinsha Patel College of Nursing, Gujarat. Participation was voluntary with assurance about the confidentiality of their information, as no identifiers or personal information were collected.

The data collection tool comprised of three sections, namely the participants' demographic details, the smart phone addiction assessment tool (Five point likert scale, 15 Items) and the self-reported Five Point Likert Scale to assess the effect of smart phone addiction. Participants' detail include age (years), gender, standard of education ($3^{rd}$, $4^{th}$, $5^{th}$, $6^{th}$ ,$7^{th}$ ), care taker and relationship, place of residence (region) and number of family member. Five Point Likert scale includes 15 items for smart phone addiction where one score for 'Always' and five for 'Never'. Five Point Likert scale includes 15 items to assess the effect of smart phone addiction where one score for 'Always' and five for 'Never'. The higher scores indicated higher levels of smartphone addiction and effect. The concurrent validity and internal reliability were obtained by (Cronbach's alpha: 0.7) Data were analyzed using descriptive, inferential and regressive analysis.

**RESULT**

Among 100, 48 (48%) were male and 52 (52%) female. The sample comprised 52 (52%) children aged 8-10 years, and 48 (48%) aged 10-12 years. 70 (70%) attended primary school and 23 (23%) lower

secondary school (middle school). 35 (35%) belonged to urban areas, 40 (17.4%) to rural ones and 20(20%) from semi urban area. 87 (87%) lived with parents, 7 (7%) with relative and 6 (6%) with care taker. Seventy-one (38.6%) mothers were graduated, 86 (46.7%) had high school education, 26 (14.2%) lower secondary school, and one (0.5%) primary school. Majority of children 95 (95%) were from hindu religion. 56 (56%) children lived in joint family.(Table:1)

**Figure 1Level of Smartphone Addiction Among School Going Children.**

The overall percentage mean score of Smartphone Addiction five point likert scale was $44.6 \pm 12.4$, while the mean score of Effect of Smartphone Addiction five point likert scale was $54.73 \pm 14.84$. Among 100 children 49 (49%) children had severe smart phone addiction, 38 (38%) children had moderate level smart phone addiction and 13 (13%) students had mild smart phone addiction, whereas 6(6%) had mild effect of smart phone addiction 22 (22%)had a moderate level of effects and 72 (72%) has a sever effect of smart phone addiction.

**TABLE: 1 ANALYSIS AND INTERPRETATION OF THE DEMOGRAPHIC DATA.**

**[N=100]**

| Demographic Data | | Frequency | Percentage (%) |
|---|---|---|---|
| Age | 8-10Yr. | 52 | 52% |
| | 10-12Yr. | 48 | 48% |
| Gender | Male | 48 | 48% |
| | Female | 52 | 52% |
| | Other | 0 | 0% |
| Standard | 3 | 16 | 16% |
| | 4 | 23 | 23% |
| | 5 | 31 | 31% |
| | 6 | 15 | 15% |
| | 7 | 15 | 15% |
| Caretaker | Parents | 87 | 87% |
| | Relatives | 7 | 7% |
| | Any Other | 6 | 6% |
| Relationship with caretaker | Grandparents | 6 | 6% |
| | Parents | 79 | 79% |
| | Uncle/Aunt | 6 | 6% |
| | Brother/Sister | 6 | 6% |
| | Guardian | 3 | 3% |
| Type Of Family | Nuclear | 41 | 41% |
| | Joint | 56 | 56% |
| | Extended | 1 | 1% |
| | Other | 2 | 2% |
| Living Area | Rural | 35 | 35% |
| | Urban | 45 | 45% |
| | Semi-Urban | 20 | 20% |
| Religion | Hindu | 95 | 95% |
| | Muslim | 2 | 2% |
| | Christian | 2 | 2% |
| | Other | 1 | 1% |

| | | | |
|---|---|---|---|
| Number Of Family Members | 3 | 19 | 19% |
| | 4 | 36 | 36% |
| | 5 | 24 | 24% |
| | 6 | 21 | 21% |

**Fig:1**

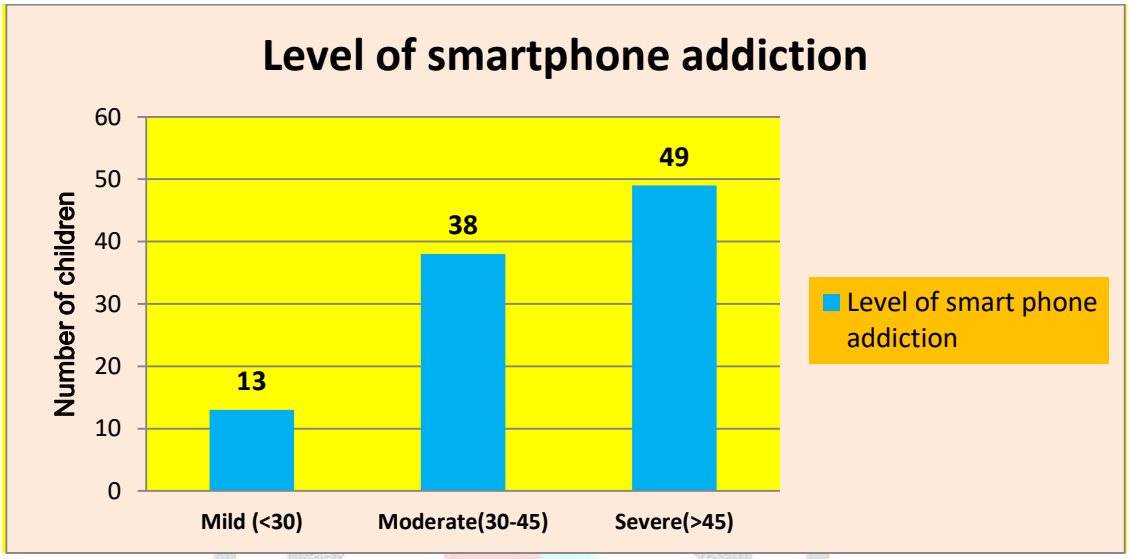
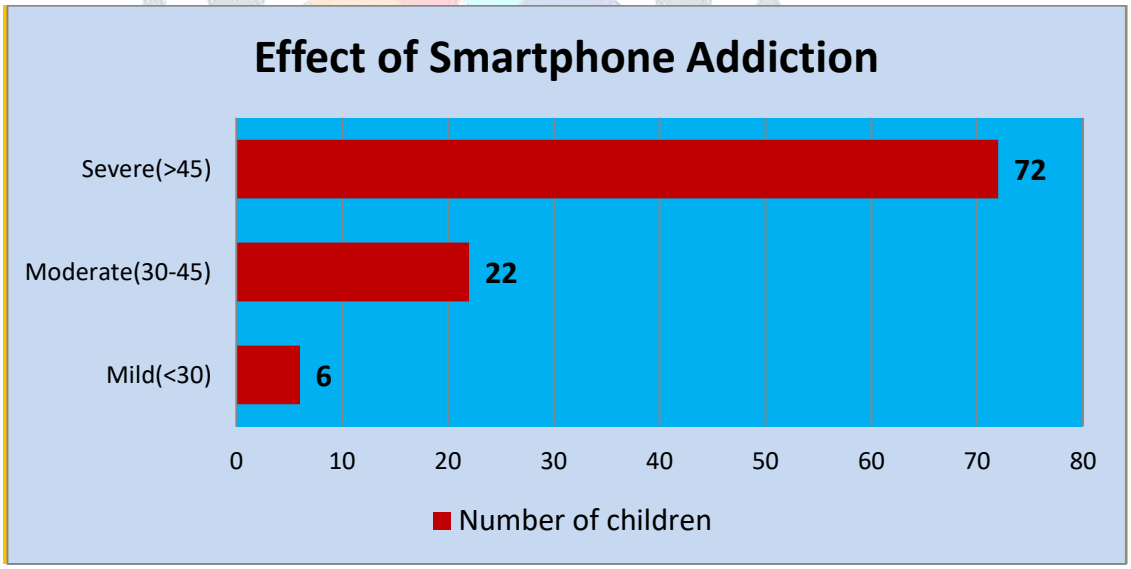



**Fig :2**




**DAILY TIME SPENT ON SMARTPHONE BY THE CHILDREN WITH**

Among 100 children 35 (35%) spent daily 2 to 4 hours where as 27 (27%), 12(12%) and 2 (2%) spent respectively 4 to 6 hours, 6 to 8 hours and more than 8 hours on Smartphone. According to children report time spent on academic work is between 2 to 6 hours according to 81 (81%) students. 59 (59%) students spent 1 to 3 hours for entertainment purpose. Among 100 children 53 (53%) spent time on you tube and 41(41%) spent time on games.(Table 2)

**ASSOCIATION OF SMARTPHONE ADDICTION WITH SELECTED DEMOGRAPHIC VARIABLES.**

The study represent there was no statistical significance between smartphone addiction and demographic variables of children such as age, gender, relation with care taker, type of family living area, religion and number of family member.(Table 3)

**TABLE 2: DAILY TIME SPENT ON SMARTPHONE BY THE CHILDREN WITH**

| Total time spent daily on smart phone | | *N(%)* |
|---|---|---|
| | ***Less than 2 hours*** | ***24(24%)*** |
| | ***2 to 4 hours*** | ***35(35%)*** |
| | ***4 to 6 hours*** | ***27(27%)*** |
| | ***6 to 8 hours*** | ***12(12%)*** |
| | ***More than 8 hours*** | ***2(2%)*** |
| *Time spent on smartphone for academic work during covid 19* | | |
| | ***Less than 2 hours*** | ***8(8%)*** |
| | ***2 to 4 hours*** | ***44(44%)*** |
| | ***4 to 6 hours*** | ***37(37%)*** |
| | ***6 to 8 hours*** | ***10(10%)*** |
| | ***More than 8 hours*** | ***1(1%)*** |
| *Time spent on smartphone for entertainment during covid 19* | | |
| | ***Less than 1 hours*** | ***28(28%)*** |
| | ***1 to 2hours*** | ***40(40%)*** |
| | ***2 to3 hours*** | ***19(19%)*** |
| | ***3 to 4 hours*** | ***8(8%)*** |
| | ***More than 4 hours*** | ***5(5%)*** |
| *Time spent on smartphone for entertainment during covid 19* | | |
| | ***You tube*** | ***53(53%)*** |
| | ***Games*** | ***41(41%)*** |
| | ***Social media*** | ***6(6%)*** |

**TABLE 3: FIND OUT THE ASSOCIATION OF SMARTPHONE ADDICTION WITH SELECTED DEMOGRAPHIC VARIABLES.**

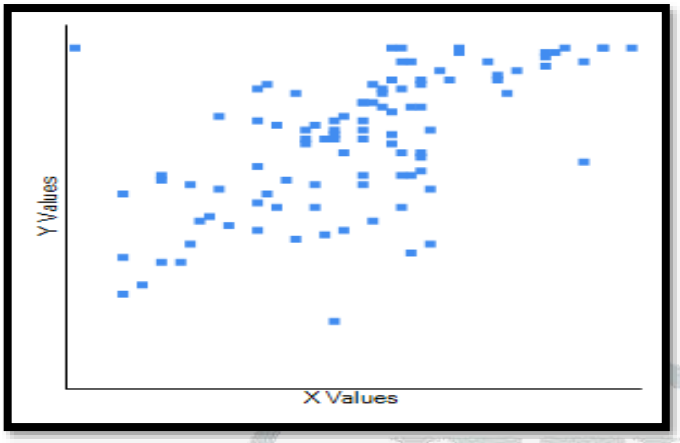
| Demographic Variables | | TOTAL | | | TOTAL | Chi-square | pValue | Sig/Non Sig |
|---|---|---|---|---|---|---|---|---|
| | | MILD | MODERATE | SEVER | | | | |
| Age | 8-10 year | 5 | 19 | 28 | 52 | 4.3067 | 0.116097 | NS |
| | 10-12year | 10 | 10 | 28 | 48 | | | |
| Gender | Male | 9 | 17 | 22 | 48 | 3.8797 | 0.143725 | NS |
| | Female | 6 | 12 | 34 | 52 | | | |
| | Other | 0 | 0 | 0 | 0 | | | |
| Standard | 3 | 2 | 4 | 10 | 16 | 5.952 | 0.652613 | NS |
| | 4 | 1 | 10 | 12 | 23 | | | |
| | 5 | 7 | 8 | 16 | 31 | | | |
| | 6 | 3 | 3 | 9 | 15 | | | |
| | 7 | 2 | 4 | 9 | 15 | | | |
| Caretaker | Parents | 12 | 26 | 49 | 87 | 1.8118 | 0.770327 | NS |
| | Caretaker | 1 | 2 | 4 | 7 | | | |
| | Any Other | 2 | 1 | 3 | 6 | | | |
| Relation with caretaker | Grandparents | 1 | 3 | 2 | 6 | 5.2478 | 0.730787 | NS |
| | Parents | 12 | 21 | 46 | 79 | | | |
| | Uncle/Aunt | 1 | 2 | 3 | 6 | | | |
| | Brother/Sister | 0 | 3 | 3 | 6 | | | |
| | Guardian | 1 | 0 | 2 | 3 | | | |
| Type of Family | Nuclear | 6 | 13 | 22 | 41 | 6.6306 | 0.356365 | NS |
| | Joint | 8 | 15 | 33 | 56 | | | |
| | Extended | 1 | 0 | 0 | 1 | | | |
| | Other | 0 | 1 | 1 | 2 | | | |
| Living area | Rural | 6 | 12 | 17 | 35 | 2.9977 | 0.558217 | NS |
| | Urban | 8 | 11 | 26 | 45 | | | |
| | Semi Urban | 1 | 6 | 13 | 20 | | | |
| Religion | Hindu | 15 | 25 | 55 | 95 | 8.2982 | 0.217059 | NS |
| | Muslim | 0 | 2 | 0 | 2 | | | |
| | Christian | 0 | 1 | 1 | 2 | | | |
| | Other | 0 | 1 | 0 | 1 | | | |
| No. Of Family Member | 3 | 4 | 6 | 9 | 19 | 11.7026 | 0.068942 | NS |
| | 4 | 6 | 14 | 16 | 36 | | | |
| | 5 | 0 | 7 | 17 | 24 | | | |
| | 6 | 5 | 2 | 14 | 21 | | | |

**Correlation of smartphone addiction and its effects**

The correlation analysis for smartphone addiction with its effect is shown in **Figure 3.** The result showed a fair positive correlation between smartphone addiction and its effects among school going children ($r = 0.6094$, $p$-value $< 0.001$; However, there was a moderate positive correlation between

smartphone addiction and its effects. the association between the two variables would be considered statistically significant.

**Figure 3 Correlationship between Smartphone addiction and its effects**




Spearman correlation was set at 95% confidence interval, p-value less than 0.05 was considered as a significant level. Correlation coefficient (r): poor = less than 0.25, fair = 0.26–0.50, good = 0.51–0.75 (good), and excellent = 0.76–1.00

**Linear regression of Smartphone addiction, psychological distress and neuroticism**

The regression analysis for Smartphone addiction and its effects is shown in Figure 4. The simple linear regression study showed a significant increase in effects levels upon one unit increase in smartphone addiction (b = 0.73, *p*-value < 0.001). These results indicated significant relationships between smartphone addiction and its effects. R Square (R2) equals 0.3714. It means that 37.1% of the variability of effects of smartphone addiction is explained by level of smartphone addiction. Correlation (R) equals 0.6094. It means that there is a strong direct relationship between Smartphone addiction and its effects.

**Discussion**

The finding suggests strong positive relation of Smartphone addiction with effect of smartphone addiction. The smartphone addiction has been increased during Covid 19 Pandemic. The majority of time spent for academic purpose on Smartphone to attend virtual lectures, assignments, instruction, videos and also for entertainment as there is a lack of outdoors and meeting to school friends during school time. The study represent there was no statistical significance between smartphone addiction and demographic variables of children such as age, gender, relation with care taker, type of family living area, religion and number of family member.

**Conclusion**

This study report the prevalence of smartphone addiction among school going children. Majority of children use the smartphone for academic purpose during this covid 19 pandemic. The study found that majority of student spent one to three hours on smartphone for you tube videos and various games as there is less outdoor games during covid 19 pandemic. The smartphone addiction might lead to many health problems and the most vulnerable group was children as there is virtual learning, assignments more use of various applications, videos and games. Thus, there is a need to organize programs to promote healthy smartphone usage to minimize the impact of smartphone addiction and its effect to health and well being of children.

**Conflict of interest:** The authors declare that they have no competing interests.

**Ethics declarations**

Ethics approval and consent to participate

Dinsha Patel College of Nursing, Institute Ethics Committee reviewed this study and granted ethical approval. Electronic consents has been obtained from participants.

**Consent for publication**

Written consent for publication was obtained from each participant.

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