

Original Research

Negative Impacts of Electronic Gadgets on School Going Children in Dakshina Kannada District

Amitha. M. Hegde¹, Meghna Bhandary², Krishna Balraj³

¹Professor and Head, ^{2,3}Post Graduate Student, Department of Pedodontics and Preventive Dentistry, A.B. Shetty Memorial Institute of Dental Sciences, Mangalore, Karnataka, India

ABSTRACT

Objective: This study aimed at identifying the negative impact of gadgets on school going children in D.K district. **Methodology:** The sample consisted of 520 children aged 6-15, out of which 260 belonged to 6-12yrs (primary section) and 260 to 13-15yrs (high school). A questionnaire survey was conducted among the students of 1st -10th grade in a Government school, D.K district. A structured questionnaire was designed to assess the usage of electronic gadgets and their effects on sleeping pattern, academic performance and social relationship. Questionnaire consisted of open and closed ended questions. **Results:** After the descriptive analysis of the data, it was found that 71% and 32% of children belonging to 13-15 yrs and 6-12 yrs respectively were found to use electronic gadgets regularly, of which 68% (13-15yrs) and 26%(6-12yrs) had irregular bedtime. Assessment of academic performance revealed that 13% (6-12 yrs) showed decline in academics and 9% difficulty in concentrating during class and the rest remained uninfluenced Whereas 35% (13-15yrs) showed fall in grades and 27% had difficulty in concentrating during class or home while studying. Also, children of 6-12 age group engaged themselves more in outdoor activities on the contrary children of 13-15 age group preferred indoor games/using electronic gadgets for entertainment purposes. **Conclusion** -Electronic gadgets are like a double edged sword which possess both beneficial and detrimental effects, timely usage can prove to be advantageous in understanding educational spheres better whereas over usage can lead to wide range of mental and physical health disorders.

Key Words: Electronic Gadgets, Academic Performance, Sleeping Pattern, Social Interaction.

Received: 28 February, 2019

Revised: 6 May, 2019

Accepted: 8 May, 2019

Correspondence author: Dr. Meghna Bhandary, Post Graduate Student, Department of Pedodontics and Preventive Dentistry, A.B. Shetty Memorial Institute of Dental Sciences, Mangalore, Karnataka, India

This article may be cited as: Hegde AM, Bhandary M, Balraj K. Negative Impacts of Electronic Gadgets on School Going Children in Dakshina Kannada District. J Adv Med Dent Sci Res 2019;7(11):66-68.

INTRODUCTION

Technology has been growing rapidly and today's era is surrounded by tech products. Electronic gadgets have its impact on people of all fields and ages including children. Children of today's era rely on technology for majority of their play. Almost all the students especially high school students are seen of using different kinds of electronic gadgets everyday like cellphone, Ipad, Psp, etc. Electronic gadget's usage is like a double edged sword. Using them carefully would have a positive impact but on the same time any false use would have a negative impact. The positive aspects being enabling better understanding in

educational spheres whereas the over use of these technology presents a whole range of problems which may interfere with their growth, health, social relationship and academic performance. Also studies have shown that Children spending long hours on their gadgets tend to show certain changes in behavior and sleeping pattern.¹ However, this may not be the same scenario in rural population owing to their low socio economic status as these children are not exposed to modern electronic gadgets. Hence, aim of this study was to evaluate the possible negative effects of electronic gadgets on school

going children belonging to the low socio economic background in Mangalore, D.K district.

MATERIALS AND METHODS

The sample consisted of total 520 children aged 6-15 , out of which 260 were from age group 6-12 (primary section) and 260 from age group 13-15yrs (high school). A questionnaire survey was conducted among the students of 1st -10th grade in a Government funded school, Mangalore, D.K district. The study was explained to the school authorities and parents at the PTA meeting and the permission was obtained to carry out the study. A structured questionnaire was designed to assess the usage of electronic gadgets and their effects on sleeping pattern, academic performance and social relationship. The questionnaire consisted of open and closed ended questions regarding the duration and the purpose of usage, sleeping pattern, time spent for outdoor activities and activities performed during leisure time. The questionnaire was handed over to the children and teachers. All these questions were asked to the children in local language.

RESULTS

After the descriptive analysis of the data, it was found that the 71% of children belonging to 13-15 years and 32% of the children belonging to 6-12 years were found to use electronic gadgets regularly, of which 68% of children (13-15years) and 26% of children (6-12years) had irregular bedtime due to the usage of gadgets at night.

Assessment of academic performance revealed that in the age group 6-12 years out of 32% of children using gadgets, 13% showed decline in academics and 9% difficulty in concentrating during class and the rest remained uninfluenced. Whereas in 13-15 year age group out of the 71% of the children using gadgets, 35% showed fall in grades and 27% had difficulty in concentrating during class or home while studying. Also, we found that 37% of the children (13-15years) and 84 % of children (6-12 years) shared bedroom / bed with either parent or sibling.

We also found that children belonging to age group 6-12 years engaged themselves more in outdoor activities on the contrary, children belonging to 13-15 years preferred indoor games/ using electronic gadgets for entertainment purposes.

DISCUSSION

Our cell phones, tablets, computers and other electronic gadgets have become such a huge part of our daily lives that its often hard to put them down even at bed time. Keeping your phone on your nightstand may not seem like a big deal, but technology affects your sleep in more ways than you realize. Literature suggests that the blue light emitted by screens on cell phones, computers, tablets and televisions restrain the production of melatonin, the hormone that controls the sleep/wake cycle or circadian rhythm.² Reducing melatonin makes it harder to fall asleep.

These gadgets increases alertness at a time when one should be getting sleepy thereby , which in turn delays the bed time and delays the onset of REM sleep , reduces the total amount of REM sleep and compromises the alertness the next morning . Overtime these, effects can add up to a significant, chronic deficiency in sleep.

In the present study we found that 68% of the children belonging to age group 13-15 had an irregular bed time as they were found to be engaged in watching TV or using mobile phones and computer and the rest 32% had regular bed time, whereas in the contrary age group 6-12years, 26% of children had irregular bed time and 74% had regular bed time. Data from a previous study showed that 86% of the children used TV or computer after 8 pm / at bedtime and this can be explained by emphasizing on the reflection of the changing lifestyle and modernization taking place in all sections of the society in our country today.³

Being sleep-deprived doesn't only affect child development but also their performance in school. Researchers from Boston College found that students from developing countries in Asia scored better in math, science and reading than students from the U.S. and other big world economies whose children are overexposed to technology.⁴ Cohen (2011) stated "Over use of technology presents a whole range of problems which may interfere with a student's ability to learn and attend to lessons".⁵ Children putting in long hours on their gadgets will give less attention to assignments and may be irritable when they are away from it.^{6,7} They might also sleep less, which can slow down their thinking the next day. Nocturnal use of these gadgets tends to disturb sleep patterns with notifications popping up throughout the night. The sound and lights can keep you awake longer and wake you up continually. Any interruption to your natural sleep cycles can cause difficulty remembering things, reduced ability to learn, decreased attention span during the day, delayed reaction time, irritability, increased risk of depression and other psychological issues.^{1,8} In our study this fact was assessed by correlating the usage of electronic gadgets and the academic performance, we found that in the age group 6-12 years, 32% of the children were found to use gadgets and 68% of children were not. Out of the 32% of the children using gadgets, 13% of the children showed decline in academic performance and 9% had found it difficult to concentrate in class. On the contrary, in the age group 13-15, 71% were found to use electronic gadgets regularly and the rest 41% did not. Out of the 71% of children, 35% showed average performance or decline in the grades and the rest 27% of children found it difficult to concentrate in class. And the rest of the children in both the groups had no influence by gadgets.

Interestingly we also found that most of the children shared a bedroom as well as bed with either a parent or sibling. This could reflect the cultural, social and familial norms in our country which emphasize the development of

interdependence and family closeness and is accepted by many families. Bed sharing is prevalent in other Asian countries as well. Studies conducted on urban population show that children who sleep in separate room tend to use mobile phones or computers secretly in the absence of their parents. However in our study it was unlikely as most of the children shared bed room with their parents or sibling owing to the fact that they were from a low socio economic background. According to the results, it was noted that in 6-12 year age group 84% of the children shared their bedroom with either parent or their sibling. This was in contrary to a study done by yang et al in Korean children where only 45% of children shared bedroom with parents. Although we found in the age group 13-15 only 37% of the children shared their bedroom.

In developed countries, kids under the age of 12 spend more time in front of a screen rather than playing outdoors. This restriction in movement results in delayed development. John Ratey, a doctor at Harvard, explained in his book, *Spark: The Revolutionary New Science of Exercise and the Brain*, that the advantages of playing are not limited to being physically fit and socially comfortable. Even 10 minutes of physical activity changes the way the brain functions. In addition, exercise normally makes people feel better because it “builds and conditions the brain”⁹ But on the contrary, in our study we found that, children aged 6-12 years engaged themselves more in outdoor activities like playing kabbadi, cricket, Lagori etc whereas Children aged 13-15 spent at least 2 hours with the gadgets for entertainment purpose. They preferred indoor activities/ using gadgets over outdoor activities. Even though, most of the children belonged to lower socioeconomic status and did not possess expensive gadgets, they had atleast basic model cellphones which were used for simple texting. So it can be inferred that active play makes kids healthier not only physically but also mentally and emotionally. This is in accordance to “The PEACH” project, a study of more than 1,000 children between the ages of 10 and 11, found that children who spend longer than two hours in front of a screen or another entertainment medium are more likely to suffer psychological difficulties.⁹ These can include child depression, anxiety, attention deficit and problematic child behavior. On the other hand, children who experience more

moderate physical activity fared better in emotional categories and were better able to solve peer problems.

CONCLUSION

Although Electronic gadgets are like a double edged sword which possess both beneficial and detrimental effects, appropriate usage can prove to be propitious in understanding educational spheres better whereas over usage can lead to wide range of mental and physical health disorders.

As rightly said, for every good thing there has to be a bad thing and this is true for electronic gadgets too, if these gadgets are used appropriately these are the boons otherwise they are curses.

REFERENCES

1. Nikkelen SW, Valkenburg PM, Huizinga M, Bushman BJ. Media use and ADHD-related behaviors in children and adolescents: a meta-analysis. *Developmental Psychology*. 2014 Sep;50(9):2228.
2. Touitou Y, Reinberg A, Touitou D. Association between light at night, melatonin secretion, sleep deprivation, and the internal clock: Health impacts and mechanisms of circadian disruption. *Life sciences*. 2017 Mar 15;173:94-106.
3. HegdeMA ,Shetty V , Yerra A. Prevalence of sleep practices and sleep problems in school going children. Department of Pedodontics and Preventive Dentistry, A B Shetty Memorial Institute of Dental Sciences; 2015 (unpublished report)
4. <https://www.motherearthliving.com/smart-parenting/kids-and-gadgets-effects-of-electronic-media-on-developing-brains>.
5. www.academia.edu/36007498/Effects_of_Electronic_Gadgets_on_Students
6. Rowan C. The impact of technology on child sensory and motor development.
7. Strasburger VC, Jordan AB, Donnerstein E. Children, Adolescents, and the Media:: Health Effects. *Pediatric Clinics*. 2012 Jun 1;59(3):533-87.
8. Sundus M. The impact of using gadgets on children. *Journal of Depression and Anxiety*. 2018;7(1):1-3.
9. <https://www.healthyfoodteam.com/how-smart-phones-destroy-childrens-brain/>
10. <https://wehavekids.com/parenting/dlectronic-devices-and-gadgets-to-Children>.
11. www.activemomsnetwork.com/activities-fun-games/33-gadgets/2793-positive-and-negative-effects-of-electronic-gadgets-to-students.html.