

Prevalence and Risk Factors of Electronic Gadgets uses Among Children Less Than Five Years of Age in Peshawar City, Pakistan.

Asif Rehman¹, Taimoor Tahir², Shaheer Ahmad², Adil Murad², Fazal Kareem², Azam Khan², Adnan Munir², Muhammad Awais², Abbas Yousaf², Zahoor-ul-Haq², Taimoor Sikandar Zaman², Syed Shahab², Muhammad Aneeq², Danish Iftikhar², Tariq Aziz²

¹Assistant Professor, Peshawar Medical College, Riphah International University, Islamabad, Pakistan.

²Final year MBBS, Peshawar Medical College, Riphah International University, Islamabad, Pakistan.

Received: January 2020

Accepted: January 2020

Copyright: © the author(s), publisher. Annals of International Medical and Dental Research (AIMDR) is an Official Publication of "Society for Health Care & Research Development". It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Introducing technology to children at young age can have adverse effects on their personal lives, their relationships with others, and their health in the future. **Methods:** A cross-sectional study was carried out in the city of Peshawar from December 2018 to March 2019. **Objectives:** Objectives of this study was to find out the prevalence and the risk factors associated with electronic gadgets use among children less than 5 years old. **Results:** Among the total 401 subjects, 322 (80.3%) children were using electronic gadgets whereas 79 (19.7%) children never used or using any kind of electronic gadgets. Among the gadgets users 29 (9%) children were less than one-year-old. The average screen time for the users were 3.06 hours per day. A total number of 42 (13%) were identified obese, 51 (16%) and 46 (14%) children were having speech difficulty/delayed speech and less social-interactive respectively while 19 (6%) children had visual problems. **Conclusion:** Our study revealed an alarming 80.3% prevalence of electronic gadgets use among children less than 5 years of age. The average screen time identified in this study is also higher than the recommended time. Awareness regarding negative health outcome is required to limit children exposure to gadgets.

Keywords: Prevalence, Electronic Gadget, Screen time, Negative impacts, Obesity, Visual Problems.

INTRODUCTION

Electronic gadgets are devices that require electric power to operate. Examples of these gadgets are mobiles, tablets, computers, television, video games etc.^[1] With technology development, humans created tools that would facilitate them to communicate with each other. The advances in telecommunication such as telephone, radio, television, mobile and tablets computers and laptops had changed individuals or communities.^[2]

Studies have shown that children less than 2 years of age should not be exposed to gadgets at all, children aging 3-5 years should not exceed the screen time of 1 hour per day, whereas a maximum of 2 hours should be the average usage time for children from 6 to 18 years of age.^[3] Children using these gadgets at early ages can have negative impacts on their lives, their social relationship and their health.^[4]

Over the years, different researches have been carried out to look for the negative impacts that are imparted on the health, growth and development of the children who use these electronic gadgets [5 and 6]. Children spend most of their time with these gadgets, and don't pay attention to their posture, screen brightness and screen time ultimately leading to bad effects on their health and vision.^[5] Chances of myopia also increase in children when they spend about 8 hours daily on gadgets.^[5] By using screening tool, researchers studied that the more time children spend on these gadgets, more likely the child will have delays in expressive speech.^[5] Longer usages without any break can cause problems with focusing and eye irritation.^[6] Using the computer and mobile phones for a longer duration is found to have effects on the daily routine, and can be linked to depression and stress in these individuals.^[7] According to a research, one effect of using these gadgets is a compromised social life as these children become introvert and impatient.^[8] Those who were found to be addicted to the gadgets showed attention deficit disorder and increased signs of depression.^[9] Studies have found that children who exceed the recommended usage time per day are more exposed to

Name & Address of Corresponding Author

Dr. Asif Rehman
Assistant Professor,
Peshawar Medical College,
Riphah International University,
Islamabad, Pakistan.

conditions such as obesity [10]. Children who exceed the recommended screen time have increased caloric intake and decreased physical activity levels, predisposing them to gain extra weight.^[11,12] Studies have also shown that using internet 90 minutes before sleep causes a disturbed sleep among children.^[13]

The purpose of this research was to find out the prevalence and the risk factors associated with electronic gadgets use among children less than 5 years of age.

MATERIALS AND METHODS

A cross-sectional study was carried out in the city of Peshawar from December 2018 to March 2019. Non-probability convenient sampling technique was used. Data collection was started after getting ethical approval from the ethical committee of Peshawar Medical College.

After getting verbal informed consent, data were collected from the parents of the children on a structured questionnaire. Other than demographics characteristics, the questionnaire included several questions such as the average screen time, visual problems, behaviour and social interaction, speech difficulty and nutritional status. Electronic gadgets were defined as a small electronic devices used for entertainment such as mobile phones, tablets, videogames etc. Children having mental or physical disability and the parents not willing to participate in the study were excluded. The data collected were entered and analyzed in SPSS version 20.

RESULTS

A total sample size of 401 children (Male: 55.2% & Female: 44.8%), the mean age was recorded 3.3 years with SD \pm 1.38. Children age ranging from 6 months to 5 years.

Among the total 401 subjects, 322 (80.3%) children were using electronic gadgets whereas 79 (19.7%) children never used or using any kind of electronic gadgets [Table 1]

Table 1: Demographic characteristics and prevalence of Electronic gadgets use

Characteristics	Number (%)
Gender	
Male	(55.2%)
Female	(44.8%)
Electronic Gadgets	
Users	322 (80.3%)
Non users	79 (19.7)
Total	401(100%)

Among the gadgets users 29 (9%) children were less than one-year-old. The average screen time for the users were 3.06 hours per day. Majority of the children in age group 49-60 months had an average screen time 4.57 hrs/day followed by 37-48 months (3.61 hrs/day), 25-36 months (3.46 hrs/day), 13-24

months (2.40 hrs/day) and 6-12 months (1.14 hrs/day) [Table 2].

Table 2: Average screen time

Age in months	Average screen time (hours/days)
6-12 months	1.14 hrs/day
13-24 months	2.40 hrs/day
25-36 months	3.46 hrs/day
37-48 months	3.61 hrs/day
49- 60 months	4.57 hrs/day
Mean	3.06 hrs/day

For those using different kind of electronic gadgets, we also recorded negative health conditions associated with it. Negative health conditions were identified in 175 children. A total number of 42 children (13%) were identified obese when we assessed their nutritional status on growth for age assessment tool, 51 (16%) and 46 (14%) children were having speech difficulty/delayed speech and less social-interactive respectively according to their parents while 19 (6%) children had visual problems [Table 3]

Table 3: Negative Health conditions among gadgets users

Health conditions	Numbers (%)
Obesity	42 (13%)
Speech difficulty/delayed speech	51 (16%)
Less social interactions	46 (14%)
Visual problems	19 (6%)
Normal	164 (51%)
Total	322 (100%)

DISCUSSION

According to American Academy of Pediatrics, children under the age of 2 years should not be allowed to use any kind of electronic gadget and pre-school children should use the electronic gadgets for no more than 2 hours per day.^[14]

A research carried out at the University of Washington showed that 66% were above this limit, using these gadgets for an average of 4.1 hours per day.^[15] This research was in correspondence to our study results that most of the children were using these electronic gadgets more (3.0hrs/day) than the recommended time.

Research shows that activities such as watching television, using a computer or playing video games were significantly associated with being overweight or obese.^[16] In this study 42 (13%) children among the gadgets users were suffering from obesity.

Studies have suggested that children age between 6 months to 2 years using these gadgets are more likely to experience speech delays.^[17] In our study 51 (16%) children among the gadgets users were suffering from speech difficulty or delayed speech.

Our study also identified that 46(14%) of children were less social interactive. Literature have suggested that children using these gadgets for long hours are usually deprived of social life and prefer sitting alone and avoid interactions.^[18] A research carried out in Greece showed that prolonged activity on these gadgets can cause visual problems and eye irritations.^[19] In our study 19 (6%) children were suffering from visual problem.

CONCLUSION

Our study identified an alarming 80.3% prevalence of electronic gadgets use among children less than 5 years of age. The average screen time identified in this study is also higher than the recommended time. Awareness regarding negative health outcome is required to limit their child exposure to gadgets. It is hard to keep them away from these gadgets, parents can limit their usage time. Further analytical research will help to find the causal relationship between the exposure and the negative outcomes.

REFERENCES

1. K. Joni. (Jul 2018). Essay on Electronic Gadgets: Meaning, Advantages, and Disadvantages. [online] Edge articles. [cited on 28 Nov 2018] Available at: <https://edgearticles.com/2018/07/09/essay-on-electronic-gadgets-meaning-advantages-and-disadvantages/>
2. Suhana M. Influence of Gadget Usage on Children's Social-Emotional Development. ASSEHR. 2017; 169(1): 224-227
3. Dellae J, Abdul M, Ainnudin W, Mohammad Nizam A. Usability considerations make digital interactive book potential for inculcating interpersonal skills. J Tech(sci&eng). Oct 2015; 77(29): 63-68
4. Alghamdi, Y. (2017). Negative Effects of Technology on Children of Today. [online] Research gate. [cited on 28 Nov 2018] Available at: https://www.researchgate.net/publication/318851694_Negative_Effects_of_Technology_on_Children_of_Today
5. Sundus M. The Impact of using Gadgets on Children. J of Dep & Anxiety. Dec 2018. Vol 7(1)
6. Barar A, Apatachioaie ID, Apatachioaie C, Marceanu L. Ophthalmologist and computer vision syndrome. Oftalmolgia. 2007; 51: 104-109
7. Yoo YS, Cho OH, Cha KS. Associations between overuse of the internet and mental health in adolescents. Nurs Hlth Sci. 2014; 16(2): 193-200
8. Upadhyay M, Jesudass B and Chitale T. Impact of electronic gadget in India. Int. J Eng T S&T. 2014. Vol 1(9) 1495-1499
9. Carli VV, Durkee TT, Wasserman DD et al. The association between pathological internet use and co-morbid psychopathology: A systemic review. Psychopathology. 2013; 46(1): 1-13
10. Atkin A. J., Sharp S, Corder K et al. Prevalence and correlates of screen time in youth. An international perspective. Am J of Prev Med. 2014; 47(6): 803-807
11. Epstien L, Robinson J, Paluch R, Robinson T et al. A randomized trial of the effects of reducing television viewing and computer use on body mass index in young children. Arch Ped and Adol Med; 162(3): 239-245
12. Mushtaq M, Gull S, Shahid U, Akram J. Dietary behaviour, physical activity and sedentary lifestyle associated with overweight and obesity and their socio-demographic correlates, among Pakistani primary school children. Int. J. behv nut phy act. 2011; 8(130)
13. Foley LS, Maddison R, Jiang Y, Marsh S. Presleep activities and time of sleep onset in children. Pediatrics 2013; 131: 276-282
14. Victor C, Marjorie J. American Academy of Pediatrics. Policy statement: Children, adolescents, and the media. Pediatrics 2013; 132(5):958-961
15. Tandon PS, Zhou C, Lozano P. Preschoolers total daily screen time at home and by time of daycare. Pediatrics 2011; 158:297-300
16. Mushtaq M, Gull S, Shahid U, Akram J. Dietary behaviour, physical activity and sedentary lifestyle associated with overweight and obesity and their socio-demographic correlates, among Pakistani primary school children. Int. J. behv nut phy act. 2011; 8(130)
17. Subrahmanyama K, Patricia G, Robert K. The impact of computer use on children's development. App Devlp Psych 2001; 22:7-30
18. Upadhyay M, Jesudass B and Chitale T. Impact of electronic gadget in India. Int. J Eng T S&T. 2014. Vol 1(9) 1495-1499
19. Barar A, Apatachioaie ID, Apatachioaie C, Marceanu L. Ophthalmologist and computer vision syndrome. Oftalmolgia. 2007; 51: 104-109

How to cite this article: Rehman A, Tahir T, Ahmed S, Murad A, Kareem F, Khan A, Munir A, Jan A, Yousaf A, Zahoor-ul-Haq, Zaman TS, Shahab S, Aneeq M, Iftekhhar D, Aziz T. Prevalence and Risk Factors of Electronic Gadgets uses Among Children Less Than Five Years of Age in Peshawar City, Pakistan. Ann. Int. Med. Den. Res. 2020; 6(2):CM05-CM07.

Source of Support: Nil, **Conflict of Interest:** None declared