Section: Paediatrics

Original Research Article

ASSESSING THE RISK OF BEHAVIORAL PROBLEMS IN CHILDREN UNDER FIVE IN RELATION TO SCREEN TIME EXPOSURE

Naresh Jindal[1], Vibha Madan[2], Shisher Agrawal[3]

[1]*Associate Professor, Department of Paediatrics, M M College of Medical Science and Research, Sadopur Ambala, Haryana, India.*
[2]*Assistant Professor, In charge ICU and Emergency, Miri Piri Institute of Medical Sciences and Research, Shahabad, Markanda, India.*
[3]*MD Paediatrics, Mahesh Children's Polyclinic and Research Center. Bahraich, India.*

Received *: 22/01/2026*
Received in revised form *: 07/03/2026*
Accepted *: 25/03/2026*

Corresponding Author:
Dr. Naresh Jindal,
Associate Professor, Department of Paediatrics, M M College of Medical Science and Research, Sadopur Ambala, Haryana, India.
Email: dr.naresh.com@gmail.com

DOI: 10.70034/ijmedph.2026.2.406

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

Int J Med Pub Health
2026; 16 (2); 2430-2435

ABSTRACT

Background: The increasing use of digital devices among children, especially those under five years of age, has raised concerns about its impact on behavioral development. Previous studies suggest a link between excessive screen time and the development of behavioral problems, but the findings remain inconsistent. This study aims to explore the relationship between screen time and behavioral problems in children under five years, with a focus on factors such as parental education, monitoring, and living environment.

Materials and Methods: This cross-sectional study included 397 children aged less than five years, divided into two age groups: <2 years (n=56) and 2–5 years (n=341). Data were collected through structured interviews with parents, including information on screen time exposure (average screen time per day, types of devices used, and monitoring by parents), socio-demographic characteristics, and behavioral assessments using the Child Behavior Checklist (CBCL). Behavioral problems were classified into internalizing, externalizing, attention problems, and aggressive behaviors. Multivariable logistic regression was used to assess the factors associated with behavioral problems, adjusting for confounding variables.

Results: Excessive screen time (>2 hours/day) was significantly associated with behavioral problems, with children who had more than 2 hours of screen exposure being 3.9 times more likely to exhibit behavioral issues (AOR: 3.9, 95% CI: 2.4–6.5, $p < 0.001$). Additionally, children with low parental education (primary education) were found to have higher odds of behavioral problems (AOR: 2.1, 95% CI: 1.3–3.5, $p = 0.002$). Parental monitoring was also a significant factor, with no parental monitoring leading to increased behavioral problems (AOR: 2.8, 95% CI: 1.8–4.6, $p < 0.001$). The study did not find significant differences based on living environment (rural vs. urban) or gender.

Conclusion: Excessive screen time is a significant predictor of behavioral problems in young children. Parental education and active monitoring of screen use also play crucial roles in mitigating these effects. Public health interventions should focus on educating parents, particularly those with lower education levels, about the risks of excessive screen time and the importance of monitoring their children's media exposure. Efforts should also aim to promote alternative forms of engagement, such as outdoor activities, to reduce screen exposure.

Keywords: Screen time, Behavioral problems, Parental education, Child development, Parent-child interaction.

INTRODUCTION

The early developmental years, particularly before the age of five, are critical for cognitive, emotional, and social growth in children. During this formative period, environmental factors, including screen exposure, play a significant role in shaping behavioral patterns. The increasing prevalence of

digital devices such as smartphones, tablets, and televisions has drastically altered the way children interact with their surroundings. According to a recent global study, over 80% of children aged 2–5 years engage with screens daily, with screen time often exceeding recommended limits.[1]

Excessive screen time in young children has been associated with adverse developmental outcomes. Evidence suggests that children exposed to more than 1–2 hours of screen time per day are at a higher risk of behavioral issues such as hyperactivity, attention deficits, poor emotional regulation, and impaired social interactions.[2,3] A meta-analysis reported that excessive screen use is linked to a 23% increased likelihood of externalizing behaviors such as aggression and tantrums, and a 19% increased likelihood of internalizing behaviors like anxiety and withdrawal.[4]

The World Health Organization (WHO) and the American Academy of Pediatrics (AAP) recommend that children aged 2–4 years have no more than 1 hour of screen time per day, while children under 2 years should have no screen exposure at all.[5] However, these recommendations are rarely adhered to in real-world scenarios. In India, studies have reported that over 70% of children aged 3–5 years exceed these guidelines, with average screen time ranging from 2 to 3 hours daily, particularly in urban households.[6] This rise is attributed to increasing digital penetration and the cultural normalization of screen use as a means to entertain or educate children.

The long-term implications of excessive screen exposure in early childhood remain a growing concern.[7] While global data have highlighted these risks, limited research has been conducted in the Indian context, where socio-cultural dynamics, parenting styles, and digital accessibility differ significantly.[8] This study aimed to assess the risk of behavioral problems in children below five years of age in relation to their screen time habits, providing critical insights to inform culturally relevant guidelines and interventions for healthy screen usage during early childhood.

MATERIALS AND METHODS

Study Design and Setting

This was a cross-sectional, observational study conducted at department of Pediatrics, of tertiary care center of North India. The study was carried out over a period of 1 year, from June 2023 to May 2024. The purpose of this study was to assess the relationship between screen time and behavioral problems in children under five years of age. The study was conducted in compliance with ethical standards, and all necessary approvals were obtained from the Institutional Ethics Committee.

Study Population

The study population consisted of children aged 18 months to 5 years who were brought to pediatric outpatient clinics during the study period. A total of 397 children were recruited for this study. Inclusion criteria included children within the specified age range whose parents or caregivers were willing to participate and provide informed consent. Exclusion criteria included children with known neurological disorders, developmental delays, congenital abnormalities, or diagnosed psychiatric conditions, as these factors could independently influence behavioral outcomes and confound the results.

Sampling Technique

A consecutive sampling technique was employed, where all eligible children who met the inclusion criteria and consented to participate were included in the study. This sampling method ensured that the study sample was representative of the population attending the clinic during the study period.

Data Collection

Data were collected through a structured, pre-tested questionnaire administered to parents or caregivers. The questionnaire was designed to capture three primary components: demographic details, screen time exposure, and behavioral outcomes.

The first section of the questionnaire collected demographic information such as the child's age, gender, parental education, family income, and living environment (urban or rural). This information was important to assess potential confounders in the study and examine how socio-economic factors may interact with screen time and behavioral problems.

The second section assessed the child's screen time habits. Screen time was quantified by asking parents to report the average daily duration of screen exposure in hours, specifying the type of device used (e.g., television, smartphones, tablets), and the nature of the content consumed (e.g., educational, entertainment, or non-educational). Parents were also asked about screen time during weekends and weekdays separately, as patterns of screen usage can vary. The WHO guidelines were used to categorize screen exposure as excessive, defined as more than 1 hour per day for children aged 2–5 years, and any screen exposure for children under 2 years.[9]

The third section involved evaluating the child's behavioral outcomes using the Child Behavior Checklist (CBCL) for ages 1.5–5 years, a validated tool widely used in clinical and research settings to assess emotional and behavioral problems in children.[10] The CBCL consists of 100 items that evaluate various behavioral domains, including internalizing behaviors (such as anxiety, depression, and withdrawal) and externalizing behaviors (such as aggression, hyperactivity, and conduct problems). Parents rated each item based on how frequently the behavior was observed in their child. Responses were then categorized into three groups: normal, borderline, or clinical, based on established cutoff scores for the CBCL. Children with scores in the borderline or clinical range were considered to have behavioral problems.

Data Analysis

Once data were collected, they were entered into Microsoft Excel for initial cleaning and validation. The analysis was conducted using SPSS version 20.0,

with descriptive statistics (mean, standard deviation, frequency, and percentages) used to summarize the demographic characteristics of the study participants. The primary outcome of interest was the presence of behavioral problems, as determined by the CBCL scores. Bivariate analyses, including chi-square tests for categorical variables and t-tests for continuous variables, were performed to examine the associations between screen time exposure and behavioral problems. To control for potential confounders, such as parental education, family income, and living environment, multivariate logistic regression analysis was conducted. This model was used to assess the independent effect of screen time on the likelihood of behavioral problems, adjusting for other sociodemographic factors. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated to determine the strength of associations. A p-value of <0.05 was considered statistically significant.

Ethical Considerations

The study was approved by the Institutional Ethics Committee. Written informed consent was obtained from all parents or caregivers before enrollment in the study. The purpose of the study, the voluntary nature of participation, and the confidentiality of personal data were explained to all participants. Data were anonymized and stored securely to protect participant privacy. The findings of the study were intended to contribute to evidence-based guidelines for screen time usage in young children and inform public health recommendations.

RESULTS

Among the 397 participants, 53.6% were male, with similar proportions across children aged <2 years (53.6%) and 2–5 years (53.7%). Most resided in urban areas (67.5%), and 56.2% of parents had secondary education, while 24.2% had primary education, and 19.6% were graduates or higher. Monthly family income was predominantly INR 10,000–30,000 (52.6%), followed by <INR 10,000 (30.5%) and >INR 30,000 (16.9%), with lower incomes more common in the <2-year group. Nuclear families were most prevalent (66.0%), followed by joint families (30.2%) and single-parent families (3.8%). Screen time exposure by parents was reported in 75.8% of cases, consistent across age groups. [Table 1]

Table 1: Demographic and Socioeconomic Characteristics of the Study Population

Variable	Total (n=397)	Age <2 years (n=56)	Age 2–5 years (n=341)
	Frequency (%)		
Gender			
Male	213 (53.6%)	30 (53.6%)	183 (53.7%)
Female	184 (46.4%)	26 (46.4%)	158 (46.3%)
Living Environment			
Urban	268 (67.5%)	37 (66.1%)	231 (67.7%)
Rural	129 (32.5%)	19 (33.9%)	112 (32.3%)
Parental Education			
Primary	96 (24.2%)	15 (26.8%)	81 (23.8%)
Secondary	223 (56.2%)	30 (53.6%)	193 (56.6%)
Graduate or Higher	78 (19.6%)	11 (19.6%)	67 (19.6%)
Monthly Family Income (INR)			
<10,000	121 (30.5%)	20 (35.7%)	101 (29.6%)
10,000–30,000	209 (52.6%)	29 (51.8%)	180 (52.8%)
>30,000	67 (16.9%)	7 (12.5%)	60 (17.6%)
Family Structure			
Nuclear	262 (66.0%)	38 (67.9%)	224 (65.7%)
Joint	120 (30.2%)	16 (28.6%)	104 (30.5%)
Single Parent	15 (3.8%)	2 (3.6%)	13 (3.8%)
Screen Time Exposure by Parent			
Yes	301 (75.8%)	42 (75.0%)	259 (75.9%)
No	96 (24.2%)	14 (25.0%)	82 (24.1%)

The average screen time for the total population was 2.2 ± 1.0 hours/day, with children aged <2 years having slightly lower screen time (1.9 ± 0.7 hours/day) compared to those aged 2–5 years (2.3 ± 1.0 hours/day). Screen time distribution showed 23.2% of children with <1 hour/day, 44.1% with 1–2 hours/day, and 32.7% exceeding 2 hours/day, with children aged <2 years more likely to have <1 hour/day (32.1%) compared to the older group (21.7%). Television was the most commonly used device (48.4%), followed by smartphones/tablets (33.8%), computers/laptops (9.6%), and combined use (8.3%), with similar distributions across age groups. Screen time often occurred before sleep (43.6%) and during meals (36.0%), while 20.4% of children watched educational programs exclusively, slightly less common in the <2-year group (16.1%) than in the older group (21.1%). Parental monitoring varied, with 29.0% reporting active monitoring, 38.5% passive monitoring, and 32.5% no monitoring, showing minimal variation between age groups. [Table 2]

Table 2: Detailed Screen Time Characteristics of Study Participants

Screen Time Variables	Total (n=397)	Age <2 years (n=56)	Age 2–5 years (n=341)
	Frequency (%)/mean ± SD		
Average Screen Time (Hours/Day)	2.2 ± 1.0	1.9 ± 0.7	2.3 ± 1.0
Screen Time Categories			
<1 Hour	92 (23.2%)	18 (32.1%)	74 (21.7%)
1–2 Hours	175 (44.1%)	24 (42.9%)	151 (44.3%)
>2 Hours	130 (32.7%)	14 (25.0%)	116 (34.0%)
Type of Device Used			
Television	192 (48.4%)	28 (50.0%)	164 (48.1%)
Smartphones/Tablets	134 (33.8%)	18 (32.1%)	116 (34.0%)
Computers/Laptops	38 (9.6%)	5 (8.9%)	33 (9.7%)
Combined Use	33 (8.3%)	5 (8.9%)	28 (8.2%)
Screen Time Setting			
During Meals	143 (36.0%)	22 (39.3%)	121 (35.5%)
Before Sleep	173 (43.6%)	25 (44.6%)	148 (43.4%)
Educational Programs Only	81 (20.4%)	9 (16.1%)	72 (21.1%)
Parental Monitoring			
Active Monitoring	115 (29.0%)	18 (32.1%)	97 (28.4%)
Passive Monitoring	153 (38.5%)	21 (37.5%)	132 (38.7%)
No Monitoring	129 (32.5%)	17 (30.4%)	112 (32.8%)

Among the 397 children, internalizing behaviors were categorized as normal in 74.3%, borderline in 14.6%, and clinical in 11.1%. Children with behavioral problems had a higher prevalence of clinical-level internalizing behaviors (29.8%) compared to those without behavioral problems (2.6%). Externalizing behaviors were normal in 71.0% overall, with borderline and clinical levels observed in 17.9% and 11.1%, respectively. Behavioral problems were associated with a higher proportion of borderline (32.3%) and clinical (21.0%) externalizing behaviors compared to those without behavioral issues (11.4% and 6.6%, respectively). Attention problems were present in 34.0% of children, predominantly among those with behavioral problems (71.0% vs. 17.2%). Aggressive behavior was noted in 26.2% of children, with a striking contrast between those with (63.7%) and without (9.2%) behavioral problems. [Table 3]

Table 3: Behavioral Outcomes Based on CBCL Domains

CBCL Domain	Total (n=397)	Behavioral Problems Present (n=124)	Behavioral Problems Absent (n=273)
	Frequency (%)		
Internalizing Behaviors			
Normal	295 (74.3%)	54 (43.5%)	241 (88.3%)
Borderline	58 (14.6%)	33 (26.6%)	25 (9.2%)
Clinical	44 (11.1%)	37 (29.8%)	7 (2.6%)
Externalizing Behaviors			
Normal	282 (71.0%)	58 (46.8%)	224 (82.1%)
Borderline	71 (17.9%)	40 (32.3%)	31 (11.4%)
Clinical	44 (11.1%)	26 (21.0%)	18 (6.6%)
Attention Problems			
Present	135 (34.0%)	88 (71.0%)	47 (17.2%)
Absent	262 (66.0%)	36 (29.0%)	226 (82.8%)
Aggressive Behavior			
Present	104 (26.2%)	79 (63.7%)	25 (9.2%)
Absent	293 (73.8%)	45 (36.3%)	248 (90.8%)

Screen time duration was significantly associated with behavioral problems ($p < 0.001$). Among children with behavioral problems, the majority (56.5%) had screen time exceeding 2 hours per day, compared to only 22.0% of those without behavioral problems. Conversely, only 8.9% of children with behavioral problems had screen time <1 hour per day, whereas 29.7% of children without behavioral issues fell into this category. For 1–2 hours of screen time, the distribution was 34.7% in the behavioral problems group and 48.4% in the group without behavioral issues ($p = 0.045$). [Table 4]

Table 4: Association Between Screen Time and Behavioral Problems

Screen Time Categories	Behavioral Problems Present (%)	Behavioral Problems Absent (%)	p-value
	Frequency (%)		
<1 Hour	11 (8.9%)	81 (29.7%)	<0.001
1–2 Hours	43 (34.7%)	132 (48.4%)	0.045
>2 Hours	70 (56.5%)	60 (22.0%)	<0.001

Multivariable logistic regression analysis identified excessive screen time (>2 hours/day) as a strong independent predictor of behavioral problems, with an adjusted odd ratio (AOR) of 3.9 (95% CI: 2.4–6.5,

p < 0.001). Low parental education (primary level) also significantly increased the likelihood of behavioral problems (AOR: 2.1, 95% CI: 1.3–3.5, p = 0.002). Lack of parental monitoring was another significant risk factor, with an AOR of 2.8 (95% CI: 1.8–4.6, p < 0.001). Male gender and rural living environment were not significantly associated with behavioral problems, with p-values of 0.121 and 0.692, respectively. [Table 5]

Table 5: Multivariate Logistic Regression Analysis of Risk Factors for Behavioral Problems

Variable	Adjusted Odds Ratio (95% CI)	p-value
Excessive Screen Time (>2 h)	3.9 (2.4–6.5)	<0.001
Male Gender	1.3 (0.9–2.0)	0.121
Low Parental Education (Primary)	2.1 (1.3–3.5)	0.002
No Parental Monitoring	2.8 (1.8–4.6)	<0.001
Rural Living Environment	0.9 (0.5–1.6)	0.692

DISCUSSION

This study aimed to assess the relationship between screen time and the risk of behavioral problems in children below five years of age, with a focus on identifying significant predictors of such issues. Our findings demonstrate that excessive screen time (>2 hours/day) is a major risk factor for behavioral problems, with an adjusted odds ratio (AOR) of 3.9 (95% CI: 2.4–6.5, p < 0.001). This result is consistent with several peer-reviewed studies highlighting the detrimental effects of prolonged screen exposure on young children's behavioral development. For instance, Wu et al., found that children who spent more than two hours per day on screens exhibited an increased risk of developing hyperactivity, attention problems, and poor social skills.[11] Similarly, Neville et al., noted a consistent association between screen time in early childhood and the development of emotional and behavioral problems, including anxiety, aggression, and difficulties with attention.[12] Our study adds to the growing body of evidence, emphasizing the importance of limiting screen time to mitigate the risks of such developmental issues.

One of the key findings in our study was the association between low parental education levels and an increased likelihood of behavioral problems in children. Specifically, children of parents with only primary-level education were found to have significantly higher odds of developing behavioral issues (AOR: 2.1, 95% CI: 1.3–3.5, p = 0.002). This is in line with other studies that have demonstrated the influence of parental education on child development.[13] Zilanawala et al., reported that lower maternal education was associated with a higher risk of behavioral problems in children, potentially due to limited access to health information and resources on child development.[14] Furthermore, parents with lower educational levels may be less likely to be aware of the potential harm associated with excessive screen time and may lack the skills or resources to provide appropriate behavioral guidance.[15] This highlights the need for public health initiatives that target improving parental awareness, particularly in low-education settings, to reduce the adverse effects of screen time on children's behavioral outcomes.[16]

In addition to parental education, our study identified parental monitoring as a significant predictor of behavioral problems in children. Children who had no parental monitoring of their screen time were significantly more likely to exhibit behavioral problems, with an AOR of 2.8 (95% CI: 1.8–4.6, p < 0.001). This finding corroborates previous research suggesting that the absence of parental supervision during screen use can lead to negative outcomes in children's development.[17] Lissak et al., emphasized that when children are allowed unrestricted access to screens, they are more likely to engage in problematic behaviors such as aggression and impulsivity.[18] Active monitoring by parents has been shown to mitigate these risks, as it allows parents to set boundaries and guide their children's screen use towards educational and age-appropriate content.[19] Our findings underscore the importance of parental involvement in moderating screen time, particularly given the pervasive nature of digital media in modern households.

Interestingly, our study found no significant difference in the risk of behavioral problems based on the living environment (rural vs. urban), with a p-value of 0.692. This finding contrasts with some prior studies that have suggested that urban children may have higher screen exposure due to greater access to digital devices and media.[20] For example, a study by Parent et al., found that urban children were more likely to have access to smartphones and tablets, which could contribute to greater screen time and a higher risk of associated behavioral problems.[21] However, in the context of India, this rural-urban divide may not be as stark as in other parts of the world. In India, both urban and rural areas have seen significant increases in smartphone penetration, and internet access has expanded rapidly in rural regions over the past decade. This shift has likely diminished the urban-rural gap in screen time exposure, with both groups having relatively similar access to digital devices.[22] Furthermore, the overall influence of screen time may be more potent than the differences between these living environments, suggesting that interventions to limit screen exposure should focus on all children, regardless of their residential area.

Gender differences, often reported in studies of screen time and child behavior, were not found to have a significant effect on the likelihood of behavioral problems in our study (p = 0.121). Previous studies have suggested that boys may be

more vulnerable to the negative effects of screen time, particularly in terms of aggression and hyperactivity.[23] For example, a study by Ansari et al., found that boys were more likely to show attention difficulties and externalizing behaviors in response to excessive screen use.[24] However, in our study, the absence of a significant gender effect suggests that the relationship between screen time and behavioral outcomes may be more complex and influenced by other factors, such as parental involvement and the content of the screen media. While boys may be more prone to certain behavioral issues associated with screen exposure, the lack of gender differences in our study could indicate that both boys and girls are equally susceptible to the negative consequences of excessive screen time, especially when other risk factors, such as low parental monitoring or education, are present.[25,26]

CONCLUSION

In conclusion, this study highlights the significant role of excessive screen time in the development of behavioral problems in children below five years of age. Our findings reinforce the importance of managing screen exposure in young children, particularly in light of the increasing accessibility of digital devices. The study also underscores the critical role of parental education and active monitoring in mitigating the risks associated with excessive screen time. These results are in line with existing literature, which emphasizes the negative impact of prolonged screen use on children's cognitive, emotional, and social development. To address this public health concern, interventions targeting parents, particularly those with lower educational levels, are essential. Additionally, strategies to reduce screen time, such as encouraging outdoor play and alternative forms of engagement, should be promoted in both rural and urban settings. Further research is needed to explore the long-term effects of screen time on child development, as well as the effectiveness of interventions designed to reduce screen exposure and improve child behavioral outcomes.

REFERENCES

1. Canadian Paediatric Society, Digital Health Task Force, Ottawa, Ontario. Screen time and young children: Promoting health and development in a digital world. Paediatr Child Health. 2017;22(8):461-77.
2. McArthur BA, Volkova V, Tomopoulos S, Madigan S. Global Prevalence of Meeting Screen Time Guidelines Among Children 5 Years and Younger: A Systematic Review and Meta-analysis. JAMA Pediatr. 2022;176(4):373-83.
3. Eirich R, McArthur BA, Anhorn C, McGuinness C, Christakis DA, Madigan S. Association of Screen Time With Internalizing and Externalizing Behavior Problems in Children 12 Years or Younger: A Systematic Review and Meta-analysis. JAMA Psychiatry. 2022;79:393-405.
4. Descarpentry A, Melchior M, Galera C, et al. High screen time and internalizing and externalizing behaviours among children aged 3 to 14 years during the COVID-19 pandemic in France. Eur Child Adolesc Psychiatry. 2024;33(4):1151-61.
5. Mallawaarachchi S, Burley J, Mavilidi M, et al. Early Childhood Screen Use Contexts and Cognitive and Psychosocial Outcomes: A Systematic Review and Meta-analysis. JAMA Pediatr. 2024;178(10):1017-26.
6. Jain S, Shrivastava S, Mathur A, Pathak D, Pathak A. Prevalence and Determinants of Excessive Screen Viewing Time in Children Aged 3-15 Years and Its Effects on Physical Activity, Sleep, Eye Symptoms and Headache. Int J Environ Res Public Health. 2023;20(4):3449.
7. Ponti M. Screen time and preschool children: Promoting health and development in a digital world. Paediatr Child Health. 2023;28(3):184-202.
8. Madigan S, McArthur BA, Anhorn C, Eirich R, Christakis DA. Associations Between Screen Use and Child Language Skills: A Systematic Review and Meta-analysis. JAMA Pediatr. 2020;174(7):665-75.
9. Guidelines on Physical Activity, Sedentary Behaviour and Sleep for Children under 5 Years of Age. Geneva: World Health Organization; 2019.
10. Mansolf M, Blackwell CK, Cummings P, Choi S, Cella D. Linking the Child Behavior Checklist to the Strengths and Difficulties Questionnaire. Psychol Assess. 2022;34(3):233-46.
11. Wu JB, Yin XN, Qiu SY, et al. Association between screen time and hyperactive behaviors in children under 3 years in China. Front Psychiatry. 2022;13:977879.
12. Neville RD, McArthur BA, Eirich R, Lakes KD, Madigan S. Bidirectional associations between screen time and children's externalizing and internalizing behaviors. J Child Psychol Psychiatry. 2021;62(12):1475-84.
13. Linebarger DL, Barr R, Lapierre MA, Piotrowski JT. Associations between parenting, media use, cumulative risk, and children's executive functioning. J Dev Behav Pediatr. 2014;35(6):367-77.
14. Zilanawala A, Pilkauskas NV. Material Hardship and Child Socioemotional Behaviors: Differences by Types of Hardship, Timing, and Duration. Child Youth Serv Rev. 2012;34(4):814-25.
15. Solomon-Moore E, Emm-Collison LG, Sebire SJ, et al. "In my day…"- Parents' Views on Children's Physical Activity and Screen Viewing in Relation to Their Own Childhood. Int J Environ Res Public Health. 2018;15(11):2547.
16. Muppalla SK, Vuppalapati S, Reddy Pulliahgaru A, Sreenivasulu H. Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management. Cureus. 2023;15(6):e40608.
17. Stiglic N, Viner RM. Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. BMJ Open. 2019;9(1):e023191.
18. Lissak G. Adverse physiological and psychological effects of screen time on children and adolescents: Literature review and case study. Environ Res. 2018;164:149-57.
19. Nakshine VS, Thute P, Khatib MN, Sarkar B. Increased Screen Time as a Cause of Declining Physical, Psychological Health, and Sleep Patterns: A Literary Review. Cureus. 2022;14(10):e30051.
20. Hale L, Kirschen GW, LeBourgeois MK, et al. Youth Screen Media Habits and Sleep: Sleep-Friendly Screen Behavior Recommendations for Clinicians, Educators, and Parents. Child Adolesc Psychiatr Clin N Am. 2018;27(2):229-45.
21. Parent J, Sanders W, Forehand R. Youth Screen Time and Behavioral Health Problems: The Role of Sleep Duration and Disturbances. J Dev Behav Pediatr. 2016;37(4):277-84.
22. Sapienza A, Lítlá M, Lehmann S, Alessandretti L. Exposure to urban and rural contexts shapes smartphone usage behavior. PNAS Nexus. 2023;2(11):pgad357.
23. Chakhunashvili K, Kvirkvelia E, Chakhunashvili DG. Does Screen Time Do More Damage in Boys Than Girls? Cureus. 2024;16(10):e72054.
24. Ansari A, Crosnoe R. Children's Hyperactivity, Television Viewing, and The Potential for Child Effects. Child Youth Serv Rev. 2016;61:135-40.
25. Cui Z, Zou P, Lin Z, Cao Y, Luo Y. Gender Differences in Excessive Screen Time among Chinese High School Students in Henan Province. Int J Environ Res Public Health. 2022;20(1):721.
26. Adani S, Cepanec M. Sex differences in early communication development: behavioral and neurobiological indicators of more vulnerable communication system development in boys. Croat Med J. 2019;60(2):141-9.