2025 Volume: 01 Issue: 06 www.ijrpa.com ISSN 2456-9995 Review Article

International Journal Research Publication Analysis

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THE EFFECTS OF EXCESSIVE SCREEN TIME ON BEHAVIORAL AND EMOTIONAL OUTCOMES IN EARLY CHILDHOOD.

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Article Received: 02 November 2025
Article Revised: 22 November 2025
Published on: 12 December 2025

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ABSTRACT

Children's excessive dependence on screen media has created severe public health problems as it may impair their mental, language, and psychological development. This research investigates the impact of screen time on various aspects of development, as well as approaches for managing and limiting children's screen time. Screen technology has a wide spectrum of cognitive implications, with both positive and negative effects reported. Screens can help with education and learning but excessive time spent in front of a screen and multitasking with other media has been linked to poor mental health and academic achievement. Screen time, which affects both the quantity and quality of contacts between children and parents, can also have an influence on language development. Contextual factors such as co-viewing and topic relevance are critical for assessing how language development is affected. Furthermore, excessive screen time has a negative impact on social and emotional development, increasing the risk of obesity, sleep difficulties, and mental health disorders such as sadness and anxiety. It can disrupt emotional processing, motivate aggressive behavior, and undermine one's overall psychological health. Setting borders, using parental controls, and demonstrating appropriate screen behavior are all strategies that parents can use to regulate their children's screen time. We can limit the potential harmful effects of excessive screen time while still enhancing children's healthy development and well-being by raising information and supporting different activities that encourage growth and development.

KEYWORDS: campaign, developmental and behavioral delays, digital learning, parenting style, screen exposure time, screen time, language development, mental development ,social

and emotional development.

INTRODUCTION:

Recent innovations, like mobile and interactive screen media, are now integrated into young children's everyday routine. Children today are "digital natives," having been born into a constantly evolving digital world supplemented by mobile media. The age at which children engage with media on a regular basis has decreased from four years in 1970 to four months in our current day (1).

Technological advances have transformed learning, communication, and information transmission; yet, current study shows that screen media use may have substantial harmful consequences on children's health in the long run, making this a critical health care concern (2).

It has increased the possibility of adolescents becoming obese, experiencing behavioral issues, sleep disturbances, and poor academic performance (1-3).

The World Health Organization (WHO) defines Screen time as "time spent passively viewing screen-based media (TV, computer, mobile devices)". This excludes active screen-based games that require physical exertion or movement. Furthermore, according to WHO's standards, kids under the age of 24 months should not be exposed to screens, and children below the age of 5 years should only be exposed to screens for a maximum of 1 hour per day (4). This topic analyzes the serious impact of excessive screen time on children's mental, language, and social-emotional development, as well as the critical strategies and roles that parents and schools can take to effectively regulate and minimize screen time in children.

Effect of screen time on development:

Mental development:

Screen media use can have both positive and negative effects on a child's mental abilities. Screen- equipped media devices have the potential to enhance education and learning (2) Research suggests that electronic books and learning-to-read programs may increase young children's early reading skills and innovative thinking abilities (2,5,6).

Yet, studies have also indicated the harmful impacts of screen media use on a number of cognitive areas involving mental performance, sensory development, and academic results (2,7). The Quebec Longitudinal Investigation of Child Development cohort study discovered

a long-lasting relationship between early screen media exposure and mental development, for every one-hour increase in TV exposure at 2 years old corresponding to a 7% unit drop in class participation and a 6% unit decrease in math proficiency in 4th grade (8). A Spanish study found a negative association between screen media use and educational achievement, implying that more screen time was related with poorer academic performance. Similarly, a study performed in the United States discovered a strong relationship between higher levels of media multitasking and worse scores on standardized exams measuring educational ability in mathematics and English (9). Thus, there are considerable indirect consequences of screen media consumption on cognitive development in children (2).

Language Development:

Children learn several parts of language, including vocabulary and phonology, during their early childhood years, which are critical for developing language skills (10). Such skills are developed through contact with adults (10).

Several studies have pointed out the importance of human connection, especially the frequency and quality of exchanges between adults and children, in the enhancement of language skills (11).

Nevertheless, there is a growing evidence that screen time reduces the quantity and quality of contacts between children and their parents, resulting in limited opportunities for the child to practice and develop their language talents (10). The relationship between screen time and the growth of language and speech is complex, and there are many elements to take into consideration (12).

The context includes various characteristics, such as actions expressed by adult caregivers during screen time, the maturity of the content for the child's age, and the level of interaction supplied by the screen (13).

Increasing screen time at an early age has a negative impact on language growth (12). However, starting screen time at a later age offers some advantages (12). The qualities of videos, their content, and co- viewing all influence language development. Other researches have shown adverse impacts on speech, language, motor abilities, mental health, and social development (12).

Research suggests that children who spend more than an hour each day on screens are more likely to exhibit behavioral issues and struggle with vocabulary acquisition (14) . These findings demonstrate the need of monitoring and managing young children's screen usage to minimize potential negative impacts on their development and behavior (14).

Social-Emotional Development:

Research has found a negative relationship between screen usage, mainly television viewing, and the development of physical and cognitive skills. Moreover, screen usage has been connected to obesity, insomnia, sadness, and anxiety (15)

.Studies on very young ones show that screen time is an independent risk factor for poor psychological well-being. According to one analysis, more television exposure between the ages of six and 18 months was connected with emotional reactivity, hostility, and exaggerating behaviors (15).

Few studies have discovered that increased screen usage at the age of four is connected with worse levels of emotional

understanding at the age of six. It also illustrates that having a television in a child's bedroom at the age of six is correlated with lower levels of emotional understanding at the age of eight (16).Gaming was linked to poorer levels of mental comprehension in boys but not in girls. This shows that different forms of screen time may have diverse effects on children's emotional development according to their gender (16).

Poor sleep caused by screen time, and mobile phone dependency have all been linked to depressed symptoms Sleep troubles, excessive screen time, and exposure to violent content activate dopamine and reward centers in the brain, all of which have been connected with attention-deficit/hyperactivity disorder (ADHD)-related behavior (17).

The psychoneurological impacts of addicted screen time usage include a deterioration in social coping skills (17). Individuals with addictive digital media routine have exhibited structural abnormalities in the brain related to cognitive control and emotional regulation (17).

It is worth emphasizing that screens can provide positive educational and informational benefits (15) . For example, many schools are successfully employing websites as educational tools to improve written English, and the Internet enables health services such as sexually transmitted illnesses and mental health

(15). Starting at the age of two, high-quality television programs created for specific educational purposes can help young students improve their language and reading skills (18) . Such programs can also assist cognitive development, promote positive racial attitudes, and promote imaginative play (18). These findings highlight the possible harmful effects of excessive screen use , especially when screens are present in a child's personal space, such as their bedroom (16). This study underlines the importance of face-to-face connection, especially between the main family members, in encouraging the

development of social-emotional skills in young children (16).

Risk factors of screen time: Cardiometabolic Risk Factors:

Excessive Screen time (ST) is thought to impact the cardiovascular system, according to many studies (19,20,21,22,23) and a dose-dependent unfavorable correlation has been shown after exceeding a daily ST threshold of two hours (21) .Cureau FV et al. found that high STonly contributes to cardiometabolic risk in overweight children (22). Cardiovascular disease (CVD) investigations have mostly examined cardiovascular fitness (CVF), blood pressure (BP), insulin resistance (IR), and cholesterol levels. A large- scale European population has linked all of these characteristics with prolonged ST throughout childhood (23).

A Swedish research of 13-year-old children indicated that CVF is inversely correlated with more than 5 hours of weekday ST for boys and more than 3-4 hours of weekday ST for girls, however involvement in organized sports was positively related (24).

Externalising Symptoms:

ADHD and behavioral issues such as aggressiveness are the most common types of externalizing symptoms. Michal Kahn et al. observed that more than 2 hours of daily ST correlated with externalizing issues in preschool children, however this was only true in children who needed sleep (25).

A cohort study by Tamana SK et al. found that more than 2 hours of ST when children were 3 or 5 years old resulted in more externalizing issues at age 5. Further examination of these results revealed that clinically obvious inattention is associated with high ST, in contrast to aggressiveness (26).

Excessive ST can have an indirect effect on externalizing behaviors. Young adolescents who are exposed to graphic sexual media are more likely to engage in high-risk sexual behaviors (early sexual debut, unsafe sex, and more sexual partners) later in adolescence. The impacts were stronger when more media types were used (27).

Sleep and Physical Activity:

Kahn M et al. employed actigraphy to investigate sleep habits and ST. Their data indicate that prolonged ST leads to worse quality, shorter duration, and later sleep initiation (28). Toddlers appear to be affected by excessive ST. More than one hour of TV every day caused higher sleep issues (29).

Potential benefits for screen time:

Beginning around the age of two, quality TV—well-designed, gender-appropriate programs with specific learning goals—can give an extra way to early language and comprehension for children (30).

Quality programs also promotes mental growth, including healthy racial perspectives and imaginative play

(31). Early data suggests that interactive 'learn-to-read' applications and e-books can improve early learning by practicing letters, reading and writing, and word identification (32,33).

The effect of television in the background:

In fact, scientific data suggest that parents communicate less to 12- and 24-month-old toddlers, and more passively, while the television is in the background than when it is switched off (34). Questionnaire-based findings demonstrate that moms use less vocabulary while playing with their 13- month-old child when the television is turned on vs. off (35). The decrease mitigates the deleterious influence of screens on the vocabulary size of these toddlers at 17 months. This is essential because the quantity of words heard before the age of three is an excellent predictor of future mental and language ability (36,37,38).

Experimental research have demonstrated that television in the background interrupts children's play sessions at aged 6, 12, 24, and 26 months. if children do not observe the screen often (5% of the time), the visual changes that often occur on television trigger the child to repeatedly orient toward the screen, consuming the mental abilities necessary to create and perform action schemes (39,34,40).

Promotions, in particular, capture children's attention because young children have limited control over their attentional focus

(41). Studies that looked at the quality of play indicate shorter play episodes and shorter durations of focused concentration in the presence of television in the background, resulting in less rich and less complicated solitary play than when the television is turned off (39,34,35).

Frequency and duration of screen media use:

Technology is becoming more prevalent in households around the world, increasing the availability of screen media devices for youngsters (42). Televisions, smartphones and computers

are among the many media electronics available to young children nowadays. Children have easy access to devices and a variety of media sources, which underlines their growth in a digital environment (43). Screen time limits have been circulated in numerous countries ranging from 30 minutes to 2 hours, with the World Health Organization recommending a maximum of 1 hour per day for young children (45,46).

Strategies for management and limiting screen time in children:

Numerous studies demonstrate that parents' awareness-raising and other activities can drastically reduce children's screen use

(47). Teens' time spent watching television and engaging in other forms of screen time dropped only when the intervention contained apparent aspects or activities aimed at lowering it (48).

Possible additions to interventions include the use of an electronically monitored device to restrict screen time ,the TV Turn-off Challenge (a campaign to switch off the TV for a particular period), the restricted use of screens on physical activity, or education through mass or small media (such as emails and pamphlets) (49).

Health visitors should offer advice to new parents and be aware of medical proof . Schools should take an interest on how much time children spend using screens inside and outside of the classroom, and inform students and parents about it (47).

Role of Parents in reducing Screen Time:

Families used screen time as a reward, but many of them also worried that digital technology might harm their child's ethics, social skills, sleep, and physical exercise (50). As the main caregivers, parents have the opportunity to impose behavioral control in the house, often using observation and rule-setting (50).

In fact, strategies focused on improving conventional parenting skills at home have been helpful in increasing a child's positive attitudes (50).

According to this strategy, some research indicates that parents' setting of limits regarding the use of technology such as television, mobile phones, and laptops is associated to children spending less time on screens (51). The ideal elective screen time limit is 0.5-1 hour per day for children aged three to seven, one hour for children aged seven to twelve, 1.5 hours for children aged twelve to fifteen, and two hours for children aged sixteen and up. Role modeling is another essential aspect. If parents watch television for more than four hours each day, their kids will have a 10.5-fold and a three-fold increased probability of doing the same

(52).

CONCLUSION:

Excessive screen media use among kids can have both beneficial and harmful effects on their development. Regarding mental development, screens have the ability to improve education and learning. Yet, research has found that excessive screen usage and media multitasking might have a deleterious impact on mental health, sensory development, and academic performance. Early screen exposure has been linked to decreased mental skills and academic achievement in subsequent years. Screen time also has an impact on language development because it reduces the frequency and quality of interactions between children and caretakers. The impact on language development is influenced by contextual factors such as co-viewing and content appropriateness.

Excessive screen time can also impair social-emotional development, resulting in obesity, sleep issues, sadness, and anxiety. It can hinder emotional comprehension, encourage aggressive attitude, and reduce emotional and social skills. Parents have an important role in monitoring and minimizing screen usage by boosting awareness, setting restrictions, and implementing behavioral controls. Parental limitations and the lack of devices in bedrooms have been shown to drastically minimize screen time. Parents should set a role model by controlling their own screen time. Overall, parents, educators, and healthcare professionals must understand the possible consequences of excessive screen time and carry out strategies to promote healthy development in children, such as different activities that improve mental, language, and social-emotional skills.

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