Impact of Screen Time on Development of Children

Maryam Afzal

BSN 3rd Year, Islamabad Nursing College, Islamabad, Pakistan

Key points:

- Introduction
- Impact of screen time on children language development
- Impact of screen time on children vision
- Impact of screen time on children social skills development
- Impact of screen time on children sleep
- Parental views on children screen time
- Role of nurse in impact of screen time on children development
- Conclusion

Introduction

The past decade has seen a significant surge in screen media use within families, with infants being introduced to screens at an increasingly young age. Screen time encompasses exposure to audiovisual content through various devices, including smartphones, TVs, computers, and gaming consoles. Research highlights the impact of screen time on children's language and physical development, prompting guidelines that recommend limiting screen time to under 2 hours for children aged 2-4 years.

However, recent studies indicate that children exceed these recommended limits. For example, American children under 8 years average 2 hours and 24 minutes of screen time daily, while Finnish children aged 3-6 years spend around 1 hour and 51 minutes. Indian studies reveal alarming trends, with 99.7% of children under 18 months exposed to screens and exceeding 1 hour of screen time daily in 88.7% of cases.[1]

The widespread adoption of digital technology has transformed daily life, with children increasingly exposed to screens. Growing concerns about excessive screen time's potential impact on children's health and development have led pediatric societies to recommend limiting recreational screen time to under 2 hours daily. For children under 2 years, complete avoidance of screen time is advised due to their vulnerability during this critical developmental period. However, children may remain susceptible to screen exposure's effects beyond early childhood.

Excessive screen time is linked to various negative effects on children's health and development, including reduced sleep quality, impaired cognitive, social, and linguistic skills, and increased risk of obesity.[2]

Impact of screen timing on language development and communication

Language skills play a crucial role in children's social and academic development, making language acquisition a vital aspect of childhood growth. Conversely, language delays and disorders can lead to behavioral issues and negatively impact academic performance, both in early schooling and later life. Language development begins at birth, shaped by interactions with caregivers and significant others. A stimulating environment, such as reading to children, can foster language growth.

The proliferation of mobile devices in recent years has led to their widespread adoption in family life, with children being exposed to these devices from an early

age. While mobile devices offer convenient entertainment options for parents and children, excessive screen time may potentially hinder language development in young children. Despite the growing trend of mobile device use among toddlers, research on its impact on language development remains limited.

The impact of screen-based media on language development likely depends on content and context. Mobile devices, with their portability, interactivity, and reward features, may influence language development differently than TV or computers. These characteristics can affect language development directly through content and format or indirectly by reducing opportunities for social interaction. The unique aspects of mobile devices suggest a need to examine their specific impact on language development.

Child development is influenced by multiple factors, and the relationship between mobile device screen time and language development may be affected by various activities and environmental factors. Research suggests that screen time can impact parent-child communication, while language-stimulating activities and reading can enhance language development. The learning environment, parental education, and attitudes toward screen use may also play a role. This study investigates the association between mobile device screen time and language development in toddlers, considering factors like parental education, reading frequency, and TV/PC screen time. We hypothesize that excessive mobile device screen time is linked to poorer language outcomes and that a favorable learning environment can mitigate this effect.[3]

Impact of screen time on children vision

Excessive screen time is also associated with vision problems, including eye strain, dry eyes, and blurred vision, collectively known as computer vision syndrome. Furthermore, research suggests that prolonged screen time, particularly indoors, may contribute to the development of myopia (nearsightedness) in children. Spending more time outdoors may reduce this risk. Potential mechanisms underlying these effects include retinal damage from blue light exposure, changes in the eye's lens shape, and altered visual signal processing.[4]

The global burden of myopia is increasing, particularly in East Asian populations, with screen time emerging as a potential risk factor. Research suggests that prolonged screen use, exceeding 2-3 hours daily, is associated with a higher risk of myopia in children.

Risk Factors and Public Health Implications

Increased screen time, particularly exceeding 2 hours daily, may contribute to the development of myopia.

Reduced outdoor activities and increased near-work activities, such as reading and writing, also play a role in the rising prevalence of myopia.

Public health strategies should prioritize reducing screen exposure among children and promoting outdoor activities to mitigate the risk of myopia.[5]

Impact of screen time on social skills development

The relationship between screen time and social skills development in children aged 3-7. Results showed a significant negative correlation, suggesting excessive screen time hinders social development. Key findings include:

Children with limited screen time (low group) demonstrated higher social skills, including cooperation, assertion, and empathy, likely due to increased face-to-face interactions. In contrast, children with extensive screen time (high group) scored lower, implying prolonged screen exposure may impede social skill development. The moderate screen time group showed intermediate results, supporting the idea that screen time duration impacts social skills.[6]

Impact of screen time on sleep

The relationship between screen time and sleep disturbances can be attributed to several factors. Evening screen exposure to artificial light can disrupt the body's natural sleep-wake cycle by suppressing

melatonin production, leading to delayed sleep onset and reduced sleep duration. Additionally, engaging withstimulating content before bed can increase physiological and psychological arousal, making it challenging to transition to sleep and compromising sleep quality. Excessive screen time, particularly before bedtime, can also encroach on sleep time, resulting in insufficient sleep and daytime fatigue.[7]

Parental views on screen time

Parent-child conflicts often revolve around screen time limits, with many parents reporting disputes when enforcing screen time rules. Research suggests that screen time can strain parent-child relationships, particularly when it replaces interactions or generates conflict. However, the impact of screen time on parenting stress and relationships may depend on the content consumed and how screens are used. This study explores the relationship between child screen time and parental satisfaction with the parent-child relationship, hypothesizing that increased screen time is associated with lower relationship satisfaction.[8]

Role of nurse in impact of screen time on children development

The role of Public Health Nurses (PHNs) in guiding parents on young children's media use is crucial. Nevertheless, research indicates that PHNs face challenges due to inadequate resources and training, hindering their ability to provide effective guidance. A notable gap exists in parental strategies and resources, as most PHNs believe parents are not sufficiently managing their children's media use.

To bridge this gap, PHNs require comprehensive support, including specialized training, sufficient time, and access to relevant resources. Integrating media use guidance into child health clinics should be a priority, acknowledging the significance of this issue in promoting healthy child development.

Moreover, a collaborative approach involving multiple healthcare professionals, such as pediatricians and early childhood educators, is essential. Future studies should investigate how PHNs can work with these professionals to develop a unified strategy for managing media use in young children. Additionally, research on effective training programs and resources for PHNs could yield valuable insights into enhancing their capabilities in this area.

By addressing these gaps and providing PHNs with the necessary support, they can effectively fulfill their advisory roles, ultimately enhancing the quality of media use guidance provided to families and promoting better developmental outcomes for young children.

Conclusion

Excessive screen time remains a concern for children, despite guidelines recommending limits. Research globally, focusing on children from birth to 12 years, shows a significant correlation between screen time and language delays. These findings can inform speech and language therapy practices and guide future research. Further large-scale studies considering multiple factors, including screen time, are necessary to develop effective recommendations.[10]

Research reveals that physical activity plays a vital role in promoting motor creativity in young children. The relationship between physical activity and motor creativity is influenced by factors such as motor working memory and screen time. By understanding these dynamics, early childhood education programs can prioritize physical activity, cognitive development, and responsible screen time management to support children's overall development. This study's findings contribute to our understanding of how physical activity and creativity intersect to shape young children's growth.[11]

References

1. Bhutani P, Gupta M, Bajaj G, Deka RC, Satapathy SS, Ray SK. Is the screen time duration affecting children's language development?-A scoping review. Clinical Epidemiology and Global Health. 2024 Jan 1;25:101457.
2. Champagne-Hamel M, Monfort C, Chevrier C, Saint-Amour D. Screen Time at 6 Years Old and

Visual Function in Early Adolescence. Vision. 2023 Sep 23;7(4):63
3. Rayce SB, Okholm GT, Flensborg-Madsen T. Mobile device screen time is associated with poorer language development among toddlers: results from a large-scale survey. BMC Public Health. 2024 Apr 15;24(1):1050.
4. Champagne-Hamel M, Monfort C, Chevrier C, Saint-Amour D. Screen Time at 6 Years Old and Visual Function in Early Adolescence. Vision. 2023 Sep 23;7(4):63.
5. Wu F, Tham YC, Sabanayagam C, Saw SM. From evidence to action: public health approaches to reducing screen time and mitigating myopia risk. Asia-Pacific Journal of Ophthalmology. 2025 Feb 26:100177.
6. Munamala RR, Rafi SM, Mahesh RM. IMPACT OF SCREEN TIME ON SOCIAL SKILLS DEVELOPMENT IN YOUNG CHILDREN: AN OBSERVATIONAL STUDY. Int J Acad Med Pharm. 2024;6(3):
7. Salehi EN, Brakenridge C, Jaydarifard S, Mielke GI. Longitudinal analysis of the bidirectional relationship between screen time and sleep: Exploring the role of physical activity. Sleep Medicine. 2025 Feb 1;126:319-26.
8. Wolfers LN, Nabi RL, Walter N. Too much screen time or too much guilt? How child screen time and parental screen guilt affect parental stress and relationship satisfaction. Media Psychology. 2025 Jan 2;28(1):102-33.
9. Utriainen S, Vehviläinen-Julkunen K, Lamminpää R. Media Use of Young Children: The Perceptions of Public Health Nurses Working in Child Health Clinics. Public Health Nursing. 2025 Mar;42(2):841-7.
10. Bhutani P, Gupta M, Bajaj G, Deka RC, Satapathy SS, Ray SK. Is the screen time duration affecting children's language development?-A scoping review. Clinical Epidemiology and Global Health. 2024 Jan 1;25:101457
11. Ghanamah R. The Impact of Physical Activity and Screen Time on Motor Creativity in Kindergarteners. Children. 2025 Jan 22;12(2):116.