

# Screen Exposure Among Preschool Children: Sociocultural Impact

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**Abstract:** *This concept paper examines the sociocultural implications of screen exposure among preschool children, a growing concern in the digital age. As young children increasingly interact with electronic devices, the paper aims to explore how screen time influences their social development. It discusses the interplay between cultural practices, parenting styles, and societal norms in shaping children's media consumption patterns. The paper also investigates the potential benefits and challenges of early screen exposure, including its impact on economic, social interactions, and overall well-being. Through a review of existing literature, this concept paper highlights key areas for future research and suggests strategies for balancing screen use with other developmental activities. The goal is to provide a comprehensive framework for understanding the broader sociocultural effects of screen exposure on preschool children, offering insights for parents, educators, and policymakers to promote healthier media habits.*

**Keywords:** Screen time, Children, Preschool, Health, Sociocultural

## 1. Introduction

People today rely on screen media in the majority of their daily lives in a world where technology is pervasive. Young children's screen time is becoming astronomically more common. Excessive screen usage during early childhood is still linked to language, cognitive, and social/emotional deficits, according to research studies (Bernota et al., 2024). There are worries about how this digital world affects youngsters. Does screen time negatively impact children's development? Does a child's screen time have any long-term consequences? Are there any advantages to using screens? Understanding the potential effects on kids' social, cognitive, and communication development as they begin using screen media of any form is crucial. Furthermore, their views of gender roles, family relationships, and societal expectations can be influenced by the kinds of content they are exposed to and how it is incorporated into their everyday lives.

In today's digital environment, young children including preschoolers are regularly exposed to screens. As smartphones, tablets, and televisions become more accessible, more children between the ages of two and five are using screens for communication, education, and entertainment. In addition to creating new opportunities for learning and growth, this change in early childhood involvement has raised questions regarding possible impacts on the sociocultural development of developing brains. Screen time affects preschoolers' physical and

mental health as well as their social and cultural habits, which are still forming at this young age. Digital media exposure can influence children's perceptions of social norms and relationships. Additionally, their perspectives on cultural norms, family relationships, and

The sociocultural impact refers to how screen exposure is shaped by and shapes the cultural and social environments in which children live. Lev Vygotsky, a Russian psychologist, educator, and literary critic, established the sociocultural theory in 1978. Vygotsky's sociocultural theory is a theory of the mind that reflects his emphasis on the interaction between a person's physiological makeup and their environment and socially or culturally created artifacts. In a socio-cultural context, past studies show that excessive screen use can affect cultural identity, social interaction, and communication methods in society. Widespread screen exposure has also accelerated the process of cultural globalization. Lule (2020) shows that the use of social media and the internet gives individuals the opportunity to expose themselves to global culture, but at the same time, it also brings risks to local culture. For example, popular culture spread through digital media often dominates local culture, causing changes in lifestyles and social norms.

In addition, according to Bernota et al. (2024), there is on-going evidence linking excessive screen usage in early infancy to impairments in language, cognition, emotional and social, also a child's social interactions have an impact on both his and her social skills and personal traits. Past study done by Nobre et al. (2021) has shown that in a survey conducted in the United States, which similarly indicated that children's exposure time values above two hours per day, 63.3% of children reported having a daily screen time of more than two hours. Furthermore, research conducted in Singapore also revealed that youngsters in their early years were exposed for more than two hours per day. It aims to comprehend how children's interactions with screens are influenced by various cultural contexts, family dynamics, and societal expectations.

We can better understand how early screen time impacts the broader social context in which young children will grow up by looking at the connection between their consumption of digital media and the development of their social behaviours, values, and cultural identities. By the time they are two and a half years old, kids are able to understand more of what they are watching, and using screens begins to feel more like a participatory experience. As cited by Wilkinson et al., (2022), it has been repeatedly demonstrated that carer co-viewing and interaction maximizes children's learning from both television and touchscreen media, and that children who watch screens alone are more likely to exhibit attention and social interaction problems than those who are supervised. Similar to newborns, carers' screen habits have a significant impact on children's screen use between the ages of two and five.

This paper will critically explore the intersections of sociocultural theory, children's health outcomes, and the broader economic and social impacts of screen exposure. Specifically, it will investigate how excessive screen time influences sociocultural dynamics, including the development of social behaviours, cultural identities, and communication practices in children. Moreover, it will address how parenting styles and family dynamics mediate these effects and influence cultural transmission. In doing so, this paper aims to provide a nuanced perspective on the complex relationship between screen exposure and sociocultural development in preschool children.

## 2. Review of Literature

### 2.1 Screen Time among children

Screen time, as defined by Ren, W. (2023), is the entire amount of time spent in front of any screen, including those found on computers, smartphones, televisions, video games, and even wearable technology. Children's social skills are crucial for improving their interactions with others, and they may have long-term effects on their social development. According to Barroso et al. (2020), children and adolescents who spend too much time on screens and engage in other sedentary habits are more likely to be obese, be less physically fit, exhibit more antisocial behavior, and perform worse academically. He discovered that 51% of neonates aged 6 to 11 months use touchscreens on a regular basis. The study's associated survey data also reveals that between 2011 and 2013, the percentage of children in the US aged 2 to 4 who use mobile media rose from 39% to 80%. According to the survey, children between the ages of 8 and 12 watched television for an average of more than four hours per day, while the average time spent using it was forty-three minutes. Furthermore, preschoolers in Asian nations spend up to 2.4–2.8 hours a day on screens, according to survey data; pertinent data indicates that the prevalence of screen addiction rises with younger children.

#### 2.1.1 Screen Time: Effect on Social development

The distinction between "passive" and "active" screen time offers a useful framework for understanding screen use. Passive screen time refers to activities like watching television, where the spectator has minimal involvement in the content. In contrast, active screen time involves more interactive engagements such as working on a computer, playing video games, or participating in physically demanding video games, where the individual actively engages with the content or contributes to its progression.

Ren (2023) presents evidence that various types of media content influence children's social development in distinct ways. While acknowledging the negative impact of excessive television viewing on children's cognitive development, the researcher argues that positive, age-appropriate media content, when consumed in moderation, can foster social growth in young children. However, this conclusion appears to be at odds with the findings of Rahman et al. (n.d.), who assert that the type of screen time does not significantly influence the social or emotional development of preschoolers, although they caution that excessive screen time may still have detrimental effects. The inconsistency between these studies suggests that the relationship between screen time and children's development is more complex than initially perceived and warrants further investigation.

Moreover, the broader research context complicates the interpretation of these findings. Wilkinson et al. (2021) highlight that while there is some evidence suggesting certain screen-time behaviors may have harmful effects, these impacts are not always as straightforward or as dramatic as they are often portrayed in popular media. The difficulty in isolating the effects of screen time from other influencing factors in a child's development complicates the ability to draw definitive conclusions. This observation raises important questions about the extent to which screen time directly causes cognitive, emotional, or social outcomes, or whether these outcomes are a result of a combination of factors, including but not limited to screen exposure.

### 2.2 Economic Impact of Screen Exposure

As technology advances, digital devices such as computers, tablets, and smartphones are already widely used in classrooms and homes, exposing toddlers to screens more frequently. Despite the educational and recreational possibilities of digital media, the economic

consequences of this growing screen time have not yet been fully examined. By examining these topics, this concept paper seeks to gain a better understanding of how the increasing usage of screens in preschool children can impact families, communities, and society at large in terms of financial circumstances.

Economic impact refers to the impact caused by a phenomenon or activity on financial conditions and economic development. In the context of screen exposure, the economic impact relates to changes in the way consumers, businesses and industries operate and how the use of technology and digital media affects the economy on a micro and macro scale. This includes the impact on workforce productivity, changes in consumer spending patterns, the emergence of new industries, as well as the creation of job opportunities related to digital technology.

The economic impact of screen exposure can be seen in several aspects:

- 1) Entertainment and Media Industry: The development of the media and entertainment industry, especially through streaming platforms and social media, is a clear example of the economic impact of screen exposure. This effect involves increased consumer spending in media service subscriptions, digital advertising, as well as online content sales (Deloitte, 2022).
- 2) Online Commerce and E-Commerce: Widespread screen exposure is also contributing to the growth of the e-commerce sector, where consumers buy goods and services through digital platforms. The use of this technology changes the way consumers spend, as well as stimulating the development of online businesses (Bada et al., 2023).
- 3) Education and Training Sector: The use of technology and screens in education is also changing the way educational institutions operate, by introducing online learning and technology-based courses. This leads to the growth of the edtech (educational technology) industry which is becoming increasingly important in the digital economy (Hattie, 2020). This multidimensional perspective provides a framework for understanding how screen exposure shapes economic outcomes across various sectors.

Past studies have shown that screen exposure has a profound impact on the economy and socio-cultural aspects of modern society. Economically, industries such as digital media, e-commerce, and entertainment are experiencing significant growth. However, on the other hand, sectors like workforce productivity and individual well-being may be negatively affected by excessive screen use.

- a) Labour Productivity:  
Dependence on digital devices can reduce productivity in the event of mental disorders or health problems such as digital fatigue syndrome and decreased concentration due to excessive screen use (Smith et al., 2021).
- b) Entertainment Industry and Digital Media:  
The entertainment and media sector has experienced rapid growth due to widespread screen exposure, especially with the development of streaming platforms such as Netflix, YouTube, and TikTok. According to a study by Deloitte (2022), spending in the digital media and entertainment industry is expected to increase to \$2.5 trillion by 2025. This effect is also related to the change in consumer behaviour, which now prefers online content to traditional media such as television.
- c) Online Trading:  
Screen exposure is also impacting the e-commerce sector, which is booming as more consumers shop online. Bada et al. (2023) in their study of digital commerce reported that

the increased use of screens among consumers triggered a change in purchasing patterns, which are now more inclined to purchases through mobile applications and e-commerce websites.

Furthermore, according to Allcott et al. (2022), shown that excessive screen time has a negative impact on productivity, particularly in the workplace and in schools. For example, digital addiction models suggest that prolonged use of social media and other platforms reduces work efficiency and imposes opportunity costs. Self-control challenges and habit formation influence this behaviour, which has economic consequences for individuals and institutions, such as decreased workplace efficiency and higher mental health treatment costs. Furthermore, recent research has highlighted both the economic and socio-cultural consequences of screen exposure, particularly among children and adolescents. Likewise to the previous study, Marchall & Stevenson (2023) stated that, increased screen time has reduced socio-emotional competencies and disrupted neurodevelopment, potentially affecting future productivity and workforce preparedness. For example, excessive screen use in childhood is associated with lower academic performance, attention issues, and lower-quality sleep, all of which have economic implications in terms of healthcare costs and lost productivity.

In addition, a study by Wu et al. (2024), it was found that the availability of virtual connections and online education has lowered expenditures, particularly during the pandemic when digital access was essential for mental health and education. However, due to related health problems like obesity and cognitive disturbances, excessive screen time has been connected to mental health problems, lower productivity, and long-term healthcare expenses. Family relationships, social interactions, and cultural consumption patterns are all impacted by screen use, which also raises worries about the negative impacts of excessive digital use on wellbeing and increases global connectivity.

This paper concept assesses the impact of the use of digital technology in education and how it impacts the economy through the e-commerce industry and distance learning opportunities. All things considered, the economic effects of screen time extend beyond their direct effects on certain business sectors like media, e-commerce, and education. They also result in changes to consumer spending, the labour market's structure, and digital goods and services. These consequences show a significant change in how the economy operates in the digital age, with a number of new opportunities arising along with difficulties that require social and cultural attention.

In conclusion, the growing screen exposure in young children is having profound economic impacts on multiple levels. While the opportunities for economic growth in sectors such as media, e-commerce, and education are undeniable, these must be weighed against the potential economic costs, including decreased labour productivity, rising healthcare costs, and disruptions in traditional industries. It is clear that the economic impact of screen exposure is not just an issue for individual families but also for society as a whole. Future research should focus on understanding the long-term economic consequences of this growing trend, while policymakers, educators, and families must work together to mitigate the risks and maximize the benefits of digital media use. By addressing these challenges, we can help foster a more balanced, productive, and economically resilient future.

## **2.3 Cultural Transmission on Socialization**

### **2.3.1 Cultural Transmission Theory**

Theories of cultural transmission have traditionally focused on how cultures maintain continuity and adapt over time. The most prominent model includes Social Learning Theory (Bandura, 1977). This theory emphasizes the role of observation, imitation, and modeling in the acquisition of cultural behaviour. In the context of screen exposure, individuals learn cultural norms, values and behaviours by observing characters and scenarios depicted in media content either through smartphone screens or other digital platforms.

Cultural transmission refers to the process by which cultural knowledge, beliefs, practices, values, customs and traditions are passed down from one generation to another in a society or social group. This process occurs through various means such as language, education, imitation, and socialization. Cultural transmission ensures the continuity of cultural identity, facilitating the survival and evolution of shared customs, technologies and norms. It can happen when cultural knowledge is passed down from parents or an older generation to a younger generation, the spread of cultural knowledge between individuals of the same generation, the transfer of cultural knowledge from individuals of different generations.

Cultural transmission through screen exposure among preschool children refers to the process by which children learn cultural knowledge, values, behaviours and practices through the content they are exposed to on screens, such as television, computers, tablets and smartphones. This type of cultural transmission is especially important in the digital age, as young children increasingly interact with media and technology from an early age.

Cultural transmission occurs through both formal (educational institutions, family interactions) and informal (media consumption, peer interactions) channels. Media exposure plays a crucial role in the informal transfer of culture, shaping children's perceptions of the world and their place in it. Digital media, which is increasingly personalized and interactive, offers children new forms of cultural engagement. However, concerns regarding the overexposure to certain content (violent, stereotypical, or materialistic) and the potential for altering children's understanding of social norms and values have prompted numerous studies on screen time's impact.

### **2.3.2 Cultural Transmission on Screen Saver**

In the 21st century, preschool children are increasingly exposed to screen-based media such as telephone devices, televisions, educational applications, online videos, and digital games. The role of screen exposure in children's cultural transmission has been researched in the fields of developmental psychology, media studies, education, and health. Cultural transmission refers to the process by which cultural knowledge, practices, values, and behaviours are passed down from one generation to another through socialization agents such as family, peers, and the media. Since young children spend so much time interacting with digital media, understanding how screen exposure can influence cultural transmission is important.

This literature review examines existing research on how screen exposure affects cultural transmission in preschool children. In particular, it focuses on how digital media influence children's understanding of social norms, identity, language, gender roles and moral values through cultural transmission in their identity formation.

Past research on cultural transmission on screen exposure among children focuses on how the media content watched by children affects their cultural learning, social behaviour, and

cognitive development. Exposure to screens, such as television, smartphones, educational applications, and digital devices play an important role in shaping a child's worldview and values.

The formation of cultural identity during childhood is influenced by exposure to various media across cultural diversity. A study by Hernandez et al. (2020), examine the role of digital media in fostering intercultural understanding among children. Studies have found that children who are exposed to a variety of media from different cultural backgrounds, such as global cartoons, animated films, and foreign language TV shows, show increased awareness and respect for cultural diversity. This process of cultural hybridization is particularly pronounced in children from multicultural societies, who are exposed to both mainstream (global) media and local, culturally specific content.

On the other hand, Zhang et al. (2022) found that screen exposure can also promote cultural homogeneity. For children living in non-Western societies, extensive exposure to Western media often results in a shift towards adopting Western ideals, including individualism and consumerism, and diminishing interest in their local traditions. This trend is most pronounced among urban children, whose screen time is more often associated with exposure to global digital content, which often departs from the collective cultural values traditionally emphasized in their communities.

In a study Rideout, V. J., & Robb, M. B. (2020) that examined how children aged 0 to 8 years use media, including television, tablets, and smartphones. It highlights how media impact children's development, including language, social, and cultural learning. Exposure to digital media among children provides opportunities for interactive learning, but it also introduces concerns about too many screens, which can interfere with their social and emotional development. Media provides opportunities for children to learn various cultural norms, but too much uncontrolled exposure can have a negative influence on their identity and social development.

According to a study by Joo et al. (2020), screen exposure, especially to social media, was found to shape children's perceptions of beauty, gender roles and success. The study revealed that children who are more involved with digital platforms are more likely to adopt global cultural ideals, often characterized by materialism and body image concerns, which may undermine traditional values.

Another study, Timmermans et al. (2021), emphasized the role of television and YouTube in the early socialization of children. Children exposed to the influence of YouTube are not only influenced by the behaviour of content creators but also by the rapid and constant flow of content that reinforces hyper-individualism and consumerism. Social norms portrayed in these media can sometimes replace family cultural values, leading to changes in children's behaviour and social expectations.

Liu et al. (2021) in his study examined the effect of screen time on children's language development, stating that although certain screen-based content, such as educational programs, can support language acquisition, excessive screen time, especially with passive content such as TV or video games, hinders face- to face communication skills. Children who spend more time with screens, especially solitary activities such as watching videos or playing games, show delayed social development and poorer social communication skills than children who are more involved in active, interactive and social play.

Radesky et al. (2020) conducted a study that focused on the sociocultural implications of mobile device use among young children. Researchers have found that while apps and educational content can provide some cognitive benefits, they also risk fostering a culture of instant gratification and reducing attention spans. Furthermore, children who use mobile devices during family meals or social interactions show less familial bonding and less meaningful interpersonal exchange, leading to weaker social skills and potential incongruence with traditional cultural expectations of family interaction.

Perry's (2020) study discusses how certain media content can perpetuate unrealistic images of family life, gender or success, leading children to form a skewed or oversimplified view of the world around them. For example, children who regularly watch media with highly idealized images of family structure or material wealth may develop unrealistic expectations about their own lives and relationships.

Tsalach and Zuk (2020) suggest that children exposed to media from a young age are likely to develop a sense of identity that is influenced by both the content they consume and the wider cultural context in which the media exists. For example, programs that highlight the diversity of cultures, languages and customs can foster a more inclusive worldview among young children.

Recent studies also explore the intersection of digital games and social media platforms in shaping children's sociocultural behaviour. Huang et al. (2023) explored the influence of digital games and the social norms embedded in these games. Video games often depict violence, competition and meritocracy, which can affect children's perceptions of success and social relationships. The competitive and often aggressive nature of many games also contributed to the shift towards more individualistic, rather than collectivist, values.

Similarly, Lindstrom & Erlandsson (2021) examine the socio cultural impact of social media on children, particularly how platforms such as Instagram and TikTok shape children's sense of identity and belonging. Social media fosters new forms of "cultural transmission" in which children actively construct and present their cultural identities through posts and interactions, while being heavily influenced by peer feedback and the social validation provided by likes and comments. This creates a digital culture of popularity, appearance and self-promotion that contrasts with traditional values centered on humility and collective well-being.

One of the consistent findings across recent studies is the mediating role of parents in mitigating or amplifying the sociocultural effects of screen exposure. Valkenburg et al. (2020) show that active parental involvement in children's media use through shared viewing, discussion and setting boundaries on screen time can help guide children's understanding of media content, leading to a more thoughtful interpretation and alignment with cultural values.

On the other hand, Blum-Ross & Livingstone (2021) found that a lack of parental mediation, especially in households where parents are overwhelmed or less digitally literate, leads to greater exposure of children to potentially harmful or conflicting cultural norms.

Based on the past literature, it is clear that exposure to screen media has a great impact on cultural transmission among children. The results also explain the impact on children's socio-cultural development which functions not only as an entertainment tool, but also as an important channel for spreading cultural values, norms, and behaviours. However, the type of content children receive greatly influences those effects, and excessive exposure to

uncontrolled media can have a negative impact on their social and cultural development. Although digital media offer opportunities for cultural exchange and learning, they also pose challenges, including the spread of materialistic values, the promotion of individualism, and the erosion of traditional cultural practices. Mediation by parents, educators and policy makers is essential in ensuring that children's media use supports positive socio cultural outcomes. As screen time continues to increase, further research is needed to assess long-term effects and explore strategies to foster a balanced and culturally sensitive approach to digital media use.

In summary, while research consistently shows that screen media play a significant role in cultural transmission, the impact is not straightforward. The type of media content, the context of exposure, and the role of parents and educators all mediate the outcomes of screen exposure on children's cultural development. Studies highlighting the homogenizing effects of global media (e.g., Zhang et al., 2022) and the reinforcement of materialistic values (e.g., Joo et al., 2020) offer important insights but often overlook the complexities of children's media engagement. Similarly, studies exploring the benefits of screen media (e.g., Hernandez et al., 2020; Timmermans et al., 2021) are often limited by a lack of focus on the broader social and familial contexts that shape children's interactions with media.

As screen exposure continues to increase, it is crucial to adopt a more nuanced approach to understanding its effects on cultural transmission. Additionally, parents, educators, and policymakers must work together to mediate screen time in ways that promote healthy, culturally sensitive outcomes for children.

## **2.4 Screen Time on Children's Health and Development**

In today's digital age, screen time has become an integral part of daily life for both children and adults alike. With the increasing availability of smartphones, tablets, computers, and televisions, children are exposed to screens at an unprecedented rate. While technology offers numerous benefits, such as access to educational content and interactive learning, concerns have risen about its impact on children's physical health and developmental milestones. Research has shown that excessive screen time may have significant effects on children's cognitive, social, emotional, and physical development. From affecting sleep patterns to contributing to sedentary behaviour, the implications of screen exposure on young minds and bodies are becoming an area of growing concern. This subtopic will explore both the positive and negative effects of screen time on children's health and development, aiming to provide a comprehensive understanding of the complexities surrounding this modern-day challenge.

### **2.4.1 Positive Effects of Social Media on Health**

Social media has a number of positive effects on health. It allows individuals to share doctors' prescriptions with friends, relatives, and colleagues, making it easier to communicate health information. People can also consult doctors online, anytime and anywhere, providing greater access to medical advice. Furthermore, social media fosters the sharing of suggestions about various diseases, symptoms, and treatments among friends and family, contributing to better awareness. In developing regions, social media helps people access vital health information that might otherwise be unavailable. Online health forums provide support and mutual accountability, allowing users to connect with others facing similar health issues. Social media also supports health-related causes, helping raise awareness and garner support. In addition, it aids health services in prioritizing critical cases and increases accountability to consumers. Lastly, the availability of more health data on social media enhances research, giving health researchers access to valuable information that could improve public health outcomes.

### 2.4.2 Negative Effects of Social Media on Health

Despite its benefits, social media also has negative effects on health. One concern is the possibility of incorrect self-diagnosis, where individuals misinterpret symptoms or rely on unreliable sources for medical advice. Additionally, social media poses a potential breach of privacy, as personal health information shared online can be exposed or misused.

### 2.4.3 Effect of screen exposure on health and development of children

Since personal mobile digital devices like smartphones and tablets are becoming more and more common, technology use has changed from the passive media consumption of the television (TV) era to a more diverse and immersive set of activities that include TV but also include content creation, education, and the acquisition of technological competencies (Mollborn et al., 2022). It has proven challenging for parents, educators, and medical professionals to develop technology use policies that balance the prosocial and educational advantages of technology use with the risks of sedentary behaviour, social isolation, and privacy invasion due to the complex effects of school-aged children's technology use.

Recent studies have shown that screen time among young children has increased dramatically in the past decade. World Health Organization (WHO) recommended that children under the age of two should not spend any time on screens, and children between the ages of two and five should not spend more than an hour a day on screens (WHO, 2019). Similarly with WHO, the 24-hours Movement Guidelines developed on 2017 also limit for children younger than five should only spend one hour a day on screens (Kerai et al., 2022). According to Xiang et al. (2022), children between the ages of 2 and 11 who spend too much time on screens are more likely to be overweight or obese. Similarly, he cited that other research has also shown a strong correlation between excessive screen usage and children's poorer cognitive development, shorter sleep length, and poorer sleep quality. Additionally, it has been discovered that early screen time increases a child's chance of language delay. Furthermore, a case-control study involving children ages 15 to 48 months revealed that early screen exposure was associated with a higher likelihood of language development issues than children who began watching television after the age of one year.

In addition, a long-term study showed that pre-schoolers' cognitive performance was negatively impacted by an earlier age at which they began using screens (Xiang et al., 2022). The studies also shown that preschool children, who typically range from 3 to 5 years of age, are spending increasing amounts of time in front of screens, often exceeding the recommended limits set by health organizations.

Likewise in a study by Langdon et al. (2022a), in the United States, children aged 5 to 17 are projected to have a 6% prevalence of frequent or severe headaches and he also cited previous studies have shown that children with migraines had lower quality of life, including lower scholastic and emotional functioning, compared to children with rheumatic diseases, cancer, and other chronic illnesses. Moreover, the median frequency of headaches among participants in his study was 15 days per month, with an average of 17 days per month. Mustuloglu et al. (2024), stated that in the study, in comparison to their peers without problematic screen exposure (PSE), pre-schoolers with PSE had a considerably higher frequency of poor oral health and a higher mean number of decaying teeth. Additionally, the PSE group was found to have lower monthly family income, a higher birth order, and parents with poorer educational attainment. Similarly, these results are consistent with previous research showing that low parental education, mothers who do not work, single-parent or extended family arrangements,

families with two or more siblings, households with five or more people, and living in a rural area are all linked to a high PSE score.

Furthermore, Kerai et al. (2022) stated that, developmental vulnerability is linked to screen usage that surpasses the daily recommended quantity in the early years. Particularly, vulnerability in the domains of physical, social, emotional, and cognitive developmental health was positively correlated with more than an hour of screen use each day. The results indicate that developmental vulnerability is linked to screen use that surpasses the recommended daily quantity in the early years. In particular, vulnerability in the domains of physical, social, emotional, and cognitive developmental health was positively correlated with more than an hour of screen usage each day. Moreover to children's other health behaviours, such as sleep and physical activity, these relationships were statistically significant when compared to other demographics and income.

Digital displays can be entertaining and informative, but too much screen time for young children is dangerous for their health and should not be disregarded. The long-term effects of excessive screen time are alarming, ranging from emotional and mental health problems to physical problems like obesity and bad posture. Parents, guardians, and legislators must set screen-use limits, encourage healthier lifestyle choices, and support substitute activities that support children's physical, mental, and emotional growth in order to protect their health and wellbeing. Society may promote healthier future generations by addressing the detrimental health effects of excessive screen usage at an early age.

In conclusion, while the recommendations set by the WHO and the 24-Hour Movement Guidelines provide a useful starting point for managing children's screen time, there are significant limitations in how screen time is currently studied and understood. The lack of differentiation between different types of screen time, failure to account for confounding variables, and limited exploration of the potential benefits of digital engagement hinder the development of a comprehensive understanding of the impact of technology on children's health and development. More nuanced, long-term research is needed to better guide parents, educators, and policymakers in fostering healthy digital habits for the next generation.

## **2.5 Parenting Style and Screen Time**

The pervasive use of digital devices has made screen time a critical concern for parents and health professionals worldwide. While screens provide opportunities for education and entertainment, excessive screen time is associated with adverse physical, mental, and social outcomes in children. Parenting styles, which encompass parental attitudes, behaviors, and strategies in child-rearing, play a pivotal role in regulating children's screen time.

Parenting style is a well-researched construct in developmental psychology that influences various aspects of a child's life, including academic performance, social competence, and health-related behaviours. Good parenting is a process where a parent fulfils a child's needs based on cultural standards that change from generation to generation and differ between families. Parenting is the practice of child rearing that affects children's physical, emotional, mental, and social development in both the short and long-term. Parenting styles are typically categorized based on Diana Baumrind's framework (1967), later refined by Maccoby and Martin (1983). The four styles authoritative, authoritarian, permissive, and neglectful are differentiated by the levels of responsiveness.

Research consistently highlights authoritative parenting as the most effective style in managing children's screen time. Authoritative parents actively establish and enforce screen time boundaries while including their children in the decision-making process. Numerous studies have emphasized the positive influence of authoritative parenting on managing children's screen time effectively. Children of authoritative parents engaged in more educational or physical activities and spent less time on screens, according to research published in the *Journal of Child Development*. They are more likely to establish rules about screen time and model appropriate technology use, leading to reduced excessive usage among children (Tang et al., 2021). As further evidenced by a study by Lauricella et al. (2015), authoritative parents tend to monitor content quality and encourage co-viewing, making screen time a shared and enriching experience rather than a solitary activity. Children are also more likely to adhere to screen time rules, as parents effectively communicate the rationale behind these guidelines. By involving children in the rules surrounding screen time, these parents increase compliance and decrease conflict.

While authoritarian parents may enforce strict screen time limits, their approach can sometimes lead to unintended consequences. Children may comply out of fear rather than understanding, leading to covert screen use when parents are not present. A study by Langer et al. (2019) found that children of authoritarian parents were more likely to develop challenging screen behaviors, including binge-watching or excessive gaming, as a means of expressing independence. In the absence of trust and open communication, children are more likely to engage in covert screen use includes watching videos late at night or using devices without permission. A study by Tzavela et al. (2018) observed that children of authoritarian parents might adhere to rigid screen time rules out of fear of punishment, rather than an understanding of its benefits. This style often fails to foster intrinsic motivation for healthy screen use, with children viewing screen time as a forbidden reward rather than a regulated activity.

Permissive parenting is often linked to higher screen time levels. An excessive amount of digital activity is frequently due to a lack of boundaries. According to research published in the *Journal of Pediatrics*, children who have permissive parents are less likely to enforce screen time limits, which cause them to spend much more time on digital devices than their peers. Research in the *Journal of Pediatrics* revealed that permissive parents are less likely to enforce screen time restrictions, resulting in children spending significantly more hours on digital devices compared to their peers Pinquart (2017). The absence of organized routines usually exacerbates this trend, making it difficult to balance screen time with other essential activities which includes homework, exercise, and sleep. It can also impair their ability to self-regulate, increasing dependency on screens for entertainment.

Neglectful parenting is associated with the highest screen time among children. Children in such households often lack guidance or meaningful alternatives to screen activities. A longitudinal study by Tandon et al. (2021) highlighted that children with neglectful parents exhibited the highest rates of screen addiction, often accompanied by negative outcomes such as poor academic performance and social withdrawal. A study by Lee et al. (2020) reported that children of neglectful parents exhibited the highest rates of obesity and sleep disturbances due to unregulated screen time. The lack of parental guidance also leaves children vulnerable to inappropriate online content and cyber bullying.

Parenting styles profoundly influence children's screen time and associated behaviours. Authoritative parenting emerges as the most effective approach, promoting balanced and purposeful screen use through clear communication, monitoring, and shared engagement. In

contrast, permissive and neglectful styles are linked to excessive and unregulated screen use, while authoritarian approaches may foster covert behaviours. Understanding these dynamics is crucial for parents, educators, and policymakers seeking to mitigate the risks of excessive screen time and promote holistic child development.

Parenting styles significantly impact children's screen time behaviours. By adopting authoritative practices, parents can effectively guide children toward balanced screen use. Implementing strategies such as technology-free zones, collaborative rule-setting and parental modelling can further enhance these efforts. Interventions focused on educating permissive parents about the impact of screen time have shown promise in mitigating negative outcomes. With the support of community initiatives, schools, and policymakers, families can foster healthier digital habits in children, mitigating the risks of excessive screen use.

## 2.6 Technology Development and Screen Exposure

Technological advancements have significantly enhanced the affordability of electronic devices such as smartphones, tablets, and laptops, making them accessible to a broader population. Additionally, these devices are now designed to be lightweight and portable, allowing users to carry and use them conveniently at any time and place. Consequently, concerns have grown about the increasing screen time, particularly among children and adolescents, as well as the prolonged exposure experienced by younger children (Yasin Tekeci et al., 2024).

Several studies have indicated a gradual increase in screen usage among typically developing children aged 6 to 10 in recent years (Mehmet K. et al., 2023). Findings suggest that children within this age range spend more time on screens compared to younger children but less than older ones. It is crucial to examine the potential effects of excessive screen time on children's development and overall wellbeing. Additionally, researchers observed that screen time tends to increase progressively with age (Yasin Tekeci et al., 2024).

Excessive screen time has become an integral aspect of contemporary life, with people across all age groups spending more time using digital devices. Although technology offers several advantages, including improved productivity, better communication, and easy access to information, prolonged screen usage also brings various risks and challenges (Khumukcham Anupama Devi & Sarva Daman Singh, 2023). Streaming services, gaming apps, and social media platforms offer endless entertainment options, keeping users engaged for extended periods. Additionally, online learning platforms and educational apps designed for children promote screen usage from an early age.

Before the COVID-19 pandemic, children under the age of five spent approximately 25% of their waking hours in front of screens. This screen time could be classified into active usage, such as participating in educational games and video calls, and passive consumption, like watching television or browsing social media. However, during the pandemic, screen time beyond online schooling saw a significant increase, rising from an average of 0.75 hours to as much as 6.5 hours daily (Garg et al., 2024).

The integration of smart technology into daily life has significantly contributed to increased screen interactions. Devices such as smart TVs, gaming consoles, and voice-activated assistants are now common in households, encouraging more frequent screen use. Additionally, wearable like smart watches and fitness trackers, which feature screens, further contribute to overall screen exposure (Papadakis & Michail Kalogiannakis, 2023). The combination of these

smart technologies not only enhances convenience and functionality but also contributes to the normalization of screen reliance, especially among younger generations who grow up surrounded by these devices. This integration raises concerns about the long-term implications on attention spans, social interactions, and physical health, making it essential to find a balance in their use.

Advancements in technology have significantly enhanced the user experience, contributing to prolonged screen usage. High-definition displays and immersive graphics provide superior visual quality, making screen-based activities such as streaming, gaming, and browsing more enjoyable and engaging (Sutcliffe & Hart, 2016). Additionally, the integration of adaptive interfaces, including personalized algorithms and targeted notifications, ensures that content is tailored to individual preferences, further encouraging users to spend more time on their devices (Kaur et al., 2021).

Technological advancements have undeniably brought numerous benefits, such as enhanced connectivity, productivity, and access to information, the risks associated with excessive screen exposure cannot be overlooked. Prolonged screen time has been linked to various negative effects, including disrupted sleep patterns, reduced physical activity, and changes in behaviour. For children and adolescents, these risks can impact cognitive development, social skills, and overall well-being. Therefore, it is essential to strike a balance between embracing the advantages of technology and managing its potential harms.

To mitigate these risks, awareness is the key to success. Parents, educators, and caregivers must remain vigilant about the amount of screen time children and adolescents engage in, setting clear limits and encouraging breaks from digital devices. Ultimately, by fostering healthy digital habits and supporting alternative activities, society can enjoy the benefits of technological progress while safeguarding physical and mental health for future generations.

In summary, pre-schoolers' screen time is a complex problem that combines health issues, financial considerations, parental approaches, cultural transmission, and technical development. The previous finding shows how excessive screen usage harms young children's physical, mental, and emotional health, increasing their risk of sedentary behaviour, stunted social development, and disturbed sleep patterns. Parenting practices have a significant impact on whether these impacts are lessened or made worse. It has been demonstrated that children with authoritative parenting develop healthier screen habits because of its emphasis on positive reinforcement and balanced screen usage. On the other hand, greater screen time and the hazards that come with it are typically linked to permissive or uninvolved parenting. Children's interactions with screens are also shaped by the cultural transmission of values, which is impacted by technical advances and society norms. The implications of this vary depending on the cultural setting.

Lastly, as technology develops further, there is an increasing demand for flexible approaches that encourage responsible screen time while using new developments for teaching. To establish a setting where technology is a tool for growth rather than a barrier, parents, educators, and legislators must collaborate. Furthermore, in order to comprehend the long-term and long-term effects of screen time on children's communicative development, future study should strive to transcend the constraints of the rapidly evolving technological modern world.

### 3. Conclusion

In summary, pre-schoolers' screen time is a complex problem that combines health issues, financial considerations, parental approaches, cultural transmission, and technical development. The previous finding shows how excessive screen usage harms young children's physical, mental, and emotional health, increasing their risk of sedentary behaviour, stunted social development, and disturbed sleep patterns. Parenting practices have a significant impact on whether these impacts are lessened or made worse. It has been demonstrated that children with authoritative parenting develop healthier screen habits because of its emphasis on positive reinforcement and balanced screen usage. On the other hand, greater screen time and the hazards that come with it are typically linked to permissive or uninvolved parenting. Children's interactions with screens are also shaped by the cultural transmission of values, which is impacted by technical advances and society norms. The implications of this vary depending on the cultural setting.

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