

# **THE IMPACT OF SCREEN TIME ON COGNITIVE AND SOCIOEMOTIONAL DEVELOPMENT IN CONTEMPORARY CHILDHOOD IN KENYA**

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## **ABSTRACT**

A child's development may be greatly impacted by excessive screen time in many areas of their life. Parents, as well as educators must acknowledge the possible risks associated with screen usage and take proactive measures to regulate it. Encouraging digital literacy and striking a balance between technology alongside other activities might help kids succeed in the digital age while preserving their overall development. It's important to keep in mind that using screens to support a child's development rather than impede it requires moderation and careful supervision. The physiological mechanisms that underlie the detrimental impacts of screen time on health are unknown, as are

the proportionate roles played by different media and screen content categories in producing certain health consequences. This article evaluates these impacts and also provides a guideline on how a slight change in behaviour can help prevent the detrimental impacts of these trends. The beneficial and detrimental impacts of screen usage on children's physical and mental development are covered in this review.

**Key terms:** Screen Time, Cognitive Development, Socioemotional Development, Language Development, Technology

## **INTRODUCTION**

Media and technology have become indispensable in the lives of young children throughout their pre-school and school years in Kenya. In the present day, digital devices such as computers, tablets, smartphones, TVs, and electronic toys are often found in every home. During the first stages of their development, parents introduce their young children to mobile phones and other smart gadgets via video communication as a means to connect with friends and relatives living at a distance. Parents and siblings engage in watching their television programming, while young children are subjected to the presence of television in the background. Parents and carers sometimes use media and other devices to aid in the relaxation of young individuals. Children of the present day are being raised with technology, such as smartphones and tablets, both at home and in school settings. According to Madigan et al. (2021), majority of parents in the Kenya with children under the age of eight own a smartphone or another kind of touchscreen device. The latest advancements in artificial intelligence might potentially have diverse impacts on young children. Realistic image generating models may be advantageous for young individuals with creative minds, similar to how language models can assist in the learning and writing abilities of toddlers. The American Academy of Paediatrics (AAP), a professional organisation of paediatricians in the United States, recommends against exposing children under the age of two to media. However, new-borns are often exposed to

media devices before they reach 12 months of age. A toddler as young as two years old can often use a touchscreen device effortlessly.

### **Background of the Study**

Prior to the 2000s, screen media in Kenya was mostly limited to television. Due to the emergence of modern technology, such as mobile devices like tablets, digital toys, as well as gaming devices, children often engage with various sorts of digital information. Prolonged and excessive use of technology poses several physiological, developmental, and behavioural difficulties in children. Children have early access to television, cell phones, and tablets in their homes. Children of various age groups have the ability to acquire new abilities by using educational materials, such as instructive movies and interactive programmes, both at home and in school (Przybylski and Weinstein, 2019). Children use social media the purpose of communicating and establishing connections with their pals. Social media is extensively used by preadolescents and adolescents. Video games are widely enjoyed by children of all age groups, who have the ability to access video games and other gaming equipment from the comfort of their own homes.

## **LITERATURE REVIEW**

### **Impact on Cognitive Development**

A child's cognitive performance might be negatively or positively impacted by using screen media. Media devices equipped with displays has the capacity to enhance education and facilitate the acquisition of knowledge. According Tamana et al. (2019) electronic books and learning-to-read programs have the potential to enhance young children's early reading skills and foster their creative thinking abilities. Nevertheless, the author has also shown the detrimental impact of screen media use on other cognitive domains as well as academic performance. The research has shown that engaging in media multitasking has detrimental effects on the cognitive abilities of teens, particularly in areas such as working memory, inhibition, and task-switching aptitude.

According to Kaur et al. (2019), there is a consistent link between cognitive ability and early screen exposure. The researchers found a negative relationship between the use of screen media and academic performance, meaning that an increase in screen time was linked to a decline in academic performance. In a similar vein, the research discovered a strong correlation between increased media multitasking and worse performance on standardized tests of academic ability in English and mathematics. Nevertheless, it is possible that negative executive and academic results are influenced by the diminished attention and concentration caused by engaging in several tasks simultaneously, rather than just by excessive use of screen media.

Children in school nowadays are continuously exposed to technology, from social media and cell phones to TV and tablet-based online classes. This review's main goal was to provide an overview of how school-age children now utilize and spend their screen time. Overexposure to

screens may have several negative consequences on school-aged children's health, including emotional, sleep, as well as behavioral issues as well as hindering their growth and cognitive development.

The two main places where school-aged children watch screens are at home, on computers and televisions, rather than in classrooms. The nature and duration of screen time are greatly influenced by the family environment, particularly the parents. Children's options for various behaviour are influenced by the shared social and physical environment that parents' attitudes, beliefs, norms, and behaviour shape and establish in the home. Children's screen time is positively correlated with media equipment availability, while it is negatively correlated with higher parental self-efficacy to restrict screen time. Thus, in order to increase parents' knowledge and capacity to assist in reducing their children's excessive screen time, health promotion programmes are required (Li et al. 2020). While there are a variety of reasons why school-aged children use screens, the primary one is amusement rather than education, which may lead to a reduction in extended screen usage. Electronic device entertainment software use might have time limitations imposed by parents, or screen time could be substituted with outside activities. It's important to investigate students' preferences for screen use across a range of age groups and to determine how long they spend using various screen media, including computers, TVs, and smartphones. This information would help create efficient interventions meant to reduce the amount of time school-aged children spend in front of screens.

### **Impact on Language Development**

According to Webster et al. (2019), during the early stages of life, it is important to acquire language abilities, as children undergo the development of several language components, such as vocabulary and phonology. These talents are obtained via contact with adults. The authors emphasized the importance of human connection, namely the frequency and quality of interactions between adults and children, in helping youngsters gain language abilities. There is rising concern about how excessive screen time impacts the frequency and quality of interactions between children and their parents, which leaves children with less opportunities to practice and develop their language skills. There is a complicated link between screen time and the growth of speech and language skills, which calls for careful consideration of a number of variables. Contextual factors mostly influence the impact of screen time rather than the amount of time spent watching (Eyimaya and Irmak, 2021). The environment includes several factors, such as the conduct shown by adult carers when using screens, the suitability of the material for the child's age, and the degree of engagement offered by the screen. Early exposure to excessive screen time has detrimental impacts on language acquisition. Nevertheless, commencing screen use at a more advanced stage of development has several potential advantages. Video qualities, content, and co-viewing all have an impact on language development. Nevertheless, other research has shown adverse impacts on verbal communication, linguistic abilities, physical coordination, intellectual growth, and interpersonal growth.

While children are around, adults need to be mindful of the impact of background television noise. Increased exposure to ambient television has been linked to adverse effects on children's cognitive capacities, executive functioning, and language acquisition in kids under five, according to Oswald et al. (2020). Extended use of television might negatively affect young children's language development and reading ability.

Madigan et al. (2020) demonstrated a direct relationship between time youngsters spend on screens while being watched by a parent and their proficiency in expressing themselves, their understanding of language sounds, and their general language skills. They show that children who spend more than one hour per day using screens are more prone to behavioural issues and have a worse ability to acquire language, in comparison to children who spend less than or equal to one hour per day on screens (Li et al. 2020).

### **Impact on Social-Emotional Development**

Use of screens has been linked to mental health issues including anxiety, sadness, insomnia, and obesity. It is still unclear exactly whose physiological processes underlie the detrimental effects of screen time on one's health as well as how various screen kinds and media content affect these consequences. Nevertheless, studies conducted on infants and toddlers indicate that the use of screens is a distinct component that contributes to reduced psychological well-being. A study indicates that there is a correlation between higher levels of television exposure throughout the period from six to 18 months of life and the presence of emotional reactivity, aggression, and externalizing behaviour. A tiny number of findings imply that poorer emotional awareness at age six is connected to higher screen usage at age four. It also demonstrates that a child's bedroom housing a television when they are six years old is connected with a poorer emotional awareness level when they are eight years old. Men were shown to have lower levels of emotional awareness when they gamed, but not women. This demonstrates how, depending on a child's gender, certain screen activities may have varied effects on their emotional development.

Looking at the effect of different forms of displays, it has been shown that computer usage and video gaming, but not television watching, are associated with more severe depression symptoms. Anxiety levels and video gaming in particular are associated. According to Neophytou et al. (2021), increased screen time has a cumulative effect on symptoms, with the most noticeable effects building up in early adolescence and into adulthood. The symptoms of depression have been linked to screen time-induced poor sleep, nocturnal digital device usage, and dependence on mobile phones. Being exposed to violent media from an early age increases the likelihood of participating in antisocial behaviour. The development of seeking behaviour consistent with drug dependence and a decline in social coping skills are two psychological effects of excessive screen usage. Patients with compulsive digital media intake have been shown to have structural abnormalities in their brains related to both emotional regulation and cognitive control (Chen and Adler, 2019). In addition, these kinds of activities could foster positive racial attitudes, cognitive growth, and imaginative play. All children two years of age and older may benefit from high-quality material in terms of their social and linguistic

development, especially those who are facing poverty or other challenges. The availability of smartphones causes time to become unpredictable, blurring the lines between work and home life, and often requiring emotional involvement to react to them. These results highlight the potentially detrimental effects of prolonged screen use throughout early childhood, especially when screens are placed in a child's private space, like their bedroom. The present research emphasises the value of face-to-face interactions, particularly with main carers, in promoting early babies' social-emotional development. More study is required to examine the processes behind the relationship between screen usage and developmental issues.

## **RESEARCH METHODS**

An extensive secondary research technique was used to examine the effects of screen usage on the cognitive and socioemotional development of modern children. The study comprised a comprehensive analysis and synthesis of the body of knowledge found in scholarly repositories, databases, and journals as well as research articles and empirical studies. The search parameters were carefully crafted to include research works published in the last ten years that address the connection between screen use and cognitive performance as well as children's socioemotional health (Guerrero et al. 2021). This secondary research strategy attempted to give a thorough and current view of the complicated dynamics between screen time and cognitive and socioemotional development in the modern environment of childhood by critically analyzing and combining results from numerous sources.

## **Results**

### **Importance Screen for A Child's Development and Health**

The options for babies and toddlers to interact with digital media have increased due to advancements in digital technology. Screen time is the term used to describe activities done on electronic devices. Electronic screens, which may double as pacifiers, are now often introduced to newborn babies as early as six months old. From a young age, infants can focus on a screen. Many babies and toddlers in Singapore who are two years old and younger are exposed to digital media daily. Ninety percent of youngsters participate in daily passive screen viewing by the time they are 18 to 24 months old (passive viewing is defined as seeing a screen without adult engagement or co-viewing). These results are consistent with research conducted in other nations. According Corkin et al. (2019), early childhood passive screen use is linked to several behavioral and developmental disorders. Therefore, there should be public health concerns about the high amounts of screen time exposure among young Singaporean children.

Sedentary behaviour throughout childhood is linked to obesity, elevated blood pressure, and worse mental health. Screen usage has been connected to childhood obesity and is often seen as a sedentary activity. Furthermore, research has linked screen usage to worse eating habits, sleep disturbances, concentration problems, nearsightedness, and developmental delays in preschool-aged children (Barr et al. 2020). This brief incorporates information from pertinent foreign research studies and the biggest and most thorough birth cohort study in Singapore.

### **Implications for Brain Development and Functions**

According to GUSTO findings, a baby's exposure to television during the first year of life has a negative correlation with their later linguistic and cognitive development at the age of 4.5. Even after taking into consideration the conditions surrounding the foetus, kid, and family, this relationship remained true. Furthermore, screen exposure between the ages of 1 and 1.5 years was linked to a number of social skills deficiencies that are often seen in kids on the autistic spectrum<sup>15</sup>. Exposure to screens during the first two years of life was associated with significant deficiencies in executive functioning by the time the kid reached the age of 8.5 (McDaniel et al. 2023). A group of brain activities known as executive functions provide humans the ability to concentrate, recall information, and multitask effectively. Health and human capital are significantly influenced by executive functions. It seems sense that researchers are worried about how exposure to digital media affects multiple talents differently. Numerous rational biological reasons exist. Studies on the neurodevelopment of newborns have shown that when they watch two-dimensional displays, they need much more focus and processing time. For the developing brain, every change in the two-dimensional screen dynamics (such as camera angles, lighting, and music) provides a fresh stimulation (Przybylski, 2019). Infants' attention spans are limited when they are exposed to new stimuli on screens repeatedly. Additionally, the fanciful nature of a TV show's fast-paced stimulation is linked to eventual attentional control problems.

### **Implications for Policy and Service Provision**

Excessive exposure to digital media at a young age is linked to decreased cognitive development, potentially hindering human growth and potential. This research shows that excessive screen use in children under the age of 3 may negatively impact their attention span, cognitive abilities, and social-emotional development.

In our digital age, limiting children's screen time is a very important problem. As screens become increasingly commonplace, parents need to be aware of the possible dangers of excessive screen time and take precautions to ensure their kids' safety. Parents may encourage their children's creativity, social skills, and general development while leading healthier, more active lifestyles by imposing reasonable screen time limitations. It's important to strike a balance that encourages good and informative material while also making time for physical activity, social contacts, and other enriching experiences (Li et al. 2020). This doesn't mean that screen time should be eliminated. Parents may provide a loving atmosphere that promotes their child's development and happiness by being aware of the effects that screen time has on kids' growth and taking proactive measures to restrict it.

The laws include a long number of detailed guidelines for restricting the amount of time that youth spend in front of screens as well as the types of information that they are exposed to. The regulations mention "smart mobile devices" expressly and do not specify whether laptop and desktop computers would be subject to the same limitations. Depending on the age of the kid, the regulations operate on a sliding scale. Children under the age of eight, for example, are only

allowed to use their gadgets for a maximum of 40 minutes per day. For those between the ages of eight and sixteen, this increases to one hour, and for those between the ages of sixteen and eighteen, it becomes two hours each day. However, device use between 10 p.m. at night and 6 a.m. the next day will be banned for all age groups.

Users' access to certain types of material must also be restricted. Companies are encouraged under the standards to provide instructional material to younger audiences. Entertainment and news material that "promotes socialist core values and advanced socialist culture, revolutionary culture, and excellent traditional Chinese culture" is permitted for older children to view. Anything that is thought to endanger children's physical or mental health should not be allowed (Guerrero et al. 2021). Tech firms will have to put the controls into place, which will require them to include "children's mode" features into their applications and gadgets. Along with data on their kids' gadget activity, parents will have to deploy this "children's mode" at their own choice.

At the core of internet companies' business models is one piece of the draft that is sure to infuriate them: Recommendation algorithms will no longer be allowed to endorse material that may lead to youngsters developing an online addiction (Eyimaya and Irmak, 2021). Additionally, it will be forbidden to promote non-educational advertising on educational websites. A major part of how many internet businesses monetise their products is via recommendation algorithms and targeted advertising, which aim to sell users items by monopolising their attention for as long as possible. Any effort to deactivate these features might have a significant negative effect on these businesses' capacity to function.

## **Discussion**

Young children are always exposed to media on screens in Kenyan Society environment. Exposure to screens might have benefits and drawbacks for children under five years old. The study's research results highlight a number of important elements pertaining to young children's use of screen-based media (Nagata et al. 2020). Children five years old and younger have been using screen-based media more often in recent years, especially after the COVID-19 pandemic limitations. Additionally, children under the age of two have a video deficiency effect, which hinders their ability to establish connections between screen content and real-life experiences. To get new information via screens, children need appropriate instruction from their carers. Furthermore, the excessive use of screens, viewing unsuitable and rapidly-paced material, unsupervised exposure to screens, and lack of parental engagement may significantly hinder a child's attention skills development, learning abilities, language acquisition, and parent-child relationships (Neophytou et al. 2021). Ultimately, the detrimental impacts of screen time may be mitigated by exposing children to meticulously curated information that aligns with their age as well as cognitive capacities. Programmes that actively engage youngsters, use visual and auditory clues, and are uninterrupted by advertisements may enhance learning and have a positive impact on working memory and attention abilities.



Most research examining the effects of screen-based media consumption on the development of young children in Kenya has relied on correlational, cross-sectional, or parent-reported data. There have been a limited number of longitudinal studies undertaken. There has been significant attention given to the utilization of outdated screen media, such as television, including incidental exposure in the background. However, there has been a growing number of studies that have been published lately, which evaluate more modern types of screen media. However, the existing literature on the subject has some limitations (Chen and Adler, 2019). Use of parent-reported, mostly from mothers, screen time data. may be susceptible to parents providing socially desired responses, potentially leading to a biased perception of the real amount of time young children spend engaged with screen-based media. Moreover, Guerrero et al. (2019) evaluated identical cognitive abilities using distinct methodologies. Although the methodologies used in this research remain reliable, they focus on distinct facets of cognitive ability. Assessments of children's everyday executive functions show how they typically work, while performance-based measurements are similar to assessing how well children function in ideal circumstances. Therefore, it is recommended for future studies to consider the methods used to evaluate various cognitive abilities when comparing results to earlier studies (Fang et al. 2019).

The adverse impacts of screen exposure may become insignificant when demographic considerations are considered (Twenge et al. 2019). Hence, next research should not just examine the media format and duration of children's screen engagement, but should also include and analyse demographic associations, cultural standards, family interactions, and psychological vulnerabilities. An intriguing methodology would include investigating the potential benefits of screen-based gadgets, programmes, and applications for children from certain backgrounds, serving as supplementary tools for children who are at risk of experiencing developmental delays (Nathan et al. 2021). The emphasis should be placed on emerging forms of screen-based media, such as smartphones and tablets, given their increasing popularity.

Ultimately, the research only examined the impacts of screen-based media on a specific developmental domain, such as cognitive abilities, without discussing how these effects may affect other domains, such as socioemotional development. While cognitive development, as well as socioemotional development, are often seen as distinct systems in a child's growth, they are interconnected in reciprocal ways inside the brain. Studies have shown significant correlations between brain function, top-down and bottom-up cognitive processes, and the emotional maturation of children. Cognitive development facilitates the acquisition of socioemotional abilities in early children, enabling them to identify emotions, enhance their empathy, and exhibit acceptable behaviour (Fitzpatrick et al. 2023). For instance, the progress of executive functions and attentional abilities is not only pertinent to the process of decision-making and planning, but it also facilitates the advancement of mood and behaviour management. For instance, initial exposure and prior experience might not only result in diminished attentional abilities and impaired executive functions but can also have adverse effects on socioemotional development and manifest as behavioral issues. Future research must

include the notion of socioemotional and cognitive processes when evaluating the effects of screen-based media on young children.

Compelling data indicates that parents' efforts to increase awareness and take direct measures may substantially reduce the amount of time children spend using screens. Early and persistent excessive screen use seems to persist over time and often coincides with other detrimental lifestyle patterns, such as an unhealthy diet and insufficient sleep (Lanca and Saw, 2020). The duration of television viewing and other screen-based activities among teenagers only decreased when the intervention had distinct components or undertakings targeted at its reduction. Potential augmentations to interventions encompass the utilization of an electronic surveillance apparatus to curtail screen time, and the contingent utilization of screens in conjunction with physical activity, or education. Maternity hospitals should include information on screen exposure for infants and children in the birth kits provided to mothers. Health visitors are to provide guidance to new parents and possess knowledge of medical research. Schools must adopt a clear position about the extent of screen use by students, both inside and outside the classroom, and effectively communicate this stance to both students and parents.

### **Role of Parents in Managing Screen Time**

While gadgets might keep a toddler busy while parents prepare supper or do other tasks, it is preferable to offer young toddlers a book or a toy. Reading and playing games are examples of offline activities that assist kids in learning new abilities and reducing their reliance on electronics for amusement (Stiglic and Viner, 2019). Above all, parents need to set limits on their own screen usage and make time for their kids. According to an American news article from May 2019 on ABC News, "Screen Time, Diane Sawyer Reporting," individuals' glance at their mobile devices for 49 days out of the year and unlock their phones 80 times a day on average.

Younger and older kids may feel neglected, aloof, and annoyed when they see their parents using their phones a lot. Since children are more likely to follow their example than follow instructions, parents should set a good example by doing what they teach. Parents with hectic work schedules often have to take calls or check their emails during supper. If there is a regulation against using a phone while dining, parents should be subject to it as well (Sultana et al. 2021). Everyone gains from more engagement in this manner, and kids get to experience life in the real world instead being glued to their screens.

Rather than merely providing kids mobile devices, parents should strive to plan extra activities, arts and crafts, and time for coloring and drawing on actual paper. Similarly, parents who encourage their kids to play sports and spend time together are also doing a great job. In addition to playing board games, parents may read tales to their kids, draw comic strips, go on field excursions, and more. They are also capable of planning "Weekends without Wi-Fi." This doesn't have to take place for the whole day; simply a few hours will allow everyone to spend time together that is meaningful (Sultana et al. 2021). It may be planned ahead of time so kids

are aware of when to complete their schoolwork (Nagata et al., 2022). Spending more time together, especially on weekends and holidays, allows families to be creative and acquire new skills.

It is advised by ChildSafeNet that kids use an alarm clock rather than their phones' alarm features and that their bedrooms be screen-free zones. Setting clear and uniform guidelines for children's gadget usage, including where they may use them and how long they can use them for, can also be beneficial. A complete ban on the Internet is not advised. It may be helpful, and kids often need it for homework. Additionally, technology may provide enjoyable family activities. Children will enjoy watching a movie with you or getting into a competitive video game.

It is evident that living in the Digital Age offers several advantages. However, it's equally important to keep in mind that kids should enjoy life outside of screens and that screen time may be beneficial (Fang et al. 2019). Furthermore, parents play a critical role in helping their kids form positive internet habits at a young age.

## **Conclusion**

Excessive screen time may have a beneficial or bad effect on Kenyan children's development. Screen time may enhance cognitive development during learning and education. Nonetheless, studies have shown that excessive screen time and media multitasking may be detrimental to academic achievement, sensorimotor development, and executive functioning. Early screen use has been linked to worse academic achievement and cognitive decline in later life. Screen time may be efficiently managed and minimized by parents via setting limits, enforcing behaviour management, and raising awareness. Parents can also set an example by reducing the amount of time they spend on screens. Generally speaking, it's important that caregivers, educators, and health care providers acknowledge the potential risks associated with excessive screen time and implement measures to promote children's healthy development, such switching to activities that enhance social-emotional, cognitive, and linguistic abilities.

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