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THE USE OF DIGITAL SCREENS IN EARLY CHILDHOOD AND THE RELATIONSHIP WITH COMMUNICATION AND INTERACTION: LITERATURE REVIEW

O USO DE TELAS DIGITAIS NA PRIMEIRA INFÂNCIA E A RELAÇÃO COM A COMUNICAÇÃO E INTERAÇÃO: REVISÃO DE LITERATURA

EL USO DE PANTALLAS DIGITALES EN LA PRIMERA INFANCIA Y SU RELACIÓN CON LA COMUNICACIÓN Y LA INTERACCIÓN: REVISIÓN DE LA LITERATURA

Tâmara Araújo Rocha NUNES [1]
tamaraaraujo144@gmail.com
Gabriela Sousa de Melo MIETTO [2]
gabrielamieto@unb.br
Valéria Marques de OLIVEIRA [3]
valeriamarques@ufrrj.br

[1] University of Brasília (UnB), Brasília – Federal District (DF) – Brazil. Occupational Therapist. Master's student in School Development Psychology.

[2] University of Brasília (UnB), Brasília – Federal District (DF) – Brazil. Psychologist, Associate Professor in the Department of Clinical Psychology/ Institute of Psychology.

[3] Federal Rural University of Rio de Janeiro (UFRRJ), Seropédica – Rio de Janeiro (RJ) – Brazil. Psychologist, Professor in the Graduate Program in Psychology at the Institute of Education.

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ABSTRACT: Family interaction and communication between parents and children are fundamental aspects of child development. The use of digital screens has become common and present in the daily activities of both parents and children. This study presents a literature review on the association between screen time and its impacts on social interaction and language development in children. Articles were selected from the databases of the CAPES–MEC Journal Portal and the Virtual Health Library (BVS), covering the period from 2012 to 2021. The sample consisted of 10 articles. The literature highlights the negative impacts on language development, reduced social interaction, and the passive use of screens. It is necessary for caregivers to moderate screen time to minimize excessive exposure. There is also a reinforced need for further studies involving children born during the pandemic period, who may have been affected by the consequences of social isolation.

KEYWORDS: Screen Time. Social Interaction. Language Development Disorders. Child Development.

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***RESUMO*:** *A interação familiar e a comunicação entre pais e crianças são aspectos fundamentais para o desenvolvimento infantil. O uso de telas digitais tornou-se comum e presente nas atividades cotidianas dos pais e das crianças. Este estudo apresenta uma revisão de literatura sobre a associação entre o tempo de tela e os impactos na interação social e na linguagem no desenvolvimento infantil. Os artigos foram selecionados nas bases de dados do Portal de Periódicos da CAPES – MEC e da Biblioteca Virtual em Saúde (BVS), entre 2012 e 2021. A amostra foi composta por 10 artigos. A literatura retrata impactos negativos no desenvolvimento da linguagem, interação social reduzida e uso das telas de forma passiva. É necessária a moderação dos responsáveis para minimizar o excesso de tempo em tela. Reforça-se a necessidade de mais estudos englobando crianças nascidas no período pandêmico, que podem ter sido afetadas pelas consequências do isolamento social.*

***PALAVRAS-CHAVE*:** *Tempo de tela. Interação social. Transtornos do Desenvolvimento da Linguagem. Desenvolvimento infantil.*

RESUMEN: *La interacción familiar y la comunicación entre padres e hijos son aspectos fundamentales para el desarrollo infantil. El uso de pantallas digitales se ha vuelto común y presente en las actividades cotidianas tanto de los padres como de los niños. Este estudio presenta una revisión de la literatura sobre la asociación entre el tiempo frente a la pantalla y sus impactos en la interacción social y el desarrollo del lenguaje en los niños. Los artículos fueron seleccionados de las bases de datos del Portal de Periódicos de CAPES – MEC y de la Biblioteca Virtual en Salud (BVS), cubriendo el período de 2012 a 2021. La muestra constó de 10 artículos. La literatura destaca los impactos negativos en el desarrollo del lenguaje, la reducción de la interacción social y el uso pasivo de las pantallas. Es necesario que los cuidadores moderen el tiempo frente a la pantalla para minimizar la exposición excesiva. También se refuerza la necesidad de realizar más estudios que incluyan a niños nacidos durante el período de la pandemia, quienes pueden haber sido afectados por las consecuencias del aislamiento social.*

PALABRAS CLAVE: *Tiempo frente a la pantalla. Interacción social. Trastornos del desarrollo del lenguaje. Desarrollo infantil.*

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INTRODUCTION

The importance of social interaction for child development is widely recognized, and in contemporary childhood, it is impossible to ignore the implications of children's use of screens and the mediation of adults in their use for child development (Nunes et al., 2024). Interaction requires bidirectional and reciprocal actions, which can be expressed through relationships between the mother, father, and/or caregiver and the child. The interaction process between parents and children is also linked to favorable economic conditions and overstimulation through the use of technology and digital screens, such as cell phones, tablets, and televisions (Piccinini et al., 2001; Assemany, 2016).

Early exposure to digital screens is justified by the perception that these resources assist in various functions, ranging from occupying children's time while parents attend to other tasks, to avoiding potentially stressful situations caused by family members, or even serving as learning mediators. It is emphasized that child development is grounded in interaction with family, other children, and environmental exploration, fostering spontaneous curiosity through play. Excessive exposure to digital stimuli can result in cognitive impairments, concentration difficulties, and disruptions in occupational domains such as sleep and nutrition (Assemany, 2016).

As screen use in childhood becomes increasingly prevalent, the Brazilian Society of Pediatrics recommends that children under 2 years of age should have no screen exposure, even as a passive distraction. Between ages 2 and 5, screen time should be limited to one hour per day. Family interaction is the primary source of tactile sensory stimulation through touch and physical closeness, factors that support socioemotional development and are not provided by digital screens (Sociedade Brasileira de Pediatria, 2019). Regarding speech and language development, digital screen use may contribute to delays and the late acquisition of communication skills.

Despite pediatric guidelines on the harms of screens, cell phones have become commonplace in daily life and are present in the routines of both parents and children, including school and early education contexts. During the COVID-19 pandemic, the need for social isolation also contributed to increased access to technology for children, a concern similarly noted by early childhood educators (Monteiro & Pereira, 2020). Five years after the pandemic, we are witnessing a social movement, both nationally and internationally, aiming to establish limits on children's screen use, sometimes through legislation. In Brazil, in February 2025, Law No. 15,100/2025 was enacted, prohibiting students in basic education from using cell phones at school, while the Federal Government published a guide on the use of digital devices to provide scientifically based guidance for children, adolescents, and families regarding the risks, benefits, and precautions associated with screen use (Brazil, 2025).

It is known that biopsychosocial factors contribute to children's neuropsychomotor development, and the greater the access to various supportive services, the more evident the potential of these factors becomes (Lima et al., 2016). Skills for play, motor development, and language and communication development, especially in early childhood (0–6 years), require monitoring to detect developmental delays, including potential psychological suffering (Eickmann et al., 2016). Considering the development of oral communication in neurotypical children, for instance, interaction with peers in environments such as schools is a key factor in enhancing language, communication, and social interaction, which was affected by the necessity of social isolation (Sociedade Brasileira de Pediatria, 2020).

Within this vast territory regarding screen use in childhood, this study presents a literature review on the association between screen time and its impacts on social interaction and language in child development.

METHODOLOGY

This study consists of a literature review on the relationship between children's screen time and its association with language development and social interaction. Articles were selected from databases indexed in the CAPES Periodicals Portal (MEC), focusing on the following databases: "DOAJ Directory of Open Access Journals – Not for CDI Discovery," "SciELO Brazil," "Latindex," "ROAD: Directory of Open Access Scholarly Resources," and "Medline Complete." Additionally, the research was conducted in the Virtual Health Library (BVS), considering articles from the databases "MEDLINE," "LILACS," and "Index Psicología – Periódicos."

The selection of materials followed criteria regarding the year of publication, limited to 2012–2021, and publications in English, Spanish, and Portuguese, aiming to better understand this phenomenon in the pre-pandemic period. It was assumed that the last two years of this period still included articles submitted before the pandemic. Boolean operators "AND" and "OR" were combined with descriptors, with greater emphasis placed on the topic of screen time. Data collection occurred between March and June 2022, using the Health Sciences Descriptors (DeCS) "screen time," "social interaction," "language development disorders," "child development," and "child."

The selection process initially considered titles and abstracts relevant to the topic. When abstracts did not clarify the study's content, the full text was read to understand the study's focus. Texts that did not address screen time or did not meet the inclusion criteria were excluded from the analysis, along with duplicates. Another inclusion criterion was the availability of the full text in open access. Selected articles were read in full and organized to compose

the results of the search. After analysis, articles addressing the study's theme were selected for presentation in the results and discussion sections.

RESULTS

A total of 69 results were found in the CAPES Periodicals Portal when combining the descriptors: "screen time," "social interaction," "language development disorders," "child development," and "child." In the BVS, 563 publications were identified, totaling 632 publications across both digital scientific repositories. After the refinement described in the methodology, the sample was narrowed to 4 articles from the CAPES Periodicals Portal and 11 from BVS, totaling 15 articles.

Following the definition of criteria and selection of texts, all 15 complete publications were read in full. Ten articles that met the study's objectives were organized for clearer visualization in Table 1, with the following topics: Title, Authors, Language, Location/Year, Study Type, and Database.

Table 1 – Outlined articles

	Title	Author	Language	Location / Year	Type	Database
1.	*Fatores determinantes no tempo de tela de crianças na primeira infância*	Nobre J. N. P., Santos J. N., Santos L. R., Guedes S. C., Pereira L., Costa J., et al.	Portuguese	Brazil, 2021	Cross-sectional study	DOAJ Directory of Open Access Journals - Not for CDI Discovery, SciELO Brazil, Latindex, ROAD: Directory of Open Access Scholarly Resources, Medline Complete
2.	*Contar o tempo ou fazer com que o tempo conte? A perspectiva dos pais portugueses sobre tempo de tela*	Castro T. S., Ponte C.	Portuguese	Lisbon, Portugal, 2019	Qualitative mixed methods study	DOAJ Directory of Open Access Journals - Not for CDI Discovery
3.	*Tempo de tela e estado nutricional de escolares da cidade de Suzano-SP*	França E. F., Junior J. P. S., Serra F. T., Martinez J. A. R., Souza C. L., Silva R. T., Miyake G. M., et al.	Portuguese	São Paulo, Brazil, 2019	Cross-sectional study	DOAJ Directory of Open Access Journals - Not for CDI Discovery

4.	Screen Use and Mental Health Symptoms in Canadian Children and Youth During the COVID-19 Pandemic	Li X., Vanderloo L. M., Keown-Stoneman C. D. G., Cost K. T., Charach A., Maguire J. L. M., et al.	English	Ontario, Canada, 2021	Longitudinal Study	MEDLINE
5.	Screen time and early childhood development in Ceará, Brazil: a population-based study	Rocha H. A. L., Correia L. L., Leite Á. J. M., Machado M. M. T., Lindsay A. C., Rocha S. G. M. O., et al.	Portuguese	Brazil, 2021	Cross-sectional Study	MEDLINE
6.	Evaluation of problematic screen exposure in pre-schoolers using a unique tool called "seven-in-seven screen exposure questionnaire": cross-sectional study	Yalçin S. S., Tezol O., Çaylan N., Nergiz M. E., Yildiz D., Çiçek Ş., et al.	English	Turkey, 2021	Cross-sectional Study	MEDLINE
7.	Prevalence of excessive screen time and its association with developmental delay in children aged <5 years: A population-based cross-sectional study in India	Varadarajan S., Govindarajan Venguidesvarane A., Ramaswamy K. N., Rajamohan M., Krupa M., Winfred Christadoss S. B.	English	India, 2021	Cross-sectional Study	MEDLINE
8.	Exposure to screens and children's language development in the EDEN mother–child cohort	Martinot P., Bernard J. Y., Peyre H., Agostini M., Forhan A., Charles M. A., et al.	English	France, 2021	Cohort Study	MEDLINE
9.	Screen media exposure in the first 2 years of life and preschool cognitive development: a longitudinal study.	Supanitayanon S., Trairatvorakul P., Chonchaiya W.	English	Thailand, 2020	Longitudinal Study	MEDLINE

10.	Mobile Media Device Use is Associated with Expressive Language Delay in 18-Month-Old Children.	Van den Heuvel M., Ma J., Borkhoff C. M., Koroshegyi C., Dai D. W. H., Parkin P. C., Maguire J. L., Birken C. S.; TARGet Kids! Collaboration.	English	Canada, 2019	Cross-sectional Study	MEDLINE

Source: authors' elaboration.

DISCUSSION

As a way of presenting the discussion, the focus was placed on screen time in relation to the themes that emerged from the results, such as its association with social interaction and its relationship with language development disorders, both connected to child development.

Screen time and its association with social interaction

The association between screen time and children aged 24 to 42 months was the focus of the cross-sectional study conducted by Nobre et al. (2021), considering this age range as a critical period for child development. The study's results indicated family difficulties in adhering to the recommendations of the Brazilian Society of Pediatrics, with children's daily screen exposure exceeding the recommended limits.

However, maternal concern regarding the child's social interaction and overall development was evident, with digital media resources being used to understand the stimuli necessary for the child (Nobre et al., 2021). This aspect was further highlighted as socially relevant in the study when considering maternal education level, corroborating recently published research (Alvarenga et al., 2020).

The presence of screens in family life is closely tied to the availability of these resources, which are provided by caregivers. Castro and Ponte (2019) discussed social isolation and excessive screen use, which may hinder the potential benefits for child development when screens are related to entertainment and education, emphasizing the importance of parent–child interaction, where such devices may support family engagement. França et al. (2019) highlighted this factor when mentioning the replacement of playful and socially interactive activities with technological means that do not promote adequate levels of physical activity.

The use of electronic games was another aspect identified by researchers, showing frequent use among school-aged children. Additionally, the rise in childhood obesity has been linked, among other factors, to the overuse of technological resources, reinforcing sedentary

habits in children (França et al., 2019). A study conducted in Turkey (Yalçin et al., 2021) with school-aged children addressed problematic screen use in the context of family interaction, highlighting a reduction in interactive activities at home, such as shared meals and reading books with parents, which contributes to sedentary habits and poor nutrition.

Regarding child development and mental health, the Canadian study by Li et al. (2021) reported high levels of depressive and anxious symptoms associated with excessive digital screen use combined with the COVID-19 pandemic period. The need for social isolation, remote educational practices, and other interactions through videos was not conducive to positive interactive experiences. For children with atypical development, such as neurological disorders including Autism Spectrum Disorder, social relationships often take unconventional forms, which may have been intensified during the pandemic due to increased screen time and reduced mediation by adults.

Screen Time and Its Relationship with Language Development Disorders

In addition to its association with social interaction, the study by Nobre et al. (2021) examined the relationship between television use and language delays in children, noting the importance of limits regarding exposure time and the use of interactive media in relation to passive stimuli. These observations align with the findings of Rocha et al. (2021), conducted in Brazil, which analyzed the association between screen time and early childhood development, showing reduced communication by children when screen time increased, as a consequence of limited interaction with adults.

Other researchers, such as Varadarajan et al. (2021), also highlight the significant relationship between digital screen use and the risk of language development delays. This issue is particularly problematic when these resources are available during meals or used as a distraction.

It is understood that child development is multifactorial and influenced by social and economic contexts. However, the impact on developmental milestones becomes evident when communicative and motor skills acquisition is linked to screen stimuli, emphasizing the need for moderation by caregivers and the inclusion of playful, interactive activities without the use of devices (Madigan et al., 2020).

The relationship between mothers and their own histories of speech and language development was examined in a cohort study conducted by Martinot et al. (2021) in France, which sought to evaluate cognitive stimulation in the home environment in relation to family resources and the execution of playful activities, such as storytelling. Sociodemographic factors were considered, especially regarding the devices used. Television was most frequently cited, often present during mealtimes. The study demonstrated that increased TV use during

meals negatively impacted language development, particularly for children under two years old, highlighting television's role as a distraction during daily routines.

Early exposure to screens, combined with extended periods of excessive screen time and limited verbal interaction between caregivers and children, correlates with delayed language development, particularly during the first two years of life. The impacts extend beyond communication, affecting fine motor skills and visual perception. These findings were reported in a longitudinal study conducted in Thailand by Supanitayanon et al. (2020), emphasizing the protective benefits of verbal interaction between children and caregivers, which positively influence cognitive development in childhood.

In addition to television, the use of mobile devices, such as cell phones, was noted in the research by Castro and Ponte (2019). The study indicated that a daily increase of approximately 30 minutes in media device use raises the risk of expressive speech delays in 18-month-old children. This finding underscores the presence of such devices in daily family life, often provided as a passive distraction. It further corroborates previous studies by highlighting the increased risk of speech delays due to reduced verbal interaction with caregivers.

CONCLUSION

One of the main findings of this review is the difficulty families face in adhering to pediatric recommendations regarding screen time in children's daily routines. At times, screens serve as allies in understanding child development, reinforcing the role of media resources in family life and even providing opportunities for social interaction.

Conversely, studies indicate a reduction in playful activities, screen use during meals, and an increase in sedentary habits. The impact of the COVID-19 pandemic and social isolation, along with interactive video use, was also considered, as it affected aspects of child and adolescent mental health.

Regarding language development, excessive and passive screen use was associated with negative outcomes for communication skills. Caregiver moderation is essential, including playful and interactive activities within the family and social context to promote verbal interaction and support the child's development.

Finally, there is a clear need for additional studies of this nature, particularly considering the effects of social isolation due to the COVID-19 pandemic and the developmental outcomes of children born during this period, who faced limitations in social interaction and peer engagement.

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