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SHORT COMMUNICATION

Effects of early screen use on child neurodevelopment in Argentina and Latin America

Efectos del uso temprano de pantallas en el neurodesarrollo infantil en Argentina y Latinoamérica

Sofía Veneziano[1], Patricia Salguero[1]

[1]Universidad Abierta Interamericana, Facultad de Medicina y Ciencias de la Salud, Carrera de Medicina. Buenos Aires, Argentina.

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Corresponding author: Sofía Veneziano

ABSTRACT

Currently, the constant presence of electronic devices has generated concern among health professionals and educators about their effects on children's neurocognitive development. This study addressed the relationship between early screen use and neurodevelopment in children in Argentina, with a comparative Latin American perspective. During the first years of life, the brain goes through a critical stage of development characterised by high plasticity and synaptic expansion, where sensory experiences and human interaction play a key role. In Argentina, research revealed that 80,3 % of children under the age of two watched television and 37,4 % used touch screens with help. Among 2-4 year olds, 38,7 % used screens without assistance. A relationship was also found between the mother's educational level and the time dedicated to stimulating activities such as reading. Excessive screen use was associated with language delays, attention and executive difficulties, sleep disturbances and an increase in sedentary behaviour and obesity. The Argentine Society of Paediatrics, like the WHO and the AAP, recommended avoiding screen exposure in children under two years of age. At the Latin American level, the high penetration of electronic devices and the lack of information contributed to excessive use, even in low-resource contexts. The study concluded that it is necessary to promote active parenting practices, implement information campaigns and develop public policies that protect the integral development of children.

Keywords: Neurodevelopment; Screens; Childhood; Health; Argentina.

RESUMEN

En la actualidad, la presencia constante de dispositivos electrónicos generó preocupación en profesionales de la salud y educadores por sus efectos en el desarrollo neurocognitivo infantil. Este estudio abordó la relación entre el uso temprano de pantallas y el neurodesarrollo de niños en Argentina, con una perspectiva comparativa latinoamericana. Durante los primeros años de vida, el cerebro atravesó una etapa crítica de desarrollo caracterizada por alta plasticidad y expansión sináptica, donde las experiencias sensoriales y la interacción humana jugaron un papel clave. En Argentina, investigaciones revelaron que el 80,3 % de los niños menores de dos años miraron televisión y el 37,4 % utilizó pantallas táctiles con ayuda. Entre los 2 y 4 años, el 38,7 % usó pantallas sin asistencia. Se evidenció además una relación entre el nivel educativo materno y el tiempo dedicado a actividades estimulantes como la lectura. El uso excesivo de pantallas se asoció con retrasos en el lenguaje, dificultades atencionales y ejecutivas, alteraciones en el sueño y aumento del sedentarismo y la obesidad. La Sociedad Argentina de Pediatría, al igual que la OMS y la AAP, recomendó evitar la exposición a pantallas en menores de dos años. A nivel latinoamericano, la alta penetración de dispositivos electrónicos y la falta de información contribuyeron a un uso excesivo, incluso en contextos de

bajos recursos. El estudio concluyó que es necesario fomentar prácticas de crianza activas, implementar campañas informativas y desarrollar políticas públicas que protejan el desarrollo integral de la infancia.

Palabras clave: Neurodesarrollo; Pantallas; Infancia; Salud; Argentina.

BACKGROUND

Electronic devices are omnipresent in today's digital age.[1] This reality has raised concerns among health professionals and educators about the impact that early exposure to screens may have on children's neurocognitive development, especially in those under the age of 2.[2,3] This article analyzes the relationship between screen use and child neurodevelopment in Argentina, comparing it with the Latin American context.

The first years of life are critical for brain development.[4] During this period, the brain undergoes rapid synaptic expansion and remarkable plasticity, making it particularly sensitive to experiences and environmental stimuli. Direct interaction with caregivers and active exploration of the environment is essential for developing cognitive, linguistic, motor, and socio-emotional skills.[5]

Several studies in Argentina have shown a growing exposure of children under 2 years of age to electronic devices.[6,7] A study conducted in an Argentine city revealed that before the age of 2, 80,3 % of children watched television, and 37,4 % used touch screens with assistance. Between the ages of 2 and 4, 38,7 % used screens without assistance. In addition, it was observed that mothers with tertiary education spent more time reading books with their children than those with lower educational levels.[8]

Early and prolonged exposure to screens has been associated with various adverse effects on child neurodevelopment:[9,10]

Language development: One-year-olds exposed to more than four hours of screen time daily showed delays in communication and problem-solving skills at ages 2 and 4.

Executive functions and attention: Research has shown that excessive screen use is linked to difficulties in maintaining attention and problems with executive functions, which are essential for learning and self-regulation.

Sleep and physical health: Screen use before bedtime can disrupt sleep patterns, and the associated sedentary lifestyle increases the risk of obesity in young children.

The Argentine Society of Pediatrics (SAP) recommends that children under 2 years of age not be exposed to screens, emphasizing that excessive use is associated with sleep disorders, sedentary lifestyles, obesity, and cognitive and social development problems. These guidelines align with the World Health Organization (WHO) and the American Academy of Pediatrics, which also advise against screen exposure in this age group.[11]

The situation is similar in Latin America. A study covering 19 countries in the region found that screen use among young children is high, exceeding the recommendations of pediatric associations. This excessive use has been linked to shorter attention spans, delayed language development, and diminished social skills.

The penetration of electronic devices in Latin American households is high, regardless of socioeconomic status. However, differences are observed in the type of devices and parental supervision. In some contexts, lack of access to information about the risks associated with early screen use and the absence of safe spaces for outdoor play may contribute to greater dependence on these devices for children's entertainment.[10]

Evidence suggests that early screen exposure in children under 2 years of age may have adverse effects on their neurodevelopment. Parents and caregivers must encourage activities that promote healthy development, such as active play, shared reading, and direct social interaction. Limiting the use of electronic devices and selecting appropriate content when their use is unavoidable are key measures to protect child development.[4]

In addition, it is essential that public policies in Argentina and throughout Latin America promote awareness campaigns on the risks of early screen use and encourage parenting practices that prioritize children's well-being and comprehensive development.

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CONFLICT OF INTEREST

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AUTHOR CONTRIBUTION

Conceptualization: Sofía Veneziano, Patricia Salguero.
Data curation: Sofía Veneziano, Patricia Salguero.
Formal analysis: Sofía Veneziano, Patricia Salguero.
Research: Sofía Veneziano, Patricia Salguero.
Methodology: Sofía Veneziano, Patricia Salguero.
Project management: Sofía Veneziano, Patricia Salguero.
Resources: Sofía Veneziano, Patricia Salguero.
Software: Sofía Veneziano, Patricia Salguero.
Supervision: Sofía Veneziano, Patricia Salguero.
Validation: Sofía Veneziano, Patricia Salguero.
Visualization: Sofía Veneziano, Patricia Salguero.
Writing – original draft: Sofía Veneziano, Patricia Salguero.
Writing – review and editing: Sofía Veneziano, Patricia Salguero.