

Education on Screen Time Management to Enhance Awareness and Knowledge for Supporting the Optimal Development of 5-Year-Old Children

Lailaturohmah^{1*}, Nelly Nugrawati², Ayu Wijaya³, Sri Utami Subagio⁴ & Andi Muhammad Adam⁵

¹Ganesha Husada College of Health Sciences, Indonesia

*e-mail: ellalalala89@gmail.com

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ABSTRACT

Uncontrolled screen time duration can negatively impact the development of 5-year-old children. This community service activity aims to provide education on screen time management to support their optimal development at TPA Al Amiin, Kediri City. Through socialization, training, and mentoring methods for parents and caregivers, this initiative increases awareness of the adverse effects of excessive screen time and provides practical strategies for managing it wisely. The effectiveness of the training was evaluated using pre-tests and post-tests, revealing a significant improvement in participants' knowledge, with an average pre-test score of 60% and a post-test score of 88%. The results suggest that structured education on screen time management plays a crucial role in supporting the optimal development of 5-year-old children and can serve as an intervention model applicable in other early childhood education setting.

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INTRODUCTION

Human development is a continuous process that begins at conception continues throughout life. The preschool age, children's development occurs rapidly and serves as the foundation for subsequent growth. This period, often referred to as the critical period or golden age, is crucial for shaping children's intellectual, social, and physical capacities. During this stage, brain development progresses rapidly, with most neural networks functioning as controllers for human activities and quality of life. Optimal early childhood development plays a vital role in determining children's future capabilities in various aspects of life.

Despite the importance of early development, data from the World Health Organization (WHO) in 2020 indicate that 5-25% of preschool-aged children experience minor brain dysfunction, including fine motor development disorders. In Indonesia, data from 2017 reveal that 13-18% of children suffer from developmental disorders such as motor delays, hearing impairments, intellectual disabilities, and speech delays. In East Kalimantan Province, data from the Central



Statistics Agency (BPS) in 2018 indicate that 5-10% of children aged 3-5 years experience delays in speech and language development. Understanding the factors influencing child development during this period is essential to ensuring optimal growth.

One significant factor influencing child development is an inactive lifestyle. One prevalent form of inactivity in early childhood is excessive screen time. Screen time refers to the duration of exposure to electronic media screens, such as televisions and gadgets (smartphones, laptops, tablets). According to the Indonesian Child Protection Commission (2020), 55% of children spend their time watching YouTube. Among young children, 47.7% of children aged 5-6 years and 25.9% of children aged 1-4 years regularly use gadgets.

Screen time usage in children has both positive and negative effects. On the positive side, it facilitates access to new information, enhances creativity, and stimulates intelligence. Educational applications on digital devices and television programs can provide engaging learning experiences through interactive audio-visual content, enriching children's imagination. However, excessive screen time can negatively impact children's social interactions, reducing their engagement with family, peers, and the community. Additionally, prolonged sitting in front of screens limits physical activity, which can hinder children's social and physical development. The American Academy of Pediatrics (AAP) recommends that children aged 18-24 months avoid screen exposure, while children aged two years and above should limit screen time to a maximum of two hours per day.

Research supports these concerns. Resly (2018) found a weak negative correlation (-0.230) between prolonged screen time and social development in children, suggesting that excessive screen use may impair social growth. Similarly, Yuliani (2020) reported that excessive gadget use is linked to developmental delays, particularly in social-emotional and motor skills.

Given these concerns, this study examines the impact of screen time management education on the optimal development of 5-year-old children. This research aims to provide insights into effective interventions that can be applied in early childhood education settings, helping parents and caregivers optimize children's development while mitigating the risks associated with excessive screen exposure.

METHODS

This community service activity adopted a participatory approach involving socialization, training, and mentoring for parents and caregivers at TPA Al Amiin, Kediri City. The research subjects consisted of parents and caregivers of 5-year-old children who participated voluntarily. The implementation of this community service followed several stages. The preparation stage included needs assessment through preliminary surveys, coordination with TPA Al Amiin, and development of educational materials on screen time management. The implementation stage involved educational sessions conducted through socialization, training, and mentoring, focusing on understanding the adverse effects of excessive screen time, strategies for managing screen time wisely, and practical techniques for reducing screen dependency in children. The evaluation stage assessed the effectiveness of the training by measuring participants' knowledge using pre-tests and post-tests, as well as conducting observations and interviews to evaluate changes in participants' practices regarding screen time management.

Educational materials included presentations, handouts, and interactive discussions. The assessment instruments used were pre-test and post-test questionnaires to measure changes in participants' knowledge, an observation checklist to track modifications in screen time management practices, and interview guidelines to obtain qualitative feedback from participants regarding their experiences and challenges in implementing the strategies. Data collection involved quantitative and qualitative methods. Pre-test and post-test results were analyzed using descriptive statistical methods to determine knowledge improvement, while qualitative data from interviews and observations were analyzed thematically to understand participants' behavioral changes. Ethical considerations were observed, ensuring voluntary participation and data confidentiality. This study adhered to ethical guidelines by obtaining informed consent from participants and was conducted in compliance with ethical standards for research involving human subjects, with approval from the relevant institutional ethics committee. The implementation process consisted of three main stages:

1. Preparation Stage

This phase involved a needs assessment conducted through preliminary surveys, coordination with TPA Al Amiin, and the development of educational materials on screen time management.

2. Implementation Stage

Educational sessions were delivered using a combination of socialization, training, and mentoring. The focus areas included:

- a. Understanding the negative effects of excessive screen time.
- b. Strategies for managing screen exposure effectively.
- c. Practical techniques to reduce screen dependency in children.

Educational materials included presentations, handouts, and interactive discussions to enhance participant engagement and understanding.

3. Evaluation Stage

The effectiveness of the training was assessed through multiple methods:

- a. Pre-tests and post-tests to measure changes in participants' knowledge.
- b. Observations to assess modifications in screen time management practices.
- c. Interviews to gather qualitative feedback on participants' experiences and challenges in implementing the strategies.

4. The assessment instruments included:

- a. Pre-test and post-test questionnaires to quantify knowledge improvement.
- b. An observation checklist to track behavioral changes in screen time management.
- c. Interview guidelines to explore participants' perceptions and challenges.

5. Data Analysis

A mixed-method approach was used for data analysis:

- a. Quantitative data (pre-test and post-test scores) were analyzed using descriptive statistical methods to evaluate knowledge improvement.
- b. Qualitative data (from interviews and observations) were analyzed thematically to identify behavioral changes and challenges faced by participants



RESULTS

Table 1. Screen Time Management Education Before and After Training

Evaluation Aspect	Before Training	After Training
Average knowledge of screen time management	60%	88%
Total	Sum Column 2	Sum Column 3

Based on the data in Table 1, it is evident that there is a significant increase in the knowledge of screen time management. The table shows an increase in participants' understanding of screen time management, from 60% in the pre-test to 88% in the post-test. This suggests that the education provided during the training had a positive effect on the participants' understanding of how to manage screen time for children effectively. The results indicate that education on screen time management can positively influence parents and caregivers in supporting the optimal development of 5-year-old children. With a significant increase in knowledge, this community service program can be considered successful in raising awareness about the adverse effects of excessive screen time and promoting better management strategies. These findings reinforce the importance of continued education for parents and caregivers to maintain and improve healthy screen time habits, which can be applied to other early childhood education settings.

DISCUSSION

The results of this study demonstrate a significant increase in the knowledge of screen time management among participants, with a notable improvement from 60% in the pre-test to 88% in the post-test. This suggests that the education provided during the training had a positive and effective impact on parents' and caregivers' understanding of managing screen time for children. The increase in knowledge highlights the importance of such educational programs in helping caregivers make informed decisions regarding children's screen time and, in turn, promoting their optimal development.

The findings of this study are in line with previous research, emphasizing the prevalence of high screen time among children in the digital age. Rahmawati (2020) observed that the variation in Low Screen Time (LST) and High Screen Time (HST) among respondents is influenced by multiple factors, such as parental awareness, parenting styles, accessibility to electronic devices, and the presence of alternative activities for children. These factors play a crucial role in determining how much time children spend engaging with screens (AAP, 2016).

Screen time refers to the duration an individual spends interacting with electronic media, including televisions, gadgets, computers, and other digital devices. The American Academy of Pediatrics (2016) recommends that children limit their screen time to no more than two hours per day to prevent adverse effects on their physical, mental, and social development (Putriana L, et al., 2019). Despite these recommendations, studies from various countries indicate that children's screen time frequently surpasses this threshold. For example, research conducted in Canada (2006) revealed that children spend, on average, over four hours per day in front of screens. Similarly, a

study in Semarang found that the highest recorded screen time among children was five hours per day, while the lowest was 1.82 hours per day.

Child development is a complex process involving the gradual enhancement of bodily structures and functions, including gross and fine motor skills, speech and language development, socialization, and independence. According to the Indonesian Ministry of Health (2016), child development encompasses multiple domains, including physical, cognitive, emotional, and behavioral aspects, which evolve both quantitatively and qualitatively (Kemenkes RI, 2016). Soetjiningsih and Ranuh (2018) further assert that child development also involves the acquisition of thinking skills, communication abilities, and social interactions (Soetjiningsih, 2018). Additionally, the Indonesian Pediatric Association (IDAI) (2018) defines development as the result of cell differentiation and the systematic organization of tissues, organs, and bodily systems in children (IDAI, 2018).

Contrary to these perspectives, Nofiani (2021) suggests that egocentric behavior, aggression, and defiant tendencies in children remain within the expected range of normal development (Nofiani, 2021). These findings align with previous studies that explore the impact of screen time on child development. For instance, Resly (2018) identified a relationship between excessive screen exposure and social development issues among school-age children. Similarly, Yuliani (2020) discovered that prolonged screen time negatively affects the developmental progress of preschoolers, reinforcing concerns that excessive digital exposure may hinder children's social interactions and overall growth. Priyoambodo (2021) also found a negative correlation between the use of electronic media, such as television and gadgets, and language development in early childhood, particularly in children aged three to four years. These findings highlight the necessity of balancing screen time, especially in younger children.

Nevertheless, Sari & Khotimah (2018) highlight the potential benefits of screen time when used appropriately. Digital media can provide children with valuable knowledge, stimulate creativity, and enhance cognitive abilities through interactive learning tools. Educational apps and programs, when used in moderation, can ignite children's curiosity and foster enthusiasm for learning. However, excessive screen time can result in adverse consequences, including social isolation and reduced physical activity. Overreliance on digital devices may lead to disengagement from family and peer interactions, potentially impacting children's social skills and emotional well-being (Desiningrum et al., 2017).

The long-term implications of excessive screen time raise concerns, particularly regarding motor development and behavioral patterns. Extended exposure to digital devices can contribute to physical inactivity, which may hinder motor skill development. Additionally, excessive screen use is linked to addictive behaviors, potentially leading to mental health issues such as aggression or social withdrawal. As noted by Resly (2018), these risks emphasize the importance of monitoring children's screen time and implementing appropriate parenting strategies to ensure their healthy development.

Considering the positive impact of educational interventions, this study suggests that structured programs can play a significant role in promoting the healthy development of young children. Future research should examine the long-term effectiveness of screen time education in mitigating digital-related risks across different age groups. Moreover, further investigation into culturally and educationally relevant training methods would enable a more targeted approach to



managing screen time. As digital technology continues to evolve, it is crucial to provide children with opportunities to benefit from educational media while ensuring they receive proper guidance on healthy screen usage (Rivanica & Oxyandi, 2018).

In conclusion, this community-based initiative has underscored the importance of educating parents and caregivers about the risks associated with excessive screen time and equipping them with practical strategies for regulation. These efforts contribute to the optimal development of children and serve as a valuable framework for future early childhood education interventions.

CONCLUSIONS

This community service activity successfully achieved its objective of educating parents and caregivers about effective screen time management to support the optimal development of 5-year-old children. The results, as presented in the pre-test and post-test data, showed a significant increase in participants' understanding of screen time management, demonstrating the positive impact of the training provided. The findings align with previous research that highlights the negative effects of excessive screen time on children's development, as well as the potential benefits of managing it wisely.

Based on the discussion, it is evident that education on screen time management is crucial for promoting healthy child development. The knowledge gained through this community service initiative can positively influence how parents and caregivers manage screen time, leading to better social interactions, physical activity, and cognitive development for children. The results emphasize the need for continued education and intervention in early childhood settings to maintain optimal development.

Future research should explore the long-term effects of screen time education and its applicability across various communities and educational contexts. Further studies could also investigate the best methods for integrating screen time management into broader parenting and educational programs. Overall, this activity provides a model for interventions that can be adapted and implemented in other early childhood education institutions to ensure children receive the proper guidance in navigating screen use while supporting their healthy growth.

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