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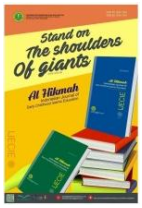

Intensity of Gadget Use and Its Impact on Early Childhood Psychosocial Development: A Study in Rurat Communities in Indonesia

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ABSTRACT

Technological transformation offers various conveniences when utilized appropriately and wisely. In fact, the portrait of gadget use is often misused, especially by children. This certainly impacts their development. The purpose of this study was to examine the impact of gadget use on the psychological development of early childhood. A qualitative approach was used, using interviews with 11 parents of children aged 10 to 5 years. The collected data was then analyzed using thematic analysis. The research findings indicate that gadget use in children begins at a very early age, with an intensity of 30 minutes to 6 hours per day. Although there are positive impacts such as improved verbal skills, introduction of basic concepts, and broadening of insight through educational content, negative impacts are found to be more dominant. Gadget use is seen to significantly impact various aspects of children's psychology. These negative impacts include tantrums, dependency, emotional dysregulation, decreased social skills, and imitation of inappropriate viewing behavior. This uncontrolled intensity of use has the potential to disrupt children's physical, cognitive, emotional, and social development in the long term. Thus, the urgency of this research emphasizes the need for close parental guidance and supervision when children operate gadgets, in order to optimize children's development according to their phase and needs.

INTRODUCTION

Infancy to childhood is a dynamic growth and development as well as a golden age for children to improve all psychological aspects. During periodization, the child shows a rapid improvement in development. Especially in the current era, where almost every activity requires the use of technology. (AN, 2025). In addition, technological advances have changed various aspects of human life and given rise to various new forms of behavior in daily life. In particular, many parents give *mobile phones* even though they are not in accordance with the recommended age for using gadgets.(Saputri, 2024). The sophistication of *smartphones* today provides a variety of features and applications that allow users to access the internet, play games, watch videos, use social media, and carry out learning and communication activities digitally.(Pratidina et al., 2024) Excessive use of social media, videos, games, and

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digital content can reduce direct social interaction, inhibit the development of emotion regulation, and affect children's ability to concentrate.(Ramadhani et al., 2025)

A study of 350 parents in Philadelphia, United States, reported that children under the age of 4 already had smartphones without full parental monitoring. If the use of digital devices is carried out without adequate controls and rules, these conditions have the potential to hinder the stages of children's growth and development, such as low social activities, decreased communication skills, and the emergence of uncontrolled use of digital devices. Therefore, technological development is closely related to the process of child growth and development, especially in the psychological and social-emotional aspects that are the focus of this research(Kabali et al., 2015)

Research by *Early Childhood Research Quarterly* explains that the use of smartphones and tablets in early childhood is known to be related to the emergence of sleep problems, decreased psychosocial development, and inhibition of children's cognitive abilities.(*R. Mallawaarachchi,* et al. n.d.2022) Another study from *the Indonesian Journal of Nursing and Health Sciences* found that excessive use of gadgets has a negative influence on early childhood emotional development, especially on children's ability to regulate emotions and social interaction (Siti, Anggun et al., 2025). In addition, *Acta Psychologica's research* states that exposure to digital media in children aged 0–36 months can affect emotional regulation, social interaction, language development, and adaptive behavior in children.(Ayu & Latifah, 2025) Research published in *the Journal of Childhood Education* shows the impact of gadget use on the social-emotional development of children aged 3–6 years, especially because children access digital videos and games more than direct social interactions.(Setiani, 2020) Dependence on gadgets can have a negative influence on children's brain development. This condition is triggered by an excessive production of the hormone dopamine so that it inhibits the maturation of the function of the prefrontal cortex, which is an area of the brain that has a role in controlling emotions, self-regulation, responsibility formation, decision-making, and the development of moral values. As a follow-up impact, children have the potential to have difficulty concentrating until hyperactive behavior appears.(Ika & Ningtyas, 2024)

There are various basic factors for parents to consider introducing digital devices to their children, including 25% Some parents get their children used to using gadgets before bedtime, 33% of parents who allow children aged 3–4 years to operate gadgets for more than an hour, and 42% of parents with 1-year-old children to operate gadgets to play games, watch videos, to operate applications. In addition, 70% of parents give gadgets when they are finishing a household chore and 65% of some parents give gadgets so that their children are calm and controlled when in public spaces. This fact shows that the use of gadgets has been inherent in early childhood parenting patterns and is often used as a means of distraction as well as a calming tool for children (Mallawaarachchi, et al. 2022).

In addition, *the International Journal of Human–Computer Interaction* states that interactive features on social media, such as chat, video, games, and digital content, have an impact on children's social, emotional, and behavioral development, including increasing the risk of digital addiction and psychological disorders (Nihaya et al., n.d.) Another study explained that the level of intensity of gadget use has an influence on the development of children's social and emotional aspects in the age range of 4-6 years because children interact more with digital devices than the surrounding social environment.(Ilma et al., 2021)

Based on the phenomenon that occurs in the field, not a few parents use gadgets as a practical solution to keep their children calm. Study by (Juliansyah, 2020). Highlighting that the high duration of *screen time* has a significant correlation with the risk of *speech delay* and low emotional regulation ability in children. In line with this, research found that excessive exposure to gadgets contributes to sleep pattern disruption and decreased social interaction, especially in preschool-age children.(Keysa & Windi, 2026) A review study confirms that the use of screen *time* to regulate the emotions of fussy children actually inhibits the maturation of brain executive functions, triggers long-term emotion regulation, and increases the risk of anxiety in preschool. Supported by research (Thufailah et al., 2024) There is still a research *gap* regarding how psychological dynamics and parenting experiences occur when gadgets are introduced from the age of 10 months to 5 years as a sedative (*digital pacifier*). Then, *novelty*) from this observation is an in-depth qualitative exploration of the motives of parents to make gadgets as *digital pacifiers*, as well as its psychological manifestations in toddlers in the socio-cultural context of people in sub-urban areas (Rural).

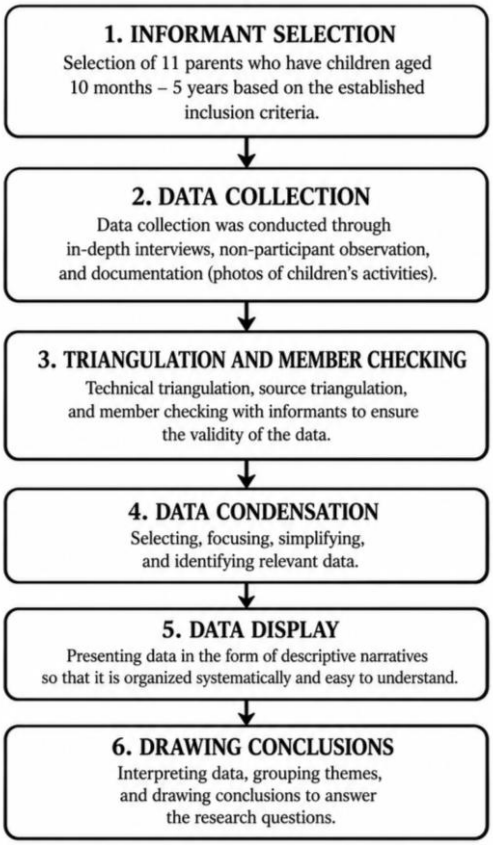
The gap between phenomena and literature is very relevant to cases that occur in rural areas. In this study area, it is known that parents have introduced and provided access to gadgets to children since the age of 12 months with the excuse of calming the child, limiting play activities outside the home, and helping children fall asleep. Departing from this phenomenon, this study was conducted to analyze in more depth the relationship between the intensity of gadget use and the development of early childhood behavior as well as to examine the reasons for parents in rural environments in giving gadgets to children.

METHODS

This research focuses on a qualitative approach through a non-participatory observational design with the aim of obtaining more in-depth information about the phenomenon of gadget users in children under five years of age. The research in rural areas involved the participation of 11 parents who had children aged 10 months to 5 years and actively provided or allowed children to use gadgets in daily activities. Information collection techniques in this study include directed interviews, observations without researcher participation, and documentation. The interview process was carried out using semi-structured interview guidelines designed according to the focus of the research, including the level of intensity of gadget use, the form of assistance provided by parents, and the psychological impact that appears on the child.

In order to ensure the credibility of the data, the researcher applied triangulation methods and triangulation of data sources. Furthermore, the data triangulation technique is carried out by harmonizing the data from interviews, observations, and documents, while

source triangulation is carried out by examining the suitability of information between informants. The researcher also conducts member checking, which is the process of re-checking the results of interviews with informants to ensure that the data obtained is in accordance with the experience and intentions conveyed by the participants. The data analysis in this study uses an interactive model developed by Miles, Huberman, and Saldana which includes three main stages, namely data condensation, data presentation, and conclusion drawing and verification. For the data condensation stage, the researcher carried out the process of sorting, concentrating, as well as rearranging the information obtained from the interview. After that, the data is compiled and presented through a narrative descriptive description so that the information is more systematic and easy to understand. For the latter, such as making conclusions and verification, it is carried out through the process of data interpretation by grouping various themes that arise so that a comprehensive understanding of the intensity of the impact of gadget use on psychological development is obtained (Hezkia Juanito et al., 2025)



RESULTS

This study was conducted to examine the intensity of the consequences or impact of the use *of mobile phones* or gadgets on the social and emotional development ability of early childhood. The results of interviews with 11 subjects of children aged 10 months to 5 years provide a fairly comprehensive picture of the dynamics of the influence of gadgets on emotional aspects, language, social behavior, and parenting patterns in the family. Based on the results of observation and data mining, it was found that the intensity of daily gadget use in these children varied, ranging from a very short category of 10 minutes, an average of 1-2 hours of use, to an extreme duration of 5-6 hours per day. During this duration, children access

various types of digital content such as YouTube videos, TikTok, animated cartoons, children's songs, to online games such as Roblox and educational games.

These findings are seen in Subjects 1, 2, 3, 7, and 8. This condition is in line with Developmental Psychology research which states that excessive screen exposure can inhibit self-regulation skills in early childhood. Research by Domoff also explains that intensive use of gadgets can increase the risk of problematic media use that has an impact on children's emotional regulation.(Muslihatun, 2025)

From the aspect of language and cognitive development, research found that children tend to imitate speech styles and expressions from digital content that is consumed repeatedly. In Subjects 7, 9, and 10, language imitation behavior from YouTube shows was found, while in Subject 5 there were indications of *speech delay*. Research by Twenge shows that the intensity of digital media use can reduce children's verbal interaction skills due to reduced direct communication with the social environment. (Siti, Anggun et al., 2026)

In the social aspect, high *screen time* makes some children show a tendency to ignore the surrounding environment, are less responsive to social interactions, and focus more on digital devices than on playing activities with peers. This is found in Subjects 3 and 11. The findings are in line with research by Radesky who explained that operating excessive gadgets can reduce the occurrence of children's social interactions with their mothers and fathers or the surrounding environment.(Keysya & Windi et al., 2024)

However, the study also found variations in impact on several subjects. Subject 4 and Subject 6 reported no significant emotional or behavioral disturbances. This is related to the more controlled pattern of gadget use. In Subject 4 who is 10 months old, the use of gadgets is limited to only about 10 minutes, while in Subject 6 the use of gadgets is carried out for one hour with parental assistance and focus on educational content.

Theoretically, this study strengthens the theory of child psychological development which states that environmental stimulation has a great influence on the development of emotions, language, and social behavior in early childhood. Excessive exposure *to gadgets* can replace direct social interaction that should be the main means of children's psychological development.(Nilapancuran et al., 2025) Practically, the results of this study provide benefits as a consideration for parents and educators, and the community and parents about limiting *screen time* according to children's age recommendations, providing assistance when children use gadgets, and choosing digital presentations that are able to provide knowledge according to developmental needs.

The limitation of this study is the number of research subjects, so the results obtained have not been able to describe the condition of the population at large. The qualitative approach through interviews and observations also causes the research results to be influenced by the subjectivity of informants and researchers. In addition, this study has not quantitatively measured the relationship between the duration of gadget use and children's psychological disorders, and has not examined in depth external aspects in the form of family parenting patterns, socio-economic background, and learning environment conditions.

Based on these limitations, the results of observations from the next study are recommended to include a larger number of samples with diverse socioeconomic backgrounds so that the results of the study are more representative. In addition, the use of mixed methods

can be considered to obtain more comprehensive data. The next study is also expected to examine the influence of the type of digital content, parental supervision patterns, and the quality of family interaction on the psychological development of children to school age.

DISCUSSION

The results of the study show that most parents have accustomed their children to using gadgets from a very early age, even when the child has not reached the age of one year. This phenomenon reinforces the view that gadgets have transformed into digital pacifiers or electronic sedatives for children. The main reasons given by parents, such as so that children are calm, not fussy in public places, or as a bedtime usher, show the existence of a permissive parenting pattern towards the use of digital technology.

This condition is also the same as Muppalla's findings which explain that the use of gadgets to regulate children's emotions is an instant strategy that risks hindering the development of emotional regulation in the long term.(Kamilla et al., 2025) The findings also support Radesky's research that the use of digital devices as a parenting tool can reduce the quality of parent-child interaction. Domoff's research added that excessive use of digital media in early childhood is related to problematic media use which is characterized by emotional dependence on gadgets.(Scott, Heri et al. 2026)

The appearance of tantrum behavior, anger that is difficult to control, and aggressive behavior such as slamming the door when the gadget is taken in Subjects 1, 3, 7, and 8 are clear indications of emotional dysregulation. Neurobiologically, the condition is related to excessive dopamine stimulation due to exposure to interactive content such as TikTok and Roblox which are addictive. This explanation is in line with Warsanto and Sulastri's research which states that prolonged exposure to gadgets can affect children's impulse control.(Nadya, Ahmad, et al, 2024)

The results of this study also strengthen the findings of Adwiah and Diana who stated that the use of high-intensity gadgets without parental supervision can trigger tantrum behavior when the use of gadgets is restricted. *Livingstone* emphasized that the lack of parental mediation makes children more vulnerable to negative psychological impacts due to the use of digital media.(Febrianti & Akbar, 2025)

From the aspect of language development, it was found that there were cases of speech delay in Subject 5 and the tendency of children to imitate the speech style of YouTube content in several other subjects. This condition shows that gadgets have a significant influence on the process of early childhood language acquisition. These findings are linear with the research of Al-Shyfa and Andika which links high screen time with delays in children's verbal development. Zimmerman's research also shows that exposure to television and digital media in early childhood can reduce the intensity of verbal communication between children and parents, thus affecting language development.(Keysya & Windi, 2026)

From the social aspect, some subjects showed indifferent behavior towards the surrounding environment and focused more on digital devices than social interaction in a direct way. This result is exactly the same as Hinkley's findings that the duration of excessive exposure to digital media is related to low social and emotional abilities in children under the age of five. Similar things were also found in Nuraini and Wardhani's research. (Beatty & Egan,

2025) and Hudi et al. The study also shows that the use of gadgets without adequate supervision has the potential to inhibit the development of social interaction in children.

Interestingly, not all subjects showed significant negative impacts. Subject 4 and Subject 6 showed relatively stable emotional developmental conditions. This is related to the limited use pattern of gadgets both in terms of duration and content quality. In Subject 4, the use of gadgets was limited to only about 10 minutes, while in Subject 6 gadgets were used for one hour with a focus on educational content and remained under parental supervision. These findings reinforce Linebarger's research that states that educational content and active parental mentoring can minimize the negative impact of gadget use in early childhood.(Sabarani, 2026) Research by the American Academy of Pediatrics also emphasizes the importance of limiting screen time according to age and parental involvement when operationalizing children's digital media.(Nilapancuran et al., 2025)

Theoretically, this study strengthens the theory of children's psychological development which places the environment as the main factor in the formation of emotional regulation, social skills, and early childhood language skills. The results of the study revealed that gadgets play a role as environmental stimulation that can affect the process of children's psychological development both positively and negatively. In addition, this study expands the study of digital parenting and its impact on early childhood development in the era of digital transformation.(Idamayanti et al., n.d.) Practically, the results of these findings provide an important way of presentation for parents, educators, and the community. For educators, the results of this finding can be the beginning to provide digital literacy education to the community, especially parents in rural areas of the intensity of the psychological impact of gadget use at the age of under five years.(Ramadhani, 2019).

The small number of informants is one of the limitations of this study, so the results cannot be generalized comprehensively. In addition, the use of a qualitative approach causes the research results to be influenced by the views of informants and the interpretation of the researcher.Third, the study has not quantitatively measured the relationship between the duration of screen time and the level of psychological disorders in children, so the cause-and-effect relationship cannot be statistically explained. In addition, other factors such as family parenting, socioeconomic conditions, and educational environment have not been analyzed in depth.

Future research is required to seek a larger sample with diverse cultural, economic and social conditions in order to make the results more representative. In addition, the use of mixed methods can be done to obtain more comprehensive data. The next research is also expected to be able to specifically examine the influence of the type of digital content, the quality of parental supervision, and family interaction patterns on the mental, emotional, social, language, and cognitive development of children and even adults.

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