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The relationship between screen time and social skills of children aged 2–4 years in the family environment

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Abstract

Background: The development of social skills in children aged 2–4 years is a crucial foundation for shaping personality and future interpersonal relationships. However, technological advancements have led to an increase in children's screen time duration, which is feared to potentially hinder their social development.

Purpose: to examine the relationship between screen time duration and social skills among children aged 2–4 years within the family environment.

Method: This research employed a quantitative approach with a descriptive correlational design. The population consisted of all children aged 2–4 years in Kembangragi Village, Selayar Islands Regency, totaling 80 children, with the entire population included as the sample (total sampling). Data were collected using structured questionnaires and observation and then analyzed using correlation tests.

Results: The analysis revealed that most children had more than 2 hours of screen time per day. Lower levels of social skills were more frequently observed among children with higher screen time. A significant relationship was found between screen time duration and children's social skills ($p < 0.05$), indicating that the longer the screen time, the lower the social skills.

Conclusion: There is a significant relationship between screen time and social skills in children aged 2–4 years. Therefore, parental supervision and regulation of screen time are necessary to support children's optimal social development.

Suggestion: Future researchers are advised to use a mixed methods approach to obtain a more comprehensive picture of the quality of screen time interactions and its impact on child development.

Keywords: Child Development; Early Childhood; Screen Time; Social Interaction; Social Skills.

INTRODUCTION

Early childhood education is a comprehensive developmental process for children from birth to six years of age, encompassing both physical and non-physical aspects. It provides appropriate and accurate stimulation for physical, spiritual, motor, cognitive, emotional, and social development, enabling children to grow and develop optimally (Pertiwi, Syafrudin, & Drupadi, 2021).

Parapsychologists explain that early childhood is a very important period for a child's growth and development; therefore, it is often referred to as the golden age. This term is used because children in

early childhood are in a phase of very rapid growth and development across physical-motor, social-emotional, moral-religious, as well as language and cognitive domains (Febriani, 2024).

Social abilities in children begin to develop as they gain the capacity to adjust from a self-centered orientation toward cooperative or sociosentric behavior, characterized by concern for the interests of others. Children start to show interest in activities with peers, and their desire to be accepted as members of a group becomes stronger. Conversely, they tend to feel unhappy when they are not accepted

by their peer group (Sari, Novitawati, & Sulaiman, 2024).

At this age, children also experience a critical period of development in which they begin to form their identity and build social relationships. Children engage in activities that involve play, and through play they can enhance their social skills (Simanjuntak, 2023). However, at present, children's social abilities appear to be declining, a condition that is sometimes not fully recognized by parents. Parents often assume that early childhood is merely a period for play, whereas this stage actually provides opportunities for children to develop and realize their inherent potential (Arifin, Febriananda, Satria, Natfi, & Yarni, 2023).

This period serves as the initial foundation for children to develop their social abilities. In this context, the researcher observes that children's social skills have not yet developed optimally, as reflected in their lack of confidence in communicating with peers or other family members, limited courage to express opinions within the family and surrounding environment, and insufficient discipline in adhering to family rules. Other observed behaviors include children tending to play alone both at home and in group settings, minimal greeting or interaction with others, and limited social engagement with peers. In addition, children often cry easily when meeting new people and show limited ability to respond or provide appropriate reactions to others (Nofadina, Hidayati, & Adistie, 2021).

In the current era of technological advancement, digital devices offer increasingly interactive and entertaining features, making media such as television an integral part of everyday life (Manfaat & Aulia, 2024). Screen time refers to the amount of time children spend using digital devices. In today's modern era, screen time has become a common and accepted part of daily life (Andini, Badriyah, & Rizqi, 2024). Digital devices are frequently used by children for entertainment activities and social interaction (Sumantiawan, Nurvita, & Chotimah, 2024). However, there are recommended limits for the duration of screen time for children.

The World Health Organization (2019) states that, to achieve good mental and physical health, children need more time for physical activities than for screen time. The recommendations issued by WHO (2020) indicate that children under 1 year of age are not recommended to have any screen time; children aged

2–4 years should have screen time limited to no more than 1 hour per day, and children aged 5–17 years should have screen time limited to no more than 2 hours per day. A study conducted in China reported that the majority of preschool-aged children have access to at least two digital devices (Patil, 2023).

Along with the development of technology and easier access to digital devices, children's screen time has increased, often exceeding the duration recommended by WHO. It has been reported that 3-year-old children experience an average screen time of 3.6 hours per day (Nofadina, Hidayati, & Adistie, 2021). Children from birth up to 8 years old spend an average of 2.5 hours per day on screen time. Parents often allow children to use digital devices during mealtimes and as a form of play activity (Manfaat & Aulia, 2024). Recently, the increase in screen time duration has occurred because parents use digital devices as a means to distract their children, especially when parents are tired, working, calming a fussy or restless child, or helping the child fall asleep. A lack of understanding of the effects of excessive screen time can result in children spending more time in front of screens than interacting with their surrounding environment (Sari, Novitawati, & Sulaiman, 2025).

In Indonesia, approximately 60–70% of children under five years of age engage in screen time for more than two hours per day, well above WHO recommendations. In various regions, including rural areas, children spend more time in front of screens due to limited access to safe outdoor activities (Musyaffa, Hendrawati, & Maulana, 2025). This trend is observed across many areas in Indonesia, including villages in South Sulawesi, where opportunities for physical interaction are limited, making the use of electronic devices one of the primary options for parents to entertain or educate their children.

Several studies have shown that excessive screen time can negatively impact children's social abilities, including reduced communication skills, diminished capacity to understand emotions, and difficulties in forming positive social relationships (Ramadani, Khodijah, Rizki, & Hasanuddin, 2025). Excessive screen time tends to decrease both the frequency and quality of direct interactions between children and their parents, which can ultimately

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impact the development of children's social skills in the future (Irzalinda & Latifah, 2023).

RESEARCH METHOD

Research Design a quantitative approach with a descriptive correlational design. This design was chosen because the study aimed to determine the relationship between two variables: screen time (independent variable) and children's social skills (dependent variable).

Population and Sample: The population in this study was all children aged 2–4 years living in Kembang Ragi Village, totaling 80 children based on village administrative data from 2024. The sampling technique used was total sampling, so the entire population served as the research sample. Therefore, the study sample size was 80 children.

This study was conducted in Kembang Ragi Village, Selayar Islands Regency, to gain a deeper understanding of how screen time affects children's

social skills in a rural setting. Selecting this location is expected to provide relevant local data to address the gap in research on screen time use in Indonesia, particularly in villages. The study focuses on children aged 2–4 years, as this is a critical period for social development, during which direct social interactions play a significant role in building foundational social skills.

Based on this phenomenon, this study aims to analyze whether there is a relationship between screen time and the social skills of children aged 2-4 years in the family environment of Kembang Ragi Village. **Research Instrument:** The instrument used was a questionnaire developed based on indicators of children's social skills and screen time duration. The questionnaire underwent validity and reliability testing before use. **Data Analysis:** Data were analyzed using the Chi-square test to examine the relationship between variables.

RESEARCH RESULT

Table 1. Distribution Frequency of Respondents (N=52)

Variable	Results	P-value
Age (Mean±SD)(Range)(Year)	(24.22±5.248) (1- 4)	
2	34/42.5	
3	21/26.3	
4	25/31.3	
Gender (n/%)		
Male	44/45.0	
Female	36/45.0	
Duration Of Children's Screen Time (n/%)		0.003
Yes	70/87.5	
No	10/12.5	
Children's Social Skills (n/%)		
Never	45/56.3	
Always	35/43.8	

The table above shows that the average age of respondents and standard deviation is (24.22±5.248) with an age range of 1-4 years. The majority of respondents are male, with a total of 44 (45.0%), with the majority of respondents having a screen time

duration of 70 (87.5%) and the majority having social skills with a total of 45 respondents (56.4%). The statistical test yielded a p-value of 0.003, indicating a significant relationship between screen time duration and children's social skills (since $p < 0.05$). This

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means that the higher the screen time, the lower the child's social skills.

DISCUSSION

Based on the research findings conducted in Kembangragi Village, Selayar Islands Regency, the characteristics of the respondents comprised 80 children aged 2–4 years. The majority of the children were 2 years old (42.5%), with the sex distribution predominantly male (55%). In terms of screen time exposure, most children (87.5%) were not exposed to screen time, while only 12.5% had a certain duration of screen time exposure. Meanwhile, the assessment of children's social skills indicated that more than half of the children (56.3%) never exhibited active social behavior, whereas the remaining proportion (43.8%) consistently demonstrated social skills during interactions.

The most important finding of this study was observed in the analysis of the relationship between screen time duration and children's social skills. The data showed that all children who were exposed to screen time (10 children) never demonstrated social skills. In contrast, among the 70 children who were not exposed to screen time, 35 children (50%) exhibited social skills. Statistical analysis yielded a *p*-value of 0.003, which was statistically significant ($p < 0.05$), indicating a significant association between screen time and children's social skills. This finding suggests that the longer the duration of screen time exposure, the lower the likelihood that a child will demonstrate positive social behaviors.

These findings are consistent with several recent studies that have highlighted the impact of screen time on the social development of early childhood. In the *Journal of Educational Research* (JER), found that children aged 3–5 years with high screen time duration tended to experience delays in social and emotional development, particularly when gadget use was not actively supervised by parents. The authors emphasized the importance of direct interaction and two-way communication as primary forms of stimulation during the child's golden age (Sari et al., 2025).

A similar study showed that excessive screen time correlated with increased tantrums and delayed social-emotional development in preschool children. The study, conducted in Malang, used Spearman's rank correlation analysis and found a significant

relationship between screen time and the quality of children's social relationships both at home and at school. The study also found that children aged 3–5 who were exposed to screen time exceeding one hour per day and with a frequency of screen time exceeding three times per day were at high risk of developing impaired social development. The authors recommend that parents limit children's screen time and replace it with hands-on play activities that stimulate social interaction (Setyarini, Rengganis, Ardhiani, & Mas'udah, 2023).

Other studies examining the relationship between screen time and pragmatic language abilities in children aged 4–6 years have reported a strong positive correlation between high screen time exposure and poorer abilities to understand social contexts during communication. Children tended to have greater difficulty following social rules in conversation or engaging in role-play activities, indicating impairments in the development of social–language functions (Adistyo & Gunawan, 2024). A study by Afifah and Azizah (2023) showed that the majority of preschool children in the Purwokerto area who had high screen time duration (more than 2 hours per day) demonstrated suboptimal social development. The study emphasized the importance of parental involvement in limiting gadget use and increasing face-to-face activities as a means of fostering children's social behavior (Afifah & Azizah, 2023).

From all these research findings, it can be concluded that uncontrolled screen time has a negative impact on the social abilities of children aged 2–4 years. This condition is closely associated with reduced opportunities for children to engage in direct interactions, imitate social expressions, and learn to understand others' emotions and body language. In the context of Kembangragi Village, the low level of screen time observed among the majority of respondents serves as a protective factor for their social development. Nevertheless, children who have been exposed to screen time show indications of decreased social interaction, which, if not properly addressed, may have implications extending into school age.

Excessive screen time exposure not only affects basic social skills but also influences children's ability to understand social rules and pragmatic language functions. Children who spend excessive time

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watching screens tend to have fewer opportunities to practice two-way conversations, express emotions, and follow play rules within social interactions. Experimental studies involving preschool-aged children have demonstrated that the intensity of digital device use is negatively correlated with children's ability to understand social contexts and apply pragmatic language in real-life social situations. Unsupervised screen time may therefore become a barrier to children's social–language development, particularly in their capacity to adjust communication according to social context (Cheng, Guan, Zhang, Zhan, Liu, Wang, & Peng, 2024).

Early childhood social development is strongly influenced by the quality and quantity of social interactions experienced in daily life. Face-to-face interactions with parents, caregivers, and peers are crucial for the development of social skills such as communication, shared attention, and the ability to interpret social cues. When screen time dominates a child's daily activities, opportunities for direct interaction tend to decrease, thereby limiting children's chances to practice social skills. This is consistent with systematic reviews on screen media use, which have found that excessive exposure to screen media can hinder early childhood social development by reducing opportunities for real-life social interactions, thus contributing to behavioral and emotional problems that affect social functioning (Ren, 2023).

Parental involvement or active supervision during children's use of digital devices has been shown to be an important moderating factor. Children who use digital media under parental supervision demonstrate better social–emotional development compared to those who use devices without supervision. A longitudinal study conducted in China found that parental monitoring and the integration of social interactions alongside screen-based activities can minimize the negative effects of screen time on early childhood social development, while simultaneously enhancing self-regulation abilities and social skills (Fonseca, Lourenço, Francisco, Crespo, & Relvas, 2024).

The researchers assume that the longer the screen time duration among children aged 2–4 years, the lower their social skills will be. Excessive interaction with screens reduces children's opportunities to learn and develop social skills

through direct interaction with their surrounding environment.

CONCLUSION

Screen time patterns among children aged 2–4 years in Kembangragi Village indicate that most children have low screen time (≤ 1 hour per day), with the most frequently used devices being television and mobile phones. Children with low screen time tend to have better social skills, as evidenced by their communication skills, discipline, peer interactions, and responsiveness to their surroundings and there is a significant relationship between screen time and children's social skills. Children with more than 1 hour of screen time per day tend to have lower social skills than children with limited screen time.

SUGGESTION

Form parents are expected to be more judicious in allowing screen time access to children aged 2–4 years by limiting the duration, as recommended by the WHO, to a maximum of 1 hour per day. Furthermore, parents need to be more active in stimulating social development through direct play, interaction, and meaningful communication with their children. For health workers particularly midwives and village pediatricians, are advised to educate and counsel parents about the impact of excessive screen time on children's social development. This counseling can be incorporated into integrated health service post programs or home visits. For community health centers it is hoped that they can provide safe and child-friendly facilities or open spaces to support children's social activities in their neighborhoods. Village governments can also play a role in disseminating information through local media about parenting in the digital age. For future researchers this study still has limitations, such as the quantitative approach without in-depth exploration of the types of content accessed by children. Therefore, future researchers are advised to use a mixed methods approach to obtain a more comprehensive picture of the quality of screen time interactions and its impact on child development.

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