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THE CORRELATION OF SCREEN TIME WITH SOCIAL EMOTIONAL DEVELOPMENT IN PRESCHOOL CHILDREN AGE 4-6 YEARS

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ABSTRACT
Children's involvement with digital devices is something that cannot be avoided in the current technological era, especially because of children's extraordinary curiosity, which indirectly accustoms them to living a sedentary lifestyle (screen time). However, there are undesirable consequences of prolonged and age-inappropriate screen use, which is of concern to developmental experts because it is one of the causes of various health, growth and development problems, as well as behavioral and cognitive problems in children. Objective to determine the correlation between screen time and the social emotional development of children aged 4-6 years. This study used a cross sectional approach with a total sampling technique in classes A and B, totaling 44 children. The questionnaire used is screen time modified by Maulodin (2018) and ASQ SE 2 by Risna (2022) which have been tested for validity and reliability. There is no correlation between screen time and social emotional development with a significance value of 0.111 (p-value > 0.05). Based on majority data, 22 children (50.0%) with high screen time use have appropriate social emotional development. This study concludes that there is no correlation between screen time and social emotional development in preschool children aged 4-6 years. Parents need to pay attention, although screen time is not the only factor that can influence social emotional development in preschool children, but it has the potential to have a negative impact. Parents can teach creative learning methods that can stimulate children's ability to use everyday objects so that children do not spend their time playing with gadgets and can balance the potential negative impact of screen time.

Keywords: preschool; screen time; social-emotional development

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INTRODUCTION

According to the Badan Pusat Statsitik (BPS) report, the percentage of mobile phone users in Indonesia reached 67.88% in 2022 (BPS, 2022). From an early age, both children and adults are accustomed to using digital devices for entertainment, obtaining information, and interacting with others (Putri, 2021). Engaging children with gadgets is clearly unavoidable, especially due to their incredible curiosity. Based on the BPS report in 2022, 33.44% of early childhood children aged 0-6 years in Indonesia already use mobile phones. 52.76% of children aged 5-6 years use cell phones, and even 25.5% of toddlers aged 0-4 years use them (BPS, 2022). School-aged and preschool children are also indirectly accustomed to a sedentary lifestyle. One type of sedentary behavior is screen time usage. The State of Mobile 2023 shows that among all mobile phone users worldwide, Indonesians have the longest screen time with an average of 5.7 hours per day, up from 5.4 hours the previous year (data.ai, 2023). The utilization of digital technology and screen time can be beneficial, particularly for

child development, such as mental, motor, reading skills, communication, critical thinking, creativity, social well-being, and emotional intelligence when used correctly (Seilatuw, 2022). According to a survey by the Indonesian Child Protection Commission (KPAI), children using gadgets for non-learning purposes 1-2 hours per day amounted to 36.5%, 2-5 hours was 34.8%, and more than 5 hours per day was 25.4% (Hanum, 2022). According to the American Academy of Pediatrics (AAP) and The American Academy of Child & Adolescent Psychiatry, the standard screen time duration for children aged 3-5 years is no more than 1 hour on weekdays and three hours on weekends with supervision (Screen time and Children, 2020). There are unintended consequences from prolonged duration and inappropriate viewing times for age, which concern developmental experts as they are one of the causes of many health, growth, and development problems (Suryawan, 2020).

According to the World Health Organization (WHO), 5-25% of preschool-aged children experience developmental disorders. The incidence rate of growth and developmental problems in children in Indonesia ranges between 13-18%. The preschool age range of 4 to 6 years begins to prepare for school through playgroups. During this period, children's character starts to form, including social or interpersonal skills. In interacting with others, children are not only required to interact well with others but also to manage themselves well (Ilham, 2020). Brauner & Stephens stated that about 9.5% - 14.2% of preschoolers have socio-emotional problems that negatively impact their development and school readiness (Jafri & Lidya, 2020). Socio-emotional development in preschoolers refers to the growth and maturation of their ability to understand and manage emotions, build and maintain positive relationships, and engage in appropriate social interactions in school and life overall (Basyuk & Ternopilska, 2022). Early childhood socio-emotional development revolves around the socialization process to learn values and behaviors accepted by society (Indanah & Yulisetyaningrum, 2019). The importance of socio-emotional development in early childhood is to develop children's character in their environment and be well-accepted by society. Research conducted by Rahmawati et al., (2020), Yasinta & Putri, (2020), Prayito et al., (2024) states there is a correlation between gadget use and screen time with socio-emotional development of preschool children, where researchers see children as if they are in the game and mimic what they see, having a significant negative impact on child development. Easy access to various information media and technology makes children lazy in exercising and being active.

Researchers found a phenomenon in Kindergarten related to screen time usage in children aged 4-6 years for more than 3 months with varying durations, i.e., less than 60 minutes and more than 60 minutes. The types of digital devices used are cell phones, tablets, and computers, with the media used for the internet being YouTube and games. Parents also mentioned that their children sometimes find it difficult to part with gadgets, get easily angry when restricted and their gadgets are taken away, and do not listen when called. Additionally, some parents expressed concerns about their children's habits, such as sleeping late, inability to do activities independently, fear of others, holding in bowel and bladder movements, and wondering, "Is my child's development in line with others, am I late compared to others?" Such times pose problems if children are given digital devices. Children tend to engross themselves in digital devices, ignoring their surroundings, which impacts early childhood socio-emotional development. As nurses, understanding screen time issues, especially its impact on children's socio-emotional development, is crucial. Nurses can provide emotional support, encourage social interaction, and educate parents to raise awareness about promotive and preventive efforts to address developmental delays. Based on these research results, the author conducted a study aimed at identifying screen time, socio-emotional development, and

the correlation between screen time and socio-emotional development in children aged 4-6 years.

METHOD

This research is a correlational quantitative study with a cross-sectional approach. The study population consisted of 44 children in classes A and B aged 4 to 6 years. The sampling technique used was total sampling, resulting in a sample size of 44 children. This study has received ethical approval from the ethics committee of Aisyiyah University Bandung with the number: 796/KEP.01/UNISA-BANDUNG/V/2024. The instrument in this study used a screen time questionnaire modified by Maoludin (2018) with 8 question items covering aspects of watching TV, computer/laptop, game consoles, and gadgets. The validity test results ranged from 0,379 to 0,728, and the Cronbach's Alpha value was 0,743. The socio-emotional development questionnaire used the ASQ-SE 2 months modified by Risna (2022) with 25 positive question items and 11 negative question items. The validity test results ranged from 0,662 to 0,982, and the Cronbach's Alpha value was 0,985. Therefore, the screen time and socio-emotional development questionnaires are valid and reliable for this study. Data collection was done by distributing questionnaires directly to parents or guardians and via Google Forms. The data were collected, processed with SPSS Statistics 26, and analyzed univariately with percentages and bivariately with the Spearman rank correlation test, presented in tables with ordinal scales.

RESULTS

The research results include the characteristics of respondents based on the child's age, correlation with the child, screen time overview (watching TV, computer/laptop, game consoles, gadgets), and an overview of the respondents emotional development. Additionally, there are correlation test results between screen time and socio-emotional development. The number of respondents in this study was 44 children, with characteristics shown in the table.

Table 1.
Respondent characteristics (n= 44)

Respondent characteristics	f	%
Age		
4 years	4	9,1
5 years	17	38,6
6 years	23	52,3
Gender		
Men	22	50,0
Women	22	50,0
Class		
A	17	38,6
B	27	61,4
Relationship		
Parents	35	79,5
Guardian	9	20,5

Table 1 shows data collected regarding the characteristics of respondents as many as 44 children with the same percentage of males as females amounting to 22 children (50,0%). The majority of respondents were 6 years old, 23 children (52,3%) and 27 children (61,4%) were in class B. Most children received parental supervision, accounting for 79,5%. Furthermore, data on the results of screen time usage can be seen in table 2.

Table 2.
Distribution of Screen time Cateogry (n= 44)

Screen time	f	%	Mean
Low	4	9,1	± 4 hours
High	40	90,9	

Table 2 shows an overview of screen time based on 2 categories, namely high and low according to the recommendations set by the American Academy of Pediatrics (2011). The majority of children's screen time was in the high category, 40 children (90.9%) and only 4 children (9.1%) with low screen time. The average screen time used by children is ± 4 hours. Furthermore, data on the results of social emotional development can be seen in table 3

Table 3.
Distribution of Social-Emotional Development (n= 44)

Social-emotional development	Score range	f	%
Appropriate	< 70	27	61,4
Monitor	70-95	8	18,2
Refer	95-155+	9	20,5

Table 3 shows an overview of social emotional development based on 3 categories developed by Squires (2002). The majority of children's social emotional development is in the "appropriate" category, 27 people (61,4%). However, there is still social emotional development in children in the supervision and referral category with a percentage of 17 children (38,7%). Futhermore, the results of screen time and social emotional development were tested using Spearman rank correlation to determine whether there was a correlation between these two variables.

Table 4.
Crosstab of Screen time with Social-emotional Development (n= 44)

Social-emootional development	Screen time				Total		P value	Correlation coefficient
	Low		High					
	f	%	f	%	f	%		
Appropriate	4	9,1	22	50,0	26	59,1	0,111	0,244
Monitor	0	0	8	18,2	8	18,2		
Refer	0	0	10	22,7	10	22,7		

Table 4 shows that most children had high screen time with appropriate socio-emotional development, totaling 22 children (50.0%); high screen time with monitored socio-emotional development was 8 children (18.2%); high screen time with referral-level socio-emotional development was 10 children (22.7%); and 4 children (9.1%) had low screen time with appropriate socio-emotional development. The significance value (p-value) of screen time with socio-emotional development in preschool children aged 4-6 years was 0,111 or > α (0.05), so H0 is accepted, and H1 is rejected, leading to the conclusion that there is no correlation between screen time and socio-emotional development in preschool children aged 4-6 years.

DISCUSSION

Screen time in Preschoolers Aged 4-6 Years

Based on the research results, the number of children with high screen time is 40 out of 44 children (90,9%), while those with low screen time are only 4 children (9,1%). The Academy of Pediatrics (2011) categorizes High Screen time (HST) for preschool children as >120 minutes/day (AAP, 2011: 201-208). This is consistent with the research by Oktavia et al. (2022), which found that 34 out of 70 children (48.57%) have high screen time duration. The researchers believe that high screen time is likely due to the advancement of digital device technology, which has become increasingly affordable and accessible, with many families owning several of these devices at home (Aksenta et al., 2023). Additionally, children are

attracted to the diverse and interesting content available on several social media platforms that provide continuously updated and engaging content. Video games offer an interactive, engaging, and addictive experience, making children spend hours playing (Astriningrum, 2018). The use of digital devices has also become a necessity for education and learning, with many educational materials available in digital format (Sutama et al., 2021).

During data collection, some parents mentioned that their children are given access to use digital devices to avoid boredom when alone, to keep up with the times, to provide a more engaging and interactive learning source than books, and to facilitate long-distance communication with friends or family through messaging or video calls. However, some parents noted that digital devices could reduce children's interest in other activities, making them more individualistic, less interactive, and less sociable with their peers. Consequently, children may become less sensitive and indifferent to their surroundings and may not listen to their parents when called while playing with digital devices. Researchers argue that if parents/guardians allow children to spend more time using electronic devices, the children will become accustomed to longer screen time durations, which may increase daily. Children will feel more comfortable watching screens in a relatively passive manner compared to interacting with others (Suryawan, 2020). Efforts to reduce screen time duration in children remain a challenging task for parents because digital devices are often used as parenting aids due to their perceived educational value and benefits (Tan et al., 2023). Therefore, it is hoped that parents/guardians will have various appropriate strategies for children using digital devices, including accompanying and being directly involved when children are playing, setting time limits to avoid addiction, providing opportunities for children to interact and socialize with their peers, and advising and guiding children on viewing good or bad content. Nurses can play a role in encouraging parents to engage children in physical activities, outdoor play, and creative activities without involving screens, helping parents monitor children's progress in reducing screen time, and evaluating its effects on children's behavior and well-being.

Social Emotional Development in Preschool Children Aged 4-6 Years

The results of this study show that 27 out of 44 children (61,4%) fall into the "appropriate" development category for their age, indicating that most children's social emotional development is as expected. This is consistent with the study by Prayito et al. (2024), which found that most of the 29 children (67%) also had appropriate social emotional development in preschool children. However, a significant number of children still have social emotional development that is not appropriate. According to the study results, 8 children (18,2%) fall into the "monitor" category, and 9 children (20,5%) fall into the "referral" category. These findings indicate that many children need special attention and professional guidance for their social emotional development. Children's social emotional development categorized as referral and monitoring might be due to various interconnected factors such as genetic and biological factors (e.g., developmental disorders like autism or ADHD) that can hinder their ability to interact socially and regulate emotions. Additionally, family environments lacking support, experiences of trauma or violence, parental emotional instability, and inconsistent parenting styles are significant contributors (Alvianti, 2023; Kusmawati et al., 2023). Poor physical health and malnutrition can also exacerbate the situation (Febriyanti, 2022). Nurses can play a role in identifying children who need further intervention based on assessment and observation results, and collaborate with psychologists, therapists, or child development specialists for more in-depth evaluations.

According to Erikson's Theory (1950), preschool children's social emotional development is in the final stage, specifically the stages of Autonomy vs. Shame/Doubt and Initiative vs. Guilt. In this stage, children have the ability to self-regulate, develop self-confidence, actively experiment, imagine, take risks, and enjoy socializing with friends. Therefore, to facilitate their independence, children should be given opportunities to do things on their own without help and not be overly restricted or scolded. The theory developed by Squires (2003) aligns with this, stating that preschool children's social emotional development involves independence, emotional regulation, and self-control in interactions with others. Preschool-aged children are distinct in expressing their feelings openly to others. They have a high curiosity to try new things and cannot yet recognize emotions such as anger, shame, sadness, and joy. Hence, they observe how adults around them manage and express emotions (Sukatin et al., 2020). Parents are a crucial family factor in providing the first interaction and proper stimulation to help children's growth and development. Therefore, the parent-child bond is a positive foundation and influential factor in supporting social emotional adaptation quality in early childhood. The stronger the supervision and relationship between parents and children, the more freely children will explore independently and feel appreciated. Conversely, if children often experience negative feelings, they will be marked by fear of criticism/anger and doubt in their abilities (Mansur, 2019). Parental involvement when children interact with their environment and properly introducing emotions can help children control and express their sensitivity to others' feelings.

The Correlation of Screen time and Social Emotional Development in Preschoolers Aged 4-6 Years

The analysis results of the correlation between screen time and socio-emotional development in this study showed that there was no correlation between screen time and socio-emotional development, with a significance value obtained at 0,111 (p-value > 0.05). According to the majority of data, children with high screen time usage had appropriate socio-emotional development, with 26 children (50,0%) fitting this category. This study is not in line with Yasinta & Putri (2020), who stated that there is a significant correlation between the duration of gadget use and socio-emotional development in preschool children. The researcher suggests that preschool children who enjoy playing with digital devices should be given a duration limit of no more than 2 hours, as recommended by the American Academy of Pediatrics in 2011. Each child has unique characteristics, including temperament, abilities, and family background, which can influence the impact of screen time on them. The duration and frequency of screen time play a crucial role because moderate screen time usage might not have the same effect as excessive use. Although there is potential for negative impacts of screen time on the socio-emotional development of preschool children, screen time is not the only factor influencing this development.

Other factors that can affect it include the quality and context of what is being watched, the role of parents in guiding and interacting, and other activities the child participates in. Selecting educational and interactive content can have a significant positive impact on the socio-emotional development of preschool children, whereas inappropriate or overly violent content can have a negative effect (Ulfah, M., 2020). Additionally, children who watch together with their parents or caregivers and receive explanations and interactions can experience different impacts compared to children who watch alone (Dhin, C.N., 2020). It is important for parents to note that excessive screen time usage can also adversely affect other aspects of health, such as eye strain, increased risk of obesity, reduced cognitive activity, and potentially threaten brain development and other growth issues (Fadhillah, 2022). Children can spend their remaining free time playing both at home and outdoors, engaging in positive

activities. Parents can teach creative learning methods that can stimulate children's abilities using everyday objects, so that children do not spend their time playing with gadgets and can balance the potential negative impacts of screen time (M.P, 2023).

CONCLUSION

From the results of the study, it can be concluded that there is no correlation between screen time and social emotional development in preschool children aged 4-6 years with a significance value (p-value) of 0,111. The majority of screen time in preschool children is in the high category as many as 40 out of 44 children or equal to (90.9%). Based on the results of social emotional development in preschool children, the majority are in the "appropriate" category as many as 27 out of 44 children or equal to (61.4%). However, the percentage of children who are in the "Monitor" and “Referral” conditions is still considerable, which needs to be a concern for parents. Nursing practice can provide health counselling to parents about children's social emotional development and screen time to detect any bridges or problems in children and collaborate with other professionals for children in need. Parents are advised to supervise and set appropriate screen time limits, select educational and interactive content and actively participate in other activities that can develop their social emotional skills.

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