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**Association between duration of gadget use and social development
in school-age children**

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Abstract

Background: The prevalence of school-age children who have gadgets is around 71%, and as many as 55% of them spend time playing these gadgets by playing games. In this sophisticated age, children often focus more on gadgets so if you use gadgets excessively, it will have an impact on children's social development.

Purpose: To determine the relationship between gadget use and social development in school-age.

Method: A cross-sectional study was used for this study. The sample was school-age children (10-12 years) at Elementary School—100 people who were obtained through the total sampling technique. A questionnaire was performed for data collection. The data were analyzed by the Chi-Square statistical test.

Results: The results indicate that most of the participants had higher scores on using the gadgets with a long category (67%). However, almost half of the participants had social development with the adequate category (62%). The results of the statistical test obtained p value = $0.005 < \alpha 0.05$.

Conclusion: There is a significant relationship between gadget use and social development among school-age at Elementary School.

it can be concluded that there is a significant relationship between gadget use and social development among school-age at Elementary School.

Keywords: Gadget Use; School-Age Children; Social Development.

INTRODUCTION

A gadget is an electronic device used as a communication medium that has various functions on each device. Gadgets are present as evidence of the development of science and technology that is increasingly sophisticated, so gadgets are present as support in the field of education. Through gadgets, knowledge can be accessed easily besides being obtained from books (Nafeela & Fazeenah, 2021).

The limit or duration of gadget use that is good for children is that it should not be used by children for more than 2 hours per day. However, children who are already addicted to gadgets will usually use gadgets for more than 6 hours. Excessive use of gadgets will cause children to often forget about their

surroundings, have difficulty in adjusting, especially to group demands, children's independence in thinking and behavior, and most importantly, disrupt the formation of a child's self-concept (Wahyuni, Siahaan, Arfa, Alona, & Nerdy, 2019; Olson, 2010; Palmer, 2015).

Children who enter elementary school, especially at the age of 10-12 years, will experience drastic changes both mentally and physically. In addition, at this age, children begin to have typical behavior and can be found only in this age period. These behavioral characteristics include the formation of peer groups, dishonest or lying behavior, cheating behavior, fear, and stress. Meanwhile, according to Hurlock,

developmental psychologists identify the characteristics of children at school age as a grouping period where children's attention is focused on the desire to be accepted by their group (Kurniawati & Sutharjana, 2023; Hurlock, 1978).

Social development in school-age children is the development of children's behavior in adjusting to existing rules, adapting to the surrounding environment wherever the child is, and playing more games for school-age children. With the existence of gadgets in a sophisticated era, children often focus more on gadgets so excessive use of gadgets will have an impact on social development. Nurses play an important role in helping children develop according to growth and development. Nurses as educators in the community environment are needed. This happens because the children's community is prioritized, especially preventing the use of gadgets. The need for health services continues to grow over time which requires nurses to have knowledge and skills in various fields. Currently, pediatric nurses have a broader role with an emphasis on health promotion and disease prevention, as well as a comprehensive view of clients in terms of mental aspects, especially in children. Pediatric nurses perform functions concerning the various roles of pediatric nurses as educators. The function of pediatric nurses is to provide services and improve children's health, contribute to maintaining and improving physical and mental health so that there is no social deviation, especially the use of gadgets (Hanifah, Indriyani, & Utami, 2019; Firmansyah, Setiawan, & Ahmad, 2021).

A qualitative study found that the gadget use of six children in Jekulo village, Jekulo sub-district, Kudus Regency, on average, had a high intensity of gadget use (Saniyyah, Setiawan, & Ismaya, 2021). High-intensity use is the use of gadgets at an intensity of more than 3 hours a day. On average, children use gadgets for 3-6 hours a day. Some of the positive impacts of using this gadget are gaining broad knowledge by accessing various information through Google, facilitating communication by sending messages via WhatsApp, and training children's creativity with game applications that sharpen children's brains. In addition to the positive impact, there are also negative impacts including disturbing children's health such as eyes that get tired easily and release little water as well as reduced sleeping hours and changing children's learning hours. Meanwhile,

another study found that the use of gadgets with the development of 32 children had poor use (63.6%) and normal use by 8 people (24.2%). Excessive or too frequent use of gadgets can affect children's personalities so that they are easily angry when their wishes are not fulfilled, angry when advised, and affect children's social interactions by not caring about the people around them and more individualism (Agustin, 2019).

RESEARCH METHOD

A cross-sectional design was used in this study. The population in this study was 100 participants from grades IV, V, and VI in Elementary school. The sample of the study was selected from grades IV, V, and VI with school-age children (10-12 years) who used gadgets outside of school hours in elementary school. Total sampling was used in this study. So, the total of the sample was 100 participants.

Data collection was carried out by distributing questionnaires to students who became samples. In this study, there are two categories of questionnaires, namely the category of duration of gadget use and the questionnaire on the social development of school-age children. Gadget use uses a questionnaire on the level of gadget use (Sari & Mitsalia, 2016) and social development using the V-SMS (Vineland Social Maturity Scale) consisting of eight questions including self-help general, self-help eating, self-help dressing, self-help direction, occupation, communication, locomotion, and socialization (Roopesh, 2019).

Data was collected during May to June 2022. Permission letter to conduct the research was approved by the principal of the elementary school. A research assistant who has a nursing background was trained to conduct research and data collection processes. Researcher and a research assistant obtained written consent from every person who agreed to participate in the questionnaire. This questionnaire took about 30 minutes.

Descriptive statistics was used to identify the characteristics of the sample and variables. Duration of gadget use and social development among school-age children (10-12 years) were calculated using percentage and frequency. Duration of gadget use is categorized as short, if < 2 hours/day, and long if > 2 hours/day. Social development is categorized as high with results of 130-140, optimal: 115-129, appropriate: 86-114, poor: 71-85, and very poor: 20-70.

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Association between duration of gadget use and social development in school-age children

Bivariate statistics was used to examine the relationship between the independent variable and the dependent variable. The chi-square test was used to examine the relationships between gadget use and social development among school-age children (10-12 years). Statistical Package for the Social Sciences

(SPSS) version 22.00 for Windows was used to perform the analysis.

This study obtained ethical approval from Jenderal Achmad Yani University with number 71/KEPK/FITKES-UNJANI/VI/2022. Informed consent was obtained from each participant in this study.

RESEARCH RESULTS

Table 1. Characteristic of Respondents (N=100)

Variable	Results
Age (Mean±SD)(Range)(Year)	(11.08±0.808)(10-12)
Gender (n/%)	
Male	65/65.0
Female	35/35.0
Duration of Gadget Use (n/%)	
Short	33/33.0
Long	67/67.0
Social Development (n/%)	
Appropriate	62/62.0
Optimal	38/38.0

From the table above, it can be seen that the age of the respondents with a mean and standard deviation (11.08 ± 0.808), the majority of participants were male as much as 65%, had a higher score of duration of gadget use 67%, and social development with an appropriate category of 62 %.

Table 2. Duration of Gadget Use and Social Development among School-age Children

Variable	Social Development		p-value
	Appropriate (n=62)	Optimal (n=38)	
Duration of Gadget Use (n/%)			
Short	13/20.97	20/52.6	0.005
Long	49/79.03	18/47.4	

Of 67 school-age children who have a long category of duration of gadget use, 18 (47.4%) in their social development in the optimal category. The statistical test results obtained p value = 0.005 < α 0.05, it can be concluded that there is a significant relationship between gadget use and social development of school-age children (10-12 years).

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DISCUSSION

Duration of Gadget Use

The result showed that of 100 school-age children (10-12 years) based on the level of duration of gadget use, children who use gadgets with long categories are 67 children (67%), more than half of the respondents than children who use gadgets with short categories as many as 33 children (33%) less than half of the respondents, so this study shows that most children use gadgets for more than 2 hours.

The results above show that the level of gadget use in children is fairly long. From the results of interviews conducted with school-age children said that the child was not limited by their parents to play with gadgets, children spent more time at home, even some children said their parents bought gadgets. However, some children also said that parents limit their children to playing with gadgets for a long time, such as being allowed to play with gadgets at certain times such as after studying, after eating, after praying, and so on.

The tendency to overuse gadgets will lead to dependence, which can disrupt interactions with the environment, reduce empathy and sympathy, and reduce family time (Sari, Handayani, & Herliana, 2023). The attitude of children who will be selfish and become more insubordinate such as not wanting to lend something they carry and no longer obeying parental orders can be triggered because children often use gadgets these children affect their social development.

Based on a survey by the Indonesian Child Protection Commission around 71.3% of school-age children have gadgets and or play gadgets for a long period of the day. As many as 55% of them spend time playing these gadgets with online games. During the pandemic, of course, more free time is left, and this is mostly used by children to use gadgets (Komariah & Putri, 2023). The use of gadgets in school-age children does have many benefits, especially since learning from school is done online and assignments are given through applications on cell phones. But when the use of gadgets begins to be excessive and exceeds the limits of normal needs, users will begin to be addicted to always playing gadgets even when there is no urgency whatsoever. The dangers that can be experienced by school-age children who should be doing more activities that can improve their social development and social interaction with their

surroundings. School-age children are very prone to falling into these things, especially if the surrounding environment does not have the power to provide the developmental direction that the child should receive (Isni & Anugrah, 2021).

A previous study has shown that school-aged children have a strong interest in practical and instant gratification, as well as a curiosity about the world around them. As a result, they often desire gadgets and prefer to use electronic media. This curiosity often leads children of this age to already have gadgets and be proficient in using them for communication and entertainment (Halawa, & Palan, 2016).

As children progress through high school, around the ages of 10-12 years old, they begin to develop several characteristics, including an interest in concrete, practical, everyday life, a very realistic mindset, and a strong desire to learn and expand their knowledge. The results of a previous study showed that excessive or too frequent use of gadgets can affect children's personalities so that they are easily angry when their wishes are not fulfilled, angry when advised, and affect children's social interactions by not caring about the people around them and children become individualism (Liza, Iktidar, Roy, Jallow, Chowdhury, Tabassum, & Mahmud, 2023). In this study, the average child uses gadgets a day for 4-5 hours. Because children are cool with their gadgets and children more often open YouTube, TikTok, and game applications the impact of gadget use on social development makes children less sensitive and care about their environment.

Social Development

Based on the results of the study showed that out of 100 school-age children (10-12 years) at elementary school, 62 (62%) are more than half of the respondents with the most dominant social development in the appropriate category. So, it is known that most children have appropriate social development as many as 62 children (62%) more than half of the respondents, while optimal as many as 38 (38%) less than half of the respondents, so it can be concluded that the measurement of social development using VSMS (Vinland Maturity Scale) children are more dominant in the appropriate category. The results above show that social

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development in school-age children (10-12 years) is fairly appropriate.

From the results of interviews conducted with children, it is found that children can communicate directly or indirectly such as by writing messages and calling using gadgets, (Locomotion / L) or being able to move wherever the child wants, some children can do it such as visiting their friend's house with their wishes but some children have to be told first by their parents. and the last is (socialization / S) or being able to socialize and engage in games, some children can do it, but some children do not always succeed in doing it, and the last is (Socialization / S) or being able to socialize and engage in games, some children can do it, but some children do not always succeed in doing it. So, in conclusion, broadly speaking, children have social development that can be said to be appropriate (sufficient) and optimal (high enough), from the VSMS (Vinland Maturity Scale) test, some children can do it and some children are not always successful in doing it.

In general, the development process is the result of the process of maturity and learning, the process of forming social development is also the result of the individual learning process through socialization. Socialization is the process of absorbing attitudes, values, and habits of society so that a person is skilled in mastering group habits, and behaving according to social demands so that he becomes a person who can socialize and is accepted by his social environment (Susanto, 2021).

Department of Health in the Republic of Indonesia and UNICEF explain that social development is the ability to socialize, make friends, discipline, recognize manners, and the ability of children to meet their own needs and not depend on others. For example, eating and drinking alone, dressing alone, obeying rules at school, and so on (Maola & Lestari, 2021).

Many factors influence or cause children to be more interested in playing with gadgets, mostly starting from a form of diversion or lack of time from parents in terms of accompanying children to play. A study suggests that many factors influence children's social growth and development including parent/guardian education, parent/guardian employment, developmental stimulation, and environmental factors from the child (Frosch, Schoppe-Sullivan, & O'Banion, 2021). Several factors influence children's social development, namely:

family factors and factors outside the family. Family factors are the relationship between parents, the order of children in the family (firstborn / middle / youngest), the number of families, family treatment of children, and parents' expectations of children, while the factors outside the family are interactions with peers and relationships with adults outside the home.

Parents always accompany when children are playing with gadgets or can be given understanding and rules for using gadgets, but as parents, they should not be too restrictive, let alone hard on children, because it is feared that it can interfere with their mental state. After all, it is feared that it can interfere with their mental state. The use of excessive use of gadgets such as more than 2 hours per day makes children will experience changes in experience changes in terms of attitude and moral development. This is obtained when the child is playing online games and then the game is lost, the child's unstable emotions will appear game is lost then the child's unstable emotions will appear (Zain, Jasmani, Haris, & Nurudin, 2022).

The Relationship Between Duration of Gadget Use and Social Development

Based on the results of the research analysis in Table 3, it shows that out of 100 children who have a short category of gadget use, 33 (33%) are less than half of the respondents, in social development, it has a moderately high category as many as 38 (38%) less than half of the respondents, while the use of gadgets that have a long category is 67 (67%) more than half of the respondents, in social development it has an adequate category (enough) as many as 62 (62%) more than half of the respondents. The statistical test results obtained $p \text{ value} = 0.005 < \alpha 0.05$, it can be concluded that there is a significant relationship between gadget use and social development of school-age children (10-12 years) at elementary school, with a note that gadget use is allocated at four times, namely in the morning, afternoon, afternoon, and evening.

The results above show that the more often a child uses gadgets, the higher the risk of being affected by disturbances in social development in children and vice versa. Therefore, this study shows that most children who experience adequate social development are children who tend to use gadgets on average using gadgets for more than 2 hours every

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day because if children use gadgets for too long or more than 2 hours every day, it can harm children's health, one of which is interfering with social development (Wahyuni et al., 2019).

The use of gadgets in school-age children, especially elementary school children, does have many benefits, especially during the pandemic learning from schools is carried out online and assignments are given through applications on cell phones. But when the use of gadgets begins to be excessive and exceeds the limits of normal needs, it will affect the social development of children, children will begin to be addicted to always playing gadgets even when there is no urgency whatsoever. School-age children are very prone to falling into these things, especially if the surrounding environment does not have the power to provide the developmental direction that the child should receive (Isnri & Anugrah, 2021).

In addition, children's social development will also be disrupted, because school-age children should play more and socialize with the surrounding environment, the process of forming social development is a result of the individual learning process through socialization. Socialization is the process of absorbing attitudes, values, and habits so that a person is skilled in mastering group habits, and behaving according to social demands so that he becomes a person who can socialize and is accepted by his social environment. Nurses play an important role in helping children develop according to growth and development. Nurses as educators in the community environment are needed. This happens because the children's community is prioritized, especially in preventing the use of gadgets. The need for health services continues to grow with time which requires nurses to have knowledge and skills in various fields. Currently, pediatric nurses have a broader role with an emphasis on health promotion and disease prevention, as well as a comprehensive view of clients in terms of mental aspects, especially in children. Pediatric nurses perform functions concerning the various roles of pediatric nurses as educators. The function of pediatric nurses is to provide services and improve children's health, contribute to maintaining and improving physical and mental health so that there is no social deviation, especially the use of gadgets (Hanifah, Indriyani, & Utami, 2019).

The results of previous research showed that out of 73 respondents, the results of the analysis of the relationship between electronic media gadgets and the social development of school-age children. Based on the results of this study, it can be seen that the use of electronic media affects children's social development. It can be seen that of the 73 respondents who used gadgets in high limits as many as 9 people (12.3%), the use of gadgets in moderate limits as many as 63 people (86.3), and the use of gadgets in low limits as many as 1 people (1.4%). As for social development, out of 73 students/respondents who have good social development as many as 64 people (87.7%) and who have sufficient social development as many as 9 people (12.3). Statistical test results with Spearman = $p: 0.000$ with a significance value of $p < 0.005$, which means that there is a relationship between the use of electronic media gadgets and the social development of school-age children at school (Maola & Lestari, 2021).

CONCLUSION

This study showed a relationship between duration of gadget use and social development among school-age children (10-12 years) in elementary school. The results above show that the more often a child uses gadgets, the higher the risk of impaired social development in children and vice versa. Therefore, this study shows that most children who experience adequate social development (sufficient) are children who tend to use gadgets on average using gadgets for more than 2 hours every day. Because if children use gadgets for too long or more than 2 hours every day, it can harm their health, one of which is interference with their social development.

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