

THE RELATIONSHIP BETWEEN GADGET USAGE DURATION AND SOCIAL DEVELOPMENT IN PRESCHOOL CHILDREN AT DHARMA SENTANA KINDERGARTEN

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ABSTRACT

Introduction

Preschool is an important period in the process of human development. The speed of growth and development of each individual with the others varies, depending on the factors that influence it during the growth and development process takes place. At this time, as technology develops, there are many influences on the child's development process, one of which is the use of gadgets. The purpose of this study was to determine whether there was a relationship between the duration of gadget use and social development in preschoolers at Dharma Sentana Kindergarten.

Method(s)

This research method is correlational which is quantitative with the approach model used is cross sectional. The sampling technique used in this study was non-probability sampling with purposive sampling, namely 94 respondents. Data collection using a questionnaire instrument.

Result(s)

The Spearman rank statistical test obtained a p value on the duration of gadget use with social development, namely $0.000 < 0.05$, then H_0 was rejected and H_a was accepted, that is, there was a significant relationship or correlation.

Conclusion(s)

The conclusion from this research is that it is expected that the community, especially parents, pay more attention to children and build good communication and interaction with children so that children can reduce excessive playing of gadgets and prevent social development problems in children.

INTRODUCTION

Early childhood is a period of rapid development that is fundamentally beneficial for later life. Early childhood encompasses children between the ages of 0 and 8. During this period, growth and development occur in various aspects, one of which is social interaction (Novitasari, 2013)

According to data from the Central Statistics Agency, the number of early childhood children in Indonesia in 2021 reached 30.83 million, equivalent to 11.35% of the current population. According to data from the Directorate General of Population and Civil Registration at the Ministry of Home Affairs, Bali's population in June 2021 was 4.27 million, with 247,861 children aged 0-4 and 329,529 children aged 5-9. Based on this data, many children in Indonesia, particularly in Gianyar Regency, are already participating in preschool programs.

The preschool period is a crucial stage in a child's development. Growth and development during this period will determine the success of the child's growth and development in the following years. The rate of growth and development varies from individual to individual, depending on the factors influencing the process. With the advancement of technology, many factors influence a child's development, one of which is the use of gadgets (Imron 2017).

Gadgets are not only circulating among teenagers and adults, but have also circulated among children, even gadgets are no longer foreign items for preschool-aged children who are not yet suitable for using gadgets (Widiawati, Sugiman, 2014). The number of gadget users is estimated at more than 1.5 billion users worldwide and it is estimated that more than 1 billion devices were sold in 2016. According to Kominfo (2017), the use of gadgets in Indonesia is estimated to reach 66.31% of users in 2017 and in Bali around 45.24%.

According to the Central Statistics Agency (BPS), the percentage of gadget users in Indonesia reached 65.87% in 2021. This figure has increased compared to 62.84% in 2020. The Central Statistics Agency (BPS) noted that in Indonesia, the majority of children aged 5 years and above access the internet for social media, with the highest percentage reaching 88.99% compared to other internet access purposes. As many as 98.70% of children aged 5 years and above access the internet using gadgets, the rest use laptops (11.87%), desktop computers (2.29%), and others (0.18%). This data shows that gadget use among children in Indonesia is quite high for accessing the internet. Seeing this,

parental supervision is needed regarding gadget use. In addition, excessive gadget use can cause children to experience social development disorders such as children becoming shy and not daring to interact with their friends.

Social development is the development of behavior in children, where children are encouraged to adapt to the rules established in their community. In other words, social development is the process by which children learn to adapt to the norms, morals, and traditions of a group. At this stage, children are not yet able to socialize well with others. They do not yet understand that the environment has a different perspective than their own. A child's early social development is based on their relationship with their parents or caregivers at home, especially family members. Children begin to play with other people, especially their family. Without realizing it, children begin to learn to interact with people outside themselves, namely with those around them. Social interactions then expand, not only with family at home but also with the surrounding environment and also at school (Fuadia, 2022).

Based on initial data collection conducted at Dharma Sentana Kindergarten, Batubulan Kangin Village, there is a population of 123 children with an age range of 5-6 years and of that number there are 69 boys and 54 girls. After conducting observations and interviews with 7 (seven) parents of students, they said that their children were able to use gadgets themselves and the duration of gadget use from each child also varied, so that the children also showed different behavior and social development.

Based on the research results from Veniawati (2022), it was stated that there is a relationship between gadget use and the risk of psychosocial development problems in preschool children. From the research conducted by Veniawati (2025), from 97 respondents, it was found that the majority, 48.4%, had a high intensity of gadget use.

Based on another research study conducted in 2013 on several families in the Yogyakarta area, it was shown that since using gadgets, children have become difficult to communicate with, are indifferent and less responsive when parents talk to them (Anggrahini, 2013). If this continues, it is feared that it will affect the social development of preschool children. While children should be able to interact well with their environment, the presence of gadgets disrupts this interaction.

Gadgets have many positive impacts, but of course, there are also negative ones. Technology is like a double-edged sword, considering that its use has both positive and negative sides. The positive impact of gadgets is that they can

stimulate the senses of hearing and sight. This is of course inseparable from the gadget's function itself, as it can display various proportions of movement, sound, color, and images in a single device. Furthermore, gadgets also have negative impacts such as eye health problems, sleep disturbances, introverted personalities, and even developmental disorders. Children who interact more frequently with gadgets will feel alienated from their surroundings due to a lack of social interaction (Sulisnadewi, Labir, 2021).

The aim of this study was to determine the relationship between the duration of gadget use and social development in preschool children at Dharma Sentana Kindergarten.

METHODS

This study used a cross-sectional approach among preschool children at Dharma Sentana Kindergarten, Batubulan Kangin Village, Gianyar Regency. The independent variable was the duration of gadget use, while the dependent variable was social development.

The study population consisted of parents of children aged 5-6 years at Dharma Sentana Kindergarten. The inclusion criteria were: 1) parents of preschool children aged 5-6 years who were willing to participate as respondents, and 2) parents who were willing to participate and had signed an informed consent form during data collection.

The sample size was calculated using the formula $s = N / 1 + N(d)^2$ where s is the number of samples, N is the population size, and d is the selected error rate of 0.05. The result of the calculation of the required sample size is 94 people. The research sample was obtained using a purposive sampling technique.

This research has passed the ethics review of the Research Ethics Commission of the Denpasar Polytechnic of the Ministry of Health, with the number LB.02.03/EA/KEPK/0447/2023. Respondents received an explanation and signed an informed consent form before data collection began.

Data collection on the duration of gadget use and social development data in preschool children was collected using a questionnaire filled out by the students' parents. Data analysis was carried out using univariate and bivariate analysis. Univariate analysis was conducted to determine the characteristics of respondents, the duration of gadget use, and social development. Bivariate analysis was conducted to determine the relationship between the duration of gadget use and social development in preschool children using the Spearman rank correlation test. Decision making is based on the p value

(probability). If the p value $< \alpha$ (0.05) then H_0 is rejected and H_a is accepted, which means there is a relationship between the duration of gadget use and social development in preschool children at Dharma Sentana Kindergarten. The direction of the correlation in the relationship between the duration of gadget use and social development in preschool children at Dharma Sentana Kindergarten can be positive or negative. If the relationship between the duration of gadget use and social development in preschool children at Dharma Sentana Kindergarten is positive, then the higher the duration of gadget use, the higher the social development problems in preschool children.

RESULTS

Respondent Characteristics

By Gender

Table 1. Frequency Distribution of Preschool Children's Characteristics by Gender

No	Gender	Freq	(%)
1	Female	41	43.6
2	Male	53	56.4
Total		94	100.0

Based on table 1, of the 94 respondents, 41 people (43.6%) were female and 53 people (56.4%) were male.

Based on last education

Table 2. Frequency distribution of respondent characteristics based on last education

No	Last education	Freq	(%)
1	Elementary School	0	0
2	Junior High School	7	7.4
3	High School	50	53.2
4	College	37	39.4
Total		94	100.0

Interpretation from table 2, of the 94 respondents, 7 people (7.4%) had junior high school/equivalent education, 50 people (53.2%) had high school/equivalent education, and 37 people (39.4%) had college education.

Bivariate Analysis

Based on work

Tabel 3. Distribusi frekuensi karakteristik responden berdasarkan pekerjaan

No	Pekerjaan	Freq	(%)
1	TNI/Polri	0	0
2	PNS	9	9,6
3	Self employed	34	36.2
4	Businessman	20	21.2
5	Laborer	0	0
6	House wife	31	33
7	Others	0	0
Jumlah		94	100.0

Table 3 shows that 9 people (9.6%) work as civil servants, 34 people (36.2%) are self-employed, 20 people (21.2%) are entrepreneurs, and 31 people (33%) are housewives.

Observation Results of Research Subjects Based on Research Variables

Intensity of Gadget Use in Children Based on Duration of Gadget Use

Table 4. Distribution of children's frequency based on the duration of gadget use

No	Durasi Penggunaan Gadget	Freq	(%)
1	Rendah	29	30.9
2	Sedang	47	50.0
3	Tinggi	18	19.1
Jumlah		94	100.0

Based on Table 4, the majority of children have moderate gadget use intensity, namely 47 children (50.0%).

Social Development in Preschool Children

Table 5. Frequency Distribution of Children Based on Social Development

No	Social Development	Freq	(%)
1	Kurang	37	39.4
2	Baik	57	60.6
Jumlah		94	100.0

The results from Table 5 show that of the 94 respondents, 37 (39.4%) had poor social development, and 57 (60.6%) had good social development.

Table 6. Bivariate Analysis of the Relationship Between Gadget Use Duration and Social Development in Preschool Children at Dharma Sentana Kindergarten

Durasi penggunaan gadget	Perkembangan sosial				Total		P	R
	Baik		Kurang		F	%		
	F	%	F	%				
Rendah	28	29.4	1	1.5	29	30.9	0.000	0.572
Sedang	26	28.0	21	22.0	47	50.0		
Tinggi	3	3.2	15	15.9	18	19.1		
Total	57	60.6	37	39.4	94	100.0		

Based on table 6, it was found that most children had a low duration of gadget use with good social development, as many as 28 people (29.4%).

The results of this bivariate analysis using the Spearman rank correlation test and obtained a p value = 0.000 < 0.05 then H_0 is rejected and H_a is accepted, namely there is a significant relationship or correlation, this states that there is a relationship between the duration of gadget use and social development in preschool children at Dharma Sentana Kindergarten. From the criteria for the level of correlation strength, the results obtained $r = 0.572$ which means there is a strong relationship between the variable duration of gadget use and social development in preschool children. The correlation coefficient value above shows that it is positive, therefore the higher the duration of gadget use, the higher the social development problems in preschool children at Dharma Sentana Kindergarten.

DISCUSSIONS

The results of a study conducted on parents of preschool children at Dharma Sentana Kindergarten showed that most of the children were male. According to research conducted by (Rodríguez et.al, 2009), the child's gender only influences the type of parenting style used by the mother and does not affect the child's development. Therefore, the data obtained in this study are in line with that research. However, the influence of gender on child development has not yet been justified regarding the relationship between the two (Windiastris, 2020).

The results of this study indicate that the majority of parents had a high school education or equivalent. Education is the primary foundation for individuals to understand the importance of health knowledge for children and their behavioral development. Therefore,

adequate education is crucial in providing parenting styles that are appropriate to their development.

The research found that most parents are self-employed. Working is generally a time-consuming activity for parents of preschool children, which can impact their children's social development. Over time, parents' busy workloads can result in less time for their children.

The results of a study conducted on parents of students who have preschool children at Dharma Sentana Kindergarten, found that most children have a moderate intensity of gadget use duration. Most parents limit their children to use gadgets for less than 1 hour, but children can use gadgets for up to 3 hours. This is because busy parents want their children to be calm without disturbing them so they give their children gadgets. This is in line with research (10) which states that gadgets can be a second caregiver when parents are busy and do not want their children to disturb their activities

This study found that most children experience good social development. Many factors influence a child's social development, one of which is parenting and guidance from parents. Pratiwi (2015) stated that there is a relationship between parenting patterns and the social development of preschool children. Good parenting is important for optimizing children's growth and development by providing the stimulation and emotional support children need for their growth and development, including affection and responsibility as parents. Therefore, parents who carry out their roles well will ensure children's growth and development are appropriate for their age. However, if parents' role in providing care is lacking, the child's growth and development will be hampered.

The results of this study indicate a significant relationship between the duration of gadget use and social development in preschool children. The correlation strength criteria show a strong relationship between the duration of gadget use and social development in preschool children. This study shows that the longer a child uses gadgets, the greater the risk of social development problems. This is in line with research from (Gunawan, 2017) which found that excessive use of gadgets by children will impact their social development.

The results of this study have limitations, namely that the measurement of the intensity of gadget use duration in children was not conducted through direct observation of

respondents but was conducted using a questionnaire that had been provided and given to the respondents' parents. This means that the measurement of gadget use duration intensity only looked at the questionnaire completed by the parents of the research respondents. Therefore, it is possible that the results obtained would be different if it were done through direct observation of children. From this study, it is hoped that further research on gadget use in children will be carried out.

CONCLUSIONS

The study results showed a significant relationship between the duration of gadget use and social development in preschool children. The majority of children played with gadgets for 30 minutes to an hour per day. The longer a child uses gadgets, the greater the risk of social developmental issues. Therefore, parental supervision is essential when children are using gadgets to prevent social developmental issues.

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