

## THE RELATIONSHIP BETWEEN DURATION OF GADGET USE AND EMOTIONAL DEVELOPMENT OF CHILDREN AGED 4-6 YEARS IN TK BANJARMASIN

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### Abstract

Golden Age is a very important developmental period (0-5 years old). The positive and negative impacts of giving gadgets to children have an influence on children's development. The duration of gadget use especially interferes with emotional and language development. This research aims to determine the relationship between duration of gadget use and the emotional development of toddlers. This research uses quantitative study of analytical survey type with cross-sectional design. Population of children aged 4 – 6 years. The research sample was 30 respondents using convenience sampling technique. Data collection tools used a questionnaire on duration of gadget use, and SDITK on emotional behavior problems. Data analysis used univariate and bivariate with the Chi-Square test. The result is the majority of children use gadgets for > 1 hour, 21 people (70%) and the majority of children experience emotional development disorders, 15 people (50%). The results of the relationship between the duration of gadget use and the emotional development of children aged 4-6 years in Banjarmasin Kindergarten, the data showed a significance value of p value = 0.041 ( $\alpha < 0.05$ ). The conclusion of this research is there is a relationship between the duration of gadget use and the emotional development of children under five. The role of parents and teachers is to coordinate early detection of children's emotional development every 3 months and limit the duration of gadget use to  $\leq 1$  hour per day for children aged 4 - 6 years.

**Keywords:** *children, duration, gadget use, emotional development, kindergarten, age 4-6 years*

### Introduction

The Golden Age is a time when children experience a very important phase in their lives, a very sensitive period of child development is when they are 1-5 years old. At this time all aspects of development, namely intellectual, emotional, and spiritual intelligence, experience extraordinary development that will affect and determine further development (Hidayati, 2020).

The problem that occurs in the current generation is the provision of gadgets too early in the era of globalization and causes a negative impact on early childhood development. Many children begin to get addicted to gadgets and forget to socialize with their surroundings, which has a psychological impact, especially a crisis of confidence, as well as physical development. Other negative impacts can also be caused by the use of gadgets in children too early, namely the impact of blue light radiation from the screen which can interfere with eye health, the development of the child's brain is not maximized due to unbalanced developmental stimulation, lack of physical activity needed for child growth and development, low quality and quantity of sleep, and low concentration problems due to addiction to gadgets (Janiasih *et al.*, 2022).

The impact of gadget use on children's mental health makes parents need to pay attention to the use of these gadgets and know the developmental and mental emotional status of their children. In 2016 the American Academy of Pediatrics (AAP) issued recommendations on the use of gadgets in children, including avoiding the use of digital media in children under 18 months of age and using gadgets for no more than one hour a day. based on a survey entitled internet penetration and internet user behavior in Indonesia 2018 released by the Indonesian Internet Service Providers Association (APJII), West Sumatra province is the third with the most internet usage, namely 2.6% after North Sumatra province (6.3%) and Lampung province as much as 3% (Dwi Hadya Jayani, 2019 dalam Damaiyanti et al., 2020).

The results showed that most children who used gadgets <1 hour had normal emotional development as much as 55.6%, while most children who used gadgets >1 hour had emotional development in the impaired category as much as 66.7%. Statistical tests show that there is a relationship between the duration of gadget use and emotional development in toddlers in Banjarmasin kindergarten ( $p = 0.041 < 0.05$ ).

Preliminary studies conducted because researchers did not get data on cases of developmental disorders, the researchers chose to conduct research with the largest number of kindergarten students with the results of preliminary studies conducted by researchers found that the most student data was in Banjarmasin Kindergarten, with 54 children so the researchers chose to conduct research at Banjarmasin Kindergarten. Preliminary studies conducted on 5 children at Banjarmasin Kindergarten. Data obtained from 3 out of 5 children using gadgets with a duration of use > 1 hour / day and 2 children using gadgets with a duration of < 1 hour / day. While the emotional development of 3 out of 5 children had impaired emotional development of children and 2 children had normal emotional development of children.

Based on the phenomenon and description above, the researcher is interested in conducting a study entitled "The Relationship between Duration of Gadget Use and Emotional Development of Children aged 4-6 years in Banjarmasin Kindergarten".

### ***Materials and Methods***

The research method used in this study is a quantitative study of analytic survey type with cross-sectional design. This research was conducted at Banjarmasin Kindergarten. The population used in this study were children aged 4-6 years in Banjarmasin kindergarten. The research sample was 30 respondents with convenience sampling technique.

The data collection instrument used the gadget use duration questionnaire (Oktaviani *et al.*, 2019) and the Emotional Behavior Problems (KMPE) questionnaire by Ladrigo-Ignacio, L and Tronco, 2000 in the book Guidelines for the Implementation of Stimulation, Detection, and Early Intervention of Child Growth and Development at the Basic Health Service Level which has been tested for validity and reliability. Data analysis used univariate and bivariate with Chi-Square test.

## Result

*Table 1: Frequency Distribution of Respondents Based on Vlidh Age in Banjarmasin Kindergarten*

Age	F	%
5 years old	13	43,3
6 years old	17	56,7
Total	30	100

Based on table 1, it is known that most children are 6 years old, as many as 17 people (56.7%).

*Table 2: Frequency Distribution of Respondents Based on Gender in Banjarmasin Kindergarten*

Gender	F	%
Male	14	46,7
Female	16	53,3
Total	30	100

Based on table 2, it is known that most of the children are female, namely 16 people (53.3%).

*Table 3 : Frequency Distribution of Respondents Based on Age of Child's Parent in Banjarmasin*

Age of Child's Parent	F	%
Earlu adulthood (26-35)	19	63,3
Late adulthood (36-45)	9	30,0
Early elderly (46-55)	2	6,7
Total	30	100

Based on table 3, it is known that most of the parents of children are in the early adult age category (26-35 years), namely 19 people (63.3%).

*Table 4 : Frequency Distribution of Respondents Based on Gender of Child's Parent in Banjarmasin*

Gender of Child's Parent	F	%
Male	2	6,7
Female	28	93,3
Total	30	100

Based on table 4, it is known that most of the parents of children are female, namely 28 people (93.3%).

*Table 5 : Frequency Distribution of Respondents Based on Education of Child's Parent in Banjarmasin*

Education Child's Parent	F	%
Low education	18	60,0
Higher Education	12	40,0
Total	30	100

Based on table 5, it is known that most parents of children have a low education as many as 18 people (60%).

Table 6 : Frequency Distribution of Respondents Based on Job of Child's Parent in Banjarmasin

Job Child's Parent	F	%
Private	4	13,3
Housewife	26	86,7
Total	30	100

Based on table 6 above, it is known that most of the children's parents are housewives as many as 26 people (86.7%).

Table 7 : Frequency Distribution of Respondents Based on Duration of Gadget Use in Children in Banjarmasin

Duration of Gadget Use	F	%
≤1 hour	4	13,3
>1 hour	26	86,7
Total	30	100

Based on table 7, it is known that the majority of children use gadgets >1 hour, namely 21 people (70%) and other children use gadgets ≤1 hour, namely 9 people (30%).

Table 8 : Frequency Distribution of Respondents Based on child's emotional development of Children in Banjarmasin

Emotional Development	F	%
Normal	6	20,0
Suspect	9	30,0
Disorder	15	50,0
Total	30	100

Table 8 shows that most children have emotional development in the impaired category as many as 15 children (50%), while children with normal emotional development are only 6 children (20%).

Table 9: Crosstab of Duration of Gadget Use with Children's Emotional Development in Banjarmasin Kindergarten

Duration of Gadget Use	Emotional Development						Total	
	Normal		Suspect		Disorder		N	%
	N	%	n	%	n	%		
≤1 hours	5	55,6	3	33,3	1	11,1	9	100
>1 hours	1	4,8	6	28,6	14	66,7	21	100
<b>Total</b>	6	20,0	9	30,0	15	50,0	30	100

*Pearson Chi Square = 0,041 (α < 0,05)*

The results in table 9 show that 5 out of 9 children (55.6%) who use gadgets ≤ 1 hour, have emotional development in the normal category, while children who use gadgets > 1 hour, it is known that 14 out of 21 children (66.7%) have emotional development in the impaired category.

Based on the results of statistical tests, it is known that the significance value in bivariate analysis is 0.041 ( $\alpha < 0.05$ ) so that  $H_0$  is rejected and  $H_a$  is accepted, which means that there is a relationship between the duration of gadget use and the incidence of emotional development of children aged 4-6 years in Banjarmasin Kindergarten.

### **Discussion**

#### a. Duration of Gadget Use in Children aged 4 = 6 years in Banjarmasin Kindergarten

The results showed that most children used gadgets for >1 hour as much as 70%. The results of this study are in line with previous research by Mulyantari *et al.*, (2019) which also found 56% of children using gadgets for >1 hour. According to Radliya *et al.*, (2017) in Kurniastuti & Rusmariana (2021) the use of gadgets today is not only used by teenagers and adults, but children who are still in playgroups and kindergartens are no strangers to gadgets, they already know and understand the sophistication of gadgets such as computers or laptops, tablet PCs, and smartphones.

The use of gadgets in toddlers is very dangerous for children's emotional health. According to the point of view of mental health science, the use of gadgets in early childhood is highly discouraged because it can result in children not getting natural lessons to communicate and socialize (Agustin, 2019). Children become less able to recognize and share emotions and verbal. The limited response of children can interfere with the development of their ability to get along and adapt (Wiguna, 2013 dalam Oktaviani *et al.*, 2019).

Children who use gadgets > 1 hour can make children become addicted to using gadgets. Gadget addiction is characterized by when the gadget in the child's hand is taken away, the child becomes sad, disappointed, anxious, angry and tantrums (Agustin, 2019). Nareza (2020) added several impacts of gadget addiction on children, including impaired cognitive development, unable to empathize, obesity due to children's lack of movement, behavioral disorders such as ADHD and can have an impact on certain limbs that feel pain. From the many negative impacts caused by excessive gadget use, several efforts are needed to reduce gadget addiction in children.

#### b. Emotional Development of 4–6 Years Old Children in Banjarmasin Kindergarten

The results of the researcher's observations showed that some children had emotional development in the impaired category as much as 50%. The results of this study are in line with previous research by Damaiyanti *et al.*, (2020) which also found that most children had problems in their emotional development, namely 52.8%. The number of children who experience disorders in their emotional development must be taken to reduce this high percentage.

The results of the researcher's observations showed that based on the age of the child, most children aged 5 years had emotional development in the impaired category as much as 76.9%, while most children aged 6 years had emotional development in the suspect category, namely 41.2%. This shows that 5-year-old children are 35.7% more likely to have impaired emotional development than 6-year-old children. According to the researcher's assumption, with increasing age, the experience gained will be more and more so that it affects the emotional development of children. In line with Vygotsky (1994) dalam Khaironi (2018) who believes that individual social interactions will continue to develop based on the experience and communication gained. The older the age, the more experience gained so that it affects the emotional development of individuals.

Children who have been detected to experience emotional development with the category of disorders are advised to take therapy to health workers such as psychologists to carry out therapy according to the child's developmental needs (Erol *et al.*, 2005 dalam Wulandari & Hermiati, 2019).

c. Relationship between Duration of Gadget Use and Emotional Development in Children aged 4-6 years in Banjarmasin Kindergarten

The results showed that most children who used gadgets <1 hour had normal emotional development as much as 55.6%, while most children who used gadgets >1 hour had emotional development in the impaired category, namely 66.7%. Statistical tests show that there is a relationship between the duration of gadget use and emotional development in toddlers in Banjarmasin kindergarten ( $p = 0.041 < 0.05$ ).

These results support previous research conducted by Damaiyanti *et al* (2020) which shows there is a significant relationship between the duration of gadget use and the emotional development of pre-school children ( $p = 0.001$ ). This study is also in line with research by Mulyantari *et al.*, (2019) which shows that there is a significant relationship between gadget use and mental emotional deviation with a value of  $p = 0.001$  and  $OR = 10.8$  which means that the use of gadgets > 1 hour in one day can increase the risk of mental emotional deviation.

Some factors that can influence the use of gadgets in children can be influenced by age, occupation and education of the child's parents. The results showed that the majority of children's parents were in the early adult category (26-35 years) as much as 63.3%. In line with Fadlilah & Krisnanto's research (2019) which also shows that the majority of children's parents are in the early adult category.

Another factor that influences the use of gadgets in children is parental employment. The results showed that most parents worked as housewives as much as 86.7%. In line with Fadlilah & Krisnanto (2019) which shows that most of the children's parents are housewives as much as 51.1%. The results of observations made by researchers showed that 76.9% of parents with IRT jobs gave gadgets > 1 hour to their children. The results of this study are not in line with Fadlilah & Krisnanto (2019) which found that

children with IRT parents use gadgets in a low category. Housewives should have more time to interact with children compared to parents who have to work outside the home, but there are still many parents who use gadgets as a means of playing with children because it is considered more practical so that they are more quiet and do not interfere with the mother's activities while taking care of housework to control children, especially when the mother has to do housework such as cooking, washing dishes, and so on (Wulandari & Hermiati, 2019).

Another factor that influences the duration of gadget use in children is from parental education where the results show that most parents or low education categories are elementary and junior high school graduates as many as 18 people (60%). According to Notoatmodjo (2016) in Iskandar *et al.*, (2022), education has a contribution for individuals to gain knowledge. Someone who has low education tends to be hampered in adapting to developments and newly introduced values (Hartini, 2019). According to Fadlilah & Krisnanto (2019), parents' lack of understanding is the cause of increased gadget use in children. Parents' lack of understanding regarding the time limit for gadget use in children can be influenced by the parents' level of education. Parents with higher education tend to have broader knowledge than parents with lower education levels, the lower the parents' knowledge, the higher the use of gadgets in children. Parents who have a high level of education will accompany, supervise, and provide time limits for gadget use in children, and vice versa. Parents who have a low level of education tend to give their children free time when using gadgets (Berliana *et al.*, 2022).

According to experts, the duration of gadget uses for children under five is <1 hour per day. Children who spend time playing gadgets can have a negative impact on their emotional development, including children becoming more emotional, rebellious, arrogant, even hitting, crying loudly, to the stage of desperation if the gadget is not returned immediately (Wulandari & Hermiati, 2019).

The use of gadgets on emotional development has a variety of further impacts such as affecting emotional development which will affect children's social life in society, experiencing difficulties in school lessons or other lessons so that it can result in psychiatric disorders (mental, emotional and behavioral) experienced by children due to gadget addiction so that this problem must be watched out by all parents, especially PAUD / TK children with the habit of playing gadgets (Wulandari & Hermiati, 2019).

Efforts that can be made by local health workers are to conduct early screening in assessing the mental and emotional status of children early on, namely at the age of 3-6 years (IDAI, 2013 in Wulandari & Hermiati, 2019). It is intended that parents can immediately follow up on the results of the examination if it is known that their child has an emotional disorder so that they can immediately consult a pediatrician, child psychologist and psychiatrist to confirm the diagnosis (Erol *et al.*, 2005 in Wulandari & Hermiati, 2019).

Suggestions for parents are also recommended to supervise and accompany children aged 4-6 years in using gadgets, namely <1 hour per day with quality and age-appropriate shows or games.

Suggestions for teachers or schools can play a role in conducting parenting programs. Parenting programs are useful for increasing knowledge, developing and improving parents' skills in caring for and educating children so that they are able to care for children properly (Lasmini, Septiani, Aisyah, & Selvia, 2022). Some models for implementing parenting programs in PAUD/TK can be implemented by creating parent's classes or parent meeting classes (KPO), parent involvement in groups/classes, parent involvement in joint events (KODAB), parent consultation days and home visits (Lasmini et al., 2022).

Teachers or schools can collaborate with health workers to increase parents' knowledge about the impact of gadgets on children's development by conducting counseling for parents, especially PAUD / TK and SD in their working areas to increase parents' knowledge about the impact of gadget use on children's emotional development.

### **Conclusion**

Gadget use in children, especially at an early age, can have a negative impact on their emotional development, such as social impairment, learning difficulties, mental, emotional and behavioral problems. Therefore, it is necessary to conduct early screening by health workers in children aged 3-6 years to detect emotional disorders. Parents are advised to supervise their children's gadget use and engage in parenting programs aimed at improving skills in educating children. Collaboration between schools and health professionals is also important to improve parents' understanding of the negative impact of gadgets on children's development.

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