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Analyzing the Relationship between Digital Game Addiction and Developmental Levelss Aged 4-6 Years Old

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ABSTRACT The digital era is experiencing very rapid development, especially the use of gadgets and this is in demand by all ages, including pre-school age children. This has an impact on the level of child development in the form of delays in the level of development. The purpose of this study was to determine the relationship between game addiction and the level of development of children aged 4-6 years, identify game addiction in preschool children, identify the development of preschool children, cross-sectional research design, independent variable addiction to children playing gadgets, independent variable development of preschoolers. schools, the sampling technique used was a total sampling of 38 children. The analytical test used was Spearman's rho = 0.01. The results showed that there was a relationship between addiction to playing gadgets and the level of development of children aged 4-6 years with a p value = 0.000 <0.05. Parents are expected to know the impact of gadget addiction and can provide education and assistance to their children when using gadgets, there are rules that must be agreed upon between children and parents regarding the duration of using gadgets, facilitating manual games, introducing interesting traditional games. Provide education and assistance to parents about the impact of gadget addiction and good use of gadgets.

INDEX TERMS Addiction, Childreen, Development level, Game, Gadget

I. INTRODUCTION

The development of gadgets is increasingly widespread, almost all individuals, children, and parents now have gadgets. The need for information and communication for the community is very important because gadgets provide interesting features to introduce children quickly. Various research journals have found that gadgets can affect children's development [1], [2], [3].

Based on the results of the Basic Health Research (Riskesdas, 2018) stated that the average gross motor development of children aged 36-59 months in Indonesia reached 97.8%. Compared to the results of Riskesdas 2013 shows that the percentage of children who experience gross motor development disorders in Indonesia is 12.4% and fine motor development is 9.8%. Meanwhile, according to research at TK Handayani Surabaya, it showed that preschool-aged children at TK Handayani Surabaya experienced a dubious level of development [4], [5].

Seeing the current reality, it has become commonplace for children to only use gadgets in the form of smartphones or cellphones as toys. Children who are in the curious stage will also be happy if their parents give the item. Children who tend to use goods continuously will be very addicted and will become a routine activity in daily life. In this case, children often like to play with toys, which makes them lazy to move and be active. They like to sit in front of the device and enjoy the game [6], [7], [8].

Parents assume that giving gadgets apart from silence children can also play games that can practice problem solving for children. Problem solving should not be based on this, because children's creativity will be obsessed with technology in the future. Problem solving can be taught with

language, touch, and attitude that parents instill in them and not once or twice but repeatedly to get them used to dealing with things that come from outside. Problem solving in the form of games and songs can improve musical intelligence and motor intelligence, thus playing an important role in the development of psychomotor, cognitive and emotional abilities [9], [10], [11].

This incident should be a concern for various parties, especially parents should increase the awareness of children in using gadgets for playing and communication facilities. Especially from the family environment in character building and growing children. The role of parents is to control the features in the gadget to avoid features that are prohibited from being seen by children, and to limit the use of gadgets for children. Children under the age of 5 years can be provided with gadgets. However, parents need to be careful about the duration of use. For example, children can only play for 30 minutes and play gadgets only once a week during free time such as Saturday or Sunday. After that, the child must continue to interact with other people. This is because the use of gadgets for more than 2 hours a day will affect the psychology of children [12], [13], [14].

Based on the background described above, the problem can be formulated as follows, "The Relationship between Game Addiction and the Development of Preschool Age Children in Handayani Kindergarten Surabaya".].

II. METHODHOLOGY

This study uses a correlational analytical research method with a cross sectional approach and uses a total sampling technique with the population in this study being all students of class A and TK Handayani Surabaya with a sample of 38 students. The independent variable in this study is addiction to playing games, while the dependent variable is child development.

Data collection in this study was carried out by filling out the questionnaire sheet directly, the researcher would accompany the preschool-aged children to choose the check list mark (√) or the options available in the column on the questionnaire sheet. Before filling out the questionnaire, the child's parents were asked to fill in the informed consent given, the preschool age child will be explained in advance by the researcher how to fill it out.

Data analysis was carried out in a computerized manner using data processing software using univariate and bivariate analysis. Univariate is a data analysis that explains and describes each research variable while bivariate is an analysis that is carried out more than or equal to two variables that serves to determine the relationship between game addiction and the development of preschool-aged children, in analyzing using non-parametric statistical tests, namely the Spearman rank correlation test by determining the value of the correlation and the strength of the correlation

III. RESULT

This research was conducted on the Kindergarten Handayani at Banyu Urip Surabaya Indonesia.

TABLE 1
Characteristics of Preschool Age Children In Tk Handayani Surabaya In April – May 2022

No.	Characteristics	Frequency	Percentage (%)
1.	Age		
	60-66 Months	16	42,1
	66-72 Months	22	57,9
2.	Gender		
	Female	25	65,8
	Male	13	34,2
3.	Ownership		
	Own	6	15,8
	Parent	31	81,6
	Sibling	1	2,6
4.	Usage Duration		
	1-2 hours/day	20	52,9
	3-4 hours/day	11	26
	5-6 hours/day	7	18,4
Total		**38**	**100**

Based on the results of the study in table 4.1, it shows that of the 38 preschool age children, the majority (57.9%) were found in the category with the age range of 66 - 72 months mostly (65.8%) For the female gender, almost all (81.6%) ownership of the gadget used is the parent's gadget. And most (52.6%) duration of gadget use is 1-2 hours/day

TABLE 2
Frequency Distribution Of Game Addiction To Preschool Age Children In Tk Handayani Surabaya In April – May 2022

Playing games	Frequency	Percentage (%)
Normal	19	50
Mild Addiction	15	39,5
Heavy Addiction	4	10,5
Total	**38**	**100**

Based on the distribution results in table 2, it shows that half of children playing normal games are 19 children (50%) then almost half of children are lightly addicted to playing games as many as 15 children (39.5%) and a small proportion of children are heavily addicted to playing games are 4 children (10,5 %).

TABLE 3
Distribution Of The Development Of Preschool Age Children In Tk Handayani Surabaya In April – May 2022

Child development	Frequency	Percentage (%)
Age-appropriate	13	34,2
Doubtful	21	55,3
Deviation	4	10,3
Total	**38**	**100**

Based on the distribution results in table 3, it shows that almost half the level of child development is appropriate as many as 13 children (34.2%) then most of the developmental levels of children are doubtful as many as 21 children

(55.3%) and a small portion of the developmental level of deviant children is 4 children (10.3%).

TABLE 4
The Relationship Of Game Addiction With The Development Of Preschool Age Children In Handayani Tk Surabaya In April – May 2022

Playing games	Child development								P
	Age-appropriate		Doubtful		Deviation		Total		
	n	%	n	%	n	%	n	%	
Normal	10	52,6	9	47,4	0	0	19	100	0.0
Mild Addiction	3	20	10	66,7	2	13,3	15	100	
Heavy Addiction	0	0	2	50	2	50	4	100	
Total	13	34,4	21	55,3	4	10,3	38	100	

Based on table 4 the results of the Spearman rank statistical test, p value = 0.000 or <0.05, it is found that there is a relationship between addiction to playing games and the development of preschool-aged children. This is in line with research conducted by Schuelt and Sumarni, 2020 [15], [16] which showed that there was a significant relationship between addiction to playing games and the development of preschool-aged children with a value (p-count = 0.000).

It is recommended that the role of parents in educating their children is that parents must be able to manage children using the games they are playing, which is to choose according to age for children under 6 years of age for color, shape, and sound recognition, limit the time that preschoolers may play games but only half an hour in a day. once a week, avoid addiction parents can apply rewards and punishments if the child violates. In addition, parents must fulfill basic needs that aim to develop children's intelligence, namely physical, emotional, and early stimulation needs [17], [18], [19]. These three basic needs must be provided simultaneously. One way is to often invite children to talk and play. Inviting him to talk, read stories over and over again, and teach him to sing, these are effective ways to stimulate children's language intelligence. This method also aims to stimulate thoughts and feelings, gross motor and fine motor in the neck, body, feet, hands and [20], [21].

IV. DISCUSSION

Development is an increase in the structure and function of the body that is more complex in various aspects of development, including gross motor skills, fine motor skills, speech and language as well as socialization and independence [22], [23]. There are two factors that influence child development, namely genetic factors (birth, family genetics), health status factors (illness or disability), individual and caregiver prenatal factors (drug abuse during pregnancy, early pregnancy), and environmental factors [24], [14], [15].

The results of the study are in line with research Ravindar, 2021 [24] that most of the preschool age children were late as many as 19 people (61.3.6%) came from several factors including the environment, health status, and family conditions. The American Academy of Pediatrics advises parents to limit the time their children play with electronic media so that children do other activities such as reading, physical activity, and socializing with others (Potter & Perry, 2009). Therefore, the right solution for parents is to invite children to play in the garden in their home area so that children are active and socialize with their peers, buy educational toys such as puzzles, busy jars to replace online games in order to train children's motor skills, and do shared activities such as cooking with mother, cleaning the house to stimulate closeness between children and mothers [13], [25].

It is recommended that the role of parents in educating their children is that parents must be able to manage children using the games they are playing, which is to choose according to age for children under 6 years of age for color, shape, and sound recognition, limit the time that preschoolers may play games but only half an hour in a day. once a week, avoid addiction parents can apply rewards and punishments if the child violates. In addition, parents must fulfill basic needs that aim to develop children's intelligence, namely physical, emotional, and early stimulation needs. These three basic needs must be provided simultaneously. One way is to often invite children to talk and play. Inviting him to talk, read stories over and over again, and teach him to sing, these are effective ways to stimulate children's language intelligence. This method also aims to stimulate thoughts and feelings, gross motor and fine motor in the neck, body, feet, hands and fingers [26], [27]. There is a limited number of samples for this study so it is suggested that in subsequent studies a minimum sample of 100, for research methods can be developed with several variables as well as sampling techniques so that the research results can show generalizations.

IV. CONCLUSION

Addiction to playing games is related to the development of preschool-age children in Kindergarten Handayani Surabaya, half of preschoolers in TK Handayani are addicted to playing gadgets normally, and most of them have a questionable level of development. so it can be concluded that there is a significant relationship between addiction to playing gadgets and development in preschool children at Handayani Kindergarten. Parents are expected to limit the provision of playing gadgets in a rare frequency or should not play more than 1 hour per day and supervise children in using gadget features so that they do not have a negative impact on children. To increase parental knowledge about the consequences of gadget addiction and the healthy use of gadgets, it is necessary to carry out a socialization activity such as community service in the surrounding kindergartens.

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