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The Effectiveness of Playing Ball Stimulation to the GrossMotor Development of 24-36 Months Children

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Abstract

Various research results reveal that early age is a golden period for the development of children in which 50% of the intelligence development occurs at the age of 0-4 years and 30% in the following 8 years. Early childhood education also needs to be considered since education plays an important role in the process of growth and development of the children. The purpose of this study was to determine the effectiveness of playing ball stimulation to the gross motor development in children aged 24-36 months.

This study used a pre-experimental design with posttest only control group design. The population was 150 children in all Posyandu in the working areas of the PKM Kanigoro. The sampling technique total sampling. The independent variable wasplaying ball stimulation, while the dependent variable was gross motor development. The instrument used KPSP.

The results of Wilcoxon Signed Rank statistical test showed p = 0.005 (α = 0.05), indicated that playing ball stimulation could improve gross motor skills development of children. It is expected that the parents of the respondents more active in asking questions, watching carefully on how to provide stimulation to the children, especially in stimulating ball games, so that it could help them in increasing their children gross motor skills. The results of this study can also be used as an input for health workers to further improvement of counseling during posyandu activities, so that the gross motor development of children continues to increase well.

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INTRODUCTION

The Law of National Education System article 28 in the year of 2003 stated that early childhood education coud be organized through formal education channels such as kindergartens, non-formal education channels including play groups, child care parks, or other forms of equal and informal education channels in the form of family education or education organized by the environment (KurniasihImas, 2009).Early childhood education is an effort that is adressed to the children from birth to six-year-olds who are carried out through the provision of educational stimulus to help the physical and spiritual development so that children have the independecewhen entering further education (Kurniasih, 2009).

Various research results indicate that early childhood is a golden period for the development of the children where 50% of intelligence development occurs at the age of 0-4 years and 30% next in the age of 8 years. This golden period is also a critical period for children where the development obtained in this period is very influential on the development in the next period until adulthood. This period only comes once and cannot be delayed, so that if the opportunity is missed, it cannot be undo, and this is what seems to be still being wasted by the community. As a result, it impacts the children's readiness when entering the school level (Kurniasih Imas, 2009).

People tend to think of the activities of walking, running, and jumping when talking about gross motor skills. Many people do not realize that in these activities gross motor skills play more than just simple moving activities. Gross motor skills depend on effective sensory processing of a variety of different skills and systems, especially the senses of the body. These motor skills also require an understanding of our physical world (Indonesian Ministry of Health, 2006).Co-ordinated gross motor action also requires muscle rhythm, adequate body control and muscle strength. When all of the actions are fulfilled, the key to good gross motor skills is effective motor planning (Tara, 2010). Regarded to the enormous impact which will bearised, early childhood education is the most important action to assess the level of development of children. Early childhood education also needs to be considered because education plays an important role in the process of growth and development of the children.

Previous research support that ball was a good stimulation for the growth and development of the children. Jannah, et.al (2017) on their research proposed spoon and ball as the activity to stimulate the growth and development of the children. One way to increase the gross motor skills was by giving stimulation to the children as a way to train their gross motor skill so that children will be skilled and agiled in all motion suitable to the environment in the future. Simple and fun stimulation which could be given to train gross motor was ball and spoon games (Janah, et.al, 2017).

The purpose of this study was to determine the effectiveness of playing ball stimulation to the gross motor development in children aged 24-36 months. Based on the survey conducted by researchers in Posyandu in Jatinom Village, Kec. Kanigoro Blitar, it was obtained that playing football is an activity that is close to children daily activity. After the researchers approached the parents of children aged 24-36 months, by asking "dotheir children often interact with the environment every day?", and "do their children always move actively every day?" It turns out that more than 80% of parents said most of their children play more cellphones and there were many parents complained that their children were less active. From the phenomenonabove, the authors were interested in conducting research entitled "*The Effectiveness of Playing Ball Stimulation to the Gross Motor Development of 24-36 months Children*".

METHODS

This research used Pre-experimental design. The population was 150 children aged from 24-36 months in the working area of Posyandu Jatinom Kec.Kanigoro Kabupaten Blitar. The sample was 150 children taken by total sampling on December 2018. The data collection technique was direct observation to the playing ball stimulation to the children's gross motor development. The independent variable was playing ball stimulation, while the dependent variable was gross motor development. The instrument used KPSP and being managed by the researcher and collaborator which was a lecturer of midwifery department. Each sample was treated by giving playing ball stimulation in the duration of 4 times in a month based on the SOP on the appendix. The data analysis used Wilcoxon Signed Rank Test with significance level of 0.05.

RESULT

Table 1 The Frequency Distribution of Playing Ball Stimulation to the Gross Motor Development of 24-36 months Children

No.	Characteristics	f	%
1.	Age		
	24-29 months	70	46,7
	30-35 months	30	20
	>35 months	50	33,3
2.	Weight		
	12-13 kg	60	40
	13-14 kg	30	20
	14-15 kg	30	20
	>15 kg	30	20
3.	Gender		
	Female	60	40
	Male	90	60
	Total	**150**	**100**

Table 1 above showed that the highest percentage of age was 24-29 months with 46.7%, the highest weight was 12-13kgg as much as 40%, and most of the respondents was male as much as 60%.

Tabel 2 The identification of Gross Motor Skills before Stimulation

No	Category	f	%
1.	Halt	120	80
2.	Normal	30	20
	Total	**150**	**100**

Tabel 3 The identification of Gross Motor Skills after Stimulation

No	Category	f	%
1.	Halt	40	26,7
2.	Normal	110	73,3
	Total	**150**	**100**

Tabel 4 The Analysis of Playing Ball Stimulation to the Gross Motor Development by *Wilcoxon Signed Rank Test*

	N	Z	Ñvalue
Before and After Stimulation	150	- 2.828	0.005
ρ = 0,005	**α = 0,05**		

DISCUSSION

Gross Motor Development of 24-36 months ChildrenbeforePlaying Ball Stimulation

Based on the research results showed that almost half (46.7%) of the children were 24-29 months. From the age of 2-6 years, children learn to do social relationships and get along with people in the environment outside, especially with children of the same age. They learn to adapt and work together in playing activities. From the results of the study also showed that most (40%) of children weight at about 12-13kg. This was supported by the previous research by Jannah (2017) stated that Body weight also affected the child's agility in motion or play.The child's weight greatly affected their daily activities like playing, this was because children difficulty in moving their bodies which were not suitable to their age. These children tend to be lazy to move compare to children who had normal weight which could move actively in moving and playing (Jannah, et.al, 2017).

The data obtained showed that most (60%) of the respondents were male. Playing was a common thing for children, but did parents know children's games to stimulate child development such as motoric, cognitive, and so on. Based on the results of the study showed that most (66.7%) of the games that were often given to children were balls game. The type of game used and how to play it could also affect the gross motor development of the children. The results of the study showed that before the giving of playing ball stimulation almost all (80%) children aged 24-36 months were included in the halt criteria of gross motor development. This was influenced by gender. There were 6 female sex respondents, this was due to the statement that many girls were not given balls as toys, they only got bear or child shaped dolls from their parents. Even though they were still in preschool years, children already knew that certain types of games and tools were considered more suitable for boys and vice versa (Hurlock 2002).

Based on the observation, before the treatment, showed that the gross motor development of the children was very limited due to the lack of phisycal activity. This was supported by the statement of Aulina on her research "there was no increase in the gross motor development of the children before the treatment of bowling game" (Aulina,2018)

Gross Motor Development of 24-36 months Children after Playing Ball Stimulation

The results of the research obtained after the playing ball stimulation showed that most (73%) of the children were included in the normal criteria of gross motor development. This was due to the type of playground equipment that influenced the pattern of play. The more games and tools that could be manipulated the more children liked these tools and the more they played with them. Sexes or gender also affected the level of activity in gross motor behavior. Boys tended to be more active than girls, even though not all children had the same activity. Gross motor activity was strongly influenced by the surrounding environment and parenting of the family. For instance, the playing ball stimulation in children could be used for children in developing gross motor skills, learning to control themselves, and increase activity. Even now, many people consider that children's games to be a waste of time, but according to Bruner playing in childhood was a "serious activity," which was an important part of the development of the first years of childhood. So playing balls could affect children gross motor development, and games were a means of improvisation and combination, and were the first to faciliitate. (Hurlock, 2002)

Stimulus is highly needed in order to make children's physical and motoric development grow optimally. Children also have the opportunity to make a twist, welcome, kick and when the child runs after the ball or looks down and squats. This can help the ability of early childhood to explore. The ability of children in the gross motor skills of the children will develop further when playing spoon ball games because every movement such as running, passing a ball, taking a ball or carrying a ball will be a place for early childhood characterized by excess movement or activity, children will tend to show movement gross motor movement that is quite speedy and agile (Jannah, 2017)

Magdalena (2012) found an increase in the ability of children after doing ring ball activities. This can be seen from the increase in the gross motor skills of children in play, children are able to play well, children can run with the ball, children can jump while taking the ball, throwing the ball, and put the ball into the ring properly. Furthermore, the child has looked very good and enthusiastic in participating in the game and has the confidence to play. So that the ability of children to participate in games and learning can work well (Magdalena, 2012)

Budiono on her study stated that early aged children who treated by playing ball stimulation showed a significant development on their gross motor skills (Nugroho,2017). After being treated with playing ball stimulation, it was clearly showed the increase of gross motor skills of the children. This was in line with Aulina statement "the gross motor skill of the children after the stimulation resulted in children was able to stand in one leg jump over the ball with two legs, and they were able to combine movements like throwing and pushing the ball.

This research was in line with the observation result done by Lutfi, et.al, which revealed the result the achievement of the gross motor skills as much as 0-2 children (0%-14.28%). Small Ball games was a way to improve gross motor skill of early age children. The result of Gross Motor skill of Group B Pertiwi Kindergarten DWP Tasikmalaya city showed the treatment on the cycle 1 was improved by 3-5 children (21.42%-35.71%). The treatment on the cycle 2 after the reflection showed there was improvement of the achievement of the children in every indicator as much as 6-8 children (42.85%-57.14%). The treatment on the cycle 3 showed that there was improvement in every indicator of the children as much as 10-12 children (71.42%-85.71%). This was a proof that small ball games could improve gross motor skills of the children of the Group B Pertiwi Kindergarten DWP Tasikmalaya city (Nur, 2017)

The Effectiveness of Playing Ball Stimulation to the Gross Motor Development of 24-36 months Children

Based on the Wilcoxon signed rank test, the statistical test found p value = 0.005, so that the value was lower than 0.05 meant that there was an effect between the pretest - posttest group. Providing stimulation with many variations of game would be very helpful in physical, mental, social health, and emotional development. Children who got a lot of stimulation, especially stimulation to play ball will develop faster than children who lack or even didn't get stimulation. Giving stimulation to play ball was included in the activity of playing actively in children. There were many advantages that could be obtained from these stimulations, one of which

was to kill extra energy, optimize the growth of all parts of the body, increased the appetite of the children because the physical activities itself.

The giving of stimulation in various forms of play, especially football, affectedchildren growth and development because the stimulation of the game had many benefits, not only for children's physical growth, but also for their mental and social development. In selecting kind of game as a stimulation tool for children growth and development, the tools should be chosen not only the fun one but also must be useful in optimizing their growth and development (Soetjiningsih, 2013).So creative children could spend most of their time playing to create something original from toys and playing tools, while in other hand, children who were not creative just follow the patterns that have been made by others. The more guidance to the children in playing, the greater the variation in playing activities and the greater excitement gained (Hurlock, 2002).

Playing ball stimulation gave a positive impact to the gross motor development of the children. This was supported by Lutfi, et.al "small ball game could increase the gross motor development of early age children.(Nur, dkk, 2017).Budiono also stated that, the different result of the gross motor development before and after treatment was 51.38%, so it could be concluded that there was a significant increase of gross motor development of the children (Nurgoho, 2017)

CONCLUSION

The results showed that (1) Before the giving of playing ball stimulation, 80% of the children were in the category of halt in gross motor development (2) Afterthe giving of playing ball stimulation, 73.3% of the children were in the category of normal in gross motor development (3) The Wilcoxon Test Signed Rank Test obtained p value = 0.005 meant that playing ball stimulation affected gross motor development of 24-36 months children.

SUGGESTION

It is expected that parents should be more active in monitoring the development of their children by providing games and giving time to play with them since providing stimulation through some types of toys (playing ball in particular) can affect their development and increasing brain intelligence.

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