
Original Articles**THE IMPROVEMENT OF GROSS MOTOR DEVELOPMENT ONPRE-SCHOOL
THROUGH PLAYING THROW AND CATCH BALL**Etika Purnama Sari¹, Okta Nurul Izzah²^{1,2} Adi Husada College of Health Sciences, Surabaya, East Java**Article history:**

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IndonesiaEmail: etikaps@gmail.com**Keywords:** *Pre-school; throw;
catch ball; gross motor.***Abstract**

Background: Early childhood gross motor skills should have been able to perform activities such as jumping both one foot and two feet, catching balls, and exercising. Some children have good gross motor, but on the other hand there are children who have obstacles in the development of gross motor, so it is slower than other children.

Objective: This study aims to analyze the Influence of playing throw and catch ball on gross Motor of Pre-School Age Children in Garuda Kindergarten.

Method: This research design uses pre-experimental with a one-group pre-post test design approach. The population in this study was all grade A students of Garuda Surabaya Kindergarten which numbered 35 students and the sample number were 35 students. The sampling technique in this study is Total Sampling. The independent variable in the study playing throw and catch ball and the dependent variable is a gross motor development. Instruments used are observation sheets and SOP. Data analysis using Wilcoxon signed rank test.

Result: The results showed that there was an increasing in children's motor development in Garuda Kindergarten The results of statistical tests showed the p value $(0.000) < \alpha (0.05)$.

Conclusion: There is an influence of playing throw and catch ball to the gross motor development of preschool-age children, this is because playing the ball will stimulate nerves and increase movement in the child so that the gross motor becomes better. To improve the development of gross Motor in children can playing throw and catch ball at home and at school.

INTRODUCTION

All children have gross motor skills but vary in varying degrees. Some children have good gross motor, but on the other hand there are children who have obstacles in the development of gross motor so it is slower than other children (Nur et al., 2017).According to Suratno, early childhood

motor skills should have been able to perform activities such as jumping both one foot and two feet, catching a ball, and exercising (Ariani et al., 2015). In relation to the motor development of the child, motor development is related to the development of the child's mobility. Motion is the main element in children's motor development. Therefore, the development of children's motor skills will be clearly visible through various movements and games that they can do. If the child moves a lot then there will be more benefits that can be obtained by the child when the child is more skilled in mastering his motor movements. In addition to the healthier body condition due to a lot of movement, the child will also become more confident and independent (Nur et al., 2017).

Early childhood in Indonesia amounts to 23.7 million people or about 10.4% of the total population of Indonesia (Kemenkes RI, 2019). Broadly speaking, the realm of child development consists of gross motor, fine motor, language/speech, and personal social/self-reliance. About 5 to 10 percent of children are estimated to experience developmental delays. Data on the incidence of general developmental delays is not yet known with certainty, but it is estimated that about 1-3 percent of children under the age of 5 experience general developmental delays (Oktaviani, 2019). The Indonesian Ministry of Health reported that 0.4 million (16%) Indonesian toddlers experience developmental disorders, both fine and gross motor disorders, development of creativity, lack of intelligence and speech delay (Ngalfiyah, 2010) in (Olii, 2019).

Based on the initial survey conducted at TK Garuda Surabaya, children still have difficulty in throwing the ball, children still have difficulty in catching the ball, lack of media utilization in learning activities and still low playing activities that train children's gross motor skills. Of the 10 children who can play catch ball, 5 children are able to throw and catch the ball while the other 5 children are still hesitant and afraid when catching and throwing balls.

The causes of coarse motor development barriers are divided into various factors such as disease factors, environmental factors, as well as personality factors. Disease factors that can slow motor development one of them is spina bifida. The disease causes motor development to become late. Environmental and personality factors can also inhibit the development of coarse motor. Children who do not have the opportunity to learn like a child who is carried by his parents, so not allowed free to move can experience delays in achieving gross motor skills (Nur et al., 2017).

Play is an activity associated with the whole child, not just partly, through child play will encourage skills that lead to the cognitive development of the child, the development of the child's language, psychomotor development and physical development. Cony Semiawan argues that with children playing all stages the child can develop well and that development can be seen when the child 12 years old (Khasanah et al., 2011). The benefits that can be obtained by playing ball are active play such as running, jumping, throwing, massaging and others. Helping the child to stretch the muscles and train the skills of his limbs, namely: (a) strengthening the muscles of the hands and feet, (b) training concentration, (c) helping him socialize, (d) practicing sensitivity and (e) training coordination between the eyes, hands and feet (Astuti et al., 2019).

The purpose of this study was to analyze the influence of playing throw and catch ball on the gross motor development of preschoolers in Garuda Kindergarten.

METHODS

Study Design

The design of this study uses pre-experimental with a one-group pre-post test design approach.

Settings

The research was conducted in February 2020 at Garuda Surabaya Kindergarten.

Research subject

The population in this study was all grade A students of Garuda Surabaya Kindergarten which numbered 35 students and the sample number were 35 students. The sampling technique in this study is Total Sampling. The independent variable in the study is playing throw and catch ball and the dependent variable is a gross motoric development.

Instruments

The instrument used is an observation sheet adapted from Wijayanti (2016) with 3 parameters namely balance, strength and flexibility, with each parameter there are 4 statements.

Data collection

In this study before the intervention in the form of playing throw and catch ball, researchers measured the development of gross motor respondents. After that play throw and catch ball as many as 2 cycles, each cycle there are 3 meetings so there is a total of 6 meetings. The first cycle in the 1st meeting, the child makes 2 rows facing each other than one by one playing throw and catch ball with a friend in front of him and his partner. The first cycle at the 2nd meeting, the child makes a row facing each other by stretching out hands like a plane, then each row face to face, the child one by one playing throw and catch the ball with a friend in front of him and his partner. The first cycle at the 3rd meeting, the child makes a row facing each other by stretching out hands like a plane, then each row is faced with a distance of 3 meters, then the child one by one playing throw and catch the ball with a friend in front of him and his partner. In the second cycle, meetings 1, 2 and 3 children are called according to no absence with their partner and occupy a predetermined place, the distance between children is 3 meters, each child has a one-time opportunity to throw a catch ball, after which the child can play alternately. After the second cycle, the researchers took measurements of the child's motoric development back.

Data Analysis

The data that has been collected will be processed using SPSS software and the Wilcoxon signed rank test statistical test is carried out.

Ethical Consideration

This research has been conducted research ethics test at STIKES Adi Husada (Number of certificate 127.15/PPM/Etik/STIKES-AH/II/2020).

RESULTS

Table 1. Characteristics of Respondents at TK Garuda Surabaya on February 2020.

Characteristics	Frequency	Percentage (%)
Gender:		
Male	16	46
Women	19	54
Total	35	100
Age:		
4 years old	15	43
5 years old	20	57
Total	35	100
Ball playing experience:		
Ever	34	97
Never	1	3
Total	35	100
Current health conditions:		
Healthy	35	100
Pain	0	0
Total	35	100

Based on table 1 shows that more than 50% of respondents' genders are women as many as 19 respondents (54%), more than 50% of 5-year-old respondents age as much as 57%, the majority have experience on playing ball as many as 34 respondents (97%), the majority of healthy body condition that is 35 respondents (100%).

Table 2. Development of Gross Motor Respondents Before and After Playing Throw And Catch Ball in Garuda Kindergarten Surabaya on February 2020

Gross motor	Before		Gross motor	After	
	Frequency	Percentage		Frequency	Percentage
Excellent	10	29%	Excellent	34	97%
Good	22	62%	Good	1	3%
Enough	3	9%	Enough	0	0%
Less	0	0%	Less	0	0%
Total	35	100%	Total	35	100%

Wilcoxon signed rank test; p -value = 0.000 ($\alpha = 0.05$)

Based on table 2 obtained gross motor results before playing throw and catch ball is more than 50% good as many as 22 respondents (62%) whereas after playing throw and catch ball the majority of motor gross very good as many as 34 respondents (97%), so obtained p value = 0.000 with $\alpha = 0.05$, which means there is an influence of playing throw and catch ball to the development of gross motoric pre-school age children.

DISCUSSION

Based on the results of research obtained before playing throw and catch ball, the development of gross motor pre-school children are mostly in the good category (62%), after playing throw and catch ball motoric development of pre-school children majority in the category of excellent (97%). Wilcoxon statistic test results signed rank test also obtained p value = 0.000 with $\alpha = 0.05$ (p value < α), so it can be concluded that there is an influence of playing throw and catch ball to the development of gross motor pre-school children.

Some factors that can affect the development of gross motoric according to (Arini, 2018) is the nature of genetics, prenatal conditions of the mother, conditions of the environment, health and nutrition, IQ, the presence of stimulation of urges and opportunities, parenting patterns and physical disabilities. Based on (Siregar et al., 2019) playing throw and catch ball is one of the games that use the ball as a medium, this game is often applied to early childhood with the aim of being able to train motor. The medium in the game is small or large balls. In addition, the game also requires good coordination between eye cooperation with children's hands and feet. The throwing and catching of balls that the child performs in this game is also useful to train the balance of the child. The child will try not to fall when throwing and catching the ball, and the child will also try to get the throw done on target and try to get the child to catch the ball directed at him.

The influence of playing throw and catch ball to the gross motor development of school-age children who were originally in the good category became a very good category, this is because by playing throw and catch ball regularly will stimulate the child's nerves and increase movement in the child so that the gross motor becomes increased.

LIMITATION

The limitation in this study is the absence of control groups

CONCLUSION

Conclusions based on the results of the study are:

1. Most Of The gross Motor Development In Pre-School Age Children In Garuda Surabaya Kindergarten before playing throw and catch ball obtained good category.
2. The majority of Gross Motor Development In Pre-School Age Children In Garuda Surabaya Kindergarten after playing throw and catch ball obtained very good category

3. There is an Effect of playing throw and catch ball To gross Motor Development In Pre-School Age Children In Garuda Surabaya Kindergarten

The advice for the research site is that playing throw and catch ball can be applied to daily activities to improve the child's gross motor skills, so that the child's development can be in accordance with the stages of development. Suggestions for researchers could further improve the design of the study using quasi experimental.

AUTHOR CONTRIBUTION

Etika Purnama Sari: drafting proposals, drafting manuscripts

Okta Nurul Izzah: drafting proposals, retrieving data

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CONFLICT OF INTEREST

There is no conflict of interest.

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