

## The Effect of Puzzle Playing Therapy on Fine Motor Development in Preschool Children

**Nike Safira**

Nursing Study Program, Indonesia Maju University  
Jln. Harapan nomor 50, Lenteng Agung-Jakarta Selatan 12610  
Email: nikesafira247@gmail.com

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### Abstract

**Introduction:** Preschoolers are children aged 3 to 6 years. At this stage, children often experience delays in fine motor skills, such as when writing or drawing, which interferes with the use of small muscles. One therapy that can strengthen and stimulate small muscles is playing puzzle therapy.

**Objectives:** To determine the effect of playing puzzle therapy on fine motor development in preschool children at RT 16, Inkopad Bogor Complex in 2021

**Methods:** This type of research is pre-experimental with a one group pre-test and post-test approach. The total population is 34 people. Sampling was carried out by Total Sampling with a total of 30 preschool children aged 3 to 6 years (4 people did not take part in puzzle play therapy because they were absent). The data collection instrument was observation using puzzle playing therapy sheets and fine motor development. Bivariate analysis used T-test paired sample test.

**Results:** Fine motor development before being given puzzle play therapy intervention, namely 5 people were categorized as very weak, 10 people were categorized as weak and 15 people were categorized as sufficient while fine motor development after being given puzzle play therapy intervention, namely 8 people were categorized as weak and 23 people were categorized as strong. As well as statistical test results obtained by researchers p-value of 0.023.

**Conclusion:** There is an effect of playing puzzle therapy on fine motor development in preschoolers at RT 16, Inkopad Complex, Bogor in 2021.

**Keywords:** preschool children, fine motor development, puzzle play therapy

### Introduction

puzzle play therapy on development Preschoolers are children aged 3-6 years. At this age children generally participate in children's programs (3 years-5 years) and playgroups (3 years), while at the age of 4-6 years, they generally take fine motor kindergarten programs.<sup>1</sup> Preschool children who experience delays in motor development are estimated at 5-10%.<sup>2</sup> Motor development is a change in movement behavior that shows the interaction of the maturity of the creature and its environment. Gross motor development is body movement that

uses large muscles or all members of the body which is influenced by the maturity of the child itself, while the fine motor is body movement that only involves certain body parts and is carried out by small muscles.<sup>3</sup>

UNICEF (United Nations International Children's Emergency Fund) obtained data that the occurrence of problems with growth and development disorders in children aged 3-6 years in Indonesia is still high, around 16% are reported to have developmental disorders in the form of intelligence disorders due to brain development disorders, hearing impairments and hearing impairments. motoric as much as 1,375,000 per five million developmental delays. WHO (World Health Organization) reports that 5-25% of pre-school-age children suffer from minor brain dysfunction, including fine motor development disorders.<sup>4</sup> The prevalence of child development problems in Indonesia in 2013 was 11-16%. In 2014, 10-14% of children experienced developmental delays, while in 2015 it was 13-18%.<sup>5</sup> Data from the Bogor City Health Office obtained data for 2021 from the target number of 569,949 children and the number of children who received SDIDTK services was 39,841 children with a percentage of 7.7% of children experiencing developmental disorders, namely fine motor development disorders, there were 23 children.<sup>6</sup>

Based on the results of research conducted by Maghfuroh (2018) regarding the effect of the use of game tools playing the puzzle method on the fine motor development of preschool-aged children in kindergarten, results were found before being given play therapy with a mean of 59%. There is an effect of the use of game tools and playing methods on the development of children's fine motor skills with a p-value = 0.001.<sup>7</sup> Meanwhile, the second study conducted by Erni Yuniati (2018) on Puzzles Affecting Fine Motoric Development of Pre-School-Age Children at Kindergarten At-Taqwa Mekarsari Cimahi showed that 17 people were in the puzzle intervention group. medium fineness (64.7%), the rest (35.3%) of respondents have low fine motor development. After the intervention of the puzzle-type educational game, most of the children's fine motor skills were in the high criteria, namely (64.7%), children with very high fine motor development, namely (23.5%) and the rest (11.8%) of respondents had moderate fine motor skills.<sup>8</sup>

The effects of delayed fine motor skills can result in the child's development being hampered and not age-appropriate, tending to have disorders of the nervous system or cerebral palsy. Children who already have cerebral palsy are characterized by these abnormal movements of the hands, feet, arms or legs and, in most cases, the muscles of the face and tongue.<sup>9</sup> Therefore, based on the background that has been described, researchers are interested in taking the influence of playing puzzle therapy on fine motor development in preschoolers at RT 16, Inkopad Complex, Bogor in 2021.

## Method

This research uses a type of quantitative research, this type of research uses Quasi-Experimental which measures one variable with another variable. The approach used is a one-group pre/post-test design. The total population is 34 people with a total sampling. The number of samples used was 30 children (4 people did not participate in the game). Preschool ages 3 to 6 years. The data collection instrument in this study was observation using observation sheets of paper. Bivariate analysis used the T-Paired Sample Test. This research has successfully passed an ethical review which was approved by the ethical commission of the Advanced Indonesian College of Health Sciences (STIKIM) with an ethical letter number: 2881/Sket/Ka-Dept/RE/STIKIM/XII/2021.

## Results

**Table 1.** Characteristics of Respondents in RT 16, Bogor Inkopad Complex

Characteristics		Frequency	Percentage (%)
Child Age	3 years	9	30 %
	4 years	9	30 %
	5 years	7	23,3%
	6 years	5	16,7%
	Total	30	100 %
Gender	Man	18	60%
	Woman	12	40%
	Total	30	100%

Based on table 1, there were 30 preschool children aged 3 to 4 years. The research was filled in by respondents to assess the child's age and gender. First, there is a more dominant preschool age level of age 3 as many as 9 people (30%) and 4-year-old children as many as 9 people (30%) and the sex is more dominant as many as 18 boys (60%).

**Table 2.** Overview of Fine Motor Development

Fine Motor Development	Puzzle Play Therapy Before (Pre-Test)		Fine Motor Development	Puzzle Play Therapy After (Post-Test)	
	N			N	%
Very weak	5	-	-	-	-
Weak	10	Weak	Weak	8	26,3%
Enough	15	Strong	Strong	23	73,3%
Total	30	Total	Total	30	100%

Based on table 2, data on fine motor development was obtained before playing puzzle therapy (Pre-test), namely motor development there were 15 people with a percentage of 50% categorized as sufficient while fine motor development was carried out after playing puzzle therapy (Post-test), namely motor development the biggest subtle there are 23 people with a percentage of 73.3% categorized as strong.

**Table 3.** Fine Motor Development Before and After Puzzle Playing Therapy (Pre-Test)

Fine Motor Development	Mean	Min-Max	Std. Deviation	N
Pre-Test	8,00	4-10	1,894	30
Post-Test	8,17	5-10	1,744	30

Based on table 3, the results of fine motor development data were obtained before the puzzle playing therapy (Pre-test) was carried out, namely the mean result was 8.00, Min 4 and Max 10, Std deviation was 1.894 with 30 respondents. The data on fine motor development after playing puzzle therapy (Post-test) was the mean results of 8.17, Min 5 and Max 10, Std deviation of 1.744 with 30 respondents.

**Table 4.** The Effect of Puzzle Playing Therapy on Fine Motor Development in Preschool Children

Developmental Pre-Test	30	0,167	0,379	0,069	0,023
Developmental Post-Test					

Based on table 4 data, it can be concluded that the number of respondents was 30 people, the mean was 0.167 with a standard deviation of 0.379 and a standard error mean of 0.069. Statistical test results obtained by researchers p-value of 0.023. So it can be concluded that there is an effect of playing puzzle therapy on fine motor development in preschool children at RT 16, Inkopad Complex, Bogor in 2021.

## Discussion

### **Description of fine motor development before being given puzzle play therapy intervention in preschool children aged 3 to 6 years at RT 16 Inkopad Complex**

Based on the results of the study, the results of fine motor development data were obtained before the puzzle playing therapy (Pre-test) was carried out, namely the mean result was 8.00, Min 4 and Max 10, Std deviation was 1.894 with 30 respondents. Based on the results of this study in line with Yuanita Ananda's research (2018), the mean result was found of 7.87 and a standard deviation of 1.246.<sup>1</sup> Similar research to Erni Yuniati's research (2018), found a mean of 3.35 and a standard deviation of 0.493.<sup>8</sup>

Based on the theory slow fine motor development can be caused by cerebral palsy. Where children who have experienced cerebral palsy have abnormal activity characteristics that affect the hands, feet, arms or legs as well as facial and tongue muscles. 10 Based on the theory of play puzzle therapy is a school attraction to prepare children's attitudes in stacking puzzle pieces into a single unit that has a comprehensive form.<sup>11</sup> Puzzles are useful for strengthening children's way of interpreting space, the capacity to imagine things intellectually, and children's capacity to deal with problems.<sup>12</sup>

The researcher assumes that the fine motor development of children who fight is also influenced by internal and external factors. While preschoolers aged 3 to 6 years have a similar developmental process, the most common ways to reach each child are at conflicting tempos. Because of this, children should often be invited to play games that can train their good coordination skills and parents' employment status, for special jobs working mothers can make timely arrangements for children. So that playing is not a barrier for children to receive sufficient opportunities, care, and warmth from parents or guardians in providing good motor development for children by their development.

### **Description of fine motor development after being given puzzle play therapy intervention in preschool children aged 3 to 6 years at RT 16 Inkopad Complex**

Based on the results of the study, the results of fine motor development data were obtained after playing puzzle therapy (Pre-test), namely the mean 8.17, Min 5 and Max 10, Std deviation 1.744 with 30 respondents. Based on this research, is in line with Yuanita Ananda's research (2018), which found a mean of 9.93 and a standard deviation of 1.534.<sup>1</sup> This research is similar to Erni Yuniati's research (2018), which found a mean of 1.88 and a standard deviation of 0.600.<sup>8</sup>

Based on the theory of disturbed fine motor development caused by environmental factors. Where the atmosphere and position outside the individual which will directly or indirectly affect individual development.<sup>13</sup> Based on the theory of puzzle play therapy is an educational game to prepare children's behavior in assembling puzzle pieces into a single unit that has a holistic shape.<sup>14</sup> Puzzles are useful for helping to prepare children's understanding and persistence, training hand and eye coordination, growing fine motor skills, increasing thinking skills and increasing understanding.<sup>15</sup>

The researcher's assumption is that puzzle play therapy is an activity that cannot solve a child's life. The activity of putting together puzzles can store and place puzzle pieces in place which will channel the improvement of good coordination mastery and children can plan to write, draw, and button clothes. Providing puzzle play therapy can be done once a week and consistently to children because this will stimulate their mentality to learn. The more successive and standard upgrades obtained, the more grounded the relationships between synapses are, therefore the development of children's fine motor skills can be honed and can develop properly according to the age of each child.

## Effect of playing puzzle therapy on fine motor development in preschool children at RT 16 Inkopad Complex

Based on the research results, it can be concluded that the number of respondents was 30 people, the mean was 0.167 with a standard deviation of 0.379 and a mean standard error of 0.069. The results of the statistical test were obtained by the researcher's p-value of 0.023. So in conclusion there is an effect of playing puzzle therapy on fine motor development in preschool children at RT 16, Bogor Inkopad Complex in 2021. This research is in line with Yuanita Ananda's research (2018) which found the results had an effect (p-value = 0.001).<sup>1</sup> Similar research to Erni Yuniati's research (2018), found results with a p-value = 0.001.<sup>8</sup> This research is almost the same as Lilis Maghfuroh's research (2018), which found a p-value = 0.001. Where is the significant value of  $p < 0.05$ .<sup>7</sup>

Researchers assume that if children's fine motor development does not grow, it can cause difficulties in carrying out fast and perfect movements. The effort that can be tried to stimulate is to use the treatment of playing puzzles where there are photos, shapes and colors contained in the puzzle which can help children improve eye and hand coordination and train children to think logically. The comparison of the ages of the children can affect the rapid slow growth of fine motor skills in children because increasing age can show the maturity of the organs.

### Conclusion

From the results of this study it can be concluded that: the dominant age is 3 years and 4 years and the dominant sex is male; Fine motor development before being given puzzle play therapy intervention in preschool children aged 3 to 6 years at RT 16 Inkopad Complex, the results were 5 people were categorized as very weak, 10 people were categorized as weak and 15 people were categorized as sufficient; Fine motor development after being given puzzle play therapy intervention in preschool children aged 3 to 6 years at RT 16 Inkopad Complex, the results were that 8 people were categorized as weak and 23 people were categorized as strong. From the results of the bivariate analysis, there is an effect of playing puzzle therapy on fine motor development in preschoolers at RT 16, Inkopad Bogor Complex, 2021.

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