

Relationship Therapy Coloring With Development Fine Motor Skills in Preschool Children in Kindergarten

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Abstract: Fine motor development in preschool children is very important because it is directly related to the child's ability to learn and perform daily activities. However, the rate of fine motor development disorders in children remains high. WHO data states that 5–25% of preschool-aged children experience minor brain dysfunction, including fine motor disorders. In Indonesia, the prevalence of fine motor development disorders reaches 16%, and in Aceh Province it is 2.2%. And only about 38% of preschool-aged children attend kindergarten, far below the national target. This study aims to determine the relationship between coloring therapy and fine motor development in preschool children. This study used a design *Quasi Experiment* with the approach *one group pre-test and post-test*, with a population of 48 children, the sample in this study was 20 children using the technique *purposive sampling*. This therapy was given twice within 4 days from April 26-29, 2025. The study was conducted at Darur Rahman Ceurih Kindergarten, Banda Aceh City. Statistical analysis with *Wilcoxon test* results *pretest* mark mean (average) before 2.1 and after 2.9, based on *statistical test* fine motor development *pretest* And *positions on Wilcoxon test*. The p-value obtained is Sig. = 0.000, so there is a significant change between fine motor development before and after coloring therapy. The conclusion is that there is a relationship between coloring therapy and fine motor development in preschool children. Researchers hope that preschool children can do coloring therapy regularly, so that fine motor skills continue to develop gradually and sustainably.

Keywords: Fine Motor Skills; Coloring Therapy; Preschoolers

1. Introduction

Preschool age children are believed to be the best age to master motor skills, one of which is fine motor skills, because at an early age the child's body is very flexible so it will be easier to receive stimulation from everything that is taught.^[1] In general, areas of child development include fine motor skills, gross motor skills, independence, and language and communication. It is estimated that approximately 5% to 10% of children experience developmental delays. While data on the incidence of developmental delays is often uncertain, it is possible to make rough estimates. 1% to 3% of toddlers experience developmental delays.^[2] Fine motor skills can be defined as a child's habit of being able to move muscles smoothly and coordination between the eyes and brain nerves which requires precision when carrying out activities such as folding paper, coloring, cutting, writing, painting and so on. Fine motor skills have habits related to physical motor skills that involve small muscles, eye and hand coordination to carry out activities, including grasping, coloring, cutting, sewing, folding paper, shaping and so on.^[3]

¹Indri, A., Raisya, N., Salsabila, H., Yohana, F., & Fauziah, N. (2022). *Motor Development in Early Childhood* (Vol. 4).

²Angraini Simamora, F., Damar Sasanti, S., Martini, A., Harahap, A., Sari, E., Sri Harnani, E., & Health Profession Study Program, Aufa University Royhan, F. (2021). Drawing and Coloring Play Therapy for Preschool Children in the Gunung Tua Inpatient Health Center Work Area. In *Aufa Community Service Journal (JPMA)* (Vol. 3, Issue 2).

³Rizal Khoirul, N., Eka Rokhmiati Wahyu, P., Nur Eni, L., (2022). Coloring Pictures Improves Fine Motor Skills in Preschool Children. *J. Masy. Healthy Indonesia.*, 02, 57–63.

World Health Organization data reports that 5-25% of preschool-aged children suffer from minor brain dysfunction (difficulty focusing), including impaired fine motor development. Globally, anxiety disorders affect 9%, irritability affects 11-15%, and behavioral disorders affect 9-15%.^[4] And in Aceh Province in 2020, the number of children aged 1-5 years was 154,111 people and 97.8% of them had physical development according to their age and 2.2% did not.^[5]

Children's fine motor development will not develop well on its own, but learning things that produce this fine motor development. So since childhood children are trained in developing their fine motor skills, pleasant activities are very necessary and can stimulate the development of children's fine motor skills. Activities done through play such as coloring. A child's fine motor development will have a positive effect on other aspects of development. One of the activities that can create fine motor skills is coloring pictures.^[6]

Coloring is the activity of adding color to a piece of paper that has been drawn using pencils or coloring. This activity is very popular with preschoolers because they want to learn about the colors and shapes of objects around them. Coloring can improve children's fine motor skills and foster self-confidence and creativity.^[7]

Several studies show that coloring therapy has a positive impact on fine motor skills, where children can develop their fine motor skills by coloring. Research conducted by Siti Fatimatus in 2023 found that there was an increase in fine motor skills, namely in cycle I of 18.75% and increased in cycle II to 87.5%.^[8] Meanwhile, a study by Ruminem in 2023 concluded that there was an increase in Fine Motor Skills With Coloring Activities.^[9]

According to the Initial Survey, From 10 respondents there are various delays in fine motor development, including. There are 7 children who did not succeed in achieving the Very Good Development (BSH) target in the sense that the child has not been able to flex his fingers well, is not neat in coloring, is not right in holding crayons, there are children who are naughty/running around (Not Focused), And have achieved the Very Good Development (BSH) goal 3 children. Then an interview was conducted with 6 mothers of the children in which they said that their children rarely trained their fine motor skills because their children prefer to play outside with their friends. With the results of the observation, it is necessary to improve fine motor skills in children at Darur Rahman Ceurih Kindergarten, Banda Aceh City.

2. Literature Review

The Relationship Between Coloring Therapy and Fine Motor Development in Preschool Children at Darur Rahman Ceurih Kindergarten, Banda Aceh City.

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⁵Aceh Health Office. (2022). *Aceh Health Profile 2022*.

⁶Rizal Khoirul, N., Eka Rokhmiati Wahyu, P., Nur Eni, L., (2022). Coloring Pictures Improves Fine Motor Skills in Preschool Children. *J. Masy. Healthy Indonesia*, 02, 57–63

⁷Saadah, N., Khairi, R., Anggraini, M. S., Fajri, Y., Anak, P. P., Dini, U., Tarbiyah, I., & Keguruan, D. (n.d.). *Journal of Early Childhood Education Study Program: Improving Children's Fine Motor Skills Through Coloring Methods at Ra An-Nur*. 12(1).

⁸Siti Fatimatus Zahro, Basuki Hadi, P., Muhammad Agus, S. (2023). Implementation of Coloring Activities in Improving Children's Fine Motor Skills. *Journal of Educational Charity*, 4(2), 126–134. <https://doi.org/10.36709/japend.v4i2.59>

⁹Ruminem, Nurliana, S., Ida Ayu Kade, SW., Rita Puspa, S., Dwi N. (2023). Stimulation of Coloring Play in Improving Children's Fine Motor Skills Preschool Age in Sungai Kunjang District, Samarinda. In *Journal of Nursing Innovation (JNI)* (Vol. 2, Issue 2).

2.1 Fine Motor Skills

Fine motor skills are the organization of the use of small muscles such as fingers and hands which often require precision and eye and hand coordination, such as writing, drawing, cutting and playing with objects or play tools.^[10]

Fine motor skills are skills that can move muscles smoothly and there is coordination between the eyes and brain nerves that require precision when carrying out activities such as folding paper, coloring, cutting, writing, painting and so on. Fine motor skillsishabits related to physical motor skills that involve small muscles and eye and hand coordination to carry out activities, including grasping, coloring, cutting, sewing, folding paper, shaping and so on.^[11]

Fine motor skills are the development of fine motor skills and physical skills involving small muscles and hand-eye coordination. The younger a child, the longer they will focus on activities involving fine motor skills. Almost every day, children use their fine motor skills, such as buttoning clothes, eating with a spoon, tying shoelaces, and doing various things like cutting, drawing, coloring, and so on. make beads-beads, etc.^[12]

2.2 Coloring Therapy

Coloring therapy is a game that allows children to express themselves without getting bored. Coloring is a suitable game for preschoolers, as children begin to appreciate and understand colors and the shapes of objects around them. Coloring pictures is one therapeutic game that can be played with toddlers. Coloring provides an opportunity for children to express their thoughts in a therapeutic way.^[13]

Coloring pictures is a creative activity where children are asked to use crayons to imitate a shape (coloring pictures). The painted pictures have a positive effect on children, especially when children get the activity, the relaxation of the picture contributes to the child's self, because this activity is a work of art of the child's imagination to learn to recognize pictures and choose the right colors to represent the picture.(Indri, 2022).Coloring is an activity carried out by applying crayons or other objects to an object to produce a colored image..^[14]

2.3 Preschoolers

Preschoolers are children entering preschool age (4 to 6 years old). Children experience growth that is visible in physical, mental, and environmental changes at home, as well as themselves. From the past until now, children are also preparing themselves for school.

¹⁰Suhartanti, I., Zulfa Rufaida, Mk., Setyowati, W., & Fitria Wahyu Ariyanti, Mk. (2019).*Stimulating Fine Motor Skills in Preschool Children*.

¹¹ Rizal Khoirul, N., Eka Rokhmiati Wahyu, P., Nur Eni, L., (2022). Coloring Pictures Improves Fine Motor Skills in Preschool Children.*J. Masy. Healthy Indonesia*, 02, 57–63.

¹²Munir, Z., & Virana, H. (2019). The Relationship between Parenting Styles in Stimulating Gross and Fine Motor Development in Preschool Children. In*Journal of Professional Nursing (JKP)* (Vol. 7).

¹³Resi N & Lara Suci Arini. (2021). The Effectiveness of Play Therapy (Coloring) in Reducing Anxiety in Preschool Children (3-6) Years Old Who Were Treated at Harapan Bunda Hospital, Batam.*Health and Science*, 1, 41–52.

¹⁴Maharani, D., & Watini, S. (2022). Implementation of the ATIK Model in Developing Early Childhood Numeracy Skills at TKIT AL Wildan Bekasi. In*JlIP-Scientific Journal of Educational Sciences* (Vol. 5, Issue 2).

Children must be well prepared to participate in learning, but the learning process in kindergarten is a game that can stimulate children's intelligence.^[15]

Developmental stages experienced by preschool children, Gross Motor Aspect: Motor skills are clearly visible in preschool children when children can stand on one leg in seconds, children also begin to lift their hands and feet, and children jump at the right distance, jump with different feet, can tie shoelaces and write several letters. Fine Motor Aspect: Fine motor skills are present in preschool children when children begin to try drawing, cutting, throwing, buttoning clothes, catching balls and playing with natural resources. Language Aspect: Language skills are clearly visible in toddlers, namely when children begin to say a few words, children begin to use 6-8 words, mention 4 colors, and children begin to recognize days and months. Personal Social Aspect: Individual social skills are present in preschool children when children are able to dress themselves, eat alone, understand their gender, children are more likely to be aggressive, both physically and verbally, independent, honest, and responsible. Cognitive development aspect: Cognitive development skills can be improved in preschool children by teaching children to learn the colors of objects around them, learn electrical components and use block objects etc., including logic and mathematics skills.^[16]

3. Method

This study used a quantitative method with a quasi-experimental design and a one-group pretest-posttest approach conducted at Darur Rahman Ceurih Kindergarten, Banda Aceh City, on April 26-29, 2025. The purpose of the study was to determine the relationship between coloring therapy and the development of fine motor skills in preschool children through coloring pictures. The population in this study was 48 children, and the sample in this study was 20 children using a purposive sampling technique. Variables independent In this study, the research was coloring therapy, while the dependent variable was fine motor development.

The instruments used include a coloring therapy observation sheet with fine motor development, a fine motor development assessment rubric, drawing sheets and crayons.

The research procedure began with obtaining permits, distributing drawing sheets with crayons, and collecting and reporting data. The data obtained were analyzed univariately to describe the characteristics of the respondents, and bivariately using the t-test. *wilcoxon* with the SPSS program version 26 and a significance level of $\alpha = 0.05$.

Research ethics is applied by prioritizing the principle *informed consent*, anonymity, data confidentiality (*confidentiality*), as well as honesty and fairness in the research process. This research does not involve risky actions, but only involves coloring pictures.

4. Findings and Discussion

This study was conducted on 20 preschool children at Darur Rahman Kindergarten in April 2025. The majority of respondents were 5 years old (45%), female (75.0%), and. The results of the univariate analysis showed that most respondents experienced fine motor development in the Starting to Develop (MB) category in the pretest of 17 children (85.0%) and in the posttest of the Developing According to Expectations (BSH) category of 12 children (60.0%).

¹⁵Zilfi Yola Pitri, Mk., Wahyu Wijayati, Mk., Wahyuni, Mk., Linda Puji Astutik, Mk., & Kholilah Lubis, Mk. (2024). *Midwifery Care for Neonatal Infants and Toddlers Publisher Cv.eureka MediaScript*.

¹⁶ Andriyani, A., & Suratih, K. (2022). *Development of Preschool Children in Regular Early Childhood Education Childhood Education Program*.

Bivariate analysis using the Wilcoxon test showed that there was a significant relationship between coloring therapy and fine motor development, with a p value = 0.000 ($p < 0.05$) (Table1). Most respondents experienced motor development in the MB category in the pretest and BSH in the posttest.

Table 1
The Relationship Between Coloring Therapy and Fine Motor Development
For Preschool Children at Darur Rahman Kindergarten
City Shine
(n=20)

No	Motoric Subtle	Pretest		posttest	
		f	%	f	%
1	BB	1	5,0	0	0
2	MB	17	85,0	5	25,0
3	BSH	2	10,0	12	60,0
4	BSB	0	0	3	15,0

Source: Primary Data (Processed)2025)

This study shows a very interesting pattern, seen before being given coloring therapy, the majority of fine motor development was in MB (starting to develop) 17 children (85.0%), while after being given coloring therapy the majority was in BSH (developing as expected) 12 children (60.0%). This is in line with the opinion of Saadah et al. that coloring activities can improve children's fine motor skills, as well as make children have high self-confidence and creativity.^[17]

Children's fine motor development will not develop well on its own, but learning things that produce this fine motor development. So since childhood children are trained in developing their fine motor skills, pleasant activities are very necessary and can stimulate the development of children's fine motor skills. Activities done through play such as coloring. A child's fine motor development will have a positive effect on other aspects of development. One of the activities that can create fine motor skills is coloring pictures.^[18]

Factors that accelerate or slow down fine motor development include genetic factors, prenatal health factors, health and nutrition, abnormalities, and prematurity.^[19]

¹⁷Saadah, N., Khairi, R., Anggraini, M. S., Fajri, Y., Anak, P. P., Dini, U., Tarbiyah, I., & Keguruan, D. (n.d.). *Journal of Early Childhood Education Study Program: Improving Children's Fine Motor Skills Through Coloring Methods at Ra An-Nur*. 12(1).

¹⁸Rizal Khoirul, N., Eka Rokhmiati Wahyu, P., Nur Eni, L., (2022). Coloring Pictures Improves Fine Motor Skills in Preschool Children. *J. Masy. Healthy Indonesia*, 02, 57–63.

¹⁹Aldila. (2024). Development of Fine Motor Skills in Early Childhood Through Coloring Activities at Aisyiyah Baturan Kindergarten. *Concept: Journal of Social Humanities and Education*, 3(3), 106–120.

5. Conclusion and Recommendation

Based on the results of a study of 20 respondents, a significant relationship was found between coloring therapy and fine motor development in preschool children. With a p-value of 0.000. This indicates that coloring therapy can develop children's fine motor skills. Therefore, it is recommended that preschool children can undergo coloring therapy regularly, so that fine motor skills continue to develop gradually and sustainably..

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