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Children's Motor Skills Development After Puzzle Play Thrapy

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ABSTRACT

Development at preschool age is a basic stage that influences subsequent development, at this time children often experience delays in fine motor development, the impact that often occurs is a lack of stimulation so that children experience obstacles in the learning process at school. One game that improves fine motor development is puzzles. The aim of this research is to identify fine motor development after being given a puzzle game. This research uses a descriptive observational case study on 2 subjects using a modified KPSP observation sheet. The research results before being given the puzzle subject 1 were moderate (10) subject 2 was poor (8) after being given the puzzle both subjects were good (21) and (19). It is recommended that both subjects optimize puzzle games to improve their fine motor development. For future researchers, it is recommended to condition puzzle games simultaneously and not to stimulate separately and it is recommended to involve parents and teachers in conducting research.

KEYWORDS

Children's Motor Skills, Play Therapy, Puzzle.

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INTRODUCTION

Fine motor development in preschool children is very important, as it lays the foundation for the development of other abilities in the future. Fine motor skills involve the use of small muscles such as the eyes and hands, which are necessary in daily activities such as writing, drawing and eating (Panzilion et al., 2020). Unfortunately, many children experience delays in fine motor development, especially if they lack proper stimulation. This can lead to learning difficulties and social development (Sutapa et al., 2021).

The problem of delayed fine motor development in early childhood is serious. Various studies show that the percentage of children with fine motor disorders is quite high, both nationally and

internationally (Widiawati & Natalya, 2021). The causative factors vary, ranging from genetics, congenital diseases, to parenting patterns. If not addressed immediately, these delays can hamper children's cognitive and social development (Rahmatillah et al., 2023).

One effective way to address delayed fine motor development in children is through play. Puzzles, for example, are a simple but very useful game (Iqbal et al., 2023). In playing puzzles, children are trained to concentrate, coordinate their eyes and hands, and solve problems. In addition, puzzles can also increase children's creativity and patience (Yolida, 2023).

The results of preliminary research show that there are still many preschool children who have not mastered fine motor skills according to their age (Michel & Molitor, 2022). In fact, simple and easily available puzzle games can be an effective solution to overcome this problem. Unfortunately, puzzle games are often underutilized by children and their parents

MATERIALS AND METHODS

This study employed a descriptive observational case study design to explore the impact of puzzle play therapy on fine motor development in two preschool children. The research was conducted at Bina Insan Mulia PAUD, Singosari, Malang, Indonesia, over a two-week period in 2023. Two children aged 4–5 years were purposively selected based on preliminary screening indicating delayed fine motor development using the KPSP tool.

Inclusion criteria included: (1) age between 48–60 months, (2) parental consent, (3) absence of diagnosed neurological or musculoskeletal disorders, and (4) observed difficulty in performing ageappropriate fine motor tasks (e.g., drawing, cutting, assembling objects). Both participants met these criteria.

The intervention consisted of structured puzzle play sessions, conducted four times over two weeks (twice per week). Each session lasted 20–30 minutes and was facilitated by trained researchers in a quiet, child-friendly environment. The puzzles used were age-appropriate wooden jigsaw puzzles (12–20 pieces) featuring familiar objects (animals, vehicles, fruits), selected to match the developmental level of the participants.

Data were collected using a modified KPSP observation sheet, validated by early childhood development experts for this study. The instrument assessed 12 fine motor indicators, including:

1. Pincer grasp
2. Hand-eye coordination
3. Drawing shapes or figures
4. Cutting with scissors
5. Pouring liquids
6. Assembling blocks or objects

Each item was scored on a 0–2 scale (0 = not achieved, 1 = partial achievement, 2 = fully achieved), yielding a maximum total score of 24. Scores were interpreted as:

1. <10: Poor
2. 10–18: Moderate
3. 19–24: Good

Ethical approval was obtained from the institutional ethics committee of Poltekkes Kemenkes Malang. Informed consent was secured from parents or legal guardians, and the principles of confidentiality, voluntary participation, and child welfare were strictly upheld. No personal

identifiers were recorded in the dataset.

RESULTS

The findings are summarized in Table 1, which presents the fine motor development scores of both subjects before and after the puzzle play therapy intervention.

Table 1. Fine Motor Development Scores Before and After Puzzle Play Therapy

Subject	Gender	Pre-Intervention Score	Category (Pre)	Post-Intervention Score	Category (Post)	Change (Δ)
1	Female	10	Moderate	21	Good	+11
2	Male	8	Poor	19	Good	+11

Prior to the intervention, Subject 1 (female, age 4 years 7 months) demonstrated moderate fine motor ability. She could point to lines and paste pictures but struggled with complex tasks such as drawing human figures, pouring water without spilling, and assembling cubes. Subject 2 (male, age 5 years 1 month) exhibited poor fine motor skills, showing notable difficulties in coloring within lines, using scissors, and manipulating small puzzle pieces.

During the first two therapy sessions, both children required verbal and physical guidance to complete the puzzles. However, by the third and fourth sessions, they independently assembled puzzles with increasing speed and accuracy. Both children also began initiating puzzle play at home, as reported by their parents.

Following the intervention, Subject 1 achieved a score of 21, and Subject 2 scored 19, placing both in the “good” category. Observable improvements included enhanced pincer grasp, smoother hand-eye coordination, ability to draw simple human figures, and successful completion of pouring and cutting tasks. The most persistent challenges remained in precision-based activities, such as cutting along curved lines or coloring within small boundaries, indicating areas for continued stimulation.

No adverse effects were observed during the intervention. Both children expressed enjoyment and eagerness to participate in each session, suggesting high acceptability of the puzzle-based approach.

Before being given puzzle play therapy, both research subjects showed limitations in fine motor development. Subject 1, with a score of 10, was classified as moderate. He was able to perform some activities such as pointing lines and pasting pictures, but still struggled with more complex tasks such as arranging cubes, drawing people, and pouring water. Subject 2, with a score of 8, had lower fine motor development. He had difficulty in many tasks, including piecing, coloring, and cutting.

Puzzle play therapy was conducted over several meetings. Initially, both subjects struggled with putting the puzzles together and needed help. However, as time went by, they showed significant improvement. By the third and fourth meetings, both subjects were able to complete the puzzle without assistance and even took the initiative to practice at home with their parents. After participating in puzzle play therapy, the fine motor development of the two subjects experienced a very good improvement. Subject 1 managed to achieve a score of 21, while subject 2 achieved a score of 19. Both of them have now been able to do various activities that were previously difficult, such as arranging cubes, pouring water, and drawing. However, there are still some aspects that need to be improved, such as coloring and cutting according to patterns.

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Result should be presented continuously start from main result until supporting results. Unit of measurement used should follow the prevailing international system. It also allowed to present diagram, table, picture, and graphic followed by narration of them.

DISCUSSION

1. Fine Motor Development Before Therapy Playing Puzzle

   Before being given puzzle play therapy, both research children showed fine motor development that was still below average. Subject 1 scored moderate, while subject 2 scored less. These results are in line with previous studies that also found low levels of fine motor development in children before intervention. This indicates the need for more intensive stimulation to improve their fine motor skills.

   Observations on subject 1 showed the influence of the family environment on his fine motor development. This child tended to be shy and lacked confidence, possibly due to lack of attention from working parents. This condition is exacerbated by the lack of proper stimulation at home. This result is in line with previous research which shows that the role of parents is very important in supporting children's development, especially in terms of fine motor stimulation.

   Subject 2 also showed similar obstacles, although his parents had more time to assist. However, the lack of variety in stimulation and the child's tendency to play gadgets more than activities that stimulate fine motor are inhibiting factors. This shows that just giving time is not enough, but the quality of stimulation provided is also very important. Both subject 1 and subject 2 need more intensive intervention to improve their fine motor skills.

2. Implementation of Play Therapy Puzzle

   Puzzle play therapy was conducted intensively for two weeks with a frequency of four meetings. Each therapy session lasted for 20-30 minutes and was carried out in accordance with predetermined procedures. At the initial meeting, both children still had difficulty in putting together the puzzle and needed help from the researcher. However, as time went by, both showed significant improvement. In the third and fourth meetings, they were able to complete the puzzle without assistance and looked very enthusiastic in playing puzzles.

   The results of this study are in line with the findings of previous research which states that puzzle games are effective in improving children's fine motor development. By playing puzzles, children are trained to coordinate hand and eye movements, as well as develop concentration and problem-solving skills. The process of arranging the puzzle pieces appropriately helps train the muscles of the fingers and improve children's accuracy.

   Puzzle games not only train fine motor skills, but also help children learn basic concepts such as shape, color, size, and number. Through puzzle activities, children actively use their fingers to manipulate objects, thus indirectly training and developing their fine motor skills. In other words, playing puzzles is an activity that is both fun and beneficial for early childhood development.

3. Fine Motor Development After Therapy Playing Puzzle
   Fine motor development after being given puzzle play therapy, subject 1 scored 21 while subject 2 scored 19, which means that the fine motor development of the two subjects is in the good category.

   In line with research conducted by Maghfuroh, (2018), the results found a difference before and after being given puzzle play therapy found a mean difference of 4.6. After the Pired samples t-test statistical test was carried out, the pvalue was $0.002 < \alpha\ 0.05$. There is an effect of the puzzle play method on the fine motor development of preschool children aged 4-5 years (Maghfuroh, 2018). Fine motor development of preschool children can also be influenced by gender. This is evidenced by the results of observations at the last meeting, namely the difference in fine motor development scores between subjects 1 and 2. Where after being given puzzle play therapy, subject 1 is female and scores 21 while subject 2 is male and scores 19. Girls are easier to manage and obey other people, while boys tend to be difficult to manage and argue with parents.

   According to Yuniati, (2019), playing puzzles can improve fine motor skills in preschool children, because puzzles are used as a means of playing in developing creativity and children's thinking patterns and can coordinate eye and hand movements, and train the muscles of the fingers (Yuniati, 2018). Puzzles can also train children's patience, make it easier to understand concepts, and learn to solve problems so that without realizing it, children's fine motor skills continue to practice and develop well. According to researchers, puzzle games can stimulate fine motor development in children. With puzzle games, children feel happy because they are not only learning to read, write, color, but children also actively participate in the preparation of puzzles, which without realizing it, children learn to actively move their fingers and eyes.

CONCLUSIONS

At the beginning of the study, subjects 1 and 2 had different fine motor skills. After following a series of puzzle play therapy, both showed rapid progress. Although they initially needed guidance, they were gradually able to master the skill of putting together puzzles. This shows that with the right stimulation, children can develop their fine motor skills quickly. In order for the benefits of puzzle play therapy to be felt in the long term, it is recommended to continue this program both at home and at school. The active role of parents and teachers is very important in ensuring the success of this program. In addition, further research needs to be done to see the effectiveness of puzzle games when applied in larger groups.

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Conflict of Interest

No Conflict of Interest

REFERENCES

Iqbal, M., Oktaviyana, C., & Azkia, C. N. (2023). Pengaruh permainan puzzle terhadap perkembangan motorik halus pada anak usia prasekolah di TK Harapan Bunda Kabupaten Aceh Utara. *Journal of Nursing Practice and Education*, *4*(1), 114–122.

Maghfuroh, L. (2018). Metode bermain puzzle berpengaruh pada perkembangan motorik halus anak usia prasekolah. *Jurnal Endurance*, *3*(1), 55–60.

Michel, E., & Molitor, S. (2022). Fine motor skill automatization and working memory in children with and without potential fine motor impairments: An explorative study. *Human Movement Science*, *84*, 102968.

Panzilion, P., Padila, P., Tria, G., Amin, M., & Andri, J. (2020). Perkembangan Motorik Prasekolah antara Intervensi Brain Gym dengan Puzzle. *Jurnal Keperawatan Silampari*, *3*(2), 510–519. https://doi.org/10.31539/jks.v3i2.1120

Rahmatillah, D., Salam, A. Y., & Rahmat, N. N. (2023). Efektivitas Permainan Melipat Kertas dan Puzzle terhadap Perkembangan Motorik Halus Anak. *Jurnal Ventilator*, *1*(4), 158–169. https://doi.org/10.59680/ventilator.v1i4.680

Sutapa, P., Pratama, K. W., Rosly, M. M., Ali, S. K. S., & Karakauki, M. (2021). Improving motor skills in early childhood through goal-oriented play activity. *Children*, *8*(11), 994. https://doi.org/doi.org/10.3390/children8110994

Widiawati, L. E. S., & Natalya, W. (2021). *Pengaruh Terapi Bermain Puzzle Terhadap Perkembangan Motorik Halus Anak Prasekolah: Literature Review*. *1*, 1651–1659. https://doi.org///doi.org/10.48144/pro siding.v1i.908

Yolida, B. (2023). The Media Puzzle Assisted Guided Inquiry Model: Its Use of Students' Critical Thinking Skills. *Futurity Education*, *3*(1), 117–125.

Yuniati, E. (2018). Puzzle Mempengaruhi Perkembangan Motorik Halus Anak Usia Prasekolah di TK At Taqwa Mekarsari Cimahi Puzzle influence motoric development smile age of prasekolah. *Jurnal Kesehatan*, *11*(1), 9–20. https://doi.org///doi.org/10.32763/yfgmsd43