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THE EFFECT OF FINGER PAINTING ON THE FINE MOTOR SKILLS OF EARLY CHILDHOOD CEREBRAL PALSY AT THE THERAPY CENTER IN KARANGANOM DISTRICT, KLATEN REGENCY

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ABSTRACT

This study aims to determine the effect of finger painting activities on the fine motor skills cerebral palsy in inclusive center therapy services in Kecamatan Karanganom, Kabupaten Klaten. This research uses quantitative methods with Single Subject Research (SSR). The design used in this study was A1-B-A2 or baseline1 – intervention – baseline2. The subject used in this study was a cerebral palsy child in the inclusive center therapy service in Kecamatan Karanganom, Kabupaten Klaten. The technique used in data collection is a performance test with 21 questions. The validity test uses the content validity test. This study used inter-ratter reliability. The assessment instruments in this study have been validated to three experts in the fields of materials, media and measurement. The data from the study were analyzed using descriptive analysis presented in the form tables and graphs using analysis components in conditions and between conditions. The results showed an increase in fine motor skills through finger painting activities with a mean at baseline1 of 49,31, intervention of 62,32 and baseline2 of 73,33. Based on the results this study, it can be concluded that finger painting activities have an effect on improving fine motor skills of cerebral palsy children in inclusive center therapy services in Kecamatan Karanganom Kabupaten Klaten.

***Keywords** : finger painting, fine motor skills, cerebral palsy*

INTRODUCTION

Children with special needs in general are children with mental, physical, social, intellectual, and emotional obstacles that require special handling and are not the same as other children. Children with special needs require separate treatment such as education and related services. This education and service is in line with Atmojo, Lukitoaji, and Noormiyanto (2020) who suggest that training in handling children with special needs is very important to improve the ability of teachers to provide treatment. Cerebral Palsy is a type of child with special needs who is paralyzed by the brain and has an impact on fine motor and gross motor disorders so cerebral palsy children find it difficult to move in their daily lives. This is in line with Valentina (2014) who explains that brain damage in cerebral palsy results in obstacles in gross motor and fine motor. The existence of damage to the brain causes cerebral palsy, and children's motor skills experience obstacles such as difficulties in independent daily activities such as dressing, writing, eating, and other Activity Daily Living (ADL).

Special treatment for cerebral palsy children can be done in education services and rehabilitation services. Educational services for cerebral palsy children are in the form of special schools and inclusive schools. Meanwhile, rehabilitation services are carried out to optimize the abilities possessed by cerebral palsy children. This rehabilitation service is usually carried out in hospitals and therapy centers by providing the therapy needed by the child. In this study, the institution used for efforts to optimize the subject's abilities is the Therapy Center in Karanganom District, Klaten Regency. The type of service used is therapy to optimize the ability of the gross motor system and fine motor skills of cerebral palsy children.

Fine motor skills are abilities that are influenced by small muscles in the body, such as writing, drawing, throwing, cutting, and playing games or objects. In the process of developing fine motor skills, there are often various problems that occur in children, these problems will affect the achievement of perfect fine motor skills. This is evidenced through Tifali's research (2014) that fine motor disorders in cerebral palsy are characterized by hand spasticity so that the hand muscles are stiff when moved, the hands are less strong when holding objects, and less able to carry out daily activities.

Abnormally developed fine motor skills have a negative impact in that the child will have a problem with a movement that uses fine motor skills, especially in terms of simple movements such as grasping, folding fingers, holding, grabbing, and sticking. Therefore, it is very important to do activities that captivate children's attention, so that children have the willingness to train their fine motor skills to improve. The activities in question should be safe and not cause children injury. This is in accordance with the Peraturan Menteri Pendidikan & Kebudayaan No. 137 of 2014 concerning

PAUD Standards, namely at the age of 4-5 years fine motor skills in children require stimulation with various activities, such as drawing freely, finger painting, playing playdough, weaving, sticking, cutting, and coloring.

Finger painting is an activity of painting with paint on paper using hands without tools. In finger painting, cerebral palsy children are free to express their imagination besides that they can move their hands and fingers. This is in line with Kurniati (2019), namely the benefits of doing finger painting are developing creative thinking skills, developing the ability to describe aesthetic values by making works such as drawing, and training muscles in the fingers. The finger painting process has a weakness, namely the color porridge for painting makes children disgusted (Astria, Sulastri, and Magta, 2015). Finger painting can improve motor skills. This is evidenced by Azwar's research (2021) that the provision of intervention, namely finger painting, has a positive effect in the form of increasing children's motor skills, which initially increased to a high category. In the implementation of interventions or finger painting can be done with several techniques, such as techniques using one finger, two fingers, and making a pattern.

METHOD

Single Subject Research (SSR) was chosen to be used in this study. The A1-B-A2 design form which produces a strong causal relationship between the dependent variable and the independent variable is used in this study. The subject of this research is a 6-year-old male cerebral palsy child with the initials A at the Therapy Center, Karanganom District, Klaten Regency. According to Sudjana (2017), a test is an assessment tool in the form of questions posed to the subject so that it will get answers in oral form using oral tests, writing using written tests, or forms of action using action tests. The test used in this research is a performance test. The performance test used in the following research has the aim of seeing an increase in the motor skills of cerebral palsy children. The instrument in this study consists of a question sheet to determine the fine motor skills of cerebral palsy children through finger painting. In the preparation of questions adjusted to the instrument grid. The following instruments were used in the study:

Table 1. Research Instrument Grid

No.	Aspek	Indikator	Bentuk Soal	No. Item	Jumlah Item
1.	Mengambil sesuatu	a. Anak mampu mengambil kertas sebagai media lukis	Unjuk Kerja	1	6
		b. Anak mampu mengambil tube cat warna	Unjuk Kerja	2	
		c. Anak mampu membuka tutup tube cat warna	Unjuk Kerja	3	
		d. Anak mampu menutup tutup tube cat warna	Unjuk Kerja	4	
		e. Anak mampu menekan tube cat warna sampai cat keluar	Unjuk Kerja	5	
		f. Anak mampu mencampur warna menggunakan jari sesuai warna yang diinginkan	Unjuk Kerja	6	
2.	Menulis	a. Anak mampu membuat garis tegak menggunakan jari	Unjuk Kerja	7	5
		b. Anak mampu membuat garis miring menggunakan jari	Unjuk Kerja	8	
		c. Anak mampu membuat garis lengkung menggunakan jari	Unjuk Kerja	9	
		d. Anak mampu membuat garis spiral menggunakan jari	Unjuk Kerja	10	
		e. Anak mampu membuat bulatan menggunakan jari	Unjuk Kerja	11	
3.	Mewarnai	a. Anak mampu menwarnai warna dengan jari tangan kanan	Unjuk Kerja	12	5
		b. Anak mampu mewarnai warna dengan jari tangan kiri	Unjuk Kerja	13	
		c. Anak mampu membuat warna abstrak pada kertas	Unjuk Kerja	14	
		d. Anak mampu mewarnai sketsa dengan teknik titik-titik	Unjuk Kerja	15	
		e. Anak mampu mewarnai sketsa dengan meratakan warna	Unjuk Kerja	16	
4.	Menggambar	a. Anak mampu menggambar dengan teknik *blocking* (cap tangan)	Unjuk Kerja	17	5
		b. Anak mampu menggambar dengan cap jari atau titik-titik	Unjuk Kerja	18	
		c. Anak mampu menggambar dengan teknik putar	Unjuk Kerja	19	
		d. Anak mampu menggambar dengan menarik garis	Unjuk Kerja	20	
		e. Anak mampu menggambar dengan meratakan cat yang telah dituang pada kertas	Unjuk Kerja	21	
		Jumlah Total		**21**	**21**

The criteria for assessing this instrument are:

Table 2. Score Description

Skor	Deskriptor
5	Able to do independently
4	Able to do with a little help
3	Moderately able (able to do with full assistance)
2	Less able even with full assistance
1	Less able even with full assistance

The score calculation in this study is:

$$\text{Final Score} = \frac{score\ obtained}{maximum\ score}\ X\ 100$$

The scores on this assessment will be recorded and processed into a graph which is then analyzed descriptively. Furthermore, the scores that have been obtained are compared with the minimum achievement targeted by the researcher using the assessment categorization. The following is the assessment categorization table used.

Table 3. Assessment Categorization

Score	Final Score	Category
>84	>80	Very Good
70 – 84	66,8- 80	Good
56 – 69	53,4 - 66,7	Fair
42 – 55	40 - 53,3	Deficient
<42	<40	Poor

RESULTS AND DISCUSSION

Results

Baseline 1 was carried out with the aim of knowing the ability of children's fine motor skills. This research was conducted at the child's home starting on June 6 - June 8, 2022. This baseline1 was conducted for 3 sessions and was carried out before the child received the intervention. Measurements at baseline1 are carried out until the data obtained is stable. Measurements were made by 3 raters, namely the researcher and 2 friends as raters. Measurements are made by reading the performance questions to the child.

Table 4 shows the baseline1 (A1) phase data

Table 4. Baseline1 data (A1)

Sessions	Average Score
1	46,98
2	48,20
3	51,74

From the results of baseline1 sessions 1, 2, and 3 presented in graphical form, it can be concluded that the data obtained have similar scores even though the scores are obtained at different times. This data is data on children's initial fine motor skills.

Based on the baseline measurement results from the three sessions and compared using the existing value category scale, it can be seen that the ability of fine motor skills is low because the subject's average score is 51. Therefore the subject requires intervention to improve fine motor skills.

Intervention is the second stage after the data at the baseline1 stage is stable. The intervention stage of the study was carried out for 6 sessions which were held on June 9-11 to June 13-15, 2022. At this stage the researcher explains finger painting to the child, such as the techniques to be learned and the materials used. Table 5 shows the data in the intervention phase (B)

Table 5. Intervention

Sessions	Average Score
1	58,09
2	59,99
3	61,26
4	63,80
5	64,75
6	66,03

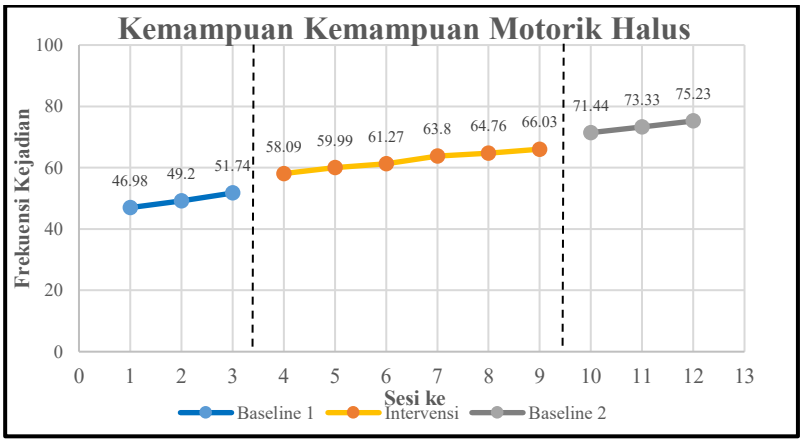
Table 3 states that fine motor skills that occur in the intervention phase (B) show an increase where in this intervention phase, the score of fine motor skills of cerebral palsy children shows sufficient score criteria. This proves that there is an increase from a low score to a sufficient score.

The baseline2 stage is carried out 3 times a session with the same method as baseline1. The difference between baseline 1 and baseline2 lies in the baseline2 measurement which has been influenced by the interventions that have been carried out previously. Baseline2 was conducted on June 16, 2022 to June 18, 2022. This baseline measurement phase is carried out to measure fine motor skills. Table 6 shows the results of the baseline2 phase.

Table 6. *Baseline2*

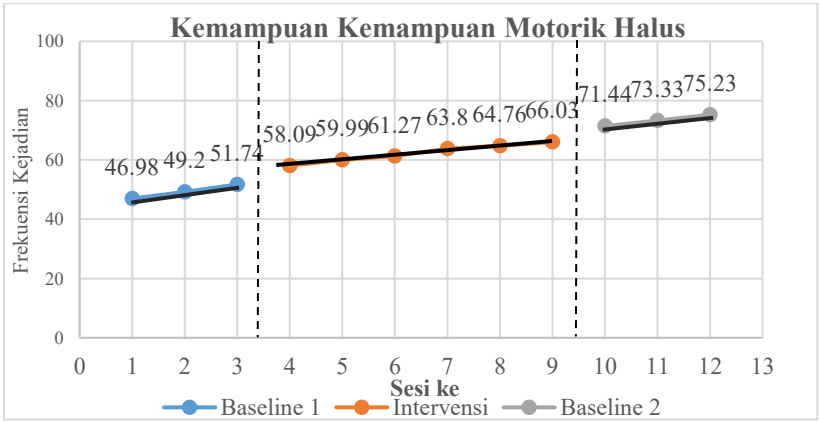
Sessions	Average Score
1	71,43
2	73,33
3	75,23

Table 6 shows that the average score in the baseline2 phase has increased, which was initially sufficient to high.



Picture 1. Recapitulation of fine motor skills score data

The last activity carried out after all data is collected through the subject and carried out before drawing a conclusion on a study is data analysis. Data analysis is carried out through analysis in conditions. The research design is to use the A-B-A design which has 3 phases, namely A1 (baseline1) which is carried out 3 sessions, B (intervention) which is carried out 6 sessions and A2 (baseline2) which is carried out 3 sessions. To determine the estimation of directional tendency or the addition of the level of fine motor skills by observing the direction (trend) at each stage of the study. The method used is the split-middle method.



Picture 2. Estimation of directional trend

The stability trend is determined using the stability criteria, which is 15%. The criteria are said to be stable if the percentage of stability is between 80 to 90% and is said to be unstable if the

percentage is <80%. The baseline phase (A1) gets a data percentage of 100% a stability range of 7.76 and has a mean level of 49.31. After knowing the stability range and mean level, you can then determine the upper limit and lower limit in this baseline (A1) phase. The lower limit and upper limit in this baseline (A1) phase are 45.43 and 53.19. From this explanation, it is concluded that the data in the baseline phase (A1) is stable. The intervention phase (B) obtained a data percentage of 100% with a stability range of 9.90. The mean level of the intervention phase (B) obtained data 62.32, then these results can be used to find the upper limit and lower limit of the intervention phase. The lower limit in the intervention phase is 67.27 and the lower limit in the intervention phase is 57.37. In this intervention phase, the data is declared stable. The baseline2 (A2) phase obtained a data percentage of 100%, a stability range of 11.28, a mean level of 73.33, an upper limit of 78.97, and a lower limit of 67.69. In the baseline2 (A2) phase, the data is said to be stable.

The trend of data traces in this study was obtained in the same way as determining directional trends. The trend of trace data has increased in baseline1, the intervention phase tends to increase and baseline2 there is also an increase. The stability level and range in this study are as follows. The baseline1 phase (A1) 56.98 - 51.74 is stable, the intervention phase (B) 58.09 - 66.03 is stable and the baseline2 phase (A2) 71.43 - 75.23 is stable.

The level of change is generated by calculating the difference between the first data and the last data at each stage. A (+) sign is a positive change, a (-) sign is a negative change, and a (=) sign indicates no change in the data.

Table 7. Level of Change

Condition	**A1**	**B**	**A2**
Level of Change	46,98 – 51,74	58,09 – 66,03	71,43 – 75,23
	(+4,76)	(+7,94)	(+3,80)

Table 8. Recapitulation of visual analysis results in conditions

Condition	A1	B	A2
Condition Length	3	6	3
Estimated Directional Tendency	(+)	(+)	(+)
Stability Trend	100%	100%	100%
Stability Trace Data	(+)	(+)	(+)
Stability Level and Range	46,98 – 51,74 Stable	58,09 – 66,03 Stable	71,43 – 75,23 Stable
Level Change	46,98 – 51,74 (+4,76)	58,09 – 66,03 (+7,94)	71,43 – 75,23 (+3,80)

Table 9. Recapitulation of visual analysis results between conditions

Condition Comparison	B/A1	A2/B
Number of variables changed	1	1
Changes in directional trends and effects	(+) (+)	(+) (+)
Change in stability tendency	Stable to stable	Stable to stable
Change in level	58,09-51,74 (+6,35)	71,43-66,03 (+5,4)
Percentage of overlap	0%	0%

Discussion

Through research that has been carried out on the subject IAS, it is known that the fine motor skills of cerebral palsy have increased. These results are corroborated by evidence, namely in the initial phase, namely the baseline1 (A1) phase where the average score of children's fine motor skills is still low. Then the score increases in the good category when finger painting activities are applied in the phase after intervention. Then when entering the baseline2 (A2) phase, the child's fine motor skills score increased even more. This shows that finger painting activities have an effect on the ability of children's fine motor skills, and proves that the hypothesis proposed can be accepted.

In the baseline1 phase, it can be seen that the length of the baseline1 phase is 3 sessions with an upward trend in the direction of the graph which shows that there is an increase in data with a stability level of 100%. Then the data is calculated using descriptive statistics with the results of the stability level and range of 46.98 - 51.74 which shows a level change of +4.76. Based on the measurement results above, it can be said that fine motor skills in the subject have improved.

The intervention phase is known through the length of the phase, namely there are 6 sessions with an upward trend in the direction of the graph which shows that there is an increase in data with a stability level of 100%. Existing data is calculated using descriptive statistics with the results of the stability level and range of 58.09 - 66.03 which shows a level change of +7.94. It can be said that the intervention phase of fine motor skills in the subject increased.

The baseline2 phase can be known that the length of the baseline2 phase is 3 sessions with an upward trend in the direction of the graph which shows that there is an increase in data with a stability level of 100%. Then the data is calculated using description statistics with the results of the stability level and range 71.43 - 75.23 which shows a level change of +3.80. Based on the measurement results above, it is said that fine motor skills in the subject have increased.

Based on data analysis from the baseline1 phase, intervention to baseline2, it is known that the use of finger painting has a positive effect on the fine motor skills of cerebral palsy in the therapy center of Karanganom District, Klaten Regency. This is evidenced that the baseline1 (A1) to intervention (B) phase found an increase and in the baseline1 (A1) and baseline2 (A2) phases there was a positive increase. In each phase, the data is stable, so it is said that the fimger painting activity in this study is effective in improving the fine motor skills of cerebral palsy at an early age at the Therapy Center of Karanganom District, Klaten Regency, Jawa Tengah Province.

Fine motor skills are an important ability that must be possessed by children with cerebral palsy, fine motor skills of children with cerebral palsy require training or activities that stimulate movement in the fingers and hands of children. Activities to train fine motor skills should be given continuously so that they can improve children's motor skills. The importance of training for fine motor skills is reinforced by the opinion of Andika (2016), namely training fine motor skills in cerebral palsy children is very important to be implemented so that children's motor skills can improve, so that children can carry out daily activities independently while at home, at school and when playing. Finger painting is one of the activities to train motor skills, especially children's fine motor skills.

Finger painting activities are flexible activities that can be done anywhere and anytime, so doing finger painting is very easy to do. Finger painting has a concept that is painting or drawing without using tools, only using fingers to the wrist to paint. The concept of finger painting is reinforced by the opinion of Masganti (2016), namely drawing activities with the effort of scratching colors directly

using fingers freely on a flat plane. Finger painting has several techniques, namely blocking, point, rotary, straight and curved techniques. Finger painting techniques used in applying color can train hand flexibility and train fine motor skills in children. Finger painting done continuously can improve fine motor skills. This is reinforced by the opinion of Listyowati & Sugiyanto (2019) that finger painting can help children in efforts to grow fine motor skills because finger painting can train coordination between eyes and hands.

This research is reinforced by the results of other relevant studies related to finger painting activities that have different target abilities, materials and tools used, and subjects. Research conducted by Magfirah (2017) produced data that finger painting can be applied to foster the fine motor skills of children with cerebral palsy grade 2 SD. Another study conducted by Nisak (2016) showed that the application of finger painting can improve the writing skills of autistic children at the ABK Education Institute. The two studies above show that finger painting can be applied to improve fine motor skills and writing skills. These studies have differences in research subjects and research targets. The first study has a research subject of cerebral palsy children with a research target of fine motor skills, while the second study is an autistic child with a research target of writing skills. From these studies it is concluded that finger pinting can help in improving skills related to fine motor skills, despite having different special needs characteristics.

The use of finger painting in improving the fine motor skills of cerebral palsy children has advantages and disadvantages. The advantage of using finger painting is that children are enthusiastic in participating in the activity. Tools and materials in finger painting are easy to obtain and practical to use. Finger painting can be done anywhere and children really like this activity. The disadvantages of finger painting activities are dirtying the place used and the clothes used. In addition, when washing hands, children look difficult and must be assisted by parents. Through the research that has been done, it is concluded that finger painting is able to improve fine motor skills in cerebral palsy at an early age at the Therapy Center Karanganom District, Klaten Regency, Central Java Province.

CONCLUSIONS AND RECOMMENDATIONS

The research conducted shows that finger painting can improve fine motor skills in doing activities using fingers in early childhood cerebral palsy at the Therapy Center Karanganom District, Klaten Regency, Central Java Province. Based on the research that has been done, it is recommended to children and therapy implementers that finger painting can be implemented as an activity to improve fine motor skills, so that they develop optimally. In addition, it can be recommended to parents that finger painting can be done as a fine motor training activity and as a leisure activity.

REFERENCES

Andika, C.F. (2016). Meningkatkan Kemampuan Motorik Halus dalam Menulis Permulaan Siswa *Cerebral palsy* Sedang. *Jurnal Ilmiah Pendidikan Khusus.* 5(1), 29-49.

Astria, N., Sulastri, M., & Magta, M. (2015). Penerapan Metode Bermain Melalui Kegiatan *Finger Painting* Untuk Meningkatkan Kemampuan Motorik Halus. *Jurnal Pendidikan Guru Pendidikan Anak Usia Dini,* 3(1), 1-11.

Atmojo, S.E., Lukitoaji, B.D., & Noormiyanto, F. (2020). Pelatihan Penanganan Anak Berkebutuhan Khusus Bagi Guru Sekolah Dasar Rujukan Inklusi. *Jurnal Pengabdian Masyarakat,* 3(2), 244-252.

Azwar, M. (2020). Peningkatan Kemampuan Motorik Halus Melalui Kegiatan *Finger Painting* pada Murid Autis Kelas I di SLB Arnadya Makasar. *Jurnal UNM,* 1-15.

Listyowati, A. & Sugiyanto. 2019. *Finger painting*. Jakarta : Erlangga for kids.

Masganti. (2016). Perkembangan Kreativitas Anak Usia Dini. Medan : Perdana Publising.

Nisak, R.R., (2016). Penerapan *Finger painting* dalam Upaya Meningkatkan Kemampuan Menulis Anak Autis. *Jurnal Pendidikan Khusus.* 1-19.

Republik Indonesia, Kementerian Pendidikan & Kebudayaan. (2014). Peraturan Kementerian Pendidikan dan Kebudayaan RI Nomor 137 tentang Standar PAUD Nasional. Jakarta.

Sudjana, N. (2017). Dasar-dasar Proses Mengajar. Bandung : Sinar Baru Algenisdo.

Tifali, M.G. (2014). Meningkatkan Kemampuan Motorik Halus Melalui Media Papan Alur Pada Anak *Cerebral palsy* Tipe Spastik. *Jurnal Ilmiah Pendidikan Khusus,* 3(3), 455-466.

Valentina, D.T. (2014). Penyesuaian Psikologis Orangtua Dengan Anak *Cerebral palsy*. *Jurnal Psikologia*, 9(2), 57-64.