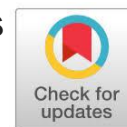


## Development stimulation with finger painting techniques and toddler age tantrum frequency



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### ABSTRACT

Temper tantrums are destructive behavior in the form of overflows that can be physical (hitting, biting, pushing) or verbal (crying, screaming, whining) or constantly sulking because the child has not been able to express emotions. Through finger painting will help children express their emotions through color games. The purpose of this study was to analyze the effect of growth stimulation with Finger Painting techniques on motor development and tantrum frequency of toddler-age children. Quasi-experimental research method with pretest-posttest with control group design. This research was conducted in Posyandu at Mantrijeron, Yogyakarta City from July to August 2018. The population in this study were all toddlers aged 1-3 years old. Subjects were selected using the purposive sampling technique as many as 82 respondents. The results show that there was a difference of occurrent temper tantrums before (average in treatment group=48.8; average in control group=45.8) and after treatment (average in treatment group=31.3; average in control group=36.7). The independent t-test analysis showed that there was an effect of stimulation with finger painting technique on the tantrum frequency of toddlers (p-value 0.0001). There was an influence of developmental stimulation with finger painting techniques on the frequency of toddler tantrums.

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### INTRODUCTION

Health development as part of efforts to develop a complete human being, among others, is carried out through child health efforts conducted as early as possible since antenatal care. Maternal health efforts carried out before and during pregnancy until delivery are intended to produce healthy offspring and are born safely (intact survival). Health efforts from the period of pregnancy up to the first five years of life are carried out to maintain survival while improving the quality of life of children to achieve optimal growth both physically, mentally, emotionally, and socially and have multiple intelligence by their potential<sup>1</sup>

The first 5 (five) years of a child's life (toddler) is the most rapid period of growth and development in the human brain. This period is relatively short and will not be repeated in the life of a human so attention to early childhood is important because it is a golden period, a window of opportunity but also a critical period. This means the plasticity of a child's brain at this time has positive and negative sides. The positive side of the brain at this time is more open to the learning process and enrichment, but the negative side is more sensitive



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to the environment that does not support such as inadequate nutritional intake, lack of stimulation and do not get adequate health services<sup>1</sup>.

The aspects of children's growth and development are broadly divided into 3 namely physical, psychological and social aspects, all of which must get optimal stimulation. The toddler is a period of children aged 1 to 3 years that requires awareness of the child's ability to control and happy with the success of new skills. The occurrence of unsuccessful attempts at controlling can lead to negative behaviors such as throwing things, banging heads against the wall, screaming which clearly shows the ego and self-power in the child begins to grow, and temper tantrums occur<sup>2</sup>. A study conducted on 1.500 parents who have children aged 3-5 years showed 83.7% of children under five experienced tantrums and around 8.6% were angry and raging every day. Research in Chicago shows that 50-80% of temper tantrums occur at the age of 2-3 years with a frequency once a week and 20% occur almost every day. Data from psikologizone (2012) toddlers in Indonesia usually experience temper tantrums in the next year around 23-83% experienced by children aged 2-4 years<sup>5</sup>.

Standardization to maximize maternal stimulation of children is divided based on the method of stimulation, type of stimulation, time or intensity of stimulation, facilities, or stimulation media. Lack of stimulation because many mothers who do not understand about its role in providing stimulation to children, will inhibit the growth and development of the child itself. In fact, through stimulation the child can achieve optimal development in vision, hearing, language development, social, cognitive, gross movements, smooth movements, balance, coordination, and independence. The stimulation must be done every time there is an opportunity to interact with children should be every day, every time and as often as possible, constantly and varied, must be adjusted to the age of its development, carried out by the family (especially mothers) and the environment.

A child experiences a tantrum because the child has not been able to express emotions. Through finger painting will help children to express their emotions through the play of colors, children can paint according to the wishes of children without fear of being wrong. This is believed to be the basis of increasing body coordination abilities, fine and gross motor skills, stress management abilities due to maturity and emotional experience of children also form characters that can ultimately help children cope with environmental demands, memory abilities, emotional control, social interaction and improvement individual learning abilities<sup>6</sup>.

Based on the description above, researchers are interested in researching with the title "The influence of developmental stimulation with Finger Painting techniques on motor abilities and frequency of tantrum toddler age children". The purpose of this study was to determine the effect of developmental stimulation with Finger Painting techniques on motor skills and the frequency of toddler tantrums.

## **METHOD**

This research is a type of Quasi-experimental research. The study will be conducted using a pretest-posttest control group design. The treatment group was preceded by a pretest and then given a developmental stimulation with finger painting techniques, after that it was measured again (posttest). Whereas the control group performed a pretest without treatment (growth and growth stimulation according to age stages) then a posttest. Stimulation of development with finger painting techniques is carried out for 1 month by parents/caregivers at home. Child motor development is measured by the Pre Development Screening Questionnaire or KPSP form and tantrum frequency is measured using the Temper Tantrum Rating Scale instrument.

The population in this study were all children aged under five (ages 1-3 years). The sample of this research is toddlers (1-3 years old) who experience temper tantrums in the Manrijeron Urban District of Yogyakarta City. The sampling technique in this study used a purposive sampling technique with a sample size of 42 respondents for the experimental group and 42 respondents for the control group

The independent variable is developmental stimulation with finger painting techniques. The dependent variables are the child's motor ability and tantrum frequency. Data collection instruments in this study were PSP, informed consent sheets, materials for finger painting (starch, food coloring, paperboard). Measurement of children's motor skills using the Pre Development Screening Questionnaire or KPSP form and tantrum frequency is measured by the Temper tantrum Rating Scale. This temper tantrum scale is a Likert model scale with 4 answer choices: Always, often, sometimes, and never. Temper tantrum rating scale instruments totaling 25 items of money statements have been tested for validity and reliability.

Data collection techniques by distributing research instruments namely materials/media Fingerpainting (starch, food coloring) and guides along with Temper Tantrum Rating Scale instruments. The researcher and the team examined the development achieved by the child based on the Pre Development Screening Questionnaire or KPSP form in both the treatment and control groups (pretest). Research subjects were asked to perform stimulation with finger painting techniques independently in their respective homes based on the available guidelines while in the control group stimulation of growth and development according to age stages. After that, both the treatment and control subjects measured the frequency of tantrums experienced by children based on the Temper Tantrum Rating Scale that was provided. While researchers re-measure the achievement of children's development abilities with the Pre Development Screening Questionnaire (KPSP) form both in the treatment group and the control group (posttest). Data analysis in the form of univariable with frequency distribution, bivariable using independent sample t-test with  $\alpha$  of 0.05

## RESULTS

### 1. The occurrence of temper tantrums before treatment

Table 1. Frequency Distribution of Respondents based on temper tantrum events before treatment in the Mantrijeron Urban District of Yogyakarta City

<i>Temper tantrum</i>	Treatment		Control		Treatment	Control
	n	%	n	%		
Low	10	23.8	7	16.6	Min: 39	Min: 35
Medium	26	61.9	29	69.1	Max: 63	Max: 62
High	6	14.3	6	14.3	Average: 48.8	Average: 45.8
Total	30	100	30	100		

Based on Table 1, it is known that the distribution of temper tantrum incidents in the treatment and control groups mostly experienced temper tantrums with medium categories respectively 61.9% and 69.1%.

### 2. Occurrence of a temper tantrum after treatment

Table 2. Frequency Distribution of Respondents based on temper tantrum events after treatment in the Mantrijeron Urban District of Yogyakarta City

<i>Temper tantrum</i>	Treatment		Control		Treatment	Control
	n	%	n	%		
Low	15	35.7	4	9.5	Min: 27	Min: 32
Medium	16	38.1	30	71.4	Max: 35	Max: 42
High	11	26.2	8	19.1	Average: 31.3	Average: 36.7
Total	42	100	42	100		

Based on Table 2, it is known that in the treatment group after finger painting stimulation for the occurrence of temper tantrums evenly distributed in all three categories while in the control group most of the sedentary temper tempered with moderate category was 71.4%.

3. The motor ability of the respondent

Table 3. Distribution of Respondent Frequencies based on motor development in the Mantrijeron Urban District of Yogyakarta City

Motor Ability (fine dan gross motor)	Treatment		Control	
	n	%	n	%
Normal	42	100	42	100
Deviations	0	0	0	0
Total	42	100	42	100

The results of the assessment of motor ability in toddler age before and after treatment in each group were all normal (100%).

4. Effect of Stimulation Development with finger painting techniques on motor abilities and frequency of tantrums in toddler age children

Before the influence test is carried out, the data normality test is done using the Kolmogorov-Smirnov test (sample size > 50). The test results obtained an average difference in tantrum scores in the treatment group of 17.6 while the average in the control group of 9.05 with the results of p-value respectively 0.200 and 0, 176 because p value > 0.05 so it can be concluded that the data distribution normal. Subsequent tests using Independent Samples t-test.

Table 4 Results of Independent Samples T-Test Analysis Effects of stimulation of development with finger painting techniques on the frequency of toddler age tantrums in the Mantrijeron Urban District of Yogyakarta City

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI	
									Lower	Upper
pre-post tantrum increment	Equal variances assumed	.146	.703	5.611	82	.0001	8.548	1.523	5.517	11.578
	Equal variances not assumed			5.611	81.61	.0001	8.548	1.523	5.517	11.578

Based on table 4, it is known homogeneity test results by the Levene Test method shows the value based on Mean, which is 0.146 with a sig of 0, 703 where sig > 0.05 which means there is a similarity of variance between groups or the data is declared homogeneous. The test results with an independent sample t-test obtained a p-value of 0.0001 (p < 0.05) which means that there are significant differences in tantrum scores for the toddler before and after treatment.

## DISCUSSION

Tantrums are a normal condition for children aged 1-3 years (toddler age), but if not handled properly tantrums can continue to occur in children and even increase to an older age. In addition, tantrum behavior that is not properly addressed also influences the formation of the child's subsequent personality. This is because the ability to process or regulate emotions plays an important role in personality development. An important action taken is to help children learn to recognize and deal with their emotions so that tantrums become behaviors that can be overcome until childhood<sup>24</sup>. This study involved 84 children who were included in toddler age and experienced tantrums with different levels. The frequency distribution of tantrum events before the respondent is given treatment shows that all respondents experienced tantrums at both the low, medium, and high levels but most of them are in the medium category. Tantrum behavior shown by children can be verbal and physical in the form of screaming, screaming and crying loudly, rolling on the floor, stomping both feet and hands on the floor and so on. After being given treatment to the group by stimulation of finger painting tantrum events experienced by children were spread evenly in all three categories. Different tantrum measurement results in groups with stimulation according to the stage of developmental age with the results of the tantrum incidence of children shifting from the previous one in the low to medium and high categories.

Nevertheless, tantrum behavior of the two groups before and after treatment decreased, namely in the treatment group mean before 48.8 and after treatment to 31.3 while in the control group the average before 45.8 and after the average became 36.7. The fingerpainting technique is an emotional transfer technique where children can express their feelings according to their imagination by drawing lines with their fingers, using various media and colors using starch, cake dough, sand, and so on. This allows children who are stimulated with this technique to experience a decrease in tantrum behavior compared to respondents from the control group who experienced an increase in tantrum behavior.

The criteria used in determining the respondents of this study are children in the age range 1-3 years, living with parents, willing to be respondents (indicated by the agreement of parents/caregivers) and the child has experienced temper tantrums (at least once a week). The results of the assessment of children's motor development abilities before treatment found all respondents (100%) have normal motor skills (both gross motor aspects and fine motor) means that none of the respondents experienced delays in motor development. Likewise, after treatment, all children can perform developmental tasks on their motoric aspects. Therefore, it is important to consider the determination of the sample criteria used by considering the development status of the child before being used as a research sample.

Motor development is a process of growth and development of a child's ability to move. This development develops in line with the maturity of the nerves and muscles of the child. Thus, every movement as simple as anything is the result of complex interaction patterns of various parts and systems in the body that are controlled by the brain. The development of motor skills is the development of coordinated control of physical movements between nerve centers, nerves, and muscles.<sup>7</sup> Every child can reach an optimal stage of motor development as long as he gets the right stimulation. In each phase, children need stimulation to develop their mental and motor skills. In this study, 100% of the respondents lived with their parents to enable children to get good care and stimulation that would support optimal motor development.

Children at this time, all their potential needs to be encouraged so that they will develop optimally. Many concepts and facts are found to explain the golden period at an early age, where all the potential of a child develops the fastest. The concept is reinforced by the facts discovered by neurologists who state that at birth a baby's brain contains 100 to 200 billion neurons or nerve cells that are ready to make connections between cells. About 50% of human intelligence capacity has occurred at the age of 4 years, 80% has

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occurred at the age of 8 years, and reached a 100% culmination when children aged 8 to 18 years<sup>3</sup>.

This is by the theory of development which says development requires stimulation or stimulation, especially in the family, for example, provision

## CONCLUSION

There is an influence of developmental stimulation with finger painting techniques on the frequency of toddler tantrums. Motor skills before and after treatment were all normal in both the treatment and control groups. Tantrum behavior in the treatment group after being given stimulation with finger painting decreased compared to before, whereas in the control group tantrum behavior in children increased.

Parents are expected to be able to stimulate well and continuously use the method of finger painting so that it can reduce tantrum reactions while stimulating aspects of development in children.

For the next researcher, they can conduct further research with subjects experiencing developmental disorders especially in motoric aspects as well as respondents with autism or hyperactivity disorders.

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