

## Correlation between History of Exclusive Breastfeeding and Fine Motoric Development in Children Aged 24-48 Months

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**ABSTRAK**

Perkembangan motorik halus merupakan keterampilan yang melibatkan koordinasi gerakan tangan, mata, saraf dan otak yang dipengaruhi oleh beberapa faktor, salah satunya kesehatan dan gizi anak. Penelitian ini menganalisis hubungan riwayat pemberian ASI eksklusif dengan perkembangan motorik halus pada anak usia 24-48. Populasi penelitian ini sebanyak 40 anak dan sampel sebanyak 36 responden dengan teknik simple random sampling. Menggunakan kuesioner riwayat pemberian ASI eksklusif dan KPSP dan dianalisis menggunakan uji Fisher's exact test. Penelitian dengan desain cross sectional yang dilakukan di Posyandu Manggis 4 Desa Arjasa Kabupaten Jember. Hasil penelitian menunjukkan bahwa 72,2% memiliki riwayat pemberian ASI non eksklusif dan 27,8% diberikan ASI eksklusif. Perkembangan motorik halus sesuai 72,2% dan meragukan 27,8%. Hasil analisis didapatkan nilai 0,689 atau  $>\alpha 0,05$  maka tidak ada hubungan antara riwayat pemberian ASI eksklusif dengan perkembangan motorik halus pada anak usia 24-48 bulan di Posyandu Manggis 4 Desa Arjasa. Perkembangan motorik halus anak tidak dapat diukur dari riwayat pemberian ASI eksklusif saja, ada faktor lain yang dapat mendukung seperti pendidikan ibu, pendapatan keluarga, dan riwayat usia kehamilan cukup bulan. Para ibu disarankan untuk mengikuti kegiatan posyandu secara rutin untuk memantau tumbuh kembang anak dan meningkatkan motivasi untuk memberikan ASI eksklusif.

**Abstract :**

*Fine motor development is a skill that involves the coordination of hand, eye, nerve and brain movements which are influenced by several factors, one of which is the child's health and nutrition. This study analyzed the relationship between history of exclusive breastfeeding and fine motor development in children aged 24-48. The population of this study were 40 children and a sample of 36 respondents using the simple random sampling technique. Using a history of exclusive breastfeeding questionnaire and KPSP and analyzed using Fisher's exact test. Research with cross sectional design conducted at Posyandu Manggis 4 Arjasa Village, Jember Regency. The results of the study showed that 72.2% had a history of non-exclusive breastfeeding and 27.8% were exclusively breastfed. Fine motor development according to 72.2% and doubtful 27.8%. The results of the analysis obtained a value of 0.689 or  $>\alpha 0.05$ , there is no relationship between a history of exclusive breastfeeding and fine motor development in children aged 24-48 months at Posyandu Manggis 4 Arjasa Village. Children's fine motor development cannot be measured from a history of exclusive breastfeeding alone, there are other factors that can support such as mother's education, family income, and history of term gestational age. Mothers are advised to participate in posyandu activities regularly to monitor the growth and development of their children and increase their motivation to provide exclusive breastfeeding.*

## Introduction

Motor development is the control of body movements by coordinating the activity of the central nervous system, peripheral nerves and muscles. Motor development consists of two, namely, gross motor skills and fine motor skills. Fine motor activity is when children rely on the ability of their small muscles(1). Fine motor development is influenced by several factors. One of them is the health and nutrition of the child after birth(2). Babies need essential intake in adequate quantities due to the need for brain growth and development, namely the rapid formation of nerve cells. These nutrients can be obtained by getting breast milk(3).

Based on recommendations from(WHO)According to the World Health Organization, babies can breastfeed starting from the moment they are born and get breast milk (breast milk) exclusively within the first six months of life, without any other food including water. Breastfeeding is done according to the wishes of the baby. Exclusive breastfeeding aims to achieve optimal child growth, development and health. Once a child's digestive organs are ready, they should be given nutritious complementary foods and continue

breastfeeding until they are two years old or beyond. Past(Government Regulation No. 33 of 2012), in guaranteeing the fulfillment of babies' rights, the Government of Indonesia is making efforts so that children are given exclusive breastfeeding from birth up to the age of 6 (six) months by taking into account their growth and development, mothers are advised to breastfeed their babies exclusively.

Data found in Indonesia as much as 78.8% of mothers who breastfeed their children until the age of 0-23 months. However, in the Indonesian Nutritional Status Study (SSGI) in 2021 the number of babies breastfed until that age has decreased (75.1%) compared to Basic Health Research data(6)yearpreviously. In addition, data obtained by district or city shows that the scale of babies who receive exclusive breastfeeding <6 months in East Java in 2021 is 71.7% and decreases compared to 2020 (79.0%). However, this coverage has met the target of the 2020 National Medium-Term Development Plan (RPJMN) of 45%.(7). Data obtained from the Nutrition SectionJember District Health Servicein 2021, 63.3% of babies receive exclusive breastfeeding but the coverage of these babies still does not meet the set

achievement of 80%. From the data above it is known that the percentage of babies who are exclusively breastfed in the Arjasa Health Center area has a percentage of 41.3%, which means that it has a percentage below the average in Jember Regency (63.3%). The results obtained from a preliminary study in Arjasa Village, in 2018 children who did not receive exclusive breastfeeding were 62.7% and in 2021 there was an increase of 64%. After carrying out a developmental assessment of 10 children aged 24-48 months at Posyandu Manggis 4 Arjasa Village, the results obtained were 2 among them had deviations, 5 children had doubtful developments and 3 children had appropriate developments. Among these disorders, a total of 5 children experienced developmental disorders in their fine motor aspects because when asked to carry out activities, the children had not been able to carry out fine motor activities according to the instructions stated in the KPSP.

Balanced nutrition has a positive impact on children's motor development. Basically the fulfillment of good nutrition can be started as early as possible because good child development is also formed from childhood. During a period of rapid

physical and fine motor growth, children need adequate nutrition to form new cells and body tissues. The health of children who are disturbed by disease can slow down their fine motor development and have the potential to damage the cells and tissues of the child's body(2). Early childhood development is a strategic indicator for shaping human capital for sustainable development(9).

The solution is that commitment is needed in the form of policies that support breastfeeding and a ban on the use of formula milk, accompanied by training and updating of knowledge, as well as strict monitoring of the application of breastfeeding practices. In addition, it is necessary to develop clear standard operating procedures (SOPs), as well as provide infrastructure that supports the implementation of the Exclusive Breastfeeding program. Based on the phenomenon of the above problems, it is found that exclusive breastfeeding in Jember Regency has not met the specified achievement targets. Therefore researchers are interested in conducting research to determine the relationship between history of exclusive breastfeeding and fine motor development in children aged 24-48 months by using the KPSP screening test.

## Method

This research is a type of observational analytical research with a cross sectional approach. The inclusion criteria for this study were mothers or caregivers of children who were willing to be respondents aged 24-48 months. Subjects with congenital abnormalities or disabilities as well as mothers/caregivers of children who cannot communicate verbally can be excluded from the study. The population used was mothers and their children aged 24-48 months, a total of 40 children at Posyandu Manggis 4 Arjasa Village with a sample of 36 determined using the simple random sampling technique.

In this study, univariate analysis was carried out to obtain an overview of the characteristics of the sample and respondents (age, sex of the child, gestational age of the mother, birth weight of the child, duration of breastfeeding for the child, number of children of the mother, last education of the mother, occupation of the head of the family and monthly income of the head of the family). This research uses an alternative test formula for the chi-square test, namely the "Fisher's Exact Test". Decision making is based on comparison of significance values. If the results of the

significance value or Sig. (2-tailed) are  $>0.05$  then  $H_0$  is accepted and  $H_a$  is rejected. If the results of the significance value or Sig. (2-tailed)  $<0.05$  then  $H_0$  is rejected and  $H_a$  is accepted.

## Research result

The characteristics of the respondents in the study based on Table 1 show that most of the children in Posyandu Manggis 4 Arjasa Village are 48 months old (27.8%). The majority of children had a history of term birth (37-42 weeks) of 77.8% and had a history of duration of breastfeeding with an ideal time (6-24 months) of 58.3%. Most of the respondents were mothers with completed high school education (38.9%). A total of 21 subjects (58.3%) of the study came from families with a monthly income of two million to three million rupiah.

Based on Table 2, there were 10 respondents with a history of exclusive breastfeeding with doubtful Fine Motor development results in 2 children (5.6%) and with appropriate Fine Motor skills in 8 children (22.2%), while 26 respondents with a history of no Exclusive breastfeeding with questionable Fine Motor development results was 8 children (22.2%) and with appropriate Fine Motor development results were 18

children (50%). After analyzing the Fisher's Exact Test between the History of Exclusive Breastfeeding and Fine Motor Development, a significance value of 0.689 or Sig. (2-tailed) > 0.05 was obtained, so  $H_0$  was accepted and  $H_a$  was

rejected. It was stated that there was no relationship between a history of exclusive breastfeeding and fine motor development in children aged 24-48 months.

**Table 1. Characteristics of Respondents at Posyandu Manggis 4 Arjasa Village in 2023**

Variable	n	%
Child Age		
24 months	7	19.4%
30 months	6	16.7%
36 months	5	13.9%
42 months	8	22.2%
48 months	10	27.8%
Maternal Gestational Age		
Preterm	7	19.4%
Aterm	28	77.8%
Postterm	1	2.8%
Length of Breastfeeding		
Not Given	8	22.2%
Not enough	7	19.4%
Ideal	21	58.3%
Mother's Education		
Graduated from elementary school	9	25%
Finished middle school	12	33.3%
Graduated from high school	14	38.9%
Academic Finish	1	2.8%
Number of children		
1	12	33.3%
2	11	30.6%
3	11	30.6%
4	1	2.8%
5	1	2.8%
Income of the head of the family		
<2000,000,-	15	41.7%
2000,0000 - 3000,000.-	21	58.3%

**Table 2. Bivariate Analysis of the History of Exclusive Breastfeeding with the Development of Children's Fine Motor at Posyandu Manggis 4 Arjasa Village in 2023**

		Fine Motor				<i>p-values</i>
		Doubtful		In accordance		
		n	%	n	%	
Giving History Exclusive breastfeeding	exclusive breastfeeding	2	5.6%	8	22.2%	0.689
	No exclusive breastfeeding	8	22.2%	18	50%	

## Discussion

This study shows that there is no relationship between history of exclusive breastfeeding and fine motor development in children aged 24-48 months. Unlike the results of research Namirah, (2021) which shows that there is a relationship between exclusive breastfeeding and fine motor development. However, this research is in line with research Amaanina (2016) in Central Java with the result that there is no relationship between exclusive breastfeeding and the development of infants aged 6 months. This is because there are many supporting factors that can affect the development of a child's fine motor skills, as stated Nurlaili (2019).

The first factor is health and nutrition. The cause of delayed motor development may arise from brain damage at birth and prenatally or an unsupportive postnatal environment, however motor delays are more often caused by the child's lack of opportunity to learn motor skills, excessive parental protection and also the child's motivation to want to learn skills.(12). Children who are exclusively breastfed will get good nutritional status so that in carrying out motor development activities the baby can do well. In children with a history of

not being exclusively breastfed, children usually get breast milk but are added to complementary foods which can also affect the child's development(13).

In addition, there are important factors other than health and nutrition such as stimulation that children get. Fine motor development is very dependent on how often the child gets stimulation because at the age of five, the muscles of the child have not yet reached perfect maturity. With the opportunity to get enough exercise, the movement of the muscles reaches a perfect motor condition characterized by smooth and flexible smooth movements.(2). According to research Desitawati, Wattimena and Susanti (2020) when conducting interviews with every mother who has a non-exclusively breastfed baby, what are the methods to stimulate fine motor development. Most of the mothers who stimulate their children by communicating with. Through communication between children and parents, the baby's fine motor stimulation can function properly. Stimulation is a form of activity to stimulate children's development such as training to speak, think, be independent and socialize. Stimulation can be done by parents or other families. The purpose of stimulation

is to help children reach an optimal level of development. Stimulation can be used as a means to trigger brain development. Can be done in daily activities when parents take care of and care for children. The stimulation that the child gets will be processed by the five senses and will then be conveyed to the brain.(14).

Researchers assume that children's fine motor development cannot be measured from a history of exclusive breastfeeding alone. Exclusive breastfeeding is proven to have many benefits and can certainly affect the health and nutrition of children, but the nutritional status of children is not only influenced by breast milk but can also be influenced by other factors such as complementary feeding which is given after the child is 6 months old or when the child is ready to receive additional food. The role and parenting style of parents, education, and the economic situation of the family can influence parents in providing direction, support and stimulation for children. In accordance with the results of research on factors other than a history of exclusive breastfeeding such as mother's education, family income of Rp. 2000,000-3000,000, duration of breastfeeding with the ideal time and history of gestational

age at term indicate that there are children who are superior in their fine motor skills. Mother's education will influence attitudes, knowledge and information regarding how to properly care for children. Families with a prosperous economy can guarantee a safe and comfortable environment for children to play and train their fine motor skills. In addition, parents who have a stable economy are able to provide the availability of children's toys and creative materials that can train fine motor coordination. In general, children born at term gestational age will avoid the risk of health and development problems. The nervous system and organs are more mature than babies born at preterm so that they can support their fine motor development process.

## **Conclusion**

Based on the results of research on children aged 24-48 months who have a history of exclusive breastfeeding in the Posyandu Manggis 4 area, Arjasa Village, Jember Regency, namely the majority have a history of not exclusive breastfeeding as many as 26 children (72.2%) and the majority have appropriate fine motor development as many as 26 children (72.2%). It was

stated that there was no relationship between history of exclusive breastfeeding and fine motor development in children aged 24-48 months. It is suggested for future researchers to be able to develop research using a larger sample and add other factors related to the development of children's fine motor skills.

### **Ethics Approval and Consent to Participate**

Researchers have obtained ethically proper information from the University Health Research Ethics Commission, dr. Soebandi with letter number No.210/KEPK/UDS/V/2023, that the study entitled The Relationship of History of Exclusive Breastfeeding with Fine Motor Development in Children Aged 24-48 Months was declared ethically feasible in accordance with the 7 WHO Standards 2011. Prior to data collection, prospective respondents explained the aims and objectives of the research and provided informed consent as a sign of agreement to be a respondent.

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