



The effect of exclusive breastfeeding on fine motor skills in infants aged 7-12 months in the kapasa health center work area

Muldaniyah^a  

^aStikes Yahya Bima, Indonesia.

Abstract

Background: The development phase is an important period for a baby's life. One of the most important factors in the development phase is nutritional needs. Nutrition is needed from when the baby is in the womb until birth. The baby's nutritional needs during pregnancy are obtained from the mother during pregnancy, while nutrition when the baby is born is obtained from exclusive breastfeeding. The purpose of this study was to determine the relationship between exclusive breastfeeding and fine motor skills in infants aged 7-12 months in the Kapasa Health Center work area. **Method:** This study uses a quantitative research type using a retrospective research design. The sampling technique uses Purposive Sampling. The number of samples is 30 respondents. Analysis using the Chi-square test. **Results:** The results of the Chi-square test obtained a value of $p = 0.004$ ($p > 0.05$) this identifies H_0 as accepted, which means there is a relationship between exclusive breastfeeding and fine motor skills in infants aged 7-12 months in the Kapasa Health Center work area. **Conclusion:** Exclusive breastfeeding plays an important role in supporting the development of infants' fine motor skills. This study recommends that mothers exclusively breastfeed for the first six months of a baby's life and avoid giving complementary foods or formula milk before the age of six months to ensure optimal growth and development of the baby.

Keywords: Exclusive breastfeeding, Fine motor skills development, Infants aged 7-12 months, Kapasa health center

1. Introduction

According to the World Health Organization (WHO), breastfeeding is one of the most effective methods to determine a child's health and survival, but almost 2 out of 3 babies do not breastfeed exclusively for 6 months as recommended and this figure continues to get worse within 2 decades. WHO and UNICEF recommend that children start breastfeeding within the first hour of birth and breastfeed exclusively for the first 6 months of life, meaning that no other food or drinks are provided, including water. Babies must be breastfed according to demand and as often as possible during the day or night and the use of bottles or pacifiers should not be used (WHO, 2020).

Based on data from WHO, the average rate of exclusive breastfeeding in the world in 2022 is only 44% of babies aged 0-6 months worldwide who received exclusive breastfeeding during the 2015-2020 period from 50% of the exclusive breastfeeding target according to WHO. According to UNICEF (2020), the low coverage of exclusive breastfeeding is partly due to a lack of knowledge about lactation management.

According to Indonesia's health profile, the achievement rate of exclusive breastfeeding nationally in 2023; 2024, which is 61.33%; 68,74%. With a national target of 44%; 47% (Ministry of Health of the Republic of Indonesia, 2024). Breast milk (breast milk) is the most perfect food with nutritional content suitable for the body and B12 binding protein Essential amino acids are essential to increase the number of baby brain cells related to infant intelligence. Exclusive breastfeeding affects the quality of baby health, The fewer babies who receive exclusive breastfeeding, the worse the quality of the health of babies and toddlers. This is because improper feeding of complementary foods can cause digestive disorders which results in impaired growth and increases the Infant Mortality Rate (AKB) (Ministry of Health of the Republic of Indonesia, 2023).

South Sulawesi Provincial Health Office The percentage of exclusive breastfeeding for infants 0-6 months in Indonesia in 2018 was 54.3%, decreasing in 2022 to 48.6%. The coverage of exclusive breastfeeding for infants aged 0-6 months in South Sulawesi province is 56.02%. The percentage of exclusive breastfeeding coverage in 2021 in Biringkanaya sub-district is 40.13% in Sudiang. The percentage of exclusive breastfeeding for infants 0-6 months in the Puskesmas area throughout Makassar City in 2022 was 36.8%, in 2020 it was 63.7%, in 2023 it was 67.8%. This figure is still below the target of the National Development Program and National Strategy (2023 South Sulawesi Health Profile).

As one of the supporters of fine motor skills from an early age, breast milk has a role in reducing the rate of child illness and mortality as explained by Munir (2021) in Hamzah (2020) because breast milk is the best food that contains nutrients that are needed by babies at the age of 0-12 months. Breast milk also contains enzymes, hormones, isomoral and anti-infectious content.

The results of Anggraheny's (2020) research also said that DHA and AA levels in breastfed babies were much higher than in babies who did not get breast milk, in this case formula milk. DHA and AA levels also play a role in the growth of the brain, retina, cholesterol which can eliminate nerve tissue, taurine neurotransmitter inhibitor and membrane stabilizers, lactose for the brain, choline which plays a role in improving memory and many other enzymes Protein contained in breast milk can form soft clots and can also be younger to digest and absorb by the baby's intestines. This makes the main nutrients that best meet the baby's growth and development that can be absorbed perfectly. Therefore, early in life, babies urgently need adequate nutrition such as optimal exclusive breastfeeding

According to the 2019 National Education System Law, babies aged 7-12 months are babies who are vulnerable to 1-6 years. At this age, children experience a lot of development and at the age of 7-12 months babies experience several developments, one of which is fine motor development. This development will run according to the baby's growing age if the mother provides treatment by providing good nutritional breast milk from birth such as exclusive breastfeeding.

Realizing the many benefits obtained by exclusive breastfeeding, the World Health Organization United Nations Children Fund (UNICEF) and Word Health Organization (WHO) recommend that babies should be breastfed only with breast milk for at least 6 months. In Indonesia, the government has also stipulated regulations on the importance of exclusive breastfeeding as stated in the Decree of the Minister of Health number 450/MENKES/SK/IV/2004 and Government Regulation (PP) number 33 of 2012. (Era et al, 2019).

Growth and development can be carried out by exclusive breastfeeding such as fine motor skills, speech and language skills, as well as socialization and independence skills where these skills show behaviors that move the large muscles of the arms, legs, and torso, such as raising the head and sitting (Behrman, 2021 in Saraswati & Muwakhida, 2019).

Based on the results of research that has been conducted by Nurlaila, Riyatun and Iswanti (2019) which was carried out on children in Karangmojo Village, Karanggayang District, Kebumen Regency, the results were obtained that there was a significant relationship between the effect of exclusive breastfeeding with fine motor development and exclusive breastfeeding with the baby's gross motor development. In addition, Arifah Saraswati & Muwakidah (2019) also conducted a study on motor development between infants aged 7-12 months with exclusive and non-exclusive breastfeeding in Ngauli Regency and the results obtained, namely motor development in children who were given exclusive breastfeeding by 51.8% as expected and 36.4% doubtful.

From the research that has been carried out previously, there is a relationship between exclusive breastfeeding and children's motor abilities because of the contents of breast milk such as taurine, charcoal hydrate, linoleic acid, omega 3 and many more milk content which plays a very important role in helping children's growth and development. Hasnawati (2020) also said that exclusive breastfeeding is very beneficial for children, one of which is as the best nutrition because breast milk is an ideal source of nutrition with a balanced composition and in accordance with the growth needs of children and is the most perfect children's food both in quality and quantity.

Based on data obtained from the Kapasa Health Center in Makassar City. In 2023 the number of babies is 123 babies and in 2024 the number of babies is 135 babies. And the number of mothers who bring their babies aged 7-12 months immunization is 42 babies to immunize at the Kakasa Health Center. there is still a lack of exclusive breastfeeding, therefore the author is interested in conducting research on the effect of exclusive breastfeeding with fine motor skills in babies aged 7-12 months at the Kakasa Health Center.

2. Materials and Methods

This research is a quantitative research. The researcher uses a research design with the Retrospective method, The retrospective approach requires research that is carried out by describing a state of looking back or relying on history. The independent variable in this study is exclusive breastfeeding while the dependent variable is growth in babies aged 7-12 months. The population in this study is all mothers who have babies aged 7-12 months who are breastfed in the Kapasa Health Center Working Area This study uses primary data obtained from filling out questionnaires and secondary data obtained from the Kapasa Health Center Working Area Health Profile.

3. Results

3.1 Responsive Features

Table 1 Distribution of maternal age frequencies in the working area of the Makassar Kapasa Health Center

Mother's Age	F	%
< 20	2	6,7
20 – 35	22	73,3
>35	6	20
Total	30	100,0

Table 1 shows the distribution of maternal age frequencies in the working area of the Makassar Kapasa Health Center. Of the total 30 respondents, the majority of mothers were between the ages of 20 and 35, which accounted for 73.3% of the total, while the age groups under 20 and over 35 years old accounted for only 6.7% and 20% respectively

Table 2 Distribution of frequency of infant age in the working area of the Kapasa Makassar Health Center

Infant Age	F	%
7	7	23,3
8	2	6,7
9	5	16,7
10	7	23,3
11	5	16,7
12	4	13,3
Total	30	100,0

Table 2 shows the distribution of infant age frequencies in the working area of the Makassar Kapasa Health Center. Of the total 30 respondents, the age of 7-year-old and 10-year-old infants each covered 23.3% of the total, making it the most abundant age group. Meanwhile, the age of 8-year-old babies has the lowest percentage, which is 6.7%

Table 3 Distribution of Gender frequency in infants aged 7-12 months in the working area of the Kapasa Makassar Health Center

Jenis Kelamin	F	%
Laki – Laki	13	43,3
Perempuan	17	56,7
Jumlah	30	100,0

Table 3 shows the distribution of sex frequency in infants aged 7-12 months in the working area of the Kapasa Makassar Health Center. Of the total 30 respondents, female babies dominated with a percentage of 56.7%, while male babies accounted for 43.3% of the total

3.2 Univariate Analysis

Table 4 Distribution of breastfeeding frequency in infants aged 7-12 months in the working area of the Makassar Kapasa Health Center

Breastfeeding	F	%
Non Exclusive	10	33,3
Exclusive Breastfeeding	20	66,7
Total	30	100,0

Table 4 shows the distribution of breastfeeding frequency in infants aged 7-12 months in the working area of the Kapasa Makassar Health Center. Of the total 30 respondents, as many as 66.7% of babies received exclusive breastfeeding, while the other 33.3% received non-exclusive breastfeeding

Table 5 Distribution of Fine Motor frequencies in infants aged 7-12 months in the working area of the Kapasa Makassar Health Center

Fine Motor	F	%
Good	9	30
Enough	19	63,3
Less	2	6,7
Total	30	100,0

3.3 Bivariate Analysis

Bivariate analysis is used to get an idea of whether there is a relationship between independent variables and dependent variables. To assess whether there is a relationship between the influence of exclusive breastfeeding and fine motor skills in infants aged 7-12 months at the Kakasa Health Center, a Chi-Square statistical test with a significance level of $\alpha = 0.05$ or a meaning interval $p < 0.05$ was used using the help of the SPSS 20.0 for windows program

Table 6 Relationship between Exclusive Breastfeeding and Growth of Infants Aged 7-12 Months in the Working Area of Kapasa Health Center

Breastfeeding	Fine motor						P value
	Kurang		Less		Total		
	F	%	F	%	F	%	
Non Exclusive	6	20	3	10	9	30	0.004
Exclusive Breastfeeding	5	16,6	16	53,3	21	70	
Total	11	36,6	19	63,4	30	100	

The results of table 5.6 out of 30 respondents of infants who were not exclusively breastfed had less fine motor ability as many as 6 respondents (20%), and good only 3 respondents (10%) While babies who were exclusively breastfed had more good growth, namely 16 respondents (53.3%), and only 5 respondents (16.6%) had poor growth. The results of the Chi-square test obtained a value of $p = 0.004$ ($p > 0.05$), which identifies that H_a is accepted, which means that there is a relationship between exclusive breastfeeding and fine motor skills of babies aged 7-12 months in the working area of the Kapasa Health Center.

4. Discussion

4.1 The Relationship between Breastfeeding and Fine Motor Ability in Babies Aged 7-12 Months

Statistically, this study stated that there was a meaningful relationship between breastfeeding and fine motor ability in infants aged 7-12 months in the working area of the Kapasa Health Center with a value of $p = 0.004$. These results show that with exclusive breastfeeding, babies will have good fine motor skills.

Breast milk is the main food for babies because it contains nutrients that are optimal for baby growth. The main components of breast milk that affect the baby's growth are carbohydrates, lactose, protein and fat. When the mother gives exclusive breast milk, the baby indirectly gets a comprehensive sensory stimulus from the mother that will affect the baby's growth

Development is the addition of more complex body structures and functions in terms of gross and smooth movement skills, speech and language, socialization and independence. Growth occurs simultaneously and development is the result of the interaction of the maturity of the central nervous system with the organs it affects, for example the development of the neuromuscular system, the ability to speak, emotion, and socialize. All of these functions play an important role in the whole human life (Darmawan, 2019).

Fine mototrics are abilities related to motor physical skills that involve small muscles as well as eye-hand coordination. So that children are able to carry out physical activities in a coordinated manner in the context of flexibility and preparation for fine motor activities that are usually carried out, namely through activities such as moving objects, arranging blocks, writing, and so on, children at this age are directed to improve their skills in carrying out activities that require fine motor movements (Laranaya et al, 2020).

Fine motor skills are the organization of the use of a group of small muscles such as fingers and hands that often require careful eye coordination with the hands, skills that include the use of tools to play and move objects and others (Sumantri, 2019 in Laranaya et al, 2020).

Exclusive breastfeeding can meet the nutritional needs needed during the growth and development of the baby, while the feeding of biia formula milk is not in accordance with the dosage, so it has bad health consequences such as malnutrition or obesity. From the results of this research, babies who are given exclusive breastfeeding but there are 3 babies with a percentage (10%) who have less fine motor skills due to various factors such as genetics, environment and can even be caused by diseases. Then as many as 6 babies (20%) who have poor growth due to not giving breast milk exclusively, this is because breast milk is the first main, best and natural food for babies who are given without food until the age of 6 months. Because breast milk contains immune, anti-infection and nutrients that babies need to grow and develop optimally.

The results of the study also showed that babies who did not receive exclusive breastfeeding but had good fine motor skills because mothers who did not give exclusive breastfeeding provided adequate complementary food intake to the baby. Child nutrition has a great influence on the growth of the baby even from the womb. The child's growth is greatly influenced where the child gets adequate food intake, energy food needed by the baby for the purposes of basal metabolism, growth and activity.

Based on the results of the study, researchers assume that breast milk is the best food for babies. Breast milk is needed for the health of babies and supports optimal growth and development of babies. Babies who get exclusive breast milk will get all the excess breast milk and meet their nutritional needs to the maximum so that the baby is healthier, more resistant to infections, less susceptible to allergies, less sick because breast milk contains antibodies and its fine motor skills develop well according to their age.

5. Conclusions

Breast milk is the optimal main source of nutrition for babies because it contains carbohydrates, lactose, protein, and fats that support the growth and development of babies. In addition, exclusive breastfeeding also provides sensory stimulation that plays a role in the development of the baby's neuromuscular system and fine motor skills. Although most babies who are exclusively breastfed show good fine motor development, there are several other factors that can affect this development, such as genetic, environmental, and certain health conditions. Conversely, babies who do not receive exclusive breastfeeding but get adequate complementary food intake can also have good fine motor development.

The results of this study confirm that exclusive breastfeeding is very important to support optimal growth and development of babies. Babies who receive exclusive breastfeeding are healthier, have better immunity to infections, and their fine motor development is appropriate for age. Therefore, exclusive breastfeeding needs to be encouraged as an effort to improve the overall health and development of babies.

Conflict of Interest

There is no conflict of interest

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