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Original Article

The Effectiveness of Exclusive Breastfeeding on the Nutritional Status of Infants in Efforts to Prevent Stunting in PMB Bogor Regency

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ABSTRACT

Breast milk contains all the nutrients needed by the body, evidenced by the results of scientific evidence about the benefits of breast milk for the baby's immune system, growth and development, babies who are not exclusively breastfed have a higher risk of disease. The purpose of the researcher is to discuss further about the effect of exclusive breastfeeding on the nutritional status of infants aged 6 months at PMB Dian Dwi Anggraini, Bogor Regency 2022. The observational research design is analytical, cross-sectional with purposive sample sampling, data analysis comparison of independent variables with dependent variables, with independent T-Test statistical tests. Based on the results of independent T-test analysis in the study, the average body weight of exclusively breastfed infants (6.03 kg) and non-exclusive breastfeeding (5.57 kg) was obtained, while the average body length was obtained from exclusively breastfed infants (59.0 cm) and in non-exclusively breastfed infants (57.92 cm), for nutritional status in exclusively breastfed infants obtained 0.14 (Z score) and Non-exclusive breastfeeding 0.97 (Z score). This shows that exclusive breastfeeding affects the nutritional status of infants who are exclusively breastfed and those who are not exclusively breastfed very significantly with a p-value of > 0.01.

Keywords: *Exclusive Breastfeeding, Nutritional Status, Baby*

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INTRODUCTION

Stunting is an indicator of chronic malnutrition due to inadequate food intake for a long time, poor food quality, increased morbidity, and increased height that is not appropriate for age (TB/U)[1,2]. In general, linear growth problems in toddlers are often ignored because they are still considered normal as long as the child's weight has met the standard. According to several studies, stunting is associated with an increased risk of illness and death as well as stunted growth of motor and mental abilities[3,4,5].

Early and exclusively breastfeeding is essential for a child's survival, and to protect the child from various diseases that can be fatal [6]. Children who receive breast milk are proven to have higher intelligence test results and have a lower likelihood of being overweight so as to prevent stunting [7,8].

According to Basic Health Research data, 52.5% or only half of the 2.3 million infants aged less than 6 months are exclusively breastfed in Indonesia, or a decrease of 12% from the figure in 2019 [9,10]. The early breastfeeding initiation rate (IMD) also fell from 58.2% in 2019 to 48.6% in 2021. Meanwhile, in Bogor District, the coverage rate for exclusive breastfeeding was only 53.12% in

2020 [10].

The causes of low breastfeeding are predisposing factors, lack of knowledge of mothers, health workers who do not understand the importance of providing counseling on exclusive breastfeeding, the many promotions of formula milk, and lack of support from the community[11]. One of the factors that inhibit the occurrence of breast milk expenditure is psychological factors, the emergence of stressors in nursing mothers [12,13].

Breast milk is an ideal food for babies, especially in the first months of life. Breast milk contains all the building blocks of nutrients and the necessary energy supply [14]. Breast milk does not burden the work of the function of the digestive system and kidneys that have not functioned in newborns, and produces optimal growth and development [15].

Based on research by the World Health Organization (WHO), in six developing countries the risk of infant death between 9-12 months increases by 40% if the baby is not breastfed. For infants under 2 months, mortality increases to 40% (4). UNICEF says babies fed formula are 25 times more likely to die in the first month of birth than babies breastfed exclusively[16].

Exclusive breastfeeding is breastfeeding for 6 months without other additional foods such as formula, fruit, biscuits or baby porridge from birth to 6 months old (12). The composition of breast milk is divided into 3 parts, namely colostrum comes out on the first day to day 4-7, transitional breast milk, comes out on days 4-7 to days 10-14 and mature breast milk after day 14 [17].

Exclusively breastfeeding will ensure the achievement of optimal development of children's intelligence potential. Breast milk apart from being an ideal nutrient, with the right composition and tailored to the needs of the baby, also contains special nutrients such as taurine, lactose, arachidonic acid (AA), docosahexaenoic acid (DHA), omega 3, omega 6, choline, and tryptophan which the baby's brain needs to grow optimally to help synaptogenesis and myelination processes[2].

Breast milk contains all the nutrients needed by the body, evidenced by the results of scientific evidence about the benefits of breast milk for the baby's immune system, growth, and development, babies who are not exclusively breastfed have a higher risk of disease.

Research that monitors the growth and development of exclusively breastfed infants has been carried out in developed countries, The results of the study found that babies with sufficient birth weight who are exclusively breastfed grow in accordance with growth standards according to WHO[14].

In contrast to the results of the study, Mukhlis stated that there was no effect of exclusive breastfeeding on the baby's weight, p-value (p = 0.680), baby length (p = 0.786) and baby's head circumference (p = 0.657) [18].

Based on the description above, the purpose of the researcher is to discuss further about the effect of exclusive breastfeeding on the nutritional status of infants aged 6 months at PMB Dian Dwi Anggraini, Bogor Regency 2022.

METHOD

The design carried out in this research is an observational study that is analytical, namely observations on the effect of exclusive breastfeeding on nutritional status in infants aged 6 months. The research design uses a cross sectional design because in this study independent and dependent variables will be observed in the same period.

This research was carried out at PMB Dian Dwi Anggraeni Bogor Regency starting from January to July 2020, the selection of research locations was carried out based on the consideration that it was possible to meet the number of samples in accordance with inclusion criteria, besides that the research location was affordable and facilitated access for researchers in completing administrative needs needed during the research process.

Parametric test is an unpaired t-test totaling 30 infants aged 6 months, how to take samples using purposive sampling where this technique is the method used if the determination of the sample is recommended on certain criteria whose purpose is to get baby respondents with exclusive breastfeeding. With the inclusion criteria set, namely: 1) babies born with a body weight of 2500 – 3000 grams, 2) babies born spontaneously without complicating or born sectio caesaria, 3) healthy, 4) mothers of infants willing to be respondents to the study by signing informed consent. Exclusion criteria: 1) infants with partial breastfeeding, 2) experiencing impairment during the study process (diarrhea or other disorders), 3) the respondent's residence is

difficult to reach.

Good research must be accompanied by ethics, in this study applied the principles of research ethics: 1) This research provides goodness and benefits for respondents, 2) provides freedom to refuse to be a respondent, 3) the identity of respondents is kept secret during the research, 4) informed consent. And this research has gone through the consideration and approval of the ethics committee

Characteristic data collection was carried out after respondents signed a letter of consent willing to be involved in the study. Primary data is the baby's body development including weight, height and head circumference of the baby and exclusive breastfeeding. The data collection instruments used were eutionary, fill-in sheets, digital scales of weight and height and the use of KMS to see the nutritional status of infants with BB / U.

Data analysis was carried out quantitatively, then univariate and bivariate analysis was carried out. To see the comparison of the independent variable with the dependent variable, with an independent statistical test T Test. If $p > 0.05$ then Ho is accepted meaning that there is no significant difference between the independent and dependent variables, if $p < 0.05$ then Ha is accepted meaning that there is a significant influence between the independent variable and the dependent variable.

RESULTS

Table 1. Frequency Distribution of Respondent Characteristics

Characteristic	Group				Value
	Breast Milk		Non breast milk		
	N=15	%	N=15	%	
Age					
17-35	13	86,6%	12	80	
36-45	2	13,4%	3	20	
Paritas					
Primipara	7	46,7%	7	46,7	
Multipara	8	53,3%	8	53,3	
IMD					
Yes	10	66,7%	11	73,3	
No	5	33,3%	4	26,7	
Work					0,448
Yes	8	53,3%	9	60%	
No	7	46,7%	6	40%	
Spousal/Family Support					
Yes	9	60%	10	66,7%	
No	6	40%	5	33,3%	

Based on table 1, it can be seen that the characteristics of respondents show no significant difference between the Exclusive Breastfeeding group and the Non-Exclusive Breastfeeding group with a p value of > 0.05, which is 0.448, so that the two groups are said to be homogeneous and worthy of comparison

Table 2. Shapiro-Wilk Test Result

Variable	*p-value*
Weight	0,110
Body length	0,086
Nutritional Status	0,069

Table 2 data shows the existence of a normal distributed data population with a value of ($p>0.05$) so that using a parametric test, namely an unpaired t-test.

Table 3. Effects of Exclusive Breastfeeding on Infant Nutritional Status

Variable	Breast-feeding	N	Mean	95% CI	p-value
Weight (kg)	Exclusive	15	6,03	5,86-6,20	< 0,001
	Non-exclusive	15	5,57	5,42-5,71	
Body Length (cm)	Exclusive	15	59,0	58,48-59,51	0,003
	Non-exclusive	15	57,92	57,49-58,36	
Nutritional Status Z score < -2 SD (BB/U)	Exclusive	15	-0,41	-0,66-0,17	0,01
	Non-exclusive	15	0,97	1,18-0,76	

Based on the results of independent T-test analysis in the study, the average body weight of exclusively breastfed infants (6.03 kg) and non-exclusive breastfeeding (5.57 kg) was obtained, while the average body length was obtained exclusively breastfed infants (59.0 cm) and in non-exclusively breastfed infants (57.92 cm), for nutritional status in exclusively breastfed infants obtained 0.14 (Z score) and Non-exclusive breastfeeding 0.97 (Z score). This shows that exclusive breastfeeding affects the nutritional status of infants who are exclusively breastfed and those who are not exclusively breastfed very significantly with a p value of > 0.01.

DISCUSSION

The effect of exclusive breastfeeding on the nutritional status of infants

The results of this study obtained the effect of exclusive breastfeeding on infant nutritional status showed from 30 respondents, the exclusive breastfeeding group as many as 15 respondents, and non-exclusive breastfeeding 15 respondents. Based on statistical tests, the T test obtained exclusive breastfeeding statistically and clinically meaningful with a p-value of < 0.01. So it can be stated based on the results of this study that there is a significant effect of exclusive breastfeeding on the nutritional status of infants with BB / U indicators.

Infants at the age of 6 months who are exclusively breastfed are proven to have length and weight according to WHO growth standards and the risk of stunting will be lower than those in the non-exclusive breastfeeding group. It can be seen from the results of the analysis of infant nutritional status using BB / U.

This is supported by the results of research conducted by Riyanti on the relationship of exclusive breastfeeding to infant growth and development, the results of the Chi-square test obtained a significance level of 0.05 so that it can be concluded that there is a relationship between exclusive breastfeeding and the growth and development of infants aged 6-12 months[19].

Child growth and development does not begin after the child is born but has begun since the child is in the mother's womb. Maternal weight gain during pregnancy represents a nutritional state that plays an important role in the growth and development of the fetus whose results can be seen from the parameters of body weight and body length[16].

The advantage of exclusive breastfeeding is that at any time it can be given directly with proportions and compositions that adjust to the baby's needs. The content of breast milk cannot be replicated by formula milk. Breast milk contains antioxidants has a major role in inhibiting oxidative stress which is a condition of imbalance between oxidants and anti-oxidants so as to form free radicals that will underlie the process of occurrence of a certain disease in infants[12].

Introducing liquids or foods other than breast milk, especially before the age of 4 months, has a risk level of gastrointestinal disease which can cause growth disorders, micronutrient deficiencies and susceptibility to infections in children under 2 years [20].

The nutritional status of infants has a significant relationship with exclusive breastfeeding, this is based on nutritional status indicators, namely weight per age [14]. There is a relationship between improving the nutritional status of infants and the practice of giving complementary foods to infants. Not doing IMD, colostrum deficiency at birth and improper administration of complementary foods are risk factors that affect nutritional status in infancy. Socialization of exclusive breastfeeding and proper complementary food is important to be given to mothers [21].

Different things were stated by the results of Mukhlis's research stating that the growth and development of babies who were given exclusive breastfeeding was different from the growth and development of babies who were not given exclusive breastfeeding. In Exclusive breastfeeding infants obtained the average body weight of the baby (9.83 kg) while in Exclusive Breastfeeding (10.06 kg), with test results obtained p (0.689) > 0.05 it can be concluded that there is no effect of exclusive breastfeeding on the baby's weight.

Based on the results of Widayati's research entitled the effect of Exclusive Breastfeeding on infant growth and development, it was found that there was a significant influence on the nutritional status and development of infants aged 6-12 months in the Gamping Health Center kerka area in 2015 [22]. Other factors that affect the nutritional status and development of babies aged 6 months are certainly differences from the nutritional status of the baby's mother, as well as the food consumed and others but have not been included in the study so further research needs to be needed.

CONCLUSION

Based on the results of research that has been conducted on infants aged 6 months at PMB Dian Bogor City in 2020, it can be concluded that the nutritional status of infants who are given exclusive breastfeeding is different from the nutritional status of non-exclusively breastfed babies. The result of the T

Test was obtained with a p value of > 0.01.

In this study there are limitations, including: 1) the design of this study cross-sectionally examines variables at one time so that it cannot see causal relationships, 2) Collection of research data in a short time, 3) When measuring weight and body length takes place there are difficulties because babies move a lot and fuss, so it takes longer.

Based on this research, similar research is needed using cohort methods, in order to obtain more accurate results. And further research can use tools for distraction, so that babies are not fussy when measurements are taken so that more accurate results are obtained.

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