

The Effect of Exclusive Breastfeeding and Supplementary Foods On The Event of Stunting In Children Under Five Years In Kendari City

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Abstract- Stunting is a nutritional problem that has not been handled until now. The prevalence of Stunting at the Mata health center in 2020 is 1.60%. The Mata Health Center ranks first in terms of low exclusive breastfeeding, which is 43.32%. The purpose of this study was to determine the effect of exclusive breastfeeding and complementary feeding on the incidence of Stunting in Children under five years (6-59 months) in the working area of the Mata Health Center of Kendari City.

Methods: This type of research is quantitative with a case control study design. The population is all Children under five years (6-59 months) in the working area of the Kendari City Mata Health Center 2021 as many as 1,274 people and there are 75 Children under Five years (6-59 months) who experience Stunting, while the sample of this research is 75 Children under five years with Stunting taken sideways and 150 Children under five years whose nutritional status is normal and taken using a matching system. Data on intake of exclusive breastfeeding and complementary feeding were obtained by interview using a questionnaire. Height data were obtained using a microtoice. Data were analyzed using the Odd Ratio (OR) test.

Results: The percentage of exclusive breastfeeding for Children under five years (6-59 months) in the working area of the Kendari City Mata Health Center is 56.4%, while early complementary feeding to Children under five years (6-59 months) is 44.0%. Children under five years (6-59 months) is 33.3%. Furthermore, the results of the chi-square test obtained a p-value of 0.000 and the results of the Odd Ratio test obtained OR 3.88 for the effect of exclusive breastfeeding on the incidence of stunting. Then obtained p-value 0.000 and OR 4.12 for the effect of complementary feeding on the incidence of stunting.

Conclusion: there is an effect of exclusive breastfeeding and complementary feeding on the incidence of stunting in Children under five years (6-59 months).

Keywords: Stunting, Exclusive Breastfeeding, Supplementary Foods, Children under five years

I. INTRODUCTION

Stunting is a major nutritional problem in Indonesia that can determine the quality of human resources[1]. Stunting is a condition of failure to thrive in toddlers due to chronic malnutrition so that they are too short for their age. Stunting children are susceptible to disease, physical and cognitive development difficulties, reduce intelligence, are at risk for degenerative diseases as adults, life threatening and the loss of the nation's generation[2]

The prevalence of stunting in the world in 2017 was 150.8 million (22.0%), according to the Stunting Toddler prevalence data collected by the World Health Organization (WHO), Indonesia is included in the third country with the highest prevalence of stunting in the Southeast Asia/South-East region. Asia Regional (SEAR). The average prevalence of stunting under five in Indonesia in 2017 was 36.4%[3].

Based on nutritional status monitoring, stunting has the highest prevalence compared to other nutritional problems such as undernutrition, underweight and obesity. The prevalence of stunted toddlers has increased from 2016 which is 27.5% to 29.6% in 2017 and based on Indonesia's health profile data in 2018 the percentage of very short toddlers and short toddlers aged 0-59 months is 11.5% and 19, 3% or added up to 30.8%(3) Similarly, the Basic Health Research Data Prevalence of Stunting Toddlers in 2018 was 30.8%[4].

Southeast Sulawesi Province in 2017 was in sixth place, while the percentage of very short toddlers and short toddlers aged 0-59 months was 15.2% and 21.2% and in 2018 in Southeast Sulawesi Province there was a decrease in the incidence of stunting as for the percentage in Very short toddlers and short toddlers aged 0-59 months by 10.1% and 18.6%[3].

Based on preliminary data obtained from the Kendari City Health Office in 2018, the prevalence of stunting reached

46.99% and in 2019 it was 26.12%, while the prevalence of exclusive breastfeeding in 2019 reached 62.49%, this figure has not reached the Strategic Plan target. in 2019 which is 85% (Dinas Kesehatan Kota Kendari, 2020).

The Health Center Mata is one of the Public health center in the coastal area of Kendari City whose prevalence of stunting ranks fourth after the Benua- Benua, Abeli and Nambo Health Centers. Stunting prevalence at the Mata Health Center is 1.60%. In addition, the Mata Health Center ranks first in terms of low exclusive breastfeeding, which is 43.32%. The results of the initial data collection also found that the working area of the Mata Health Center consisted of 5 villages, namely Mata, Purirano, Mangga Dua, Kendari Caddi and Kasilampe villages. Of the five sub-districts, Purirano sub-district is a village with higher stunting conditions than other urban villages, namely from 75 stunting toddlers, 28% are from Purirano sub-district (Public health center Mata, 2020).

The government has made various efforts to tackle stunting, but the prevalence of stunting is still high. Stunting prevention programs are stated in the Minister of Health Regulation Number 39 of 2016 concerning nutrition interventions for the first 1,000 days of life and providing sensitive and specific nutrition[5], but the program has not shown a decrease in prevalence stunting.

Several research results show that the most dominant factor influencing the incidence of stunting is non-exclusive breastfeeding[6]. The risk of becoming stunted is 3.7 times higher in Toddlers who are not exclusively breastfed compared to Toddlers who are exclusively breastfed[7]. This certainly illustrates that children who are not given exclusive breastfeeding mean that they are given complementary foods early, ie before 6 months the child has been given MP-ASI[8]. Similarly, research by Aridiyah, et al., 2015 found that one of the factors that influence the occurrence of stunting in children under five in rural and urban areas is exclusive breastfeeding and the age of complementary feeding[9]. Based on these problems, the researchers are interested in conducting research that aims to determine "The Effect of Exclusive Breastfeeding and Complementary Breastfeeding on Stunting Incidence in Toddlers (6-59 Months) in the Kendari City.

II. METHOD

This type of research is quantitative research using a case control study design. This research was carried out on April 5-17, 2021 in the working area of the Kendari City Mata Health Center. The population of this study were all toddlers (6-59 months) in the working area of the Kendari City Mata Health Center 2021 as many as 1,274 people and there were 75 toddlers (6-59 months) who experienced stunting. The sample of this study was some toddlers (6-59 months) in the working coastal area of the Kendari City Mata Health Center in 2021 as many as 225 samples consisting of case samples and controls. The sample cases in this study were Toddlers (6-59) months who experienced stunting as many as 75 people. The control sample was toddlers (6-59 months) who did not experience stunting, namely 150 people. The case sampling technique used total sampling, namely the entire population was used as a sample. The control sampling technique is using a matching system, namely matching the sex and age of toddlers.

Identity data (age, gender, education, occupation) were collected by means of interviews using a questionnaire. Data on exclusive breastfeeding and complementary feeding were collected by interview using a questionnaire. Stunting data was collected by measuring height using a microtoice with an accuracy of 0.1 cm and calculated using the Z-Score formula with height/age index. Data were analyzed by univariate analysis to identify research variables which were carried out descriptively and bivariate analysis using Chi-Square and Odd Ratio (OR) tests.

III.RESULTS OR FINDING

The results showed that in terms of age characteristics, it can be seen that of the 225 samples, most (32.0%) were 24-35 months old and a small portion (6.7%) were 48-59 months old. Furthermore, from the aspect of the gender of Toddlers, most (62.7%) are male and the rest (37.3%) are female. For more details on the distribution of samples based on their characteristics can be seen in table 1 below

Table 1. Distribution of Sample Characteristics

Sample Characteristics	n	%
Toddler Age (Months)		
6-11	30	13,3
12-23	60	26,7
24-35	72	32,0
36-47	48	21,3
48-59	15	6,7
Total	225	100
Toddler Gender		
Male	141	62,7
Female	84	37,3
Total	225	100
Mother's Age (Years)		
<20	1	0,4
20-35	175	77,8

>5	49	21,8
Total	225	100
Mother's Type of Work		
Honorary	5	2,2
Housewife	210	93,3
Employee	7	3,1
Trader	2	0,9
Government employees	1	0,4
Total	225	100
Mother's Education Level		
Primary school	7	3,1
Junior high school	53	23,6
Senior High School	149	66,2
Diploma	2	0,9
Bachelor	14	6,2
Total	225	100

The univariate analysis showed that from 225 samples, there were 150 people (66.7%) with normal nutritional status (controls) and 75 people (33.3%) with stunting nutritional status (cases). Then for exclusive breastfeeding, most of them gave exclusive breastfeeding as many as 127 people (56.4%) and the rest did not give exclusive breastfeeding as many as 98 people (43.6%). Furthermore, the provision of MP-ASI showed that of the 225 samples, most of them gave good MP-ASI, namely 126 people (56.0%) and the rest gave MP-ASI, namely 99 people (44.0%). For more details can be seen in table 2 below

Table 2. Univariate Analysis Results

Research variable	Sample	
	n	(%)
Toddler Nutritional Status		
Normal	150	66,7
Stunting	75	33,3
Total	35	100,0
Breastfeeding		
Exclusive		
Exclusive breastfeeding	127	56,4
No Exclusive Breastfeeding	98	43,6
Total	35	100,0
Complementary feeding		
Good MP-ASI	126	56,0
Early MP-ASI	99	44,0
Total	50	100

The effect of exclusive breastfeeding on the incidence of stunting in toddlers (6-59 months) shows that from 225 samples, there were 75 cases, namely samples with stunting nutritional status and 150 controls, samples with normal nutritional status. Then out of 75 cases, most of them were not given exclusive breastfeeding as many as 49 people (65.3%), the rest were given exclusive breastfeeding as many as 26 people (34.7%), then from 150 cases, most of them were given exclusive breastfeeding, namely 101 people (67 cases), the rest were not given exclusive breastfeeding as many as 49 people (32,7%).

The results of the Chi-Square test at the 95% confidence level ($\alpha=0.05$), p-value is 0.000 and the Odd Ratio (OR) analysis results obtained an OR value of 3.88 with lower limit (LL) – upper limit (UL)) is 2.16-6.97. This shows that the p-value <0.05 and the OR value $(3.88) > 1$, then H_0 is rejected and H_a is accepted, which means that there is an effect of exclusive breastfeeding on the incidence of stunting in Toddlers (6-59 months) in the work area. Kendari City Mata Health Center, the sample who was not given exclusive breastfeeding had a 3.88 times risk of experiencing stunting compared to the sample who was given exclusive breastfeeding.

The effect of complementary feeding (MP-ASI) on the incidence of stunting in Toddlers (6-59 months) shows that from 225 samples, there were 75 cases, namely samples with stunting nutritional status and 150 controls, samples with normal nutritional status. Then out of 150 controls, most were given good complementary feeding, namely 101 people (67.3%), the rest were early MP-ASI as many as 49 people (32.7%). Then from 75 cases, most of them were given early MP-ASI as many as 50 people (66.7%), the rest were given good MP-ASI as many as 25 people (33.3%). The results of the Chi-Square test at the 95% confidence level ($\alpha=0.05$), the p-value is 0.000 and the results of the Odd Ratio (OR) analysis are the OR value of 4.12 with the lower limit (LL) – upper limit (UL)) is 2.28-7.42. This shows that the p-value

Table 3. Results of Bivariate Analysis

Variable	Status Gizi				Total		OR (CI 95%)
	Normal		Wasting				
	n	%	n	%	n	%	
Gift Exclusive Breastfeeding							
Exclusive breastfeeding	101	67,3	26	34,7	127	56,4	3,88 (2,16-6,97)
No Exclusive Breastfeeding	49	32,7	49	65,3	98	43,6	
Total	150	100	75	100	225	100	
Complementary Foods for Breastfeeding (MP-ASI)							
MP-ASI Good	101	67,3	25	33,3	126	56,0	4,12 (2,28-7,42)
MP-ASI Early	49	32,7	50	66,7	99	44,0	
Total	150	100	75	100	225	100	

The sample who was not given early complementary feeding has a 4.12 times risk of experiencing stunting compared to the sample who was given good complementary feeding.

Exclusive Breastfeeding

The results showed that of the 50 samples, most were given exclusive breastfeeding as much as 56.4% and the rest did not give exclusive breastfeeding as much as 43.6%. Toddlers who are exclusively breastfed are toddlers who are only given breast milk at birth until they are 6 months old, while toddlers who are not given exclusive breastfeeding are toddlers who are not given other foods other than breast milk such as soft foods when they are 3 months old, 5 months old.

One of the causes of not being given exclusive breastfeeding is local culture and traditions, which are usually suggestions from the parents-in-law and parents of the respondent that babies be given honey or water or mixed with sugar, even babies aged 0-6 months have gotten bananas, this is done regularly. hereditary so that babies do not get exclusive breastfeeding besides that there is still an understanding of mothers when babies get formula milk, babies will get fatter so it is not enough just to breastfeed. However, there are also mothers who give exclusive breastfeeding, one of which is because the information provided by health workers increases the mother's understanding of the importance of exclusive breastfeeding for the growth and development of toddlers in the future [10].

This research is reinforced by [11]that exclusive breastfeeding is given when babies are 0-6 months old. Mother's Milk (ASI) is exclusive food for babies[11]. The nutritional value contained in breast milk is very high so that babies do not need any additional composition from outside[12]. Exclusive breastfeeding means that babies are only given breast milk without additional solid foods such as bananas, papaya, milk porridge. Exclusive breastfeeding is recommended for a period of up to 6 months [13]. Breast milk (ASI) is the best food for babies, especially in the first months of life. Breast milk contains all the nutrients to build and provide the energy needed. Breast milk is the main and most perfect source of food for infants aged 0-6 months who are then called exclusive breastfeeding [12].

Provision of complementary feeding to Toddlers (6-59 months)

This study shows that of the 225 samples, most of them were given good complementary feeding, namely 56.0%, samples that received good complementary feeding were samples that consumed other foods other than breast milk when they were 6 months old. Then in this study there were also 44.0% samples given early MP-ASI, namely toddlers who received food other than breast milk before the age of 6 months.

This research was strengthened by the Ministry of Health of the Republic of Indonesia (2014) that complementary foods for breast milk (MP-ASI) are foods or drinks that contain nutrients given to toddlers or children aged 6-24 months to meet their nutritional needs[14,15]. There are various terms for complementary foods, namely complementary foods, complementary foods, solid foods, weaning foods, transitional foods, beiscot (a term in German which means food other than milk given to toddlers). The whole term refers to the understanding that breastfeeding and breast milk substitutes are transitions to gradually change to family or adult food[16].

Stunting Prevalence in Toddlers (6-59 months)

The results showed that from 225 samples, there were 66.7% with normal nutritional status (controls) and 33.3% with stunting nutritional status (cases). Nutritional status is an expression of a state of balance in the form of certain variables, or the embodiment of nutriture in the form of certain variables. Nutritional status is a measure of the fulfillment of nutritional needs obtained from the intake and use of nutrients by the body. Food consumption affects a person's nutritional status[17].

The low nutritional status of Baby under 2 years is caused by direct and indirect factors. Direct factors include food intake and infectious diseases suffered by Bayi di bawah 2 [18]. According to [19], quoting directly from Lie goan hong, he stated that

diet is a variety of information that provides an overview of the types and amounts of foodstuffs eaten by one person every day and is a characteristic of a particular community group[19]. In general, Baby under 2 years newborns have an irregular feeding schedule, Baby under 2 years can eat 6-12 times or more in 24 hours without a regular schedule. Baby under 2 years breastfeeding can be done every 3 hours because Baby under 2 years's stomach will be empty within 3 hours after breastfeeding. In line with increasing age, the gap between breastfeeding times becomes longer, because the stomach's capacity is enlarged and the mother's milk production increases, then after the baby is 6 months old, the milk production decreases. Meanwhile, Baby under 2 years needs increase with age and weight, so that food intake from breast milk alone cannot meet the nutritional needs of Baby under 2 years. Therefore, from here Baby under 2 years needs additional food or other companions[14,17].

Effect of exclusive breastfeeding on the incidence of stunting

The results of this study indicate that from 225 samples, there were 150 controls, namely samples with normal nutritional status and 75 cases, namely samples with stunting nutritional status. Then out of 75 cases, most (65.3%) were not given exclusive breastfeeding, this is because breast milk really supports the growth and development of toddlers, if not given it can inhibit the growth of bone cells in toddlers. However, in this study there were also 34.7% of the samples given exclusive breastfeeding, having stunting nutritional status, this is because many factors cause stunting, it is suspected that stunting occurs due to stunting.

Factors of infectious disease suffered by children under five. Furthermore, this study also found that 67.3% of toddlers who were given exclusive breastfeeding had normal nutritional status, this situation was because exclusive breastfeeding was rich in nutrients and adapted to the nutritional needs of infants when they were 0-6 months old, this shows that the nutritional needs obtained when the baby is in accordance with the age and the baby can avoid the possibility of infectious disease then there are 32.7% of the samples who are not given exclusive breastfeeding have normal nutritional status. This is presumably because the food consumed is in accordance with the needs of toddlers.

The results of the Odd Ratio (OR) test show that there is an effect of exclusive breastfeeding on the incidence of stunting in Toddlers (6-59 months) in the working area of the Kendari City Mata Health Center, namely the sample who is not given exclusive breastfeeding has a risk of 3.88 times experiencing stunting compared to the sample who is breastfed. Exclusive.

This study is in line with Putrid and Lake's (2020) research that the most dominant factor influencing the incidence of stunting is non-exclusive breastfeeding. given exclusive breastfeeding⁽⁹⁾ this certainly illustrates that children who are not given exclusive breastfeeding means that complementary foods are given early, ie before 6 months the child has been given complementary feeding. Similarly [20], research by [21] found that one of the factors that influence the occurrence of stunting in children under five in rural and urban areas is exclusive breastfeeding [21].

This research is reinforced by the theory of [22,23] that exclusive breastfeeding reduces the incidence of infectious diseases related to the nutritional status of children under five. Exclusive breastfeeding will increase the baby's immune system, so that the body's resistance to infection will increase [24]. This research is strengthened by the theory that feeding babies is one of the most important things to support the health and growth process of babies. Proper feeding of infants will prevent malnutrition and retardation, while inappropriate feeding increases the risk of enteral problems, infection and even death[16]. Similarly, [25] that food for babies up to 6 months is mother's milk, known as exclusive breastfeeding. After that, the baby must receive additional food in the form of complementary food for breast milk (MP-ASI). Breast milk is given to children until they are 24 months old, after that they must have received full food like adults[26].

Effect of complementary feeding (MP-ASI) on the incidence of stunting

The results showed that 66.7% of the samples given early complementary feeding experienced stunting, this was because the food was given too early or too quickly so that the food could not be absorbed properly in the body, then this study also found 33.3% of the samples The MP-ASI is good for stunting, this situation is thought to be due to other factors that cause stunting, for example the quality and quantity of the MP-ASI given is not in accordance with the needs of the baby, so that although MP-ASI is given when he is 6 months old, but if the amount and type of food If given inadequately, it can cause a lack of nutritional status in Toddlers. Then in this study there were also 67.3% of the samples given MP-ASI was good, had normal nutritional status, this situation was because the provision of MP-ASI could support the growth and development of toddlers and there were also 32.7% of the samples given early MP-ASI, have a normal nutritional status, this is due to other factors that strengthen the nutritional status of Toddlers such as the nutritional intake provided is very adequate and sufficient for the nutritional needs of Toddlers, so that although it is given too early, it can improve the nutritional status of Toddlers.

The results of the Odd Ratio (OR) test showed that there was an effect of early complementary feeding on the incidence of stunting in Toddlers (6-59 months) in the working area of the Kendari City Mata Health Center, namely samples that were not given early MP-ASI had a risk of 4.12 times experiencing stunting. compared to samples given good MP-ASI. According to the researcher's assumption, giving early MP-ASI is one of the risk factors for stunting in Toddlers, if Toddlers are given MP-ASI early, they are more at risk of experiencing Stunting than Toddlers who are given MP-ASI both according to the age of giving MP-ASI, which is 6 months.

This study is in line with [27] that the age of Toddlers when they first received MP-ASI had a significant relationship with Stunting status in Toddlers in the working area of the Maron Health Center. The correlation between toddlers' age when they were first given complementary feeding with stunting status was found to be -0.182, meaning that the more appropriate the age of giving complementary feeding to toddlers, the lower the risk of stunting. The results of this study prove that there is a relationship between the history of giving MP-ASI with Stunting status in Toddlers aged 24-59 months in the working area of Maron Health

Center. The Odds Ratio value of 1.568 indicates that Toddlers who are given MP-ASI correctly according to age have 1.568 times the chance to grow not Stunting than Toddlers who are given MP-ASI incorrectly

This research is reinforced by the theory that at the age of 6 months, the baby's digestion is ready to receive food. Giving MP-ASI early before 6 months or more than 6 months can cause babies to be malnourished and will experience iron deficiency, and experience delayed growth and development. 6 months the nutritional status is more normal than at the age of 0-3 months or 4-5 months. Malnutrition status in toddlers can be due to the introduction of MP-ASI for less than 6 months. The results of research that support [28], that there is a close relationship between the first age of giving MP-ASI with nutritional status on the index BB/U and TB/U are weak, with a positive direction of relationship, meaning the earlier the age of giving MP-ASI then the nutritional status of children is getting worse[28].

IV. CONCLUSION

There is an effect of exclusive breastfeeding on the incidence of stunting in Toddlers (6-59 months), namely samples that are not given exclusive breastfeeding have a 3.88 times risk of experiencing stunting compared to samples given exclusive breastfeeding. There is an effect of complementary feeding on breast milk (MP-ASI) on the incidence of stunting in toddlers (6-59 months), namely samples that are not given complementary feeding properly have a risk of 4.12 times experiencing stunting compared to samples given good complementary feeding.

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