

Conference Paper

The Relationship between Exclusive Breastfeeding (ASI) and Mother Height with Incident Rates Stunting among Child Age 2-5 Years In Barombong Public Health Center, Gowa, Sulawesi Selatan

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Abstract

Background: The incidence of stunting is one of the nutritional problems experienced by toddlers in the world today. Indonesia ranks fifth for stunting in the world, which is around 37% (nearly 9 million) children. Toddlers with stunting will have a level of intelligence that is not optimal, making children more vulnerable to disease and in the future can be at risk of decreasing levels of productivity. In the working area of the Barombong Public Health Center, it was reported that nutrition issues, especially exclusive breastfeeding for toddlers and pregnant women, were still the focus of attention from the current Puskesmas work plan. So that this problem could be a risk factor for stunting incidents experienced by many toddlers in the work area of Barombong Health Center, Gowa Regency, South Sulawesi. **Objectives:** This study aims to determine how the relationship between exclusive breastfeeding and maternal height with the incidence of stunting in infants aged 2-5 years at the Barombong Public Health Center, Gowa district, South Sulawesi. **Methods:** A cross sectional approach was used, this study conducted in August 2018 with the total population was 56 toddlers were selected using purposive sampling techniques. Data collection was carried out by researcher assisted used questionnaires. Forty nine toddlers met inclusion criteria. Parental height data is obtained by measuring high using a precision microtoise of 0.1 cm and the incidence of stunting is obtained by measuring the nutritional status with toddler's height by age (TB / U) is less than -2 SD and chi square test was used to data analysis. **Results:** The results were prevalence of short fathers is 1%, and short mothers is 89.8%. The prevalence of children under five did not get exclusive breastfeeding is 75.5% and the incidence of stunting is 83.7% and very short 16.3%. From the bivariate test results there was no relationship of father's height with stunting events chi square test results (p-value 1.00) of parents with stunting events, there was a relationship of maternal height with stunting events chi square test results (p-value 0.026), there is a relationship between exclusive breastfeeding with the stunting event of the chi square test results (p-value 0.015). **Conclusion:** the conclusion of this study is need family approach and providing education to the family as well as best nutritional intake in the breast milk at the beginning of life in order to prepare the first 1000 days of children life to avoid Stunting.

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1. Introduction

One of the health indicators of a child is height growth, which is used as an accurate marker of inappropriate growth and development of the child. Stunting is a condition where the baby has failed to grow with a lack of height indicator and is not in accordance with the child's age [1]. Determination of stunting conditions can be known to refer to the WHO table by using the Z-Score rules on anthropometric standards for assessing children's nutritional status [1].

Stunting is often overlooked in groups of people where a short height is found, so it is considered not a problem even considered something normal. In 2017, 22.2% or around 150.8 million toddlers in the world experienced stunting, more than half of stunting toddlers in the world came from Asia (55%) while more than a third (39%) lived in Africa. Of the 83.6 million stunting toddlers in Asia, the largest proportion came from South Asia (58.7%) and the lowest proportion in Central Asia (0.9%). The prevalence of toddlers is very short and short in Indonesia in 2017 is 9.8% and 19.8%. This condition increased from the previous year, namely the prevalence of very short toddlers at 8.5% and short toddlers at 19%. The province with the highest prevalence of toddlers is very short and short in 2017 is East Nusa Tenggara, while the province with the lowest prevalence is Bali [2, 13, 14].

In South Sulawesi the percentage of stunting was 24.6% and Gowa regency ranked 12th out of 24 regencies in South Sulawesi [3]. The number of children under five who experience stunting, making the nutritional status of children must make attention to health services. Ahmad et al. (2010) states that stunting is more common in children who have poor nutritional intake from food and breastfeeding [4].

Stunting can be prevented by some things such as giving exclusive breastfeeding, providing nutritious food according to the body's needs, familiarizing clean living behavior, carrying out physical activities, to balance energy expenditure, nutrient intake into the body and monitor children's growth and development on a regular basis [5]. Some studies link the provision of nutritional intake in infants with the incidence of stunting. Research conducted by Zainal (2012) found exclusive breastfeeding is the most dominant risk factor affecting the incidence of stunting at the age of 6 - 59 months (OR: 3.1 95% 1,434 - 6,835). Likewise, research conducted by Ahmad et al (2010) found stunting in infants aged 6-24 months due to non-exclusive breastfeeding ($p = 0.002$: OR = 4.2) and poor breastfeeding MP ($p = 0.007$, OR = 3.4)

In addition to nutritional intake, which is a direct determinant of the incidence of stunting is the height of the parents. Parental height can have an impact on the

next generation of linear growth during the growth period [6]. Research conducted by Nasikhah (2014) showed that the incidence of stunting in infants aged 24 -36 months included maternal height <150 cm ($p = 0.006$; OR = 10.3) [7]. Another study found that there was a relationship between maternal height and the incidence of stunting in children aged 24 - 59 months in Tombatu Utara district, Southeast Minahasa $p = 0,000$ ($\alpha <0.05$).

The condition of the mother before pregnancy both body posture (weight and height) and nutrition is one of the factors that influence the occurrence of stunting. Adolescent girls as future mothers should have good nutritional status. In 2017, the percentage of young women with short and very short conditions increased from the previous year, which was 7.9% very short and 27.6% short [6]. Several previous population-based studies have been conducted to identify risk factors for stunting in children aged 0-59 months including maternal height and exclusive breastfeeding so researchers are interested in seeing the relationship between maternal height and exclusive breastfeeding with the incidence of Stunting in children age 2-5 years

2. Methods

2.1. Study Design

This type of research carried out in this study is an observational study using the Cross Sectional Study method to identify the relationship of 3 variables at the same time between the variables of exclusive breastfeeding and maternal height with the stunting event variable.

2.2. Samples and Selection Procedure

The population and sample in this study were all mothers of children under five and toddlers who experienced stunting aged 2-5 years in the Work Area of Barombong Public Health Center, GOWA District, amounting to 56 mothers of toddlers. The sample is determined by the Slovin formula obtained a sample of 49 toddlers from 56 respondents.

The sample in this study were toddlers who were stunted based on anthropometric measurement data with height indicators according to age (TB / U) and measured using a 0.1 cm accuracy microtoise and met the criteria of living together with their parents in the working area of Barombong Community Health Center, aged 2-5 years, children

have never been or are suffering from diseases such as tuberculosis, lung spots or infectious diseases and can not follow the research process (dropout).

2.3. Data Collection Procedure Ethical Consideration

First of all respondents namely stunting toddlers and their mothers were selected based on inclusion and exclusion criteria. Mothers with stunting children who are included in the criteria will be given informed consent about the research to be carried out and if the respondent agrees it is asked to sign the consent form to be the respondent or thumbprint

Respondents who have signed informed consent will be measured in height with an upright body position with foresight, feet tight against the wall and not using headgear or footwear. Concurrently, questionnaires were filled out by mothers with stunting toddlers about exclusive breastfeeding which contained questions about the respondent's identity including name, age, gender, address of residence, mobile phone number, and exclusive breastfeeding including the age of the first time breastfeeding was given to toddlers and the duration of breastfeeding

2.4. Data Analysis

Analysis of the data used in this study was to determine the relationship of exclusive breastfeeding with the incidence of stunting in toddlers aged 2-5 years, using an alternative fisher exact test and to determine the relationship of maternal height with incidence of stunting in toddlers aged 2-5 years using the test Chi square. Significance level $\alpha = 0.05$

3. Results

The results table 1 showed that children aged ≥ 3 years were 25 (51.0%), and aged < 3 years were 24 (49.0%). Children aged 2-5 years old were mostly female with 29 participants (59.2%) and 20 participants are male (40.8%).

Based on the table, found hinges mothers aged found in ≥ 30 years are 33 participants with percentage (67.3 %), and $a < 30$ years are 16 participants with percentage (32.7%).

The results of the table, showed that the majority of mothers with low education were 46 participants with percentage (93.9%), and 3 participants have highly educated with the percentage (6.1%).

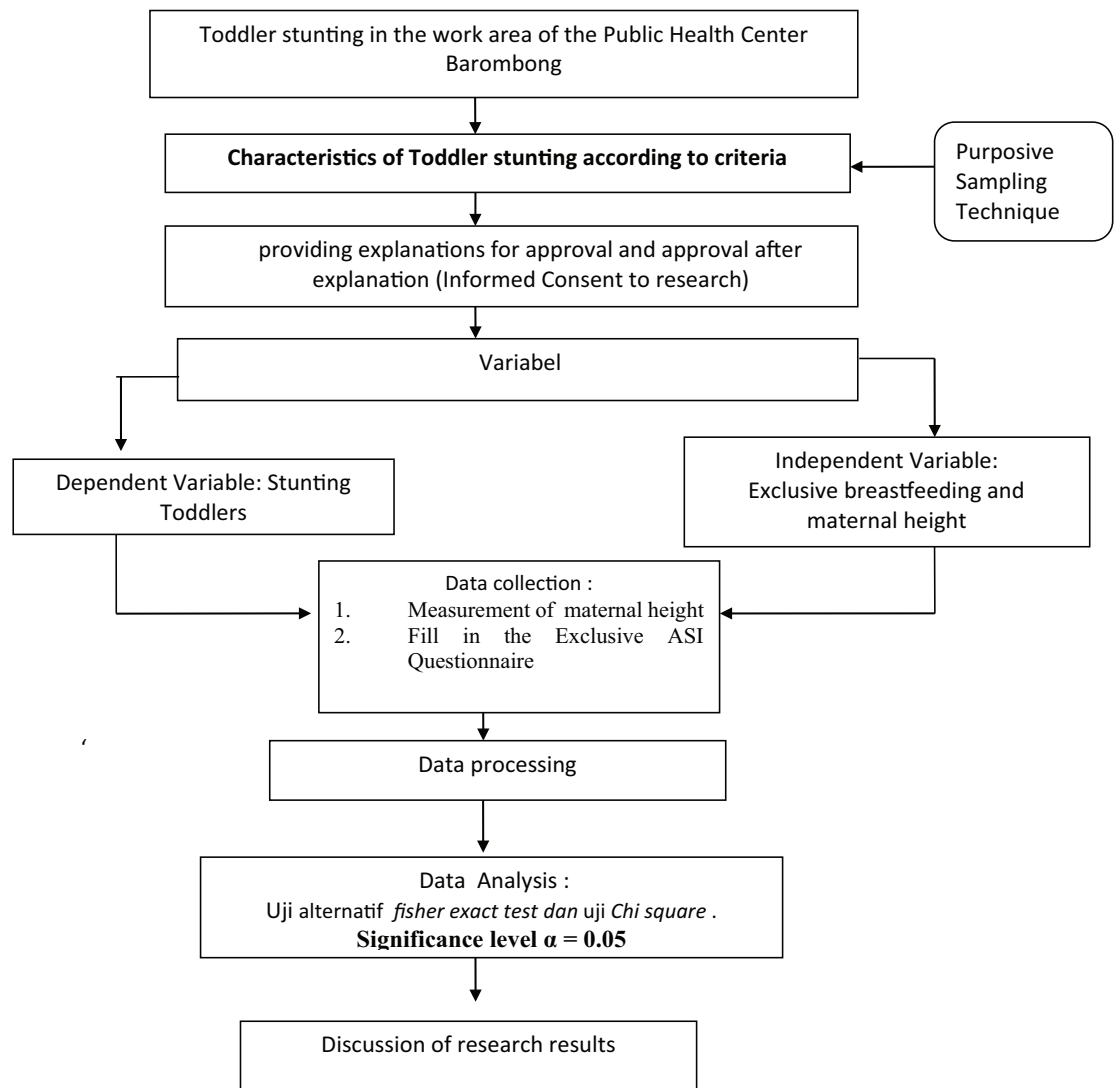


Figure 1: Illustrates the Flow Chart of Research.

Based on table 7 in aboveshowed that 11 (22.4%) participants got breastfeeding exclusiveand those not got reastfeedingexclusive were 38 (77.6) participants.

Based on the table 8 in above show that the prevalence of fathers normal Hightwere 48 (98%) participants, and 1 (2%) participants with the normal Hight. However the prevalence mothers Hight are 44 (89.8%) are short and 5 (10.2%) participants indicated to normal height.

The results table 9 in above showed that 41 (83.7%) participants had stunting with Short height and 8 (16.3%) participants had stunted with Very short height.

TABLE 1: Respondent Characteristic.

Variables	Frequency (f) (n)	(%)
Children Age ≥ 3 years	25	51,0
<3 years	24	49,0
Sex Male	20	40,8
Female	29	59,2
Mothers		
Age (Years)		
≥ 30 years	33	67,3
<30 years	16	32,7
Mothers Education		
Low Education	46	93,9
High Education	3	6,1
Total	49	100,0

TABLE 2: Distribution of baby with Breastfeeding Exclusive in Barombong Health Center, 2018.

Breastfeeding Exclusive	Frequency (f)	Percentage (%)
Give	11	22,4
Not Give	38	77,6
Total	49	100.0

TABLE 3: Distribution of Respondents by Parents height in the Barombong Health Center, 2018.

Mother Height	Frequency (f)	Percentage (%)
Short (< 149 cm)	44	89.8
Normal (>150 cm)	5	10.2
Total	49	100.0

Source: Primary Data 2018

TABLE 4: Distribution of baby incidence to stunting in Barombong Community Health Center, 2018.

Baby Height	Frequency (f)	Percentage (%)
Short	41	83,7
Very short	8	16,3
Total	49	100.0

3.1. Bivariate Analysis

Based on result table 10 we found that 49 respondents got exclusive breastfeeding found that 7 (58.3%) participants had short height and very short obtained 5 (41.7%) participants, while the categories not given exclusive breastfeeding with short height obtained 34 (91.9%) participants and very short 3 (8.1%) participants. Based on the results of data analysis using the Fisher Exact Test, it is known that the value of $p = 0.009$ where $p < \alpha 0.05$. Thus, we concluded that there was a significant relationship with exclusive

TABLE 5: Relationship between exclusive breastfeeding with incidence of stunting in infants age between 2-5 years in Barombong Community Health Center, 2018.

Exclusive breastfeeding	Stunting Status						P
	Short		Very Short		Total		
	n	%	n	%	n	%	
Give	7	58.3	5	41.7	12	100	0.015
Don't Give	34	91.9	3	8.1	37	100	
Total	41		8		49		

breastfeeding and height in baby aged between 2-5 years in Barombong community health center.

TABLE 6: Relationship between Mother's Height and Stunting Incidence in baby Aged 2-5 Years in Barombong Health Center, 2018.

Mothers Hight	Stunting Status						P
	Short		Very Shot		Total		
	n	%	n	%	n	%	
Normal	2	40	3	60	5		0.026
Short	39	88.6	5	11.4	44		
Total	41		8		49		

Based on result table 11 shows that out of 49 respondents in the category is Normal Maternal Height with short categories we found 2 respondents (40%) and very short is 3 respondents (60%). Short maternal height with 39 respondents (88.6%), and very short categories of 5 respondents (11.4%). Based on the Chi-Square test results, we know that the value of $p = 0.026$ where $p < \alpha 0.05$. From the Chi-Square test, the relationship between maternal height and the incidence of stunting. Thus there is a relationship between maternal height and the incidence of stunting among baby aged 2-5 years in the Barombong Community Health Center.

4. Discussion

The relationship between exclusive breastfeeding with the incidence of stunting in children aged 2-5 years. The results of bivariate analysis of exclusive breastfeeding with the incidence of stunting obtained a p-value of 0.015, which means that there is a significant relationship between exclusive breastfeeding with the incidence of stunting in children aged 2-5 years in Barombong Public Health Center, Gowa District.

This study funding similar to previous result that have a relationship between exclusive breastfeeding and the incidence of stunting in infants of 2-3 years. Where is

obtained p-value = 0,000 (0,000 <0.05). Breast milk is the best food for babies after birth. According to WHO, exclusive breastfeeding is only breastfeeding for infants up to 6 months of age without the addition of fluids or other foods.

Breastfeeding can be given until the baby is 2 years old [9]. One of the benefits of exclusive breastfeeding supports the growth of infants especially height because calcium is more efficiently absorbed than breast milk substitutes or formula milk. So babies who are given exclusive breastfeeding tend to have higher height and are in accordance with the growth curve compared to babies who are given formula milk. Breast milk contains more calcium and can be absorbed by the body so that it can maximize growth, especially height and can avoid the risk of stunting.

In this study, researchers looked at the relationship between the histories of exclusive breastfeeding when children aged 0 to 6 months to the incidence of stunting detected at the age of 2-5 years. From the results of the study, the researchers concluded that the best history of giving nutrition when children aged 0-6 months was exclusive breastfeeding. However, there are other factors that can affect a child's height at the age of 2-5 years. As in this study, there were 5 babies who were given exclusive breastfeeding, but they were very short in height, this could have been influenced by nutrition when the child was 2-5 years old. Another factor is the data obtained that many mothers in the working area of Barombong Puskesmas have low education, which is around 93.9%.

The results of bivariate analysis of maternal height with the incidence of stunting obtained a p-value of 0.026, which means that there is a significant relationship between maternal heights with the incidence to stunting in a baby aged 2-5 years in Barombong Health Center, Gowa Regency. This shows that children born with mothers who are short increase the chances of children growing into stunting. Maternal height is one of the factors associated with child height [10] Research in Egypt shows that children born to mothers who are less than 150 cm tall are more at risk for stunting. However, many things affect the incidence of stunting, especially interactions between genetic and environmental factors. This is similar finding with Miko & Al-Rahmad (2017), found that maternal height is significantly related to the incidence of stunting with a p-value of 0.048 which means that it has a significant relationship with the incidence of stunting [11].

Research conducted in Semarang shows that maternal and paternal height is a risk factor for stunting in infants aged 12-36 months. Parental height can have an impact on the subsequent generation of linear growth during the growth period. These influences include genetic and non-genetic factors, including intergenerational nutrition effects

that affect growth where there is an obstacle in achieving height according to genetic potential, especially in people with a low or middle income [6] and the other result support according to Nurlinda (2013), states that the quality and quantity of growth can be determined through genetic instructions contained in fertilized eggs [12].

Researchers assume that, even though a mother has a very short height category, it is possible for her child to grow to a normal height. Or vice versa, mothers who have normal height, have children with stunting. As in this study that there are 5 mothers whose height is normal, but have children with stunting. This explains that genetic factors are not a determinant of stunting.

5. Conclusion

From the research it can be concluded that there are have a relationship between exclusive breastfeeding with occurrence of stunting, with the result of p-value 0.015 in baby aged 2-5 years in BarombongPublic Health Center, Gowa Regency. In addition, the results are also obtained there are have a relationship between maternal height and the incidence to stunting which obtained with a result of the p-value of 0.026 in baby aged 2-5 years in BarombongPublic Health Center, Gowa Regency

Suggestion

The high incidence of stunting requires an effort to increase community knowledge with improving community nutrition, providing health education and involving family planning services (*posyandu*) in approaching providing information to the public, especially mothers, to maintain nutrient intake during pregnancy, providing exclusive breastfeeding for infants, provide adequate intake to toddlers as needed and always bring baby's to family planning services (*posyandu*)to monitor the toddlers. in order to prepare the first 1000 days of life for a better generation of Indonesia. Further research is needed for other researchers to get a more detailed picture of the factors related to parental height and the incidence of stunting.

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