

ANALYSIS OF FACTORS ASSOCIATED WITH EXCLUSIVE BREASTFEEDING BEHAVIOR WITH STUNTING INCIDENCE

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Abstract. Stunting is a form of malnutrition (undernutrition) that is defined as a child with a height to age Z-score less than minus two standard deviations. Rembang Regency is one of the districts that is still facing stunting problems because the stunting rate in Rembang Regency continues to increase. The purpose of this study is to analyze factors related to the incidence of stunting in children under 5 years in Rembang. This is an observational analytical quantitative study with a Cross-Sectional design with a sample of 70 children under 5 years. The sampling technique in this study is random sampling. The instrument used in this study was a questionnaire that was distributed directly in Pamotan, Rembang District. Data analysis uses univariate and bivariate analysis. The results of this study showed that there was a relationship between birth history and stunting p-value was 0.014. There is no relationship of pregnancy history with a stunting p-value of 1,000. There is a relationship between the mother's last education and the stunting p-value of 0.013. There is no relationship between maternal employment and stunting p-value of 1,000. There is no relationship between access to health services and a stunting p-value of 0.107. There is no relationship between exclusive breastfeeding and stunting p-value of 0.520. There is no relationship between family income and a stunting p-value of 0.351. There is no relationship between maternal employment and stunting p-value of 1,000. There is no relationship between access to health services and a stunting p-value of 0.107. There is no relationship between exclusive breastfeeding and stunting p-value of 0.520. There is no relationship between family income and stunting p-value of 0.351. There is no relationship between maternal employment and stunting p-value of 1,000. There is no relationship between access to health services and a stunting p-value of 0.107. There is no relationship between exclusive breastfeeding and stunting p-value of 0.520. There is no relationship between family income and a stunting p-value of 0.351. This study concludes that the factors related to the incidence of stunting in Pamotan, Rembang District are birth factors and maternal education factors.

Keywords: stunting factors, toddler

INTRODUCTION

Malnutrition is a condition of nutritional shortage with some negative effects on the composition and operation of the human body, leading to specific clinical as well as physical outcomes. Stunting, which is characterized as a child with a height-for-age Z-score of less than minus two standard deviations, is a type of malnutrition or undernutrition. Toddlers throughout the globe today are affected by the issue of stunting nutrition (Kahssay, M et al., 2020).

Short-term and long-term harmful effects of stunts are possible. The short term is that it can interfere with brain development, intelligence, physical growth disorders, and also metabolic disorders in the body. In the long term, stunting can cause decreased cognitive ability and learning achievement, decreased immunity so that you get sick easily, and a high risk of developing diabetes, obesity, heart and blood vessel disease, cancer, stroke, and also disability in old age (Atikah Rahayu, et al., 2018)

Around 150.8 million toddlers worldwide, or 22.2% of all children, had stunting in 2017. Over half (55%) of people are from Asia, and over a third (39%) are from Africa. According to the Joint Child Malnutrition Estimates (2018), South Asia had the biggest percentage of Asia's 83.6 million stunted toddlers (58.7%), while Central Asia had the lowest percentage (0.9%). (Joint Child Malnutrition Estimates, 2018).

The Indonesian Toddler Nutrition Status Survey (SSGBI) in 2019, notify that the prevalence of stunting in Indonesia reached 27.7%. This means that around one in four toddlers (more than eight million children) in Indonesia are stunted. WHO does set a threshold which is 20%, and then this figure is still very high.

In Central Java, the prevalence of stunting according to PSG (Nutrition Status Monitoring) data shows an increasing trend from 2014 to 2017, namely 22.6%-24, 8%-23.9%, and 28.5% in 2017. Based on the data PSG (Monitoring Nutritional Status) in 2017 where the

lowest prevalence was 21.0%.

Rembang Regency is one of the districts that is still facing the problem of stunting, this is because the stunting rate in Rembang Regency continues to increase. Based on basic health research, the stunting rate in 2019 was 22.9% and then in 2020, it rose to 24.97%. Based on data from the Rembang Health Office through integrated stunting reduction intervention data in 2020, the highest number of stunted toddlers was found in Pamotan District with a total of 261 toddlers spread across several village areas.

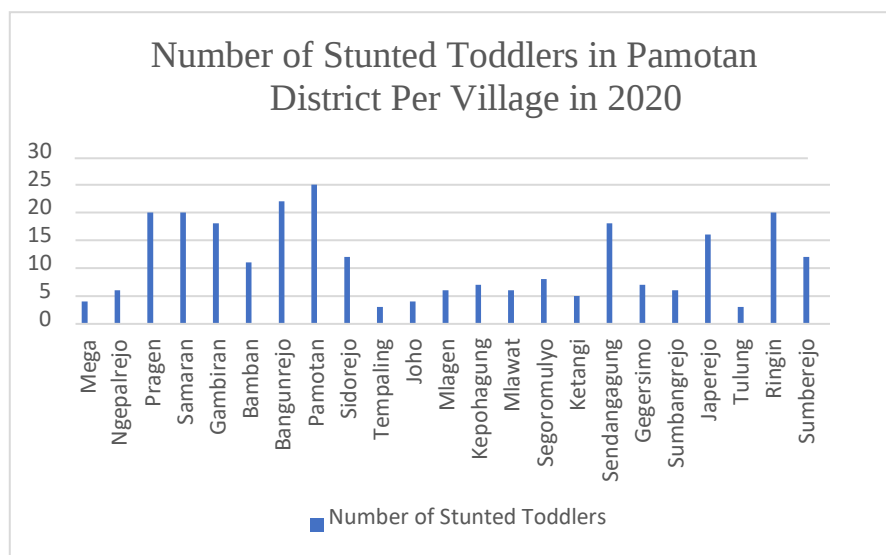


Figure 1. Number of Stunted Toddlers in Pamotan District Per Village in 2020

Stunts can cause irreversible disturbance of children's physical development, thus causing a decrease in cognitive and motor skills and a decrease in children's work performance. Intervention from an early age must be carried out so that growth and development disorders in children due to malnutrition if they do not get it, will continue into adulthood. The occurrence of stunting is influenced by many factors, both directly such as low nutritional intake and health status, and indirect causes such as income factors and economic disparities, food systems, health systems, urbanization, and others (Bappenas, 2018). Some of the previous studies stated that the causes of stunting both in the world and in Indonesia include lack of knowledge about stunting, food insecurity, premature or low birth weight births, exclusive breastfeeding, management of MPASI for children, environmental sanitation,

The high number of stunting incidents and the many factors that cause stunting requires integrated intervention, both from health workers or in collaboration with multi-sector teams that hope to reduce the incidence of stunting and control the causal factors to prevent stunting and its impacts. Many studies also show that stunting can be reduced by combating stunting risk factors (Kurniadi, 2019). From the description above, the researcher is interested in analyzing the factors related to the incidence of stunting in toddlers of age in Rembang, especially in the Pamotan District area.

METHODS

This type of research is quantitative research, research that requires the use of numbers starting from data collection. This research uses a descriptive-analytic study design with a cross-sectional approach. This study emphasizes the observation of independent variable data and the dependent variable only once at a time and there is no follow-up (Nursalam, 2017). The design of the research method that the authors will use is a survey using a questionnaire. This study aims to identify which of the factors Birth History, Pregnancy History, Mother's Last Education,

Access to Health Services, Exclusive Breastfeeding, and Family Income related to the incidence of stunting in toddlers aged 1-5 years in Rembang. The research was conducted in Pamotan District, Rembang Regency on June 15-18. The population in this study were mothers who had toddlers aged 1 to 5 years. Have a clear address and/or reside in Pamotan Rembang District. Of the 261 toddler populations in Pamotan District, 70 samples were obtained which were calculated using the Lameshow formula. The research data that has been obtained were analyzed using the SPSS method of univariate and bivariate analysis.

RESULTS AND DISCUSSION

A. Characteristics of Respondents

Characteristics in toddlers are divided into two, namely based on age and gender. The following is the result of the frequency distribution of age and sex of toddlers in Pamotan Rembang District.

1. Age

Table 1. Age Frequency Distribution of Toddler Respondents in Pamotan District, Rembang

Age	Frequency	%
1-2.5 years	46	65.7%
3-5 years	24	34.3%
Total	70	100%

Source: primary data, 2022

Based on Table 1, there are two age categories for 70 respondents, namely respondents aged 1-2.5 years totaling 46 toddlers (65.7%) and respondents aged 3-5 years totaling 24 toddlers (34.3%).

2. Gender

Table 2. Gender Frequency Distribution of Toddler Respondents in Pamotan District Rembang

Gender	Frequency	%
Man	42	60%
Woman	28	40%
Total	70	100%

Source: primary data, 2022

Based on Table 2, the frequency distribution of the sex of 70 toddler respondents in Pamotan Rembang District, there were 42 toddlers (60%) male respondents and 28 toddlers (40%) female respondents.

B. Univariate Analysis Results

The following is the result of univariate analysis of 7 variables in a sample of toddlers in Pamotan Rembang District, including birth history, pregnancy history, mother's last education, mother's occupation, access to health services, exclusive breastfeeding, family income, and incidence of stunting.

Table 3. Results of univariate analysis

Variable	n	%
Birth History		
LBW	50	71.4 %
nonLBW	20	28.6%
Total	70	100%
Pregnancy History		
risky	49	70%
No risk	21	30%
Total	70	100%
Mother's last education		
≤JUNIOR HIGH SCHOOL	48	68.8%
>junior high school	22	31.4%
Total	70	100%

Mother's job		
Work	7	10%
Housewife	63	90%
Total	70	100
Access to Health Services		
Easy	64	91.4%
Not easy	6	8.6%
Total	70	100%
Exclusive breastfeeding		
Exclusive Breastfeeding	50	71.4%
Non Exclusive ASI	20	28.6%
Total	70	100%
Family Income		
Low	40	57.1%
Tall	30	42.9%
Total	70	100%
Stunting events		
stunt	36	51.4%
Not Stunting	34	48.6%
Total	70	100%

Based on Table 3 regarding birth history, it can be seen that 50 or 71.4% of 100% of toddlers have a history of LBW births, while 20 or 28.6% of 100% of toddlers who a non-LBW birth history. This explains that most of the mothers of toddlers in Pamotan Rembang District have a history of normal births in their toddlers. Based on table 3 regarding the history of pregnancy, it can be seen that mothers who have a history of risk in their pregnancy are 49 or 70% of 100%, while mothers who do not have a risk of hiry of pregnancy are 21 or 30% of 100%. This explains that most of the mothers under five in Pamotan Rembang District have a risk in their pregnancy history. Based on table 3 regarding the mother's last education, it can be seen that as many as 48 or 68, 8% of 100% of mothers with under five have low education ($\leq$ junior high school), while 22 or 31.4% of 100% of mothers with high education ($>$ junior high school). This explains that most mothers under five in Pamotan Rembang District have low education. Based on table 3 regarding mother's work, it can be seen that as much as 7 or 10% of 100% of mothers under five work to meet economic needs while as much as 63 or 90% of 100% of mothers under five do not work or are housewives. This explains that most of the mothers under five in Pamotan Rembang District do not work or are housewives. Based on table 3 regarding access to health services, it can be seen that as many as 64 or 91.4% of 100% of toddlers get access to health services easily while as many as 6 or 8, 6% of 100% of toddlers are not easy to get access to health services. This explains that most toddlers in Pamotan Rembang Sub-District get easy access to health services. Table 3, it can be seen that as many as 50 or 71.4% of 100% of mothers give exclusive breastfeeding to their toddlers, while as many as 20 or 28.6% of 100% of mothers do not give exclusive breastfeeding to their toddlers. This explains that most toddlers in Pamotan Rembang District get exclusive breastfeeding from their mothers. The Table 3, it can be seen that as many as 40 or 57.1% of 100% of families under five have a low income or less than the minimum wage for work, while as many as 30 or 42.9% of 100% of families under five have a high income or more than the minimum wage for work. This explains that most families of toddlers in Pamotan Rembang District have low incomes. Based on Table 3, it can be seen that 36 or 51.4% of 100% of toddlers experience stunting while 34 or 48.6% of 100% of toddlers do not experience stunting.

C. Bivariate Analysis

Based on the result of a bivariate analysis of the relationship between birth history, pregnancy history, mother's last educational factor, mother's occupation, exclusive breastfeeding, family income and also stunting in Pamotan Rembang District.

Table 4. Relationship between birth history and stunting in toddlers

Table 4. Relationship between birth history and stunting in toddlers								
Birth History	Stunting events				Total		PR 95% CI	P-value
	stunt		Non stunt					
	N	%	N	%	N	%		
No normal	16	76,2	5	23,8	21	100	1,867	0.014

Normal	20	40,8	29	59,2	49	100	(1,235-2,822)
Total	36	51,4	34	48,6	70	100	

Source: Primary Data, 2022

Based on Table 4, more toddlers have a history of less normal births in cases of stunting 76.2% than those who are non-stunted 23.8%. The results of the chi-square test showed that (p -value 0.014) < 0.05 H_0 was rejected H_a was accepted, so there is a significant relationship between birth history and the incidence of stunting. The results of the PR (Prevalence Ratio) calculation show that toddlers with less than normal birth history are at risk of 1.867 times to experience stunting compared to normal birth history with 95% CI (1.235-2.822). The results of this study are the same as the research conducted by A. Rahmadi 2017 which produced a p -value of 0.000 < 0.05 H_0 rejected H_a accepted, so there is a relationship between birth length and stunting. Babies with low body length are 1.56 times at risk of experiencing stunting. < 0.05 and an OR value of 25.5 which means that babies with low birth weight have a 25 times chance of experiencing stunting. Based on observations in the field, the factors that cause babies to be born with LBW are the lack of maternal nutritional intake during pregnancy because during pregnancy the baby's mother experiences a decrease in appetite. The factor of examining the baby after birth also has an effect, some are routinely examined, some are not routinely examined, or only a few times.

Table 5. Relationship between Pregnancy History and Incidence of Stunting of Toddlers

Pregnancy History	Stunting events				Total		PR 95% CI	P value
	stunt		Non Stunting					
	N	%	N	%	N	%		
risky	26	52	24	48	50	100	1,040	1,000
No risky	10	50	10	50	20	100	(0.623-1,737)	
Total	36	51,4	34	48,6	70	100		

Source: Primary Data, 2022

Based on Table 5, for mothers under five who have a history of risky pregnancies in cases of stunting, the results are 52% more than those who are non-stunted, 48%. The results of the chi-square test show that (p -value 1.000) > 0.05 H_0 is accepted H_a is rejected, so there is no significant relationship between a history of pregnancy and the incidence of stunting. Most mothers of toddlers in Pamotan District have a risk in their pregnancy history but the age factor of the mother during pregnancy is mature in carrying out pregnancy and fulfilling nutrition during pregnancy is good enough, so there is no significant relationship between pregnancy history and the incidence of stunting in toddlers.

Table 6. Relationship of Mother's Last Education with Stunting Incidents

Mother's Last Education	Stunting events				Total		PR 95% CI	P value
	Stunt		Non Stunting		N	%		
	N	%	N	%			N	%
Low (≤JUNIOR HIGH SCHOOL)	30	62.5	18	37.5	48	100	2,292	0.013
High (>junior high school)	6	27,3	16	72,3	22	100	(1,119-4,693)	
Total	36	51,4	34	48,6	70	100		

Source: Primary Data, 2022

Table 6 indicates that children of women with low levels of education are more likely to be stunted (62.5%) than non-stunted (37.5%). The findings of the chi-square test indicated that H_0 was rejected (P -value 0.013) at 0.05. H_a agreed, proving that there is a strong correlation between the mother's most recent level of schooling and the prevalence of stunting. According to the PR calculation's findings (Prevalence Ratio), moms with low levels of education are 2.292 times more likely than mothers with high levels of education to have children who are stunted

(95% CI: 1.119–4.693). With a p-value of 0.005 0.05, this study agrees with Dedeh Husnaniyah, et al.'s findings from 2020, indicating that there is a substantial connection between the mother's most recent level of schooling and the prevalence of stunting. According to field observations, the majority of moms in the Pamotan District with children under five had education levels below junior high school. Knowledge is influenced by education; the more education one has, the more knowledge and insight they possess. Mothers who have received education will be able to appropriately maintain food quality and hygiene, manage menus, and process food. In addition to receiving postsecondary education, moms must be proactive and receptive in requesting information about child nutrition from health professionals and the media to stop toddler stunting. as well as appropriately managing the quality and hygiene of meals. In addition to receiving postsecondary education, moms must be proactive and receptive in requesting information about child nutrition from health professionals and the media in order toddler stunting. as well as appropriately manage the quality and hygiene of meals. In addition to receiving postsecondary education, moms must be proactive and receptive in requesting information about child nutrition from health professionals and the media to stop toddler stunting.

Mother's job	Incident <i>stunt</i>				Total		PR 95% CI	<i>P-value</i>
	<i>stunt</i>		Non <i>stunt</i>					
	N	%	N	%	N	%		
Work	4	57,1	3	42,9	7	100	1.125 (0.567- 2,234)	1,000
No Work	32	50,8	31	49,2	63	100		
Total	36	51,4	34	48,6	70	100		

Source: Primary Data, 2022

According to Table 7, moms of toddlers who have stunting work more than mothers of toddlers who do not have stunting, who work 42.9% more. The chi-square test findings demonstrate that (p-value 1.000) > 0.05 H₀ is acceptable. There is no discernible link between mother employment and stunting since H_a is rejected. In contrast to working moms, mothers who do not work have more time in the morning to visit the posyandu, receive additional food, and receive health education. This is based on direct observations made in the field. Stunting is more common among mothers who do not work, and there is no connection between the mother's employment and the prevalence of stunting. The mother's job affects child care and the financial situation of the household. Because toddlers are so reliant on their mothers, caregivers, and other family members, mothers who work outside the home run the risk of neglecting their children. However, as labor is a significant element in influencing the quality and quantity of food, working women can help the family's finances.

Service Access Health	Incident <i>stunt</i>				Total		PR 95% CI	<i>P-value</i>
	<i>stunt</i>		Non <i>stunt</i>					
	N	%	N	%	N	%		
Not easy	6	85.7	1	14,3	7	100	1,800 (1,209-	0.107
Easy	30	47,6	33	52,4	63	100	2,680)	
Total	36	51,4	34	48,6	70	100		

Source: Primary Data, 2022

Based on Table 8 access to health services for toddlers is not easy, there are more cases of stunting 85.7% than non-stunting 14.3%. The results of the chi-square test showed that (p-value 0.107) > 0.05 H₀ accepted H_a rejected, so there is no significant relationship between access to

health services and the incidence of stunting. This research is in line with the research of Andi Syamsiah, et al 2021 with a p-value of $0.228 > 0.05$, there is no significant relationship between access to health services and the incidence of stunting. Based on direct observations in the field, both mothers with stunted toddlers and mothers with non-stunted toddlers get easy access to services. Based on results of observations in the field in every village in Pamotan District already have a village midwife in their respective villages. However, in accessing health services there, mothers prefer to come to the puskesmas because the infrastructure and facilities are more complete than the village midwife, but if there is an urgent situation for access to health services they still come to the village midwife so access to health services there is easy. In terms of distance, travel time, and ease of transit to obtain health services, the affordability of access is meant.

Table 9. Relationship between exclusive breastfeeding and stunting

Breastfeeding Exclusive	Stunting events				Total		PR 95% CI	P-value
	stunt		Non					
	N	%	N	%	N	%		
Not Exclusive	12	60	8	40	20	100	1,250 (0.789- 1,979)	0.520
Exclusive	24	48	26	52	50	100		
Total	36	51,4	34	48,6	70	100		

Source: Primary Data, 2022

Based on table 9, exclusive breastfeeding for toddlers who are not given exclusive breastfeeding is more common in cases of stunting 60% than those who are non-stunted 40%. The results of the chi-square test showed that ($p\text{-value } 0.520 > 0.05$) H_0 accepted H_a rejected, so there is no significant relationship between exclusive breastfeeding and the incidence of stunting. This research is same with research conducted by Depi Yunia Purwanti and Diah Ratnasari 2020 in Bulakamba District with a p-value of $0.492 > 0.05$, there is no significant relationship between exclusive breastfeeding and stunting.

Table 10. Table of Family Income Relationship with Stunting Incidence

Family Income	Incident <i>stunt</i>				Total		PR 95% CI	<i>P-value</i>
	<i>stunt</i>		Non <i>stunt</i>					
	N	%	N	%	N	%		
Low <UMR	23	57.5	17	42.5	40	100	1.327	0.351
Tall≥UMR	13	43,3	17	56,7	30	100	(0.814-2,162)	
Total	36	51,4	34	48,6	70	100		

Source: Primary Data, 2022

Based on table 10, family income of toddlers with low income or less than the minimum wage works more in cases of stunting 57.5% than non-stunting 42.5%. The results of the chi-square test show that ($p\text{-value } 0.351 > 0.05$) H_0 accepted H_a is rejected, so there is no significant relationship between family income and the incidence of stunting. The results of the PR (Prevalence Ratio) calculation show that toddlers whose families have low income are at risk of 1.327 times to experience stunting compared to toddlers whose families have high incomes 95% CI (0.814-2.162). This research is in line with research conducted by Alwin Dakhi 2018 in North Binjai with a p-value of $0.13 > 0.05$, so there is no significant relationship between family income and the incidence of stunting. This can be caused by the income received is not fully used to meet basic needs, but for other needs as well. High income does not necessarily guarantee adequate nutrition for toddlers, because the level of income is not necessarily allocated enough for food. Observations in the field show that the majority of toddler families

in Pamotan District have low incomes. However, they still have enough to meet their daily needs because some families have side jobs to support their daily needs. because the level of income is not necessarily allocated enough to eat. Observations in the field show that the majority of toddler families in Pamotan District have low incomes. However, they still have enough to meet their daily needs because some families have side jobs to support their daily needs. because the level of income is not necessarily allocated enough to eat. Observations in the field show that the majority of toddler families in Pamotan District have low incomes. However, they still have enough to meet their daily needs because some families have side jobs to support their daily needs.

CONCLUSION

The conclusions from the research results are Characteristics of toddlers aged 1-5 years in Pamotan District, Rembang, aged 1-2.5 years, totaling 46 toddlers (65.7%) and respondents aged 3-5 years totaling 24 toddlers (34.5%). There were 42 toddlers (60%) male and 28 toddlers (40%) female. The risk factor for toddlers associated with the incidence of stunting in Pamotan Rembang District is the risk factor for birth. The toddler mother's risk factor associated with the incidence of stunting in Pamotan Rembang District is the risk factor for the mother's last education. There is a correlation between the risk factor for birth history and the incidence of stunting in toddlers aged 1 to 5 in the Pamotan Rembang District, with a statistical test result of p-value 0.014 to 0.05. Have a relationship between maternal risk factors for the incidence of stunting in toddlers aged 1-5 years in Pamotan Rembang District, namely the risk factor for the mother's last education with a statistical test result of p-value 0.013 <0.05.

In the Pamotan Rembang District, there is a correlation between maternal risk factors for stunting incidence and the mother's most recent level of schooling, with a statistical test result of p-value 0.013 0.05. There is a 0.014–0.05 correlation between birth history and the prevalence of stunting in toddlers aged 1–5 years in Rembang. Have a relationship between the mother's last education and the incidence of stunting in toddlers aged 1-5 years in Rembang, p-value 0.013 <0.05. In Rembang, for toddlers aged 1 to 5 years old, there is no correlation between a history of pregnancy and the prevalence of stunting, with a p-value of 1.000 > 0.05. There is a link (p-value 0.013 0.05) between the mother's most recent level of schooling and the prevalence of stunting in children aged 1 to 5 in Rembang. Haven't relationship between exclusive breastfeeding and the incidence of stunting in toddlers aged 1-5 years in Rembang, p-value 0.520 > 0.05. There is no correlation between the frequency of stunting in toddlers aged 1 to 5 in Rembang and the mother's employment, with a p-value of 1.000 > 0.05. There is no association between the prevalence of stunting in toddlers aged 1 to 5 in Rembang and access to health care, with a p-value of 0.107 > 0.05. There is no association between the prevalence of stunting in toddlers aged 1 to 5 in Rembang and exclusive breastfeeding, p-value of 0.520 > 0.05. In Rembang, for toddlers aged 1 to 5 years old, there is no association between family income and the prevalence of stunting, with a p-value of 0.351 > 0.05.

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