

DETERMINANTS OF STUNTING INCIDENTS IN SOUTHWEST ACEH

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ABSTRACT

In Southwest Aceh, stunting is still in the vast category compared to other districts/cities in Aceh Province. Although various strategies have been implemented by the local government so that the percentage of stunting incidents can be reduced, these efforts are currently not running optimally. This research aims to determine the causes of stunting in children in the Southwest Aceh Regency. In general, this research is helpful as a reference framework to reduce the incidence of stunting for childbirths, especially in the Southwest Aceh Regency. This research uses a quantitative type of research with a case-control design. The population in this study were all toddlers in Southwest Aceh Regency, totalling 3,477 respondents. The sampling method used simple random sampling, with the number of samples in this study being 90 cases and 90 controls. The results of the study showed that there was the most dominant relationship between the mother's low education (OR=5.67; 95%CI=0.87-37.10; p=0.070), the mother's second pregnancy and the birth interval of the first child <2 years (OR =14.79; 95%CI=3.97-55.10; p=0.0001), father's height <162 cm (OR=6.53; 95%CI=0.86-49.71; p =0.070) and use of insect repellent (OR=6.43; 95%CI=1.70-24.25; p=0.006). A mother's second pregnancy with a birth interval of <2 years is the most dominant factor in the incidence of stunting in Southwest Aceh. So it is hoped that the BKKBN, in collaboration with local health officials, the Health Service, Community Health

Centers in Southwest Aceh, as well as village midwives in Southwest Aceh, will improve health promotion performance by providing education about family planning so that it can increase public knowledge about the importance of spacing pregnancies.

KEYWORDS

Determinants, stunting, Southwest Aceh.

INTRODUCTION

The problem of stunting is a public health problem that is associated with an increased risk of morbidity, death, and obstacles to both motor and mental growth. Stunting can occur when the fetus is still in the womb and only appears when the child is two years old (1). Basic Health Research (2013) states that 15 districts/cities have stunting prevalences above 50%. In 2015, the prevalence of stunting under five in Indonesia reached 36.4%. This shows that more than a third, or around 8.8 million Indonesian toddlers are stunted. In Aceh Province, the stunting prevalence rate in 2018 was recorded at 37.9 percent. This means 0.7 percent higher than the national prevalence of stunting (3).

In 2018, the Indonesian Government launched a joint action called the "National Stunting Prevention Movement." The Aceh government has also prepared strategic steps to reduce the stunting rate, which are contained in the Aceh Governor's Regulation Number 14 of 2019 concerning Integrated Prevention and Handling of Stunting in Aceh. This policy strengthens related parties' commitment to accommodating the service needs of every Acehnese child (4).

Research on stunting has been carried out in various regions in Indonesia, in this case also includes the Aceh

region; as stated by Nur Aisyah, Central Aceh, Bener Meriah, and Southwest Aceh have a lot of young husband and wife couples, so the regions are more likely for stunting status to increase more than other areas (5).

Based on data from the Aceh Provincial Health Service at the beginning of 2022, Southwest Aceh had the highest incidence of toddler stunting. Hence, the author was interested in researching the factors that caused this area to rank third regarding the problem—studying 23 districts/cities in Aceh Province. The author then puts it in "Determinants of Stunting Incidents in Southwest Aceh in 2022."

METHOD

This research uses a quantitative method with a case-control design. The population in this study was all toddlers in Southwest Aceh Regency, totaling 3,477 respondents. The sampling method used simple random sampling, with 90 cases and 90 controls. This research uses a logistic regression test to test the research hypothesis.

RESULTS

Table 1 Factors Associated with the Incident of Stunting in the Birth of Toddlers

Variable	Stunting events						OR	95% CI	P Value
	n	Stunting %	Mean (SD)	n	Normal %	Mean (SD)			
Maternal Factors									
Mother's height			150,34			155,38	0,83	0,77-0,89	0,0001
> 160 cm	5	5,56		7	7,78				
152 cm – 160 cm	23	25,56		69	76,67		0,47	0,13-1,61	0,229
< 152 cm	62	68,89		14	15,56		6,20	1,71-22,43	0,005
Mother's education									
Tall	13	14,44		35	38,89				
Intermediate	48	53,33		47	52,22		2,75	1,29-5,83	0,008
Low	29	32,22		8	8,89		9,76	3,56-26,77	0,0001
There was a second pregnancy									
≥ 2 years	17	24,29		68	85,00				
< 2 years	53	75,71		12	15,00		17,67	7,77-40,18	0,0001
Father Factor									
Dad's height			161,7			165,17	0,91	0,86-0,96	0,0001
> 170 cm	2	2,22		15	16,67				
162 cm – 170 cm	33	36,67		51	56,67		4,85	1,04-22,61	0,044
< 162cm	55	61,11		24	26,68		17,19	3,64-81,09	0,0001
Father's education									
Tall	9	10,00		30	33,33				
Intermediate	45	50,00		35	38,89		4,29	1,80-10,19	0,001
Low	36	40,00		25	27,78		4,80	1,95-11,84	0,001
Smoking behavior									
Not a smoker	20	22,22		44	48,89				
Sometimes smoking	27	30,00		29	32,33		2,05	0,97-4,31	0,059

<i>Smoker</i>	43	47,78	17	18,89	5,56	2,57-12,03	0,0001
Child Factors							
Child's weight at birth							
			2.429,44	3.121,11	0,99	0,98-0,99	0,0001
2500 g -3999 g	21	23,33	78	86,67			
≥4000 g	0	0,00	1	1,11		(empty)	
<2500 g	69	76,67	11	12,22	23,30	10,49-51,76	0,0001
Exclusive breastfeeding							
<i>Exclusive breastfeeding (≥ 6 months)</i>	21	23,22	49	54,44			
<i>Not exclusively breastfed (< 6 months)</i>	69	76,67	41	45,56	3,93	2,07-7,45	0,0001
Immunization equipment							
<i>Existing and complete</i>	24	26,67	59	65,56			
<i>There are but not complete</i>	40	44,44	20	22,22	4,92	2,40-10,07	0,0001
<i>There isn't any</i>	26	28,89	11	12,22	5,81	2,48-13,59	0,0001
Use of insect repellent							
<i>Don't use insect repellent</i>	37	41,11	73	81,11			
<i>Use insect repellent</i>	53	58,89	17	18,89	6,15	3,13-12,07	0,0001

Based on the results of the analysis above on maternal factors, there is no significant relationship between maternal height of 152-160 cm ($P=0.229$ OR=0.47) and the incidence of stunting. There is a relationship between maternal height <152 cm ($P=0.005$ OR=6.20), secondary education ($P=0.008$ OR=2.75), low education ($P=0.0001$ OR=9.76), and second pregnancy. 2 mothers with a birth distance of their first child ($P=0.0001$ OR=17.67) with the incidence of stunting.

Regarding the father factor, there was no significant relationship between fathers who sometimes smoked ($P=0.059$ OR=2.05) and the incidence of stunting. There is a relationship between the father's height of 162-170 cm ($P=0.044$ OR=4.85), father's height <162 cm ($P=0.0001$ OR=17.19), secondary education ($P=0.001$ OR=4.29), low education ($P=0.001$ OR=4.80) and smoking ($P=0.0001$ OR=5.56) with the incidence of stunting.

In the child factor, there was a relationship between weight <2,500 g at birth ($P=0.0001$ OR=23.30), exclusive breastfeeding ($P=0.0001$ OR=3.93), incomplete immunization ($P=0.0001$ OR=4.92), not getting immunization ($P=0.0001$ OR=5.81), using insect repellent ($P=0.0001$ OR=6.15) with the incidence of stunting. Regarding residence factors, there was no significant relationship between children who used river water for toilets ($P=0.473$ OR=0.61) and the incidence of stunting. There was a significant relationship between children who used water from

dug wells for toilets ($P=0.0001$ OR=5.94) and the incidence of stunting.

In the environment and economy, there is no significant relationship between income between Rp. 564,035-Rp. 864,721 per month ($P=0.360$ OR=1.48) with the incidence of stunting. There is a significant relationship between income $\leq$ Rp—564,034 per month ($P=0.0001$ OR=17.62) and the incidence of stunting (Table 1).

Table 2 The Most Dominant Factors Associated with the Incident of Stunting in the Birth of Toddlers Using Multiple Logistic Regression Test

Variable	Model 1		Model 2		Model 3	
	AOR (95%CI)	P Value	AOR (95%CI)	P Value	AOR (95%CI)	P Value
Maternal Factors						
Maternal Factors						
Tall						
Intermediate					0,66 (0,20-2,14)	0,484
Low					5,67 (0,87-37,10)	0,070
There was a second pregnancy						
≥ 2 years						
< 2 years					14,79 (3,97-55,10)	0,0001
Father Factor						
Dad's height						
> 170 cm						
162 cm – 170 cm			4,06 (0,82-20,12)	0,086	2,56 (0,42-15,53)	0,306
< 162cm			7,55 (1,35-42,11)	0,021	6,53 (0,86-49,71)	0,070
Father's education						
Tall						
Intermediate			2,21 (0,82-5,93)	0,116	1,04 (0,31-3,49)	0,945
Low			1,44 (0,45-4,65)	0,537	0,38 (0,08-1,89)	0,237
Smoking behavior						
Not a smoker						
Sometimes smoking			0,48 (0,16-1,42)	0,183	0,10 (0,02-0,58)	0,010
Smoker			1,35 (0,48-3,80)	0,571	0,27 (0,05-1,30)	0,103

Child Factors

Exclusive

breastfeeding

Exclusive

breastfeeding ($\geq$
6 months)

Not exclusively breastfed (< 6 months)	1,56 (0,72-3,41)	0,261	1,53 (0,60-3,88)	0,376	1,03 (0,28-3,75)	0,967
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Immunization

equipment

Existing and
complete

There are but not complete	2,94 (1,32-6,55)	0,008	2,15 (0,86-5,36)	0,101	0,99 (0,28-3,46)	0,986
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There isn't any	2,26 (0,82-6,20)	0,113	1,25 (0,37-4,19)	0,720	0,37 (0,05-2,81)	0,335
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Use of insect

repellent

Don't use insect
repellent

Use insect repellent	3,63 (1,66-7,90)	0,001	3,51 (1,47-8,39)	0,005	6,43 (1,70-24,25)	0,006
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Pseudo R2	0,1734		0,2344		0,4037	
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The results of the analysis explain that insect repellent use is most dominantly related to stunting in children. Children who when other variables are constant, children repellent are 4 times more likely to experience stunting than those who do not use insect recall test results show that the pseudo-R2 value is 0.1734, meaning that model 1 indicates that these factors are simultaneously (together) related to stunting by 17.34%.

Model 2 explains that a father's height < 162 cm is most dominantly associated with stunting in children. A father's height < 162 cm is 8 times the risk of experiencing stunting compared to a father's height > 170 cm when other variables are constant. The statistical test results show that the pseudo-R2 value is 0.2344, meaning that model 2 indicates that these

factors are simultaneously (together) related to stunting by 23.44%.

Model 3 explains that the mother's second pregnancy with a distance between the births of the first child < 2 years is most dominantly associated with stunting in children. The second pregnancy of a mother with a distance between the births of her first child < 2 years is 16 times more likely to experience stunting than the second pregnancy of a mother with a distance between the births of her first child > 2 years when other variables are constant. The statistical test results show that the pseudo-R2 value is 0.3259, meaning that model 2 indicates that these factors are simultaneously (together) related to stunting by 32.59%.

Model 3 explains that the mother's second pregnancy with a distance between the births of the first child < 2 years is most dominantly associated with stunting in children. The second pregnancy of a mother with a distance between the births of her first child < 2 years is 15 times more likely to experience stunting than the second pregnancy of a mother with a distance between the births of her first child > 2 years when other variables are constant. The statistical test results show that the pseudo-R² value is 0.4037, meaning that model 3 indicates that these factors are simultaneously (together) related to stunting by 40.37%.

DISCUSSION

The Relationship between Maternal Factors and the Incidence of Stunting in Toddlers

Based on the analysis above, mothers who are >160 cm taller than children who are not stunted are 7.78% taller. The mother's height is 152-160 cm, 76.67% higher than in children who are not stunted. Meanwhile, respondents with a mother's height <152 cm were taller than stunted children by 68.89%. The statistical test results obtained an OR value = 0.47. This means that if the mother's height is 152-160 cm, the risk of stunting decreases by 0.47 times. The statistical test results obtained a p-value of 0.229, which means there is no significant relationship between the maternal height of 152-160 cm and the incidence of stunting. The statistical test results obtained an OR value = 6.20. This means a mother's height <152 cm has 6 times the risk of stunting than a mother's height >160 cm. The results obtained p value 0.005, which means there is a significant relationship between maternal height <152 cm and the incidence of stunting.

The results of this study are in line with Wanimbo & Wartiningsih (2020), showing that the chi-square test obtained a p-value of 0.303 (>0.05), which means that

maternal height does not have a significant relationship with the incidence of stunting. This research is in line with case-control research in Banjarbaru, where the mother's height did not significantly affect toddlers who were stunted or normal/not stunted (7). This is possible because maternal stunting is not caused by genetics but simply due to a chronic lack of energy or having suffered from recurrent and chronic infectious diseases. This result is inversely proportional to research conducted by (Hanum, 2019), where maternal height has a significant relationship with the incidence of stunting and short mothers have a 3 times higher risk of having stunted children. A short mother, due to genetic/hereditary factors, can have an impact on fetal growth and the function of the organs that are formed because a short mother has limited organ capacity and function, so providing nutritious food to improve nutritional status will be in vain because of everything that enters the body. The mother will be adjusted to the capacity of the mother's organs (6,8).

Maternal education, respondents with higher education were higher among children who were not stunted by 38.89%. Maternal secondary education was higher in stunted children by 53.33%. Meanwhile, respondents with low maternal education had a higher rate of stunting in children at 32.22%. The statistical test results obtained a value of OR=2.75. This means that mothers with secondary education have 3 times the risk of stunting compared to mothers with higher education. The results obtained a p-value of 0.008, which means there is a significant relationship between mothers with secondary education and the incidence of stunting. The statistical test results obtained an OR value = 9.76. This means that mothers with low education are at 10 times the risk of stunting compared to mothers with higher education. The results obtained a value of 0.0001, which means there

is a significant relationship between mothers with low education and the incidence of stunting.

The results of this study are not in line with Wanimbo & Wartningsih (2020), showing that the chi-square test obtained a value of $p=0.203$ (>0.05), which means there is no relationship between the mother's education level and the incidence of stunting. The results of this research align with research conducted in North Pontianak by Mentari & Hermansyah (2019), where there was no significant relationship between stunting nutritional status and maternal education level. This is because maternal education only guarantees a little knowledge related to nutrition. From direct observations, mothers with low education are more likely not to work, so they have time in the morning to come to the integrated service posts every day to get additional food and receive nutrition and health education. This can be seen from the level of attendance of mothers at the integrated service posts every day, which is listed on the attendance list.

Good care for children includes using iodized salt, giving vitamin A capsules, completing immunizations, and providing good sanitation (10). Agho et al.'s research (2009) Ramli et al.'s research (2009), found that maternal education was significantly related to the incidence of stunting in toddlers. This can be caused by the mother's more significant parenting role than the fathers. Fathers work more so they spend less time with their children. Research in Nepal by Tiwari et al (2014) shows the same thing: maternal education is related to the incidence of toddler stunting.

Low maternal education is the leading cause of stunting among school children and teenagers in Nigeria. Educated mothers are more likely to make decisions to improve their children's nutrition and health. The mother's level of education also determines the ease with which the mother can absorb

and understand the nutritional knowledge obtained. This can be used as a basis for distinguishing appropriate counseling methods. In the interests of family nutrition, education is needed so that someone, especially a mother, is more responsive to nutritional problems in the family and can take action as soon as possible (13).

The results of this study are not in line with Sumardilah & Rahmadi (2019) and Rosadi et al (2016), who stated that the mother's education level has a significant relationship with the incidence of stunting, where the higher the mother's education level, the risk of children experiencing stunting is 5 times lower than mothers with a low education level. This is because the level of education determines a good understanding of children's nutrition and health, so even though mothers work, they will still pay good attention to nutritional intake and can obtain nutritional and health information through other means than going to integrated service posts.

In the event of a 2nd pregnancy, the 2nd pregnancy of a mother with a birth distance of > 2 years for the first child is higher in children who are not stunted by 85.00%. Meanwhile, the mother's second pregnancy with a birth distance of <2 years for the first child was higher in children with stunting as much as 75.71%. The statistical test results obtained an OR value = 17.67. This means that the second pregnancy of a mother with a distance between the births of her first child <2 years has 17 times the risk of stunting compared to the second pregnancy of a mother with a distance between the births of her first child >2 years. The results showed a p-value of 0.0001, which means there is a significant relationship between the mother's second pregnancy and the birth distance of the first child <2 years and the incidence of stunting.

This research is in line with Jayanti & Ernawati (2021), showing that 20 toddlers have a history of pregnancy interval ≤ 2 years and have stunting (58.8%) and 14 toddlers who do not have stunting (41.2%), while toddlers There were 8 people (22.2%) who had a history of pregnancies > 2 years apart and were stunted, while there were 28 children (77.8%) who did not have stunting. The results of the Bivariate test show that Pregnancy Distance is a factor in the relationship between pregnancy distance and the incidence of stunting at the Harapan Baru Samarinda Seberang Community Health Center, as demonstrated by the p-value = 0.002 2 years.

Pregnancy spacing is one of the factors causing stunting, namely pregnancy spacing, also known as the difference between the subject's age and birth before or after birth. Birth spacing can cause stunting because gestational spacing affects parents' parenting patterns toward their children, especially children who have a close birth distance (16).

Pregnancy intervals of less than 2 years can cause poor fetal growth, prolonged labor, and bleeding during delivery because the condition of the uterus has not recovered properly. Too close causes the mother to have a short time to heal the condition of her uterus so that it can return to its original condition. Pregnant women who are too close are at risk of experiencing anemia in pregnancy. There are other influencing factors, such as lifestyle, not using contraception, and the mother not having regular check-ups (15).

The Relationship between Paternal Factors and the Incidence of Stunting in Toddlers

Father's height > 170 cm is higher in children who are not stunted by 16.67%. The father's height is 162-170 cm, which is 56.67% higher than that of children who are not stunted. Meanwhile, fathers with a father's height

< 162 cm were taller than stunted children by 61.11%. The statistical test results obtained an OR value = 4.85. This means that a father's height of 162-170 cm has 5 times the risk of stunting compared to a father's height of > 170 cm. The statistical test results obtained a p-value of 0.044, which means there is a significant relationship between the father's height of 162-170 cm and the incidence of stunting. The statistical test results obtained an OR value = 17.19. This means a father's height < 162 cm has 17 times the risk of stunting compared to a father's height > 170 cm. The results obtained a value of 0.0001, which means there is a significant relationship between a father's height < 162 cm and the incidence of stunting. This result aligns with Dewi's (2016) research, the chi-square test results between the father's height and the incidence of stunting (p-value 0.507). This means there is no relationship between the father's height and the incidence of stunting (17).

The smoking behavior of non-smoking fathers is higher in non-stunted children by 48.89%. Occasional smoking is higher in non-stunted children, as much as 32.33%. Smoking is higher among stunted children, as much as 47.78%. The statistical test results obtained a value of OR=2.05. This means that fathers who occasionally smoke have twice the risk of stunting compared to fathers who do not smoke. The results obtained a value of 0.059, which means there is no significant relationship between fathers who sometimes smoke and the incidence of stunting. The statistical test results obtained an OR value = 5.56. This means that fathers who smoke have 6 times the risk of stunting compared to fathers who do not smoke. The results showed a p-value of 0.0001, which means there is a significant relationship between father smoking and the incidence of stunting.

This result is in line with Nadiyah et al. (2014), showing that there is a significant relationship between fathers' smoking habits at home and stunting ($p < 0.05$). Kyu et al. (2009) also found a negative relationship between husbands' smoking behavior and children's TB/A index. Household surveys in rural and urban areas in Indonesia also found that fathers' smoking behavior is related to stunting and severe stunting.

Fathers who smoke have the strongest association with stunting but not with the risk of being underweight in children. This occurs because the food consumed is of low quality. Cigarette consumption increases the risk of malnutrition in children because the allocation for cigarettes is more significant than for buying food (20). Cigarette spending has shifted the need for nutritious food that is essential for toddler growth and development, which results in delayed mental development, increased morbidity, and mortality due to susceptibility to disease (21).

Smoking can inhibit the progress of children's nutritional status through the occurrence of lower respiratory tract infections. Children who are exposed to environments with cigarette smoke experience more respiratory tract infections (22). Based on research by Hawamdah et al. (2003), the incidence of pneumonia and bronchitis is significantly related to parental smoking habits. If the parents are not smokers, the annual incidence is 7.8%; if one parent is a smoker, 11.4%, and if both are smokers, 17.6%. Abnormalities in leukocyte function were found in children whose parents smoked. Nicotine in cigarettes directly reacts with chondrocytes (cartilage cells) through special nicotine receptors, causing inhibited bone growth (19).

The Relationship between Child Factors and the Incidence of Stunting in Toddlers

Child's birth weight children weighing 2,500 gr-3,999 gr at birth is higher in children who are not stunted by 86.67%. >4,000 gr at birth are higher in children not stunted by 1.11%. <2,500 gr higher in children who are stunted by 74.67%. The category >4,000 gr needs to be filled (empty) because only 1.11% of newborns weigh >4,000 gr. The results of the statistical test obtained an OR value of 23.30. This means that children weighing <2,500 gr at birth are at 23 times greater risk of stunting than children weighing 2,500 gr-3,999 gr at birth. The results obtained a p-value of 0.0001, meaning a significant relationship exists between the baby's birth weight and the incidence of stunting.

El Taguri et al. (2009) study in Libya showed that low birth weight is one of the risk factors for stunting. The results of Ernawati et al. (2013) study in Bogor showed a significant difference between the group of children who had average birth length and those who had short birth length with the incidence of stunting.

Birth weight is closely related to fetal, neonatal, and postneonatal mortality, infant and child morbidity, and long-term growth and development. It is also inversely related to the risk of hypertension, cardiovascular disease, and type 2 diabetes in adulthood. Low birth weight, too rapid postnatal weight gain (early complementary feeding), or a combination of both are predisposing factors for these diseases (25).

In developing countries, children with low birth weight (LBW) are more likely to experience intrauterine growth retardation due to poor maternal nutrition and increased infection rates compared to developed countries (26). Children with LBW will have less anthropometric body measurements in adulthood. Women who are born with low birth weight have a high risk of becoming stunted mothers, so they tend to give birth to babies with low birth weight like themselves. Babies born to stunted mothers will also

become stunted adult women and will form the same cycle as before (27).

Exclusive breastfeeding children who receive exclusive breastfeeding for six months are higher in children who are not stunted by 54.44%. While children who receive exclusive breastfeeding <6 months are higher in children who are stunted at 74.67%. The results of the statistical test obtained an OR value of 3.93. This means that children who receive exclusive breastfeeding <6 months are at four times the risk of stunting compared to children who receive exclusive breastfeeding for six months. The results obtained a p-value of 0.0001, which means a significant relationship exists between exclusive breastfeeding and the incidence of stunting. According to Rivanica & Oxyandi (2024), breast milk is essential in fulfilling toddler nutrition. UNICEF & WHO (2019) recommends exclusive breastfeeding for babies during the first six months of their lives because breast milk provides all the energy and nutrition that babies need.

Several studies have been conducted to determine the causes of stunting in toddlers aged 24-59 months. Several studies state that stunting in toddlers can be caused by exclusive breastfeeding received by toddlers. The study was conducted both inside and outside Indonesia to determine the causes of stunting. Based on research conducted by Wijayanti (2019), Windasari et al. (2020), and Kahssay et al. (2020), the majority of the age of respondents who experienced stunting were between 24 and 59 months or under five years of age or commonly referred to as toddlers. According to Fauzi et al. (2016), toddlers are children who have reached the age of one year, more popularly known as children under five. Toddlers aged 24-59 months are included in the group of people who are most susceptible to nutritional disorders (the group of vulnerable groups of people with nutrition), while at

that time, they were experiencing a relatively rapid growth process (34). This is to the statement of Sutomo & Anggraini (2010) that fulfilling balanced nutrition during toddlerhood, even when toddlers are in the womb, is very important to prevent nutritional problems.

Exclusive breastfeeding is one of the efforts to meet nutritional needs during infancy. This aligns with Rivanica & Oxyandi (2024), who said breast milk plays a vital role in meeting toddler nutrition. WHO 2005 recommended exclusive breastfeeding for infants during the first six months of life because breast milk provides all the energy and nutrition infants need during the first six months; exclusive breastfeeding can reduce infant mortality rates caused by various diseases (36).

According to research by Kahssay et al. (2020), toddlers who do not receive exclusive breastfeeding are 6.6 times more likely to experience stunting. This can happen because breast milk given exclusively contains colostrum (32). Colostrum contains immune substances, especially Ig A, to protect babies from digestive tract infections, especially diarrhea. According to the researcher, colostrum in breast milk can protect babies from digestive tract infections. If digestive infections occur, it will cause a decrease in nutritional needs in toddlers; unmet nutritional needs will cause nutritional problems in these toddlers. In their research, Wulandari & Purba (2019) said that toddlers with a history of digestive infections (diarrhea) with stunting in toddlers in North Bengkulu Regency. Research conducted by Kahssay et al. (2020) is in line with research conducted by Fikadu et al. (2014) in Meskan District, Gurage Zone, Southern Ethiopia, that children who do not receive exclusive breastfeeding until the age of 6 months have a 3.27 times higher risk of experiencing stunting compared to

children who do not receive exclusive breastfeeding until six months.

Monika (2014), in her theory, said that breast milk contains carbohydrates. The main carbohydrate in breast milk is lactose, which is the main component of it. Lactose meets 45-50% of the baby's energy needs. Another type of carbohydrate in breast milk is oligosaccharides, essential in protecting the baby from infection. According to Monika (2014), breast milk also contains 3.5 grams of fat per 100 ml. Fat is needed as a source of energy, and as much as 50% of the baby's energy needs are obtained from breast milk fat. Breast milk fat contains DHA and ARA, which are very important for developing the baby's nerves and visuals. Breast milk also contains the enzyme lipase, which plays a role in digesting fat and converting it into energy the baby needs. Breast milk also contains the enzyme amylase, which plays a role in digesting carbohydrates. Thus, when viewed from the content of breast milk, it will help reduce the incidence of malnutrition and stunted growth, which generally occurs in toddlers.

In addition, according to Monika (2014), breast milk also contains Antiparasitic, Antiviral, Antiallergic, Antibodies that function to protect babies from various infections, such as K-immunoglobulin, sIgA (secretory immunoglobulin A) white blood cells-K, and K-oligosaccharides. The results of the study by Rahman & Nur (2015), showed that there was a significant relationship between exclusive breastfeeding and the incidence of ARI. This shows that the prevalence of ARI is greater in children who are not exclusively breastfed than in children who are exclusively breastfed. Stunting can cause decreased intelligence, stunted growth and development, decreased endurance, and low productivity (41). Stunting in the long term has bad consequences that can decrease cognitive abilities and

learning achievement (42). The opinion expressed by Yosephin (2019), is supported by research conducted by Yadika et al. (2019), which states that there is a significant relationship between stunting and IQ as a sign of brain development, where the IQ score in stunted children is lower than that of non-stunted children, this can occur because stunting in the early life of a child can cause permanent damage to cognitive development followed by less than optimal motor and intellectual development so that it tends to have consequences for education, income, and productivity in adulthood, thus potentially reducing economic growth.

Completeness of immunization in children: children who receive complete immunization are higher in children who are not stunted at 65.56%. Children who receive incomplete immunization are higher in children who are stunted by 44.44%. Babies who do not receive immunization are higher in children who are stunted by 28.89%. The results of the statistical test obtained an OR value of 4.92. This means that children who receive incomplete immunization are at five times the risk of stunting compared to children who receive complete immunization. The results obtained a p-value of 0.0001, which means a significant relationship exists between children who receive incomplete immunization and the incidence of stunting. The results of the statistical test obtained an OR value of 5.81. This means children who do not receive immunization are at six times the risk of stunting compared to children who receive complete immunization. The results obtained a p-value of 0.0001, which means a significant relationship exists between children who do not receive immunization and the incidence of stunting. In line with previous research in Bandung in 2020, which stated that there was no significant relationship between immunization status and the incidence of stunting, where the P-value = 0.056 was obtained (44).

This study is not in line with the study of Al-Rahmad et al. (2013) in Banda Aceh City, which stated that there was a relationship between complete immunization and the incidence of stunting with the results of statistical tests obtained a value of $p = 0.040$ ($p < 0.05$). According to the theory, incomplete immunization can cause toddler immunity to become weak, making it easy for them to get infections. If toddlers experience infections and are left alone, they can be at risk of becoming stunted. Based on the results in the field, it was found that the toddlers were not yet immunized because they were not old enough for immunization. However, they were indeed not immunized due to various factors. One is the belief in the content of immunizations that cause toddlers fevers, etc.

CONCLUSION

The incidence of stunting in toddlers is still high in Southwest Aceh. The incidence is caused by several factors originating from the mother, father, and child. In toddlers, all risk factors, including the mother, father, and child, are stunted. Several dominant factors causing stunting include those originating from the mother: Middle and low maternal education, 2nd child pregnancy <2 years with the birth distance of the first child. Factors from the father: father's height 162-179 cm and <162 cm, Middle and low father's education, father's behavior sometimes smoking and smoking. Factors from toddlers: not exclusive breastfeeding, incomplete immunization and no immunization, and use of insecticides. So, after all, combined, the mother's 2nd pregnancy with the birth distance of the first child <2 years, the father's height <162cm, and the use of insecticides are the most dominant factors in stunting.

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