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DETERMINANTS OF INCIDENTS OF STUNTING IN TODDLERS IN THE WORKING AREA OF INGIN JAYA HEALTH CENTER ACEH BESAR DISTRICT, ACEH, INDONESIA

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ABSTRACT

Stunting is a chronic nutritional problem still a global public health challenge, especially in developing countries. Many factors, including direct and indirect factors, influence the incidence of stunting in toddlers. This research analyzes the determinants of stunting among toddlers in the Ingin Jaya Community Health Center, Aceh Besar Regency, working area. This type of research is an analytical survey with a cross-sectional design. The population in the study was 215 toddlers aged 9-24 months, and the sample was 68 people. The research was conducted from 03 to January 08, 2024, in the working area of the Ingin Jaya Community Health Center, Aceh Besar Regency. Data was collected using a questionnaire and analyzed univariately and bivariate with the chi-square test. The results showed that 72.1% suffered from stunting, 66.2% had low income, and 54.4% had family members ≥4 people, 70.6% had inappropriate ANC visits, 60.3% had non-exclusive breastfeeding, 73.5% had incomplete basic immunization. Factors associated with the incidence of stunting include low income (OR=3.83; (95%CI=1.2 – 11.8; p-value=0.034), number of family members ≥4 people (OR=3.73; 95%CI=1.2 – 11.5; p-value=0.037), lack of complete ANC visits (OR=20.06; 95%CI=5.3 – 75.9; p-value=0.000), not given exclusive breastfeeding (OR=29.36; 95%CI=5.8 – 75.9; p-value=0.000), and incomplete basic immunization (OR=6.67; 95%CI=1.9 – 22.2; p-value=0.003). The most dominant factor related to the incidence of stunting in toddlers is not given exclusive breastfeeding (AOR=39.60; 95%CI=4.23 – 370.48; p-value=0.001). Promotion and support for exclusive breastfeeding must be a priority in efforts to prevent stunting. The government, health workers, and the community need to work together to increase awareness of the importance of exclusive breastfeeding and provide support to breastfeeding mothers.

KEYWORDS: ANC visits; Basic immunization; Exclusive Breastfeeding; Income; Number of family members; Stunting

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INTRODUCTION

Stunting is a condition of failure in growth caused by failure to gain weight, disruption of linear growth and head circumference, and malnutrition, which results in children having a height that is not comparable to children their age. The growth and development conditions of toddlers can be represented by TB/U and BB/TB indicators, also known as the Z-score. A Z-score <-2 SD is a standard indicator for stunting toddlers in the short and thin category (Khasanah et al., 2021).

The stunting rate in the world is still quite large, with 150.8 million (22.2%) children under five experiencing stunting. Timor Leste is in first position with the highest prevalence rate, reaching 48.8%, and Singapore has the lowest prevalence rate under five at 2.8% (Hapsari, Fadhilah and Wardani, 2022). The stunting rate in Indonesia fell from 24.4% in 2021 to 21.6% in 2022. The SSGI stunting figures for each province show that the highest number of stunting is found in East Nusa Tenggara 35.3%, West Sulawesi 35%, Papua 34.6%, West Nusa Tenggara 32.7% and 2 Aceh 31.2%. Meanwhile, the lowest stunting was found in DKI Jakarta at 14.8% and Bali at 8% (Kemenkes RI, 2023). Data from the Aceh Health Office in 2023 shows that the highest prevalence of stunted toddlers is found in Subulussalam City at 47.9%, North Aceh at 38.3%, Pidie Jaya at 37.8%, and Aceh Besar at 27% (Dinkes Aceh, 2023). In the Aceh Besar Regency area, the number of stunted toddlers in 2022 will reach 1211 people. The number of children under five has decreased compared to the number of stunted people in the last three years, namely 3,285 people in 2020. This data shows that stunting among children under five has succeeded in decreasing by 36.8%. Even though it has succeeded in reducing the number of stunting, Aceh Besar Regency is still the region with the highest cases of stunting under five in Aceh province.

Stunting impacts short-term and long-term health and affects individual function, including lower cognitive function and productivity in the future (Hapsari, Fadhilah and Wardani, 2022). In the short term, there can be an increase in the incidence of illness and death, growth and muscle mass and body composition, cognitive, motor, and verbal development in children that are not optimal, and increased health costs. Long-term impacts include suboptimal body posture, increased risk of obesity and chronic diseases such as diabetes mellitus, coronary heart disease, hypertension, cancer, and stroke, decreased reproductive health, less than optimal learning capacity and performance during school, suboptimal productivity and work capacity (Neherta, 2023).

Several factors cause toddler stunting, namely essential, indirect, and direct factors. The primary factors for stunting are parents' income and education. Indirect factors include sanitary disposal of feces, clean water, vaccination/immunization coverage, antenatal care visits, optimal breastfeeding, MP-ASI, and household food security. Meanwhile, the direct factors in stunting are maternal fertility, birth spacing, maternal height, baby's weight at birth, diversity of food consumed, and infectious diseases, especially diarrhea incidents (Simanjuntak et al., 2022)

Based on data from the Ingin Jaya Health Center shows that in 2023, in January-November 2023, the number of families was found to be 8,749 families, and the number of families at risk of stunting was 1,441 families. Data on stunting toddlers as a whole reached 438 toddlers, where the highest cases were found in toddlers aged 9-24 months, as many as 215 toddlers, followed by toddlers aged 24-59 months with 131 toddlers, and the lowest cases were found in toddlers aged 0-9 months with 92 toddlers. A preliminary study conducted by researchers on May 12, 2023, by interviewing ten mothers who had toddlers with stunting conditions in the working area of the Ingin Jaya Community Health Center, Aceh Besar Regency, found that 7 out of 10 mothers did not breastfeed exclusively and gave complementary foods too early. This can disrupt the digestive system and increase the risk of infection. Apart from that, during pregnancy, there are still many mothers who do not visit standard antenatal care. The incompleteness of this visit was caused by the mother's lack of knowledge about the importance of antenatal care during pregnancy and the lack of family support, especially the husband, in carrying out the visit.

This research was conducted to determine the determinant factors for the incidence of stunting among toddlers in the working area of the Ingin Jaya Community Health Center, Aceh Besar Regency in 2024.

Research methods

This type of research is a quantitative analytical survey with a cross-sectional study design. It was conducted at the Ingin Jaya Community Health Center, Aceh Besar Regency, Aceh, Indonesia, from January 03 to January 28, 2024. A total of 68 parents who had toddlers aged 9-24 months were interviewed, and the toddlers' height was measured.

Data collection was carried out by measuring height based on age to determine stunting data, checking the KIA book to determine the completeness of ANC visits and basic immunizations, and interviewing with a questionnaire to determine exclusive breastfeeding, income, and the number of family members. The data analysis used was the chi-square test.

RESEARCH RESULT

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Table 1. Frequency Distribution of Respondent Characteristics in the Working Area of the Ingin Jaya Community Health Center, Aceh Besar Regency

No	Respondent Characteristics	f	%
1	Education		
	Primary	0	0
	Secondary	53	77.9
	High	15	22.1
2	Occupation		
	Housewife	55	80.9
	Civil Servant	7	10.3
	Self-Employed	6	8.8

Based on the table above, it is known that based on their characteristics, the majority of respondents had secondary education as many as 53 people (77.9%) and domestic workers as many as 55 people (80.9%).

Table 2. Frequency Distribution of Income, Number of Family Members, ANC Visits, Exclusive Breastfeeding, Basic Immunization Completeness, and Incidence of Stunting in Toddlers in the Working Area of the Ingin Jaya Health Center, Aceh Besar Regency

No	Research Variables	f	%
1	Income		
	High	21	30.9
	Low	47	69.1
2	Number of Family Members		
	<4 people	31	45.6
	≥4 people	37	54.4
3	ANC Visits		
	Complete	20	29.4
	Incomplete	48	70.6
4	Exclusive Breastfeeding		
	Exclusive	28	41.2
	Not Exclusive	40	58.8
5	Basic Immunization		
	Complete	17	25.0
	Not Complete	51	75.0
6	Stunting Incidence		

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	Not Stunting	19	27.9
	Stunting	49	72.1

Table 2 shows that respondents with low incomes were 69.1%. Respondents from family members ≥4 people were 54.4%. Respondents who had incomplete ANC visits were 70.6%. Respondents who were not exclusively breastfed were 58.8%. 75.0% of respondents who did not complete basic immunization. 72.1% of respondents experienced stunting.

Table 3. Factors Associated with Stunting Incidents in Toddlers in the Working Area of the Ingin Jaya Community Health Center, Aceh Besar Regency

No	Research Variables	Stunting Incidence				Total		p-value	OR (95% CI)
		Not Stunting		Stunting					
		f	%	f	%	f	%		
1	Income								
	High	10	47.6	11	52.4	21	100		
	Low	9	19.1	38	80.9	47	100	0.034	3.83 (1.2 – 11.8)
2	Number of Family Members								
	<4 people	13	41.9	18	58.1	31	100		
	≥4 people	6	16.2	31	83.8	37	100	0.037	3.73 (1.2 – 11.5)
3	ANC Visits								
	Complete	14	70.0	6	30.0	20	100		
	Incomplete	5	10.4	43	89.6	48	100	0.000	20.06 (5.3 – 75.9)
4	Exclusive Breastfeeding								
	Exclusive	17	60.7	11	39.3	28	100		
	Not Exclusive	2	5.0	38	95.0	40	100	0.000	29.36 (5.8 – 147.1)
5	Basic Immunization								
	Complete	10	58.8	7	41.2	17	100		
	Not Complete	9	17.6	42	82.4	51	100	0.003	6.67 (1.9 – 22.2)

Based on table 3, it shows the factors related to the incidence of stunting among toddlers in the Working Area of the Ingin Jaya Health Center, Aceh Besar Regency, namely low income (OR=3.83; (95%CI=1.2 – 11.8; p-value=0.034), number of members family ≥4 people (OR=3.73; 95%CI=1.2 – 11.5; p-value=0.037), incomplete ANC visits (OR=20.06; 95%CI=5.3 – 75.9; p-value=0.000), not given exclusive breastfeeding (OR=29.36; 95%CI=5.8 – 75.9; p-value=0.000), and incomplete basic immunization (OR=6.67; 95%CI=1.9 – 22.2; p-value= 0.003).

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Table 4. The Most Dominant Factors Associated with the Incidents of Stunting in Toddlers in the Working Area of the Ingin Jaya Community Health Center, Aceh Besar Regency

No	Research Variables	Model I		Model II	
		OR (95% CI)	p-value	OR (95% CI)	p-value
1	Low income	20.65 (1.34 – 316.89)	0.030	7.58 (0.89 – 64.13)	0.063
2	Number of Family Members ≥4 people	7.48 (0.92 – 60.3)	0.059	5.06 (0.72 – 35.48)	0.103
3	Incomplete ANC Visits	7.96 (1.28 – 49.31)	0.026	5.95 (1.09 – 32.36)	0.039
4	Not Given Exclusive Breastfeeding	122.40 (5.57 – 2687.14)	0.002	39.60 (4.23 – 370.48)	0.001
5	Incomplete Basic Immunization	0.20 (0.02 – 2.01)	0.173		
	R-square	56.82%		54.25%	

Table 3 shows that the most dominant factor related to the incidence of stunting in toddlers in the Working Area of the Ingin Jaya Health Center, Aceh Besar Regency, is not being given exclusive breast milk (AOR=39.60; 95%CI=4.23 – 370.48; p-value=0.001). Respondents who were not given exclusive breast milk were 39.60 times more likely to experience stunting compared to respondents who were given exclusive breast milk when other variables were constant.

DISCUSSION

The results of this study show that the most dominant factor associated with stunting is not providing exclusive breastfeeding (AOR=39.60; 95%CI=4.23 – 370.48; p-value=0.001). Respondents who were not given exclusive breast milk were 39.60 times more likely to experience stunting compared to respondents who were given exclusive breast milk when other variables were constant. This research is in line with Gebreayohanes and Dessie (2022), who show that exclusive breastfeeding is one of the predictors of stunting in this study.

In line with the results of this research, Sampe, Toban and Madi (2020) show that there is a relationship between exclusive breastfeeding and the incidence of stunting in toddlers, where toddlers who are not exclusively breastfed are 61 times more likely to experience stunting than toddlers who are solely breastfed. Research by Pramulya, Wijayanti and Saparwati (2021) supports these results, which shows a relationship between breastfeeding and the incidence of stunting in toddlers aged 24-60 months in the working area of the Selopampang Community Health Center.

Breast milk is the first liquid food produced naturally by the mother. The benefits of breast milk for babies are protecting babies from various diseases, protecting babies from allergies and asthma, preventing vision problems, and increasing baby intelligence (Marfuah et al., 2022). Breast milk contains perfect nutrients and antibodies essential for babies' optimal growth and development. Apart

from that, breast milk also helps prevent infections and diseases that can inhibit growth (Fikawati, Syafiq and Karima, 2015; Hamalding, Said and Nurmiati, 2020). The low level of exclusive breastfeeding is one of the triggers for stunting in toddlers, which is caused by past events and will impact the future of children under five. On the other hand, good breastfeeding by mothers will help maintain nutritional balance so that average child growth is achieved (Wardani and Sholikah, 2023) Recent longitudinal studies reveal that babies who are exclusively breastfed have better cognitive development, a more robust immune system, and more optimal growth rates than babies who are not exclusively breastfed. The breastfeeding process also increases the emotional bond between mother and baby, which is vital to the child's psychosocial development. Breast milk contains microbiota that shapes the baby's gut microbiome, which is increasingly recognized as an essential factor in long-term health and growth (Hadi et al., 2021; Juharji et al., 2022; Sari, 2022)

This is different from other research that shows that incomplete provision of ANC is the most dominant factor related to stunting (Hanum et al., 2024). However, in this study, toddlers who did not complete ANC visits when their mothers were pregnant were 5.95 times more likely to experience stunting compared to toddlers whose mothers completed ANC visits.

Although other factors such as ANC visits, family income, number of family members, and immunization also play a role in preventing stunting, their influence is not as strong as exclusive breastfeeding. Regular ANC visits are essential to monitor the health of the mother and fetus, but their effect is not direct on the baby's growth after birth. Family income and number of family members can influence the quality and quantity of food available, but breast milk remains the best source of nutrition for babies. Meanwhile, immunization prevents disease but does not provide the nutrients needed for optimal growth.

CONCLUSION

Factors associated with the incidence of stunting in toddlers in the Working Area of the Ingin Jaya Health Center, Aceh Besar Regency, are low income (OR=3.83; (95%CI=1.2 – 11.8; p-value=0.034), number of family members ≥4 people (OR=3.73; 95%CI=1.2 – 11.5; p-value=0.037), lack of complete ANC visits (OR=20.06; 95%CI=5.3 – 75.9; p-value=0.000), not given exclusive breastfeeding 29.36; 95%CI=5.8 – 75.9; p-value=0.000), and incomplete basic immunization (OR=6.67; 95%CI=1.9 – 22.2; p-value=0.003). The most dominant factor related to the incidence of stunting in toddlers in the Working Area of the Ingin Jaya Health Center, Aceh Besar Regency, is not being given exclusive breast milk (AOR=39.60; 95%CI=4.23 – 370.48; p-value=0.001).

SUGGESTION

It is essential to increase education and socialization about the importance of exclusive breastfeeding to the community, especially pregnant women and their families. This can be done through counseling at Posyandu, using mass media digital platforms, strengthening the implementation of providing lactation rooms in workplaces and public places, and providing adequate maternity leave. In addition,

it is necessary to increase ANC coverage, educational campaigns about the importance of immunization and the use of contraceptives, as well as outreach programs about parenting patterns and effective distribution of family resources, can help large families better manage the nutrition of their members.

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