Analysis of factors contributing to stunting in toddlers in the working area of the Johan Pahlawan Community Health Center, West Aceh Regency

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Abstract

Stunting is a condition of growth failure in the body and brain due to prolonged malnutrition, resulting in children being shorter than normal children of the same age and having delayed thinking. Stunting can cause various symptoms, not only involving stunted physical growth, but stunting can also inhibit cognitive development and other health problems. One of the causes of stunting is a lack of nutritional intake in toddlers and inappropriate parenting behaviors by mothers. The purpose of this study was to analyze the factors contributing to stunting in toddlers. This study aims to analyze the factors contributing to stunting in the working area of the Johan Pahlawan Community Health Center in West Aceh Regency. The method this study used is a quantitative analytical study design with a case-control research design. The data analysis used univariate analysis to describe the characteristics of the variables studied and bivariate analysis with the chi-square test to determine the relationship between two variables. This study was conducted in the working area of the Johan Pahlawan Community Health Center from September 2024 to April 2025. The results of the study showed a significant relationship between the level of maternal compliance and stunting, with a p-value of 0.000 ($p<0.005$). In the social support variable, there is a significant relationship with stunting incidents with a p-value of 0.000 ($p<0.005$). In the economic variable, there is also a significant relationship with stunting incidents obtained from statistical test results with a p-value of 0.000 ($p<0.005$).

Keywords: maternal knowledge; social support; economic status; stunting

Introduction

Stunting is a condition of growth disorders in the body and brain due to chronic malnutrition, which causes children to be shorter than normal children of the same age and experience cognitive developmental delays (mira et al., 2024). According to the Indonesian Ministry of Health in 2016, stunting is a chronic malnutrition problem caused by inadequate nutrient intake over a long period of time due to dietary patterns that do not meet nutritional needs. Stunting can occur when the fetus is still in the womb and only becomes apparent when the child is two years old (rahmadhita, 2020). Stunting can cause various symptoms, not only involving stunted physical growth, but also hindering cognitive development and other health problems. Children suffering from stunting are a clear indicator of malnutrition (Fauziah et al., 2023)

According to the WHO, through the Joint Child Malnutrition Estimates (JME) report in 2024, there were 150.2

million or 23.2% of children under five years of age worldwide who were stunted. Based on the results of the Indonesian Nutrition Status Survey (SSGI) in 2024, 19.8% or 4,482,340 children in Indonesia were stunted. Based on the results of the Indonesian Nutrition Status Survey (SSGI), the number of stunted children in Aceh Province was 28.6%. Based on data from the West Aceh District Health Office, in 2024 there were 120 children with stunting. The highest number of stunting cases in West Aceh District was in the Johan Pahlawan Community Health Center working area, with 28 cases.

Stunting is a condition that will have an impact on the growth and development of children in the future. According to UNICEF in 2013, stunting has an impact on children's health and growth and development. Stunting can cause physical and mental growth and development disorders in children, resulting in them being unable to learn optimally at school compared to other children. The nutritional impact on young children experiencing stunting can disrupt growth and cognitive development (uswatun et al., 2020). In addition, stunted children also have a greater risk of developing non-communicable diseases such as diabetes, obesity, and heart disease in adulthood (haskas, 2020)

One of the causes of stunting is a lack of nutritional intake in toddlers and inappropriate parenting behaviors by mothers. Lawrence Green states that human behavior is influenced by predisposing factors, enabling factors, and reinforcing factors (Riyanti, 2022) Predisposing factors are factors within humans that can encourage or facilitate a person to act. One of the predisposing factors that can contribute to stunting is mothers' knowledge of complementary feeding. Mothers' knowledge about stunting and nutrition plays a very important role in preventing and treating stunting in children. Enabling factors are factors that enable or facilitate certain behaviors and actions. One enabling factor that can have an impact on the occurrence of stunting is economic factors. The occurrence of stunting is also influenced by the economic status of the family, because families with low incomes often face obstacles in meeting their children's nutritional needs, such as limited access to nutritious food, clean water, and adequate health services.

The last factor, the reinforcing factor, is a factor that reinforces or supports behavior that has already been carried out. This factor can be obtained from social support. Mothers who receive good social support tend to be better able to manage stress and have better access to information and resources related to child health and nutrition. This condition enables mothers to implement better parenting practices, including exclusive breastfeeding, appropriate complementary foods, and utilization of health services.

The highest number of stunting cases was found in the Johan Pahlawan Community Health Center working area, with 28 cases. Preliminary studies conducted by researchers on 5 stunting cases in the Johan Pahlawan sub-district showed that the main factors were mothers' lack of knowledge about complementary feeding, economic factors, and lack of social support for mothers.

Based on the above description, this study aims to analyze the factors contributing to stunting in the working area of the Johan Pahlawan Community Health Center in West Aceh Regency.

Methods

This study used an analytical quantitative study design with a case-control research design. This study was conducted in the working area of the Johan Pahlawan Community Health Center from August to September 2025. The population in this study was all toddlers in the working area of the Johan Pahlawan Community Health Center. The sample from this study consisted of two groups, namely the case group, which was stunted toddlers, with a total

of 28 cases. The control group was non-stunted toddlers taken from the same population with a ratio of 1:2. The number of control samples was 56 toddlers.

The sampling technique for the case group was total sampling, in which all cases that met the criteria were included. Meanwhile, for the control group, simple random sampling was used to ensure that the characteristics of the control sample had similar economic conditions to the case group and were not stunted, thereby minimizing bias.

The dependent variable of this study is the incidence of stunting in toddlers. The stunting variable was collected using secondary data obtained from the Johan Pahlawan Community Health Center. The independent variables of this study are maternal knowledge, economic factors, and social support factors.

The technique used in data collection was interviews, and the measurement tool used in this study was a questionnaire. The variables of maternal knowledge and economic factors will be measured using a Guttman scale with a score range of 0-1. Meanwhile, the variable of social support will be measured using a Likert scale with a score range of 1-4. The data analysis used is univariate to describe the characteristics of the variables studied and bivariate analysis with a chi-square test to determine the relationship between two variables.

Results

Respondent characteristics based on respondent status, maternal age, child age, maternal knowledge, social support, and economic status (Table 1)

Table 1. Univariate Analysis

characteristic		n	%
Status respondent	Stunting	28	33,3%
	Non stunting	56	66,7%
	Total	**84**	**100%**
Mother's age	< 30 years	34	41,5%
	30 – 35 years	31	36,9%
	>35 years	19	22,6%
	Total	**84**	**100%**
Child's age	1-2 years	17	20,2%
	3 years	15	17,9%
	4 – 5 years	61	61,9%
	Total	**84**	**100%**
Maternal knowledge	good	63	75%
	poor	21	25%
	Total	**84**	**100%**
Sosial support	high	70	83,3%
	low	14	16,7%
	Total	**84**	100%
Economi	high	51	60%
	low	33	39,3%
	Total	**84**	**100%**

Respondents with good maternal knowledge accounted for 75%, and respondents with poor maternal knowledge accounted for 25%. Respondents with high social support accounted for 83.3%, and respondents with low social support accounted for 16.7%. The number of respondents with high social status accounted for 60.7% and those with low economic status accounted for 39.3%.

Factors contributing to stunting in toddlers based on maternal knowledge, social support, and economic conditions (Table 2).

Table 2. Bivariate Analysis of Factors Contributing to Stunting in Toddlers

Variabel	Stunting		Non stunting		Total	p-value
	n	**%**	**n**	**%**		
Maternal Knowledge						
Poor	17	60,7%	4	7,1%	21	0,000
Good	11	39,3%	52	92,9%	63	
Sosial Support						
Low	14	50%	0	0%	14	0,000
High	14	50%	56	100%	70	
Economi						
Low	28	100%	23	41,1%	51	0,000
High	0	0%	33	58,9%	33	

The incidence of stunting in toddlers with poor maternal knowledge was 60.7%, while respondents with good maternal knowledge accounted for 39.3%. Respondents with stunting and high social support accounted for 50%, while those with low social support accounted for 50%. Respondents with stunting and low economic status accounted for 100%, while those with high economic status accounted for 0%.

Discussion.

1. The relationship between maternal knowledge and stunting in toddlers

Based on research conducted from September 2024 to April 2025 in the working area of the Johan Pahlawan Community Health Center, the results and analysis of data collected from 86 respondents, consisting of 28 stunted respondents (cases) and 56 non-stunted respondents (controls) in the working area of the Johan Pahlawan Community Health Center showed that the majority of respondents with good maternal knowledge were non-stunted respondents, 52 (82%). Meanwhile, the level of poor maternal knowledge was dominated by stunted respondents, 17 (81%). The statistical test results obtained a p-value of 0.000 ($p<0.005$). This indicates that there is a significant relationship between the level of maternal knowledge and the incidence of stunting in toddlers.

These results are in line with previous studies that state that there is a significant relationship between mothers' knowledge and stunting in toddlers in the working area of the Abang 1 Community Health Center, with a coefficient of $\alpha=0.05$ yielding a p-value of 0.001, which means that the p-value is less than the α value of 0.05 (putu et al., 2024)

The level of maternal knowledge is a mother's ability to receive information about health and the nutritional intake that should be given to toddlers (Eka Oktavia et al., 2024). The level of maternal knowledge is one of the risk factors for stunting because it can help improve the nutritional status of children. Maternal knowledge greatly influences the way mothers care for their children. Good parenting patterns can influence how mothers behave and act in caring for their children. The role of mothers is very important, especially in terms of providing nutrition to their children (raihan et al., 2022)

Mothers with a good level of knowledge will tend to better understand the importance of providing a balanced nutritional intake, both during pregnancy and during early childhood. Lack of knowledge among mothers can result in

inadequate feeding practices, such as not providing exclusive breastfeeding, delayed introduction of complementary foods, and a lack of variety in nutritious foods, which can directly affect children's nutritional intake.

2. The relationship between social support factors and stunting in toddlers

Based on the results of research and data analysis conducted on 86 respondents, of which 28 were stunted (case) and 56 were not stunted (control) in the working area of the Johan Pahlawan Community Health Center, it was found that the majority of respondents with high social support were among the 56 respondents who were not stunted (80%). Meanwhile, low levels of social support were dominated by stunted respondents (14 or 100%). The statistical test yielded a p-value of 0.000 ($p<0.005$). This indicates a significant relationship between the level of social support and the incidence of stunting in toddlers.

These results are in line with previous studies which stated that there is a significant relationship between social support and the prevention of stunting in toddlers. This can be proven by the p-value ($p=0.000$) which is less than the α value (0.05). Based on the correlation coefficient value, it can be seen that the higher the social support obtained, the greater the prevention of stunting in mothers of toddlers (Nia Novita Sari & Yesiana Dwi Wahyu, 2024)

Social support factors are support that is primarily emotional or psychological, cognitive or informational, and material or facility-based, provided to mothers in caring for toddlers to achieve optimal growth and development. Social support is the ability of families and communities to provide time, attention, and support in meeting physical, mental, and social needs. Social support in the process of child growth and development is essential, as it ensures that mothers do not struggle alone in caring for their children. A supportive environment enables mothers to make better decisions, reduce stress, and increase access to the resources needed to prevent stunting.

3. The relationship between economic status and stunting in toddlers

Based on the results of research and data analysis conducted on 86 respondents, of which 28 were stunted (case) and 56 were not stunted (control) in the working area of the Johan Pahlawan Community Health Center, it was found that the majority of respondents with high economic status were not stunted, namely 33 (100%). Meanwhile, low economic status was dominated by stunted respondents (28 or 54.9%). The statistical test yielded a p-value of 0.000 ($p<0.005$). This indicates a significant relationship between economic status and stunting in toddlers.

These results are in line with previous studies which stated that there is a relationship between family socioeconomic status and the incidence of stunting in the working area of the Gajah 1 Community Health Center, Gajah District, Demak Regency, because it shows that the p-value is <0.05 so that Ha can be accepted, it can be stated that family socioeconomic status is related to the incidence of stunting in toddlers aged 24-59 months in the working area of the Gajah 1 Community Health Center, Gajah District, Demak Regency (Bima Ayu Kenanga Sari et al., 2025)

Stunting is caused by multiple factors, not only poor nutrition experienced by mothers during pregnancy or toddlers, one of which is family economic status. One economic factor that can influence stunting is family income. Family income affects a person's ability to access certain foods that will affect a child's nutritional status. People with low economic status tend to have limited access to certain foods, putting them at risk of consuming insufficient amounts of food (oktavia, 2021)

The economic factors that influence stunting are closely related to the respondents' income. Many respondents do not have a steady income. If the family's income is low, it will affect the choice of nutritious foods to consume.

Conclusion

Based on the results of research conducted by researchers in the working area of the Johan Pahlawan Community Health Center in West Aceh in 2025, the following conclusions were obtained: of the three variables selected, namely maternal knowledge, social support, and economic status, all have a significant relationship with the incidence of stunting in toddlers. The level of maternal knowledge is one of the risk factors for stunting because it can help improve the nutritional status of children. Social support in the process of child growth and development is essential, as it ensures that mothers do not have to struggle alone in caring for their children. Economic status, which can influence stunting, includes family income. Family income affects a person's ability to access certain foods, which in turn affects the nutritional status of children.

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