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Original Article

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Factors influencing stunting among toddlers

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Abstract:
Stunting in children is a nutritional problem that has become a national problem, this is because stunting has a negative impact on human resources in the future. The 2013 Basic Health Research showed that the prevalence of stunting was still 37.2%. The 2016 National Health Survey recorded that the prevalence of stunting reached 33.6%, this is an important health problem because the stunting problem is above the 20% threshold. Meanwhile, stunting in toddlers is caused by multifactor such as nutritional consumption during pregnancy, maternal knowledge about nutrition, limited access to services, inadequate access to sanitation and clean water. The impact of stunting is a decrease in intelligence, susceptibility to disease, hampered economic growth and work productivity and exacerbates inequality. Stunting in toddlers is where the height is shorter than the average age. This study aims to determine the factors that influence the incidence of stunting in toddlers in Paret and Paret Timur Villages, East Bolaang Mongondow Regency. This study is a quantitative study with a cross-sectional approach. The study population is all cases of stunting in toddlers in the Paret and Paret Timur Villages, East Bolaang Mongondow Regency. The research sample was taken using purposive sampling. The research data were analyzed using SPSS for windows, for bivariate data analysis using the Chi Square test, while for multivariate data using the Logistic Regression test. The results of the study showed that nutritional status, health problems in children, habits of eating instant foods, and maternal height were associated with stunting in toddlers with a p-value < 0.05. Food taboos, history of iron tablet consumption, history of antenatal care, history of comorbidities during pregnancy, history of exclusive breastfeeding, clean water sanitation, smoking environment and economic conditions were not associated with the incidence of stunting in toddlers with a p-value > 0.05. Nutritional status, maternal height, and habits of eating instant foods together as risk factors for stunting in toddlers. The conclusion of this study is that nutritional status, health problems in children, habits of eating instant foods, and maternal height are associated with stunting in toddlers.

Keywords:
stunting, toddler, nutrition

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INTRODUCTION

Stunting remains one of the most significant public health challenges in Indonesia (Kemendesa Desa, 2017). This condition affects not only children's physical growth but also their cognitive development, educational achievement, productivity, and overall quality of life in adulthood. According to the World Health Organization (WHO), stunting is defined as impaired growth and development in children caused by chronic malnutrition, recurrent infections, and inadequate psychosocial stimulation. Children are classified as stunted when their height-for-age is more than two standard deviations below the median of the WHO Child Growth Standards. Stunting commonly occurs during the first 1,000 days of life, from pregnancy through the child's second year of life, a critical period for determining future health and developmental outcomes (WHO, 2020).

Indonesia has made considerable progress in reducing stunting over the past decade; however, the prevalence remains relatively high compared to global standards. Previous national health surveys reported that more than one-third of Indonesian children experienced stunting, reflecting persistent nutritional and socioeconomic disparities across different regions (Wahdah et al., 2015). This high prevalence indicates that stunting is not merely a medical issue but also a multidimensional problem closely associated with poverty, education, sanitation, and access to healthcare services.

The causes of stunting are multifactorial and interconnected. One of the primary contributing factors is inadequate nutritional intake during pregnancy and early childhood. Pregnant women experiencing chronic energy deficiency, anemia, or insufficient intake of protein and micronutrients are more likely to deliver infants with low birth weight (Aridiyah et al., 2015). These infants subsequently face a higher risk of growth failure and developmental delays. Furthermore, inappropriate infant feeding practices, such as the absence of exclusive breastfeeding during the first six months and inadequate complementary feeding, substantially contribute to stunting. Poor maternal knowledge regarding nutrition and childcare practices also exacerbates the problem. Research conducted by Ardiana et al. (2020) demonstrated that peer group support and community-based health education could improve maternal knowledge regarding stunting prevention and child nutrition management.

Socioeconomic conditions also play a major role in the persistence of stunting. Families with limited financial resources often struggle to provide nutritious food, adequate healthcare, and proper sanitation facilities (Ramlan et al., 2025). Poor environmental sanitation and limited access to clean water increase the risk of recurrent infections, such as diarrhea and respiratory tract infections, which interfere with nutrient absorption and impair children's growth. Studies examining the determinants of stunting in Indonesia have consistently identified poverty, low parental education, inadequate maternal health services, and poor living conditions as dominant contributing factors (Ardiana et al., 2021).

The consequences of stunting extend far beyond childhood. Children who experience chronic malnutrition tend to demonstrate lower cognitive performance, decreased concentration, and poorer academic achievement compared to children with normal growth patterns. Chronic nutrient deficiency impairs brain development and neural function, leading to long-term cognitive limitations (Yusnitasari et al., 2024). In adulthood, individuals who experienced stunting during childhood are

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more likely to encounter reduced productivity and increased susceptibility to non-communicable diseases such as diabetes mellitus, hypertension, and cardiovascular disorders. Consequently, stunting affects not only individuals and families but also national economic development and the quality of human resources (Nurprastiwi et al., 2024).

Efforts to prevent stunting require comprehensive, sustainable interventions across multiple sectors. Prevention should begin even before pregnancy by improving the nutritional status of adolescent girls and women of reproductive age (Kurniyawan et al., 2025). During pregnancy, regular antenatal care, iron supplementation, and adequate protein and micronutrient intake are essential to support optimal fetal growth. Following childbirth, exclusive breastfeeding for six months and continued breastfeeding combined with nutritionally adequate complementary feeding are strongly recommended. Growth monitoring through community health services such as posyandu is also important for the early identification and management of growth disorders.

Healthcare professionals and community participation play crucial roles in stunting prevention programs. According to studies by Ardiana et al. (2021), empowering community health cadres and implementing educational interventions at the community level significantly improve public awareness regarding balanced nutrition, childcare practices, and stunting prevention strategies. Community empowerment programs that use locally available agricultural products as nutritious food sources may also be cost-effective approaches to improving family nutrition and reducing stunting prevalence (Kurniyawan et al., 2024).

The Indonesian government has introduced various national strategies to reduce stunting prevalence through both nutrition-specific and nutrition-sensitive interventions. These initiatives include supplementary feeding programs, sanitation improvement, strengthening maternal and child healthcare services, health promotion, and poverty reduction programs (Faza et al., 2025). Collaboration among healthcare providers, educational institutions, agricultural sectors, and local communities is essential to ensure the effectiveness and sustainability of these interventions. Without integrated and coordinated efforts, reductions in stunting prevalence may progress slowly despite ongoing public health initiatives.

In conclusion, stunting is a complex public health issue influenced by nutritional, socioeconomic, environmental, and educational factors. Its long-term consequences affect not only physical growth but also cognitive capacity, economic productivity, and national development. Therefore, comprehensive preventive measures involving families, healthcare professionals, communities, and governmental institutions are necessary to address this issue effectively. Through continuous education, nutritional support, improved healthcare access, and community empowerment, Indonesia can further reduce stunting prevalence and improve the quality of future generations.

METHOD

This study employed a quantitative analytic design with a cross-sectional approach to identify factors associated with stunting among toddlers in Paret and East Palet Villages, East Bolaang

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Mongondow Regency, Indonesia. The study focused on toddlers who were stunted according to the World Health Organization (WHO) height-for-age standards.

The study population consisted of all toddlers identified with stunting in the research area. A total of 90 respondents were included through purposive sampling, based on predetermined inclusion criteria. The inclusion criteria were mothers or caregivers of toddlers diagnosed with stunting who were willing to participate in the study. Respondents with incomplete data or who declined to participate were excluded from the study.

Data collection was conducted using structured questionnaires and documentation obtained from local health records. The questionnaire collected information on nutritional status, maternal height, consumption of instant foods, history of infectious diseases, exclusive breastfeeding history, antenatal care history, exposure to smoking, sanitation conditions, availability of clean water, maternal education, and socioeconomic conditions. Anthropometric measurements were used to determine stunting status according to the WHO child growth standards.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) for Windows. Univariate analysis was conducted to describe respondent characteristics through frequencies and percentages. A bivariate analysis using the Chi-square test was performed to assess the relationship between the independent variables and stunting incidence. Variables with significant associations were further analyzed using multivariate logistic regression to identify the dominant risk factors associated with stunting among toddlers. Statistical significance was determined at a p-value of < 0.05.

The results indicated that nutritional status, maternal height, health problems in children, and consumption of instant foods were significantly associated with stunting incidence. Meanwhile, exclusive breastfeeding history, antenatal care, smoking exposure, sanitation conditions, access to clean water, and economic conditions were not significantly associated with stunting among toddlers.

Ethical approval was obtained from the appropriate institutional review board prior to the study. All participants provided informed consent prior to participation, and the confidentiality of respondent information was maintained throughout the study.

RESULT

Based on the univariate analysis, the total number of stunted toddler respondents was 90, comprising 26 toddlers (28.9%) categorized as very short and 64 toddlers (71.1%) categorized as short. The respondents were aged 0-5 years, with 44 females (48.9%) and 46 males (51.1%).

Regarding nutritional status, 17 respondents (18.9%) were categorized as malnourished, 16 respondents (17.8%) as undernourished, and 57 respondents (63.3%) as well-nourished. A total of 44 respondents (48.9%) had mothers with a height of 150 cm, while 46 respondents (51.1%) had mothers with a height ≥151 cm. Based on maternal history during pregnancy, 79 respondents (87.8%) had mothers who consumed iron tablets, whereas 11 respondents (12.2%) had mothers who did not consume iron tablets. Regarding antenatal care history, 87 respondents (96.7%) received antenatal care, while 3 respondents (3.3%) did not. Furthermore, 14 respondents (15.6%)

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had mothers with comorbidities during pregnancy, while 76 respondents (84.4%) had no maternal comorbidities during pregnancy.

Regarding infant feeding practices, 64 respondents (71.1%) reported a history of exclusive breastfeeding, whereas 26 respondents (28.9%) did not. A total of 51 respondents (56.7%) reported health problems, while 39 respondents (43.3%) reported none. Regarding dietary habits, 37 respondents (41.1%) regularly consumed instant foods, while 53 respondents (58.9%) did not. Regarding environmental conditions, 37 respondents (41.1%) owned and used household yards, whereas 53 respondents (58.9%) did not own or use household yards. A total of 87 respondents (96.7%) had access to clean water sources, while 3 respondents (3.3%) did not. Additionally, 66 respondents (73.3%) lived in smoking environments, while 24 respondents (26.7%) did not live in smoking environments. Based on socioeconomic status, 29 respondents (32.2%) were categorized as having sufficient family economic conditions, whereas 61 respondents (67.8%) were categorized as having low economic status.

Table 1. Univariate Analysis of Respondent Characteristics (n = 90)

Variable	Category	n	%
Stunting Category	Very short	26	28.9
	Short	64	71.1
Gender	Female	44	48.9
	Male	46	51.1
Nutritional Status	Malnourished	17	18.9
	Undernourished	16	17.8
	Well-nourished	57	63.3
Maternal Height	≤150 cm	44	48.9
	≥151 cm	46	51.1
History of Fe Tablet Consumption During Pregnancy	Consumed	79	87.8
	Did not consume	11	12.2
History of Antenatal Care (ANC)	Received ANC	87	96.7
	Did not receive ANC	3	3.3
History of Maternal Comorbidities During Pregnancy	Present	14	15.6
	Absent	76	84.4
History of Exclusive Breastfeeding	Given	64	71.1
	Not given	26	28.9
Children's Health Problems	Present	51	56.7
	Absent	39	43.3
Instant Food Consumption Habits	Regularly consumed	37	41.1
	Did not consume regularly	53	58.9
Utilization of Household Yard	Owned/used	37	41.1
	Not owned/not used	53	58.9
Ownership of Clean Water Source	Have access	87	96.7
	No access	3	3.3
Smoking Environment	Yes	66	73.3
	No	24	26.7
Family Economic Status	Sufficient	29	32.2
	Low	61	67.8

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Table 2. Relationship Between Factors Influencing Stunting in Toddlers

Variable	Category	Very Short n (%)	Short n (%)	p-value
Nutritional Status	Malnutrition	16 (94.10)	1 (5.90)	0.000
	Under nutrition	8 (50.00)	8 (50.00)	
	Good nutrition	2 (3.50)	55 (96.50)	
Children's Health Problems	Present	21 (41.20)	30 (58.80)	0.004
	Absent	5 (12.80)	34 (87.20)	
Food Abstinence	Present	8 (25.00)	24 (75.00)	0.631
	Absent	18 (31.00)	40 (69.00)	
Habit of Eating Instant Food	Present	18 (48.60)	19 (51.40)	0.001
	Absent	8 (15.10)	45 (84.90)	
Mother's Height	< 150 cm	19 (43.20)	25 (56.80)	0.003
	≥ 151 cm	7 (15.20)	39 (84.80)	
Fe Consumption	Not consuming	1 (9.10)	10 (90.90)	0.166
	Consuming	25 (31.60)	54 (68.40)	
History of ANC	No history	0 (0.00)	3 (100.00)	0.554
	History present	26 (29.00)	61 (70.10)	
History of Illness During Pregnancy	Present	6 (42.90)	8 (57.10)	0.217
	Absent	20 (26.30)	56 (73.70)	
History of Exclusive Breastfeeding	Not given	15 (57.70)	11 (42.30)	0.000
	Given	11 (17.20)	53 (82.80)	
Utilization of the Yard	Not utilized	8 (33.30)	16 (66.70)	0.605
	Utilized	18 (27.30)	48 (72.70)	
Ownership of Clean Water Sources	Do not have	1 (33.30)	2 (66.70)	1.000
	Have	25 (28.70)	62 (71.30)	
Smoking Environment	Yes	20 (30.30)	46 (69.70)	0.794
	No	6 (25.00)	18 (75.00)	
Family Economy	Low	23 (37.70)	38 (62.30)	0.060
	Adequate	3 (10.30)	36 (89.70)	

Based on the table above, stunting among toddlers was significantly associated with children's nutritional status, history of health problems, consumption of instant foods, history of exclusive breastfeeding, and maternal height, as indicated by p-values <0.05. In contrast, food abstinence practices, history of maternal Fe tablet consumption during pregnancy, history of antenatal care (ANC), utilization of home yards for planting fruits and vegetables, ownership of clean water sources, smoking environment, and family economic status were not significantly associated with stunting incidence among toddlers.

Based on the selection criteria for multivariate analysis using independent variables with p-values <0.25, the variables included in the model were children's nutritional status, history of exclusive breastfeeding, children's health problems, instant food consumption habits, maternal height, history of Fe tablet consumption, history of comorbidities during pregnancy, and family economic status.

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Table 3. Multivariate Analysis of Risk Factors Influencing Toddler Stunting

Variables	B	SE	p-value	OR	95% CI
Nutritional Status	-4.677	2.041	0.022	0.009	0.000 – 0.508
Maternal Height	-3.303	1.334	0.013	0.037	0.003 – 0.502
Fe Consumption History	4.589	2.803	0.102	98.444	0.405 – 23934
History of Comorbid Illness During Pregnancy	-0.925	1.683	0.583	0.397	0.015 – 10.749
Pregnancy History	-3.562	1.961	0.069	0.028	0.001 – 1.326
Exclusive Breastfeeding	-1.000	1.455	0.492	0.368	0.021 – 6.370
Child Health Problems	-2.964	1.391	0.033	0.052	0.003 – 0.789
Instant Food Eating Habits	-1.070	1.441	0.458	0.343	0.020 – 5.781

Based on Table 3, nutritional status was significantly associated with stunting in toddlers (p = 0.022; OR = 0.009). This finding indicates that poor nutritional status is a significant risk factor for stunting. Maternal height was also significantly associated with stunting (p = 0.013; OR = 0.037), suggesting that children born to mothers shorter than 150 cm had a higher risk of stunting than those born to taller mothers.

Child health problems were significantly related to stunting incidence (p = 0.033; OR = 0.052), indicating that toddlers with health problems had a greater risk of becoming stunted. Meanwhile, although instant food consumption was included in the multivariate model, the variable was not statistically significant (p = 0.458).

In contrast, the history of Fe tablet consumption during pregnancy, the history of comorbid illness during pregnancy, pregnancy history, and exclusive breastfeeding were not significantly associated with stunting (p > 0.05). Therefore, these variables were not identified as dominant risk factors for stunting among toddlers in this study.

DISCUSSION

This study involved 90 stunted toddlers. Statistical analysis revealed that nutritional status was significantly associated with stunting and was identified as a risk factor for stunting among toddlers. Stunting is a condition in which a toddler's height or length is below the standard appropriate for their age. This condition is determined when a child's height-for-age z-score is below -2 standard deviations from the median of the WHO Child Growth Standards (Ministry of Health of the Republic of Indonesia, 2018).

The findings demonstrated that nutritional status was significantly associated with stunting, as indicated by a p-value of 0.022 (< 0.05) and an OR value of 0.009. These results indicate that nutritional status influences the incidence of stunting among toddlers. The findings are consistent with those of Mugiyati et al. (2018), who reported that inadequate energy intake was significantly associated with stunting. Insufficient nutritional intake negatively affects children's physical growth and development. Nutritional status serves as an important indicator for assessing the adequacy of daily nutrient intake and the body's ability to utilize nutrients effectively. Children with adequate nutritional intake and optimal nutrient utilization are more likely to experience normal growth and

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development. Conversely, poor nutritional status may impair physical growth and developmental outcomes that persist into adulthood.

The bivariate analysis showed that child health problems were significantly associated with stunting among toddlers (p = 0.004; < 0.05). These findings suggest that child health conditions contribute to the occurrence of stunting. However, multivariate analysis did not identify child health problems as an independent risk factor for stunting. These findings are consistent with research by Aridiyah et al. (2015), which reported that infectious diseases were associated with stunting among toddlers in both rural and urban settings. Common health problems experienced by children include diarrhea, upper respiratory tract infections, helminth infections, and other chronic illnesses. Such health problems may interfere with growth and development by reducing appetite and impairing nutrient absorption, thereby decreasing the availability of nutrients required for optimal growth. Persistent health problems may also weaken the immune system, increasing susceptibility to recurrent infections. If these conditions continue over time, chronic nutritional disorders may occur, eventually leading to growth disorders such as stunting.

The results showed that food abstinence practices were not significantly associated with stunting among toddlers (p-value = 0.631). These findings suggest that avoiding certain foods was not directly associated with stunting incidence in the study population. Food restrictions may sometimes be appropriate because not all foods are suitable or safe for children. Certain foods may trigger allergies, vomiting, or choking. In addition, some foods, such as carbonated beverages and foods high in preservatives or sugar, are not recommended for frequent consumption because they may increase the risk of various health problems in children. These findings are supported by research conducted by Munawir and Wahyuningtiyas (2018), which found that food intake and household food security significantly influenced the incidence of stunting among children under five years of age.

The bivariate analysis demonstrated that instant food consumption habits were significantly associated with stunting among toddlers (p-value = 0.001). Furthermore, multivariate analysis revealed a p-value of 0.033 and an OR of 0.052, indicating that instant food consumption was a risk factor for stunting. Although instant food is convenient and easy to prepare, it is generally high in calories, sugar, fat, and salt. Long-term consumption of instant food may contribute to obesity, type 2 diabetes mellitus, dental problems, respiratory disorders associated with obesity, and an increased risk of cancer. Despite its high caloric content, instant food often lacks adequate micronutrients and macronutrients required for optimal growth and development in children. Consequently, children who frequently consume instant food may experience inadequate nutritional quality despite sufficient caloric intake, potentially resulting in impaired growth. These findings are supported by research conducted by Payab et al. (2015), which concluded that junk food consumption is a common risk factor for obesity and poor health outcomes.

The bivariate analysis showed that maternal height was significantly associated with stunting (p-value = 0.003). In addition, multivariate analysis demonstrated an OR value of 0.037, indicating that maternal height was associated with an increased risk of stunting among toddlers. These findings are consistent with research conducted by Amin and Julia (2014), which found that parental height, particularly maternal height, was associated with stunting in children. Mothers with a height of less than 150 cm had a greater likelihood of giving birth to stunted children compared to mothers with normal height. Similarly, Ni'mah and Nadhiroh (2015) reported that short mothers had a 1.98-

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times greater risk of having stunted children. Maternal height reflects both genetic and environmental influences, including long-term nutritional status and maternal health during childhood and adolescence. Therefore, maternal stature may contribute to intergenerational growth failure and influence child growth outcomes.

The bivariate analysis showed that a history of iron tablet use during pregnancy was not significantly associated with stunting among toddlers (p=0.166). Although no significant relationship was identified, adequate maternal nutrition during pregnancy remains essential to support fetal growth and development. Administering at least 90 iron tablets during pregnancy is an important strategy to maintain maternal health and prevent anemia. Adequate iron intake supports oxygen transport, fetal development, and optimal pregnancy outcomes. Iron supplementation is also part of the Indonesian government's national program to reduce stunting prevalence through improvements in maternal nutrition (Kemendesa, 2017). Therefore, despite the absence of a statistically significant association in this study, iron supplementation during pregnancy remains an important public health intervention.

The results showed that antenatal care history was not significantly associated with stunting (p-value = 0.554). These findings differ from the study conducted by Najanah et al. (2013), which reported that mothers who did not receive standard antenatal care had a 2.4-times greater risk of having stunted children compared to mothers who received adequate antenatal care services. Antenatal care aims to ensure that pregnant women receive quality healthcare services throughout pregnancy to support maternal and fetal health. Antenatal care includes routine monitoring, nutritional counseling, health education, and early detection of pregnancy complications. According to the Kementerian Kesehatan (2018), antenatal care should be provided at least 4 times during pregnancy. Although no significant association was identified in this study, adequate antenatal care remains important for promoting healthy pregnancy outcomes and preventing maternal and infant complications.

The analysis showed that concomitant illnesses during pregnancy were not significantly associated with stunting among toddlers (p-value = 0.217;> 0.05). These findings suggest that pregnancy-related comorbid conditions were not dominant determinants of stunting in the study population. Other factors, such as nutritional status, maternal height, eating habits, and environmental conditions, may have contributed more substantially to child growth outcomes. Although no statistically significant association was identified, early detection and management of maternal comorbidities remain essential. Regular antenatal care services play an important role in monitoring maternal and fetal health, identifying potential complications, and providing timely interventions to reduce maternal and infant morbidity and mortality (Al-Rahmad et al., 2013). Strengthening antenatal care services and improving maternal health programs should therefore remain a priority to support healthy pregnancies and optimal child development.

The results demonstrated that exclusive breastfeeding was significantly associated with stunting among toddlers, as indicated by a p-value of 0.000 (< 0.05). However, multivariate analysis showed that exclusive breastfeeding was not an independent risk factor for stunting (p-value = 0.069). These findings are consistent with research by Ni'mah and Nadhiroh (2015), which reported that toddlers who did not receive exclusive breastfeeding during the first six months of life were more commonly found in the stunted group than in the normal growth group. Similarly, Rahmad and Miko (2016) found that the absence of exclusive breastfeeding significantly contributed to stunting among

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toddlers in Banda Aceh and was considered a dominant risk factor for stunting. Exclusive breastfeeding provides essential nutrients, antibodies, and immune protection necessary for optimal growth and development during infancy. Therefore, promoting exclusive breastfeeding remains an important strategy for preventing stunting and improving child health outcomes.

The findings showed that household yard use for cultivating vegetables and fruits was not significantly associated with stunting (p-value = 0.605). These results suggest that the presence of home gardens alone may not directly affect children's nutritional status without appropriate dietary practices, adequate food intake, and proper childcare. Nevertheless, household yard utilization remains an important strategy for strengthening household food security and increasing access to nutritious food sources (Sambul et al., 2025). Home gardening can provide vegetables and fruits containing essential vitamins and minerals required for children's growth and development. In addition, household gardening may contribute to dietary diversity and reduce household food expenditures, thereby supporting long-term nutritional improvement among families and communities.

The results demonstrated that ownership of clean water sources was not significantly associated with stunting among toddlers (p-value = 1.000). These findings differ from those of Al-Rahmad et al. (2013), who found that poor hygiene practices increased the risk of stunting by 4.808 times. Access to clean water is generally associated with better sanitation and healthier living conditions, both of which are important for preventing infectious diseases such as diarrhea and helminth infections that may impair nutrient absorption and child growth. However, the findings of this study suggest that stunting is influenced by multiple interconnected factors. Nutritional status, maternal height, feeding practices, and family health conditions may have exerted stronger influences on stunting incidence than water access alone. Therefore, improving access to clean water should be accompanied by improvements in nutrition, sanitation, maternal health, and childcare practices to effectively reduce stunting prevalence.

The findings of this study indicated that exposure to a smoking environment was not significantly associated with stunting among children. These results differ from previous studies reporting that children living in households with smokers tend to experience slower physical growth compared to children raised in smoke-free environments. Exposure to cigarette smoke may negatively affect children's health by increasing susceptibility to respiratory infections and interfering with nutrient absorption, both of which may impair growth and development. In addition, parental smoking behavior may indirectly reduce household resources available for nutritious food, healthcare services, and education because a portion of family income is allocated to cigarette consumption (Bella et al., 2023). Although no significant relationship was identified in this study, smoking exposure remains an important public health issue because of its potential adverse effects on child health and family welfare. The absence of association in this study may be related to the stronger influence of other factors, including maternal height, nutritional status, feeding practices, and socioeconomic conditions.

The results showed that family economic condition was not significantly associated with stunting among toddlers, as indicated by a p-value of 0.06 in the bivariate analysis and a p-value of 0.458 with an OR value of 0.343 in the multivariate analysis. These findings indicate that economic condition was not identified as a significant risk factor for stunting in this study population. In general, low family income may reduce household purchasing power and limit access to nutritious food,

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healthcare services, and adequate living conditions. According to the Ministry of Health of the Republic of Indonesia (2018), poor economic conditions are often associated with limited food availability and inadequate access to healthcare. However, the findings of this study differ from those of Rahmad and Miko (2016), who found that low family income was significantly associated with stunting among toddlers in Banda Aceh.

The absence of a significant association in this study may be explained by the influence of other dominant factors, such as maternal height, nutritional status, feeding practices, and environmental conditions, which may have contributed more strongly to stunting. These findings emphasize that stunting is a multifactorial condition resulting from the interaction of nutritional, biological, environmental, and social determinants rather than economic status alone.

CONCLUSION

This study identified several factors associated with stunting among toddlers in Paret and East Palet Villages, East Bolaang Mongondow Regency, Indonesia. The findings demonstrated that nutritional status, maternal height, child health problems, exclusive breastfeeding history, and instant food consumption habits were significantly associated with stunting incidence. Furthermore, nutritional status, maternal height, and consumption of instant foods were identified as dominant risk factors for stunting among toddlers. These findings indicate that stunting is a multifactorial health problem influenced by nutritional, biological, behavioral, and environmental factors that interact to affect children's growth and development.

Based on these findings, comprehensive and sustainable interventions are required to reduce stunting prevalence among toddlers. Healthcare professionals and community health cadres should strengthen nutrition education, growth monitoring, and counseling programs related to balanced nutrition, exclusive breastfeeding, and healthy feeding practices. Families are encouraged to improve children's dietary quality and reduce consumption of instant foods, while the government should continue strengthening nutrition-specific and nutrition-sensitive programs, including maternal and child healthcare services, sanitation improvements, and community empowerment initiatives. Future studies are also recommended to explore additional determinants of stunting using larger sample sizes and broader study settings to support more effective stunting prevention strategies.

REFERENCES

Al-Rahmad, A. H., Miko, A., & Hadi, A. (2013). Kajian stunting pada anak balita ditinjau dari pemberian ASI eksklusif, MP-ASI, status imunisasi dan karakteristik keluarga di Kota Banda Aceh. *Jurnal Kesehatan Ilmiah Nasuwakes, 6*(2), 169–184.

Ardiana, A., Afandi, A. T., Masaid, A. D., & Rohmawati, N. (2019). Utilization of agricultural products for the management and prevention of stunting through empowering health cadres in Jember District. *Darmabakti Cendekia Journal, 2*(2), 52–56.

Volume 02 Number 01 (May 2026)
p-ISSN: 0000-0000
e-ISSN: 0000-0000

Ardiana, A., Afandi, A. T., Rohmawati, N., & Masahid, A. D. (2021). Focus group discussion dalam peningkatan pengetahuan kader tentang pencegahan stunting sejak dini. *Jurnal Pengabdian Kepada Masyarakat Royal, 4*(3), 225–230.

Aridiyah, F. O., Rohmawati, N., & Ririanty, M. (2015). Faktor-faktor yang mempengaruhi kejadian stunting pada anak balita di wilayah pedesaan dan perkotaan. *E-Jurnal Pustaka Kesehatan, 3*(1), 163–170.

Bella, A., Dartanto, T., Nurshadrina, D. S., Kusnadi, G., Moeis, F. R., Nurhasana, R., ... & Thabrany, H. (2023). Do parental smoking behaviors affect children's thinness, stunting, and overweight status in Indonesia? Evidence from a large-scale longitudinal survey. *Journal of Family and Economic Issues, 44*(3), 714–726.

Faza, N., Novita, R., Trisnawati, D., Kurniyawan, E. H., Afandi, A. T., Kurniawan, D. E., & Nur, K. R. M. (2025). Pesticide exposure increases the incidence of low birth weight (LBW) in agricultural areas. *Journal of Nursing Periodic, 2*(2).

Kemendesa. (2017). *Buku saku desa dalam penanganan stunting.* Kemendesa.

Kementerian Kesehatan RI. (2018). *Pusdatin: Buletin stunting* (Vol. 1). Kementerian Kesehatan RI.

Kurniyawan, E. H., Iswatiningtyas, N. F., Cahyarani, F. B., Sholihah, N. L. I. M., Wati, D. Y., Sapitri, R. D. A., & Afandi, A. T. (2024). Overview of reproductive health in women in agricultural areas due to exposure to pesticides. *Malang Journal of Midwifery (MAJORY), 6*(1), 1–13.

Kurniyawan, E. H., Nurhasnah, P. A., Khairunnisa, K., Fadhlillah, F., Ameliya, A. I., Afandi, A. T., & Nur, K. R. M. (2025). Analysis of the determinant factors of malnutrition of children aged below five years among agricultural households: Literature review. *Jurnal Gizi Mandiri, 2*(2).

Mugianti, S., Mulyadi, A., Khoirul, A., & Najah, Z. L. (2018). Faktor penyebab anak stunting usia 25–60 bulan di Kecamatan Sukorejo Kota Blitar. *Jurnal Ners dan Kebidanan*, 268–278. https://doi.org/10.26699/jnk.v5i3.ART.p268

Munawir, A., & Wahyuningtiyas, F. (2018). Food intake and food security as determinants of stunting children under five years. *Health Notions, 2*(1), 25–32.

Najahah, I., Adhi, K. T., Ngurah, G., & Pinatih, I. (2013). Risk factors of stunting for 12–36 month old children in Dasan Agung Public Health Centre, Mataram, West Nusa Tenggara Province. *Public Health and Preventive Medicine Archive, 1*(2), 103–108. https://doi.org/10.15562/phpma.v1i2.171

Ni'mah, K., & Nadhiroh, S. R. (2015). Faktor yang berhubungan dengan kejadian stunting pada balita. *Media Gizi Indonesia, 10*(1), 13–19.

Nurprastiwi, A. G., Sasongko, N. A., Kurniyawan, E. H., Nur, K. R. M., Afandi, A. T., & Kurniawan, D. E. (2024). The impact of farmer families' communication in compliance nutritional needs among toddlers. *Health Technology Journal, 2*(5), 543–554.

Payab, M., Kelishadi, R., Qorbani, M., Motlagh, M. E., Ranjbar, S. H., Ardalan, G., & Heshmat, R. (2015). Association of junk food consumption with high blood pressure and obesity in Iranian children and adolescents: The CASPIAN-IV study. *Jornal de Pediatria, 91*(2), 196–205. https://doi.org/10.1016/j.jpedp.2014.07.008

Rahmad, A. H. Al, & Miko, A. (2016). Kajian stunting pada anak balita berdasarkan pola asuh dan pendapatan keluarga di Kota Banda Aceh. *Jurnal Kesmas Indonesia, 8*(2), 63–79.

Ramlan, P., Sukri, P., Abdullah, M. T., Ibrahim, M. A., Hardianti, & Cahyani, A. (2025). Poverty and stunting: A socioeconomic analysis of vulnerable communities; A systematic literature review. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1475, No. 1, p. 012026). IOP Publishing.

Sambul, H. J., Kairupan, S. B., & Tarore, S. (2025). Implementation of improving diversification and community food security program through optimizing yard utilization in Tomohon City. *Technium Social Sciences Journal, 68*, 103.

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Wahdah, S., Juffrie, M., & Huriyati, E. (2015). Faktor risiko kejadian stunting pada anak umur 6–36 bulan di wilayah pedalaman Kecamatan Silat Hulu, Kapuas Hulu, Kalimantan Barat. *Jurnal Gizi dan Dietetik Indonesia, 3*(2), 119–130.

World Health Organization. (2020). *Levels and trends in child malnutrition.* World Health Organization.

Yusnitasari, E., Cahyaningrum, T. R., Anindita, N. M., Kurniyawan, E. H., Kurniawan, D. E., Afandi, A. T., & Nur, K. R. M. (2024). Nutritional status of toddler in agricultural areas. *International Journal of Midwifery and Health Sciences, 2*(3), 105–120.