THE RELATIONSHIP BETWEEN TODDLER AGE AND THE INCIDENCE OF STUNTING IN KUTAI KARTANEGARA DISTRICT

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Abstract

Background:Kutai Kartanegara Regency is the region with the highest prevalence of stunting in toddlers in East Kalimantan in 2022, reaching 27.1%. Toddler age is one of the characteristics of children that can be related to the incidence of stunting. The purpose of this study is to analyze the relationship between toddler age and the incidence of stunting in toddlers. Method: The type of research that will be conducted uses quantitative research. The research design used is a cross-sectional research design. The population in this study is stunted toddlers in the working area of a community health center in Kutai Kartanegara Regency, totaling 121 toddlers. The required sample size is 32 toddlers. Data analysis uses descriptive analysis and inferential analysis, namely the normality test and the Fisher exact test. Results: The results of toddler age, 40.6% of toddlers aged 1-3 and 3-5 years and 18.8% of toddlers aged 0-1 years. The results of toddler height are 81.3% of toddlers are not stunted and 18.8% of toddlers are stunted. The analysis results obtained a p-value of 0.007 (<0.05) which means there is a relationship between toddler age and the incidence of stunting. Conclusion: there is a relationship between toddler age and the incidence of stunting.

Keywords: Toddler; Age; Stunting

1. INTRODUCTION

Stunting is a linear growth problem in children related to long-term nutritional and health conditions. In 2020, an estimated 149.2 million children worldwide, or approximately 22% of children under five, experienced stunting. In Indonesia, the prevalence of stunting, according to the 2022 Indonesian Nutritional Status Survey (SSGI), was recorded at 21.6%, while the prevalence in East Kalimantan Province was 23.9%. Kutai Kartanegara Regency reportedly had a prevalence of 27.1% in the same year (1). These data indicate that stunting prevention remains a priority, including through strengthening child growth monitoring at the health service level.

Stunting can be related to various interacting factors, including adequate food intake, recurrent infections, parenting patterns, access to health services, sanitation conditions, food security, and the family's socioeconomic situation (2). Its impact is not only visible on physical growth but can also be related to the child's long-term development and health (3). Therefore, identifying groups of children who require more attention is important as part of prevention efforts.

Child age is one of the characteristics that has been studied in stunting research. A study of toddlers aged 12–59 months in Muaro Jambi reported a relationship between child age and stunting incidence (3). Analysis based on data from the Indonesia Family Life Survey also examined age as a factor associated with stunting in children in Indonesia (4). Other research using data from Indonesian children also identified age as a characteristic that needs to be considered, along with maternal factors and vaccination (5). These findings suggest that the relationship between age and stunting needs to be understood within the context of the population and other contributing factors.

Although the relationship between age and stunting has been previously studied, evidence from local populations remains useful for describing patterns found in specific service areas. This study focused on toddlers in the Teluk Dalam Community Health Center (Puskesmas Teluk Dalam) area, Kutai Kartanegara Regency. The results are expected to provide baseline information for health workers in strengthening growth monitoring and nutritional education tailored to children's needs. This study aimed to analyze the relationship between toddler age and stunting incidence.

2. METHODOLOGY

The type of research to be conducted will be quantitative research, namely research in the form of numbers or figures (Sunyoto, 2017). The research design used is a cross-sectional research design.

It began with secondary data collection to compile a research proposal conducted in April 2026, followed by submitting the proposal to Simlitabkes, then revising/improving the proposal and conducting a research ethics test.

The population in this study was 121 stunted toddlers in the Teluk Dalam Community Health Center work area. Since the researcher has a population of more than 100, the researcher can take between 20-25%. The required sample size is 32 toddlers who meet the inclusion criteria of being physically and mentally healthy, toddlers in the Teluk Dalam Community Health Center work area, and whose parents are willing to be respondents.

The processing of primary data obtained includes data entry, data processing and statistical data analysis carried out by computerization, namely by using the SPSS program to carry out data analysis with descriptive analysis and inferential analysis, namely the Normality Test, Fisher Exact Test.

3. RESULTS

4.1 Results

3.1.1 Respondent Characteristics

Table 3.1 Respondent Characteristics

Characteristics	Frequency	Presentation
Toddler Height		
Normal	26	81.3
Stunting	6	18.8
Toddler Weight		
Normal	32	100
Abnormal	0	0
Exclusive Breastfeeding		
Exclusive	32	100
Not Exclusive	0	0
Immunization		
Complete	8	25
Incomplete	24	75
Total	32	100

Source: Primary Data, 2026

Table 3.1 shows that 81.3% of children had normal height. 100% of children had normal weight. 100% of children were exclusively breastfed. 75% of children had incomplete immunizations.

3.1.2 Toddler Age

Table 3.2 Toddler Age

Toddler Age	Frequency	Presentation
0-1 Years	6	18.8
1-3 Years	13	40.6
3-5 Years	13	40.6
Total	32	100

Source: Primary Data, 2026

Based on table 3.2, the results obtained were 40.6% of toddlers aged 1-3 and 3-5 years and 18.8% of toddlers aged 0-1 years.

3.1.3 Toddler Stunting

Table 3.3 Stunting in Toddlers

Stunting	Frequency	Presentation
No Stunting	26	81.3
Stunting	6	18.8
Total	32	100

Source: Primary Data, 2026

Based on table 3.3, the results show that 81.3% of toddlers are not stunted and 18.8% of toddlers are stunted.

3.1.4 The Relationship Between Toddler Age and the Incidence of Stunting

Table 3.4 Relationship between Toddler Age and Stunting Incidence

		Stunting		Total	P-Value Fisher Exact
		No Stunting	Stunting		
Toddler Age	0-1 Years	6	0	6	0.007
	1-3 Years	13	0	13	
	3-5 Years	7	6	13	
Total				32	

Source: Data Analysis, 2026

Based on Table 3.4, the p-value was 0.007 (<0.05), which means there is a relationship between toddler age and the incidence of stunting.

4. DISCUSSION

4.1 Respondent Characteristics

a. Toddler Height

Based on research results, 87.5% of children have normal height. Toddler height is influenced by various interrelated factors, including genetics, nutritional status, health conditions, parenting styles, and the environment. Genetic factors, including parental height, contribute to a child's growth potential, but height growth is not solely determined

by heredity. Adequate nutritional intake, especially energy, protein, vitamins, and minerals, is crucial to support a child's linear growth. Long-term malnutrition can lead to growth disorders and increase the risk of stunting.(6).

b. Toddler Weight

Based on research results, 100% of children had a normal weight. Toddler weight is related to the incidence of stunting because it can reflect a child's growth and nutritional status. Children who are underweight may indicate nutritional problems that could potentially stunt growth if persisted over the long term. Insufficient energy and nutrient intake can lead to suboptimal growth and ultimately contribute to stunting.(7).

c. Exclusive Breastfeeding

Based on the research results, 100% of children were exclusively breastfed. This is in line with research(8)that breast milk is milk produced by the mother and contains all the nutrients needed by the baby for the baby's growth and development needs. Exclusive breastfeeding is when the baby is only given breast milk, without additional fluids such as formula milk, orange juice, honey, tea, water and without additional solid foods such as bananas, papaya, milk porridge, biscuits, rice porridge and porridge, for 6 months.

d. Immunization

Based on research results, 75% of children have incomplete immunization status. Increasing immunity against diseases in infants is done through injections. Incomplete immunizations weaken toddlers' immunity, making them susceptible to infectious diseases. Children who experience infections, if left untreated, are at risk of stunting.(9).

4.2 Toddler Age

Based on research results, 40.6% of mothers have toddlers aged 1-3 years and 3-5 years.(10)The majority of stunted toddlers are in the 24–59 month age group. This age group is a crucial period because nutritional needs increase with growth and development, while the impact of chronic malnutrition from earlier begins to become more apparent in height growth.

4.3 Toddler Stunting

Based on the research results, 81.3% of toddlers were not stunted and 18.8% were stunted. Stunting is defined as impaired linear growth with a height-for-age z-score of less than -2 SD below the median value based on the World Health Organization (WHO) Child Growth Standards.(11).

4.4 The Relationship Between Toddler Age and the Incidence of Stunting

Based on the analysis, there is a relationship between toddler age and stunting incidence. This is in line with research findings.(5)using data from the Indonesia Family Life Survey (IFLS) of 4,570 children aged 0–59 months. Multivariate results showed a relationship between age and stunting; compared to younger age groups, the 12–23 and 24–59 month groups had higher odds ratios for stunting in the study model.

Age is significantly associated with stunting, with older age showing a protective effect. Studies in Nepal and Nigeria reported that older children, particularly those aged 24–59 months, were more likely to be stunted than younger age groups; this suggests a gradual increase in the risk of stunting as children age. Children under 12 months are more vulnerable to stunting due to several key factors. This period is a critical period for growth, where risks include inadequate nutritional intake, such as suboptimal breastfeeding practices.(5).

This is in line with research(12)which states that stunting is influenced by the child's age, where children under 24 months have a 0.250 times (95% CI: 0.104–0.598) lower chance of avoiding stunting compared to children over 24 months.

A child's age is also related to the incidence of stunting in toddlers. Older children (aged 24–59 months) have a higher risk of stunting than younger children (aged 0–24 months). Stunting occurs when a toddler experiences malnutrition during the first 1,000 days of life. This condition begins to appear when a child is 2 years old. Inadequate food intake at this age results in unmet nutritional needs. This is also related to children's increasing nutritional needs as they grow and increase their physical activity.(12).

Stunting at an older age may reflect accumulated exposure to nutritional and health conditions from early life. After the period of exclusive breastfeeding, adequate complementary foods and family diets become crucial in meeting nutritional needs. Recurrent infections, sanitation quality, access to clean water, food security, parenting styles, socioeconomic conditions, and maternal and genetic factors may also play a role. The findings of this study support the importance of routine growth monitoring across all toddler age groups, with particular attention to older children and a comprehensive assessment of diet, medical history, household conditions, and the environment.

5. CONCLUSIONS

In a sample of 32 toddlers in the working area of Teluk Dalam Health Center, Kutai Kartanegara Regency, there was a relationship between age group and the incidence of stunting.

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