



**ANALYSIS OF DETERMINANTS OF STUNTING AMONG CHILDREN  
AGED 24-59 MONTHS IN PAMENANG VILLAGE, PAGELARAN  
SUB-DISTRICT, PRINGSEWU DISTRICT**

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## A B S T R A C T

*The problem of malnutrition in Indonesia is currently being aggressively carried out various prevention and control efforts by involving all sectors, namely the problem of stunting. The determinants of stunting are lack of nutritional intake, infectious diseases, food availability, parenting, environmental health and health services. In addition, demographic and educational factors contribute to stunting. The purpose of this study was to determine the relationship between the characteristics of parents and toddlers with stunting of toddlers aged 24-59 months. This study is an observational study with a quantitative approach and uses a cross sectional research design in Pamenang Village, Pagelaran District, Pringsewu Regency. The sample in this study were toddlers aged 24-59 months totaling 151 toddlers. The results of the study found stunting toddlers as much as 29.8%. The results of statistical analysis showed no significant relationship between age ( $p = 0.640$ ) gender ( $p = 0.354$ ), history of disease ( $p = 0.326$ ), mother's education level ( $p = 0.090$ ) and father's education level ( $p = 0.225$ ) with stunting. Suggestions that can be given are that the prevention and handling of stunting is prioritized in toddlers aged 36-59 months.*

*Keyword: stunting, parent characteristics, toddler characteristics*

## A B S T R A K

Masalah kekurangan gizi di Indonesia saat ini dan sedang gencar melakukan berbagai upaya pencegahan dan penanggulangannya dengan melibatkan semua sektor yaitu masalah pendek (*stunting*). Faktor determinan *stunting* yaitu kurangnya asupan gizi, penyakit infeksi, ketersediaan pangan, pola asuh, kesehatan lingkungan dan pelayanan kesehatan. Selain itu faktor demografi dan Pendidikan berkontribusi terhadap *stunting*. Tujuan penelitian ini adalah untuk mengetahui hubungan karakteristik orang tua dan balita dengan *stunting* balita umur 24-59 bulan. Penelitian ini merupakan penelitian observasional dengan pendekatan kuantitatif dan menggunakan desain penelitian *cross sectional* di Desa Pamenang Kecamatan Pagelaran Kabupaten Pringsewu. Sampel dalam penelitian ini yaitu balita umur 24-59 bulan sebanyak 151 balita. Hasil penelitian ditemukan balita *stunting* sebanyak 29,8%. Hasil analisis

statistik menunjukkan tidak ada hubungan secara signifikan umur ( $p = 0,640$ ) jenis kelamin ( $p = 0,354$ ), riwayat penyakit ( $p = 0,326$ ), tingkat pendidikan ibu ( $p = 0,090$ ) dan tingkat pendidikan ayah ( $p = 0,225$ ) dengan stunting. Saran yang dapat diberikan yaitu agar pencegahan dan penanganan stunting lebih diprioritaskan pada balita umur 36-59 bulan.

Kata kunci: stunting, karakteristik orang tua, karakteristik balita

## INTRODUCTION

The problem of malnutrition in Indonesia is currently being aggressively carried out various prevention and control efforts by involving all sectors, namely the problem of stunting. Malnutrition occurs since the baby is in the womb and in the early period after the baby is born, however, the stunting condition only appears after the baby is 2 years old. Stunted and severely stunted toddlers are toddlers with body length (PB/U) or height (TB/U) for their age compared to the WHO-MGRS (Multicentre Growth Reference Study) 2006 standard. The Indonesian Ministry of Health defines stunting as children under five with z-scores of less than  $-2SD$ /standard deviation (stunted) and less than  $-3SD$  (severely stunted). (Indonesian Ministry of Health, 2020). Meanwhile, the definition of stunting according to Simbolon (2019), is a condition of growth failure in children under five (babies under five years old) as a result of chronic malnutrition so that children are too short for their age.

Data on the prevalence of under-five stunting by the World Health Organization (WHO) in 2018 named Indonesia into the third country with the highest prevalence in the South-East Asian Region, which is 36.4% (Ministry of Health of the Republic of Indonesia, 2018). The prevalence of stunting in Indonesia is still above 20%, meaning that it has not reached the WHO target of below 20%.

The results of the Indonesian Nutrition Status Study (SSGI) in 2022 recorded the prevalence of stunting among children under five years of age at 21.6%. Meanwhile, the prevalence of stunting in Lampung Province was 15.2% and Pringsewu Regency was 16.2% (Indonesian Ministry of Health, 2022).

The prevalence of stunting in Pringsewu Regency has decreased compared to 2021 at 19%. Pagelaran sub-district has the highest prevalence of stunting in Pringsewu Regency at 10.1%. One of the villages with the largest contribution to stunting prevalence in Pagelaran Sub-district is Pamenang Village at 16.63% (Pringsewu District Health Office, 2021).

The direct factors that cause stunting are lack of nutritional intake and infectious diseases, while the indirect causes are food availability, parenting, environmental health and health services. In addition, the root causes of stunting are demographic, educational, economic and socio-cultural factors (Trihono, 2015). The level of education, household income is also a cause of stunting (Rahayu., et al. 2018). Other contributing factors to stunting include genetic factors, economic status, pregnancy spacing, maternal anemia, and nutrient deficiencies. (Candra, 2020).

The impact of stunting results in high morbidity and disability rates for the short term, while the long term can lead to stunting in adults, limited abilities and the onset of non-communicable diseases (Trihono, 2015), such as chronic diseases of diabetes mellitus, coronary heart disease,

hypertension, cancer, and stroke (Simbolon, 2019). Then the short-term impact results in cognitive, motor and verbal development in children is not optimal. Furthermore, in the long term, it causes suboptimal posture as an adult. Stunting in children is the result of nutrient deficiencies during the first 1000 days of life. This leads to irreversible impairment of children's physical development, resulting in decreased cognitive and motor abilities and decreased work performance. Stunted children have an average Intelligence Quotient (IQ) score eleven points lower than the average IQ score of normal children. (Indonesian Ministry of Health, 2018). Growth and development disorders in children due to malnutrition if they do not get early intervention will continue into adulthood. (Setiawan et al., 2018).

Cases of stunting in children can be used as a predictor of the low quality of a country's human resources. Stunting leads to poor cognitive abilities, low productivity, and increased risk of disease, resulting in long-term losses for the Indonesian economy. (Trihono et al, 2015). There have been many studies related to factors that influence stunting in toddlers aged 24-59 months. The results of research in the Penyandingan Health Center work area, Ogan Kemiring OKU Regency in 2021 found that there was a relationship between the mother's education level and the incidence of stunting (Estherina et al. 2021). Another study explained that there is a significant relationship between the age of toddlers 24 - 59 months has a risk of being stunted by 10 times greater than the age of toddlers 12 - 23 months. (Sujianti, S., & Pranowo, S. (2021). The results of the analysis show that there is a significant relationship between age and the incidence of stunting in toddlers. (Putri et al, 2022). The age of toddlers 24-59 months is the dominant factor in stunting. (Sujianti & Pranowo, 2021). In addition, the history of infectious diseases suffered is also a cause of stunting in toddlers. The results of research on toddlers aged 24-59 months reported that those who experienced infectious diseases were more often stunted toddlers compared to normal toddlers. (Lusiani, et al., 2021).

Based on the results of the preliminary study on February 11, 2022 with a total sample of 10 toddlers for TB / U nutritional status, the results showed that four toddlers were stunted, namely 40%, one high toddler, namely 10% and five normal toddlers, namely 50%.

## **METHODS**

This research is an observational study with a quantitative approach and uses a cross sectional research design. In this study, primary data were collected to determine the dependent variable studied was stunting, while the independent variables were parental characteristics (mother's education, father's education).. Research time was conducted on March 28 - July 15, 2022. This research was conducted in Pamenang Village, Pagelaran Subdistrict, Pringsewu Regency.

The research design used was quantitative research with a cross sectional study approach. The sample in this study were toddlers aged 24-59 months as many as 151 toddlers in Pamenang Village, Pagelaran District, Pringsewu Regency. The variables in this study are the stunting variable as the dependent variable and as independent variables including parental characteristics (mother's education level and father's education level), toddler characteristics (gender, age and disease history),

The sample selection technique uses a simple random sampling technique by drawing and making a sampling frame from a list of toddlers aged 24-59 months in each village. Analysis of research data using univariate and bivariate tests with chi square tests. This study received ethical exemption from the Health Research Ethics Commission of the Tanjungkarang Health Polytechnic No. 059/KEPK-TJK/X/2022.

## RESULTS AND DISCUSSION

### Univariate Analysis

Univariate analysis of frequency distribution of characteristics of parents and toddlers aged 24-59 months as shown in Table 1.

### Characteristics of Parents and Toddlers

The results of the analysis of stunting data of toddlers, parental characteristics (mother's education level and father's education level), characteristics of toddlers (gender, age and history of illness), are shown in Table 1.

Table 1. Frequency Distribution of Parent and Toddler Characteristics

Variable	n	%
<b>Stunting</b>		
Stunted	45	29.8
Not stunted	106	70.2
<b>Characteristics of Toddlers</b>		
<b>Gender</b>		
Male	64	42.4
Female	87	57.6
<b>Age</b>		
24-35 months	46	30.5
36-59 months	105	69.5
<b>Disease History</b>		
Any disease	50	33.1
No disease	101	66.9
<b>Mother's Education Level</b>		
Primary education	80	53.0
Secondary education	66	43.7
Higher education	5	3.3
<b>Father's education level</b>		
Primary education	79	52.3
Secondary education	63	41.7
Higher education	9	6.0

Table 1 shows that of the 151 toddlers studied, 29.8% were stunted and 70.2% were not stunted. Based on gender, women were 57.6%, higher than men by 42%. The age group of toddlers aged 24-35 months was 31.1%, smaller than the age group of 36-59 months as much as 69.5%. While according to the history of the disease found toddlers with a history of disease as much as 33.1% smaller than the toddlers who do not with a history of disease as much as 66.0%. The

education level of parents is mostly with primary education mothers as much as 53% and fathers as much as 52.3%.

### Bivariate Analysis of Characteristics With Stunting

Bivariate analysis of the characteristics of parents and toddlers aged 24-59 months with stunting is shown in Table 2. Analysis of parental characteristics includes the level of education of the father and mother with stunting. While the characteristics of toddlers include age, gender and history of disease.

**Table 2. Analysis of Parent Characteristics and Characteristics of Toddlers with Stunting**

Karakteristik	Stunting		Tidak Stunting		p value
	n	%	n	%	
<b>Age</b>					
24-35 months	12	26,1	34	73,9	0,640
36-59 months	33	31,4	72	68,6	
<b>Gender</b>					
Male	16	25,0	48	75,0	0,354
Female	29	33,3	58	66,7	
<b>Disease History</b>					
Any disease	18	36,0	32	64,0	0,326
No disease	27	26,7	74	73,3	
<b>Mother's Education Level</b>					
Primary education	30	37,5	50	62,5	0,090
Secondary education	14	21,2	52	78,8	
Higher education	1	20,0	4	80,0	
<b>Father's education level</b>					
Primary education	28	35,4	51	64,6	0,225
Secondary education	14	22,2	49	77,8	
Higher education	3	33,3	6	66,7	

In Table 2, the results of the analysis of the relationship between the age of toddlers and stunting show that of the measured toddlers found stunting toddlers from the age group 36-59 months by 31.4%, higher than the stunting toddlers from the age group 24-35 months. The statistical test results obtained a p-value of 0.640 ( $p\text{-value} > 0.05$ ), meaning that it can be stated that there is no significant relationship between the age of toddlers and stunting.

Based on gender, it illustrates that stunted toddlers from the female gender are 33.3%, higher than stunted male toddlers as much as 25.0%. Conversely, male toddlers who are not stunted are 75.0% higher than female toddlers as much as 66.7%. The statistical test results obtained a p-value of 0.354 ( $p\text{-value} > 0.05$ , meaning that it can be stated that there is no relationship between gender and the incidence of stunting. In line with the results of a parallel study conducted in the Ketapang Health Center Working Area, East Kotawaringin, gender has no significant relationship with the incidence of stunting.

The results of the analysis of the relationship between disease history and stunting showed that there were 36.0% of stunted toddlers who had a history of disease, higher than stunted toddlers who did not have a history of disease as much as 26.7%. The statistical test results obtained a p-value of 0.326, meaning that there is no relationship between the history of illness and stunting.

The next analysis is the result of the analysis of the relationship between father's education and stunting informs that there are 35.4% of stunted toddlers from fathers with primary education level, higher than stunted toddlers from fathers with secondary education level as much as 22.2%. The statistical test results of the relationship between father's education level and stunting obtained a p value of 0.225 (p value > 0.05), this can be explained that there is no relationship between father's education level and stunting.

The results of the analysis of the relationship between maternal education and stunting inform that there are 37.5% of stunted toddlers from mothers with primary education level, higher than stunted toddlers from mothers with secondary education level of 22.2%. The statistical test results of the relationship between maternal education level and stunting obtained a p value of 0.09 (p value > 0.05), this indicates that there is no significant relationship between maternal education level and stunting.

In line with the results of research conducted in Cilacap, it was concluded that there was no significant relationship between gender and the incidence of stunting among toddlers. (Sujianti & Pranowo, 2021). Another study conducted in Bantul showed that gender, father's education, and mother's education were not significantly associated with stunting in children under the age of 24-59 (Andari et al., 2020; Rahmawati, et al, 2020). Similarly, the results of research in Situbondo explain that there is no significant relationship between age and stunting (p value 0.095), and gender and stunting (p value 0.512). The results of research in Gemolong, Sragen Regency stated that maternal education level was not associated with stunting (Shodikin, et al., 2023). Factors that do not affect the incidence of stunting are toddler age, father's education, mother's education, (Rufaida, et al., 2020). Other studies found no significant association of age with stunting (p value 0.095), gender with stunting (p value 0.512). (Umiyah and Hamidiyah, 2021).

## **CONCLUSIONS AND SUGGESTIONS**

The results of this study can be concluded that 29.8% of stunted toddlers were found. The results of statistical analysis show that there is no significant relationship between age, gender, history of disease, mother's education level and father's education level with stunting. Therefore, this study explains that the characteristics of parents and toddlers cannot be called a determinant of stunting. Suggestions that can be given are that the prevention and treatment of stunting is prioritized in toddlers aged 36-59 months and toddlers with female gender.

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