



## Mother's Knowledge and Family Income and the Frequency of Stunting Incidents

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### Abstrak

Stunting adalah kondisi dimana tinggi atau Panjang badan balita tidak sesuai apabila dibandingkan dengan umurnya. Menurut WHO, faktor penyebab terjadinya stunting adalah faktor keluarga dan rumah tangga, pemberian Air Susu Ibu, pemberian Makanan Pendamping Asi, dan Riwayat infeksi. Salah satu faktor keluarga yang berpengaruh adalah kurangnya pengetahuan orang tua mengenai gizi dan kesehatan. Faktor lain dari penyebab stunting adalah pendapatan keluarga. Apabila akses pangan ditingkat pertama terganggu, terutama akibat kemiskinan, maka stunting akan muncul karena ketidak terjangkauan dalam pemenuhan nutrisi sehari-hari. Tujuan dari penelitian ini adalah untuk mengetahui hubungan antara pengetahuan ibu dan pendapatan keluarga terhadap tingkat kejadian stunting. Metode yang digunakan dalam penelitian ini adalah kuantitatif dengan pendekatan cross sectional, populasi dari penelitian ini adalah ibu yang memiliki anak dibawah 5 tahun di Desa Paterongan, Kecamatan Galis, Kabupaten Bangkalan. Sampel sebanyak 33orang. Instrumen yang digunakan adalah kuisioner. Hasil penelitian ini menunjukkan bahwa ada Hubungan yang signifikan antara pengetahuan ibu dengan kejadian stunting p value 0,000. Dan ada Hubungan antara pendapatan keluarga dengan kejadian stunting p value 0,011.

**Kata kunci:** Stunting, Pengetahuan ibu, Pendapatan Keluarga

### Abstract

Stunting is a condition where a toddler's height or body length is not appropriate when compared to his age. According to WHO, the factors causing stunting are family and household factors, giving breast milk, giving complementary foods to breast milk, and a history of infection. One of the influencing family factors is parents' lack of knowledge about nutrition and health. Another factor that causes stunting is family income. If access to food at the first level is disrupted, especially due to poverty, stunting will arise due to unaffordability in fulfilling daily nutrition. The aim of this research is to determine the relationship between maternal knowledge and family income on the incidence of stunting. The method used in this research is quantitative with a cross sectional approach, the population of this study is mothers who have children under 5 years in Paterongan Village, Galis District, Bangkalan Regency. The sample was 33 people. The instrument used is a questionnaire. The results of this study show that there is a significant relationship between maternal knowledge and a reduction in the incidence of stunting, p value 0.000. And there is a relationship between family income and a reduction in the incidence of stunting, p value 0.011.

**Keywords:** Stunting, Knowledge, Income

## INTRODUCTION

Stunting (short stature) is one of the conditions of growth failure that can lead to chronic malnutrition and have long-term effects on a child's growth and development. A child with a high Z-score for height-for-age (TB/U) based on the World Health Organization (WHO) child growth standards reaching less than -2 Standard Deviations (SD) can be categorized as stunted. According to the WHO report, the global prevalence of stunting in 2018 reached 149 million toddlers worldwide. Based on the Basic Health Research (Riskesdas) results in 2018, the prevalence of stunted toddlers was 30.8%, gathered from 34 provinces in Indonesia, including East Java Province, where the prevalence of stunted toddlers was 19.2%.

The causes of stunting in children arise from various factors. According to the WHO, the factors contributing to stunting include family and household factors, breastfeeding (ASI), complementary feeding (MP-ASI), and a history of infections. One influential family factor is the lack of parental knowledge about nutrition and health. Parental knowledge of the symptoms, impacts, and prevention of stunting can provide a better understanding of health maintenance, thus reducing the incidence of stunting. With good knowledge, it raises awareness among parents about the importance of stunting prevention (Kemenkes R1, 2019). Mothers play a crucial role in providing nutrition, and their knowledge affects their behavior in maintaining their child's health (Putri et al., 2021). Maternal knowledge about stunting is related to decision-making regarding nutrition and healthcare (Yanti et al., 2020).

According to Tiara (2019), income is the earnings received by an individual for their work over a specific period to support their own and their family's livelihood. Therefore, family income also affects a child's growth and development. In a low-income family with a large number of family members, it can be challenging to provide quality food for the family (Purnamasari, 2018).

Paterongan Village is one of the villages in the Galis District of Bangkalan Regency. The population aged 0-5 years is 130 people. There are 87 toddlers who experience stunting (short stature), and this is the highest prevalence of stunting in Bangkalan, which is 29.90%. Therefore, the researcher aims to analyze whether there is a relationship between maternal knowledge and family income and the occurrence of stunting in Paterongan Village, Galis District, Bangkalan Regency.

## METHODS

This research is an observational analytic study with a cross-sectional approach. The population in this study consists of mothers with children under 5 years of age in Paterongan Village, Galis District, Bangkalan Regency.

According to Arikunto (2013), if the population being studied is less than 100, the entire population should be included. However, if the population being studied is more than 100 people, a sample of 10-15% or 20-25% of the total population can be taken. Therefore, in this study, the researcher selected 33 samples, which is 25% of the total population.

The research instruments in this study include statements about maternal knowledge of stunting, data about children and mothers, as well as information about family income. These instruments have been tested for validity and reliability. Primary data collected was analyzed using univariate and bivariate analysis, employing the Chi-Square test with a significance level of less than 0.05. Secondary data was obtained from the relevant government department and related sources.

## RESULT AND DISCUSSION

This research was conducted in August 2023 in Paterongan Village, Galis District, Bangkalan Regency. The sample for this study consisted of 33 mothers with children under 5 years of age.

### Univariate Analysis

Univariate analysis is a method used to summarize a dataset to provide useful information for a broader audience. An example of univariate analysis is descriptive statistics. One type of descriptive statistic is the frequency distribution. Below is a table displaying the results of the frequency distribution:

Table 1. Frequency distribution of respondent characteristics

Characteristics	Frequency (n)	Percentage (%)
Gender		
Boy	18	54.5%
Girl	15	45.5%
Mother's Knowledge		
Not good	11	33.3%
Pretty good	11	33.3%
Good	11	33.3%
Family Income		
High > Umr	14	57.6%
Low < Umr	19	42.4%
Stunting Cases		
Normal/not stunting	20	60.6%
Stunting	13	39.4%

Source: Data Processed (2023)

In this research, the study included 18 male children (54.5%) and 15 female children (45.5%) as subjects. During the first year of life, male children are more prone to malnutrition compared to their female counterparts. This susceptibility is attributed to the larger body size of male children, which necessitates a higher energy intake. If the energy intake is insufficient and this situation persists, it can lead to growth impairments (Diva et al., 2023).

As per Arikunto (cited in Laili, 2018), the assessment of knowledge levels can be categorized into three groups: good, sufficient, and poor. The characteristics of respondents based on maternal knowledge reveal that there are 11 respondents (33.3%) with limited knowledge, 11 respondents (33.35%) with moderate knowledge, and 11 respondents (33.3%) with strong knowledge. The inadequate maternal knowledge about stunting is evident from the responses in the questionnaire distributed by the researcher, where most mothers do not pay attention to their child's nutritional intake, feeding practices, maternal nutritional status during pregnancy, neglect available healthcare services when their child is unwell, and disregard environmental cleanliness.

The family income level is determined based on data from the East Java Regional Development Planning Agency (Bappeda), where the 2023 Regional Minimum Wage (UMR) in Bangkalan is Rp 2,152,450.83. The researcher classifies family income as low if it falls below the UMR and high if it exceeds the UMR. Referring to Table 1, the frequency distribution based on income indicates that 14 respondents (57.6%) have a higher family income, whereas 19 respondents (42.4%) have a lower family income.

Examining the frequency distribution table regarding stunting occurrences, there are 20 respondents (60.6%) whose children fall under the normal category, while 13 respondents (39.4%) have children categorized as stunted. Stunting can be identified by the Z-score for a child's height-for-age (TB/U) according to the World Health Organization (WHO) child growth standards, with values below -2 Standard Deviations (SD) indicating that the child may be experiencing stunting.

### Bivariate Analysis

Bivariate analysis was conducted to assess the statistical significance of the relationship between maternal knowledge and family income in reducing the prevalence of stunting. Bivariate analysis was carried out employing the Chi-Square statistical test, with the following outcomes:

Table 2. Chi Square Test Results of the Relationship Between Mother's Knowledge and Stunting Incidence

Mother's Knowledge	Stunting				Jumlah		P-value
	Normal		Stunting		F	%	
	F	%	F	%			
Not good	0	0%	11	84.6%	11	33.3%	0.000
Pretty good	9	45%	2	15.4%	11	33.3%	
Good	11	55%	0	0%	11	33.3%	
Total	20	100%	13	100%	33	100%	

Source: Data Processed (2023)

According to Table 2, the relationship between maternal knowledge and the occurrence of stunting is evident. Based on the Chi-Square test results, it is found that among the 11 respondents with limited maternal knowledge, 11 respondents are categorized as stunted (84.6%), and none fall into the normal category (0%). In contrast, among the 11 respondents with moderate maternal knowledge, 2 respondents (15.4%) are categorized as stunted, and 9 (45%) respondents are categorized as normal. According to Table 5, it is also apparent that among the 11 respondents with good maternal knowledge, there are 0 (0%) respondents categorized as stunted, and 11 (55%) are categorized as normal. Based on the Chi-Square test results in the table regarding the relationship between maternal knowledge and the occurrence of stunting, a p-value of 0.000 is obtained, which means there is a significant relationship between maternal knowledge and the occurrence of stunting.

These findings align with a study by Mardiana (2019), which indicates a relationship between knowledge and the occurrence of stunting due to the prevalence of respondents with limited knowledge in Puskesmas Pulau Kupang, Kapuas Regency. This is attributed to the lack of maternal knowledge about healthy and nutritious food, resulting in their children experiencing nutritional deficiencies. Additionally, the low intake of vitamins and minerals consumed by mothers can also influence fetal malnutrition and nutritional deficiencies during pregnancy, which can be a major cause of childhood stunting. This study also aligns with the research by Rizcewaty et al. (2021), which states that there is a relationship between maternal knowledge and the occurrence of stunting in the working area of Puskesmas Pulau Kupang, Kapuas Regency, due to maternal lack of knowledge about nutritional status. Many mothers are unaware that exclusive breastfeeding is the practice of providing breast milk to infants without additional food for the first 0-6 months, and that complementary feeding should begin after 6 months, involving foods that contain protein and micronutrients.

Relationship Between Family Income and the Occurrence of Stunting

Based on the testing of the relationship between family income and the prevalence of stunting using the Chi-Square test, the following results were obtained:

Table 3. Chi Square Test Results of the Relationship Between Family Income and Stunting Incidence

Family Income	Stunting cases				Total		Nilai P-value
	Normal (not stunting)		Stunting				
	F	%	F	%	F	%	
High	12	60%	2	15.4%	14	42.4%	0,011
Low	8	40%	11	84.6%	19	57.6%	
Total	20	100%	13	100%	33	100%	

Source: Data Processed (2023)

Based on the table above, it is evident that out of the 14 respondents with high family income, 2 respondents (15.4%) are categorized as stunted, and 12 (60%) respondents are categorized as normal. On the other hand, among the 19 respondents with low family income, 11 (84.6%) respondents are categorized as stunted, while 8 (40%) respondents are categorized as normal. Based on the Chi-Square test results in the table regarding the relationship between family income and the occurrence of stunting, a p-value of 0.011 ( $P < 0.05$ ) is obtained, which means there is a significant relationship between family income and the occurrence of stunting.

These research findings indicate that families with lower income tend to have children who are more likely to experience stunting. This can occur because the lower family income makes it challenging to provide food that meets the nutritional needs of toddlers compared to families with higher social income (Sari et al., 2020).

The higher the parents' income, the better their dietary habits tend to be. This is because with sufficient income, families have more flexibility in choosing their children's food consumption (Syahroni et al., 2021). Low income significantly affects a family's ability to purchase food items, resulting in the inability to provide food or menus that ultimately lead to nutritional deficiencies, especially in toddlers who require a wide range of nutrients for growth and development. Inadequate nutritional status is often indicated by food intake and infectious diseases. This is also influenced by environmental factors and family income (Handini et al., 2013).

This study aligns with research conducted by Yesi (cited in Wahyudi, 2019), which suggests that toddlers from families with low economic status are five times more likely

to experience stunting compared to toddlers from families with high economic status. Income is the most crucial factor determining the quantity and quality of food. Families with lower economic status (low-income families) face difficulties in obtaining nutritious food items. The economic condition that hinders toddlers from less privileged families from receiving adequate nutritional intake is largely due to their family's limited purchasing power for a variety of food items. Therefore, many toddlers from impoverished families experience malnutrition problems such as stunting.

## CONCLUSION

The broader implications drawn from this research suggest a significant correlation between maternal knowledge and the prevalence of stunting in Paterongan Village, situated in Galis District, Bangkalan Regency. This relationship is substantiated by the compelling statistical evidence, with a p-value of 0.000, well below the widely accepted significance level of 0.05. Additionally, the study uncovers a noteworthy association between family income and the occurrence of stunting, as revealed by a Chi-Square test result with a p-value of 0.011, also falling below the 0.05 significance threshold. These findings highlight the pivotal roles of maternal knowledge and family income in addressing the complex issue of stunting in the studied community, emphasizing the need for targeted interventions and support to mitigate this health concern and promote child well-being.

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