



## Relationship Between Family Income And Stunting Incidence For Toddlers In BanjarsariWetan Village In 2023

Revita Dwi Noviansari<sup>1\*</sup>, Karina Nur Ramadanintyas<sup>1</sup>, Zaenal Abidin<sup>1</sup>

<sup>1</sup> Public Health Study Program, Stikes Bhakti Husada Mulia Madiun, Indonesia

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### Abstract

Stunting is a condition where there is a failure of growth and development in children under five which is triggered by malnutrition. It was recorded that in 2021, 195 toddlers were stunted, while in 2022 there were 69 (30.39%) toddlers who were stunted. The study aimed to determine the relationship between family income and the incidence of stunting in toddlers in the Banjarsari Wetan village. This research uses analytical survey methods with a case-control approach. The sample for this research is 60 respondents (30 cases and 30 controls). Data analysis used is univariate analysis, and bivariate uses test chi-square. The results showed that the most dominant sex of toddlers was male, which was 60%, while family income in BanjarsariWetan Village was high income (51.7%). The results of the chi-square test analysis were obtained ( $p = 0.002$ ) which means that there is a relationship between family income and the incidence of stunting in toddlers in BanjarsariWetan Village. The conclusion from this study is that there is a relationship between family income with the incidence of stunting.

\*Correspondence Address:

Jl. Taman Praja No. 25

Madiun, Indonesia

E-mail :

[revita211199@gmail.com](mailto:revita211199@gmail.com)

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## Introduction

*Stunting* or dwarfism, which is a failure of growth in children under five years old or toddlers obtained from lack of nutritional intake in the first 1,000 days of life, starting from the womb to the age of 23 months (Tim Percepatan Pencegahan Anak Kerdil (*Stunting*), 2021). *Stunting* It can also be interpreted as a growth failure in children under five caused by lack of nutrition which results in children not being able to grow properly for their age. (Tim Nasional Percepatan Penanggulangan Kemiskinan, 2017). Based on Anthropometric Standards to ensure the categories are very short, short, normal, and tall, it can be seen by comparing the results of weight and length/height measurements, and Body Length or Height according to Age (PB / U or TB / U) in children aged 0 (zero) to 60 (sixty) months. (Menteri Kesehatan RI, 2020). *Stunting* In children can risk inhibiting brain development, impact in the long term *stunting* can result in delays in psychological development, low skills to learn, and a risk of developing serious diseases such as diabetes, hypertension, to obesity (P2PTM Kemenkes RI, 2018).

Based on the WHO (*World Health Organization*), the Prevalence of toddler *stunting* in Indonesia is ranked sixth in the world and is included in the highest prevalence in Southeast Asia with an average prevalence rate of toddler *stunting* in Indonesia it is 36.4%, (World Health Statistics data visualizations dashboard, 2019). According to Riskesdas (Basic Health Research) 2018 in Indonesia figures *stunting* by 30.8%, while in East Java Province the number of *stunting* In 2018 decreased, from 12% in 2013 to 11.9% in 2018. (Kementerian Kesehatan Republik Indonesia, 2018). Meanwhile, according to SSGBI 2019 AND

SSGI 2021, the prevalence of *stunting* in East Java Province is 26.9% (Kementerian Kesehatan Republik Indonesia, 2021).

Based on data from the 2020 Madiun Regency Health Profile, of the 26,494 toddlers who have been measured, there are 4,465 toddlers (16,85%) who have a short height. Dagangan sub-district is one of the sub-districts that has a percentage of cases *stunting* the highest in South Madiun was 37.83% compared to Kebonsari District at 24.06%, Geger District at 31.21% and Dolopo District at 32.11%. (Dinas Kesehatan Kabupaten Madiun, 2021). Banjarsari Wetan Village is one of the villages with the most *stunting* cases in Dagang District. The majority of residents have a family income below the UMR for Madiun Regency, namely < IDR 2,154,251.34. This can affect toddler food consumption in terms of quantity, quality, and lack of variety. Based on data from Polindes in Banjarsari Wetan Village, in 2021 there were 195 cases of stunted toddlers, while in 2022 there were 69 cases (30.39%) of stunted toddlers. Although the trend is declining, this figure has not reached the 2024 national target of 14%.

The purpose of the study was to determine the relationship between family income and the incidence of *stunting* in Banjarsari Wetan Village.

## Methods

The research design used in this study was an analytic survey method with a case-control approach to look at risk factors with a retrospective approach (Notoatmodjo, S, 2012). This research is located in Banjarsari Wetan Village, Dagangan District, Madiun Regency. The research was conducted in March – April 2023. The population in this study were all toddlers who were stunted in Banjarsari Wetan Village, Dagangan District, Madiun Regency, totaling 69 toddlers. The sample in this study was calculated using the Lameshow formula, totaling 60 respondents. The sample in this study used a 1:1 ratio consisting of 30 toddlers suffering from *stunting* and 30 toddlers not suffering from *stunting*. Data was collected using questionnaires and observation sheets based on the Madiun Regency UMK in 2023. Sampling using a simple random sampling technique. The independent variable of this study is family income, the independent variable family income is coded by giving code 0 to respondents who have low income and code 1 to respondents who have high income based on the 2023 Madiun Regency UMK. The dependent variable is coded 0 for toddlers who are stunted, and code 1 for toddlers who are not stunted or normal based on the 2022 Posyandu recap. The data analysis used was univariate analysis to describe the data in a simple way and bivariate analysis to determine the relationship between family income and the incidence of *stunting* in toddlers using the Chi-Square test SPSS 16.0.

## Results

**Table 1.** Frequency distribution of the respondent's characteristics

Characteristics	f	%
<b>Gender</b>		
Male	36	60,0
Female	24	40,0
<b>Age</b>		
17 – 25 years	7	11,7
26- 35 years	30	50,0
36- 45 years	23	38,3
<b>Family Income</b>		
Low Income	29	48,3
High Income	31	51,7
<b>Stunting events</b>		
<i>Stunting</i>	30	50
Not stunted	30	50
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 1 shows the distribution of respondents based on the sex of the majority of toddlers male, namely 36 respondents with a percentage of 60%. The gender distribution of female toddler respondents was 24 respondents with a percentage of 40%. The distribution of respondents was based on

the age of the majority of mothers 26-35 years, namely as many as 30 respondents with a percentage of 50%.while the distribution of respondents was at least based on the mother's age, namely 17 – 25 years, as many as 7 respondents with a percentage of 11.7% The distribution of respondents based on family income, the majority of respondents who have high family income are 31 respondents with a percentage of 51.7%. while 29 respondents had low family income with a percentage of 48.3%. It can be seen that out of 60 respondents, 30 toddlers were stunted and 30 toddlers were not stunted.

**Table 2.** Cross-tabulation of the Relationship between Family Income and Stunting Incidents in Banjarsari Wetan Village

Family Income	Stunting events				Total		P-value
	stunting		Not stunted		N	%	
	N	%	N	%			
Low Income	21	72,4	8	27,6	29	100	0,002
High Income	9	29	22	71	31	100	
<b>Total</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>	<b>60</b>	<b>100</b>	

Based on Table 5 it is known that 21 respondents (72.4%) of low-income and under-five suffer from stunting and 8 (27.6%) of low-income respondents and under-five do not suffer from stunting. Meanwhile, 9 respondents (29%) with high income and under five experienced stunting, and 22 (71%) of high-income respondents and five did not suffer from stunting. The results of the Chi-Square statistical test obtained a p-value = 0.002, which means that there is a relationship between family income and the incidence of stunting in Banjarsari Wetan Village.

## Discussion

### 1. Family Income

Income is the amount of money received by a person (or more) family from their labor to meet the needs of life (Handayani, 2018). Family income is the sum of the real income of all household members who live under the same roof and are dependents of the head of the household (Deti, 2015). Family income in this case is related to the provision of family food, access to food within the family, and adequate distribution of food for the family. The purchasing power for nutritious food in the family is influenced by family income because determining the type of food to be purchased depends on the high and low income. (Aida, 2019).

### 2. The Relationship Between Family Income And The Incidence Of Stunting In The Village Of Banjarsari Wetan

Based on the results of research that has been conducted, it was found that the *value of P-Value* = 0.002 which means that there is a relationship between family income and the incidence of *stunting* in BanjarsariWetan Village, Dagangan District, Madiun Regency. The results showed that the incidence of *stunting* in toddlers mostly occurred in toddlers with low family income as many as 21 (72.4%) respondents, with an *OR value* = 6.818 so that toddlers with low family income had a 6.8 times greater risk of stunting than toddlers with high family income.

The results of this study are in line with research results (Yesi Nurmalasari, 2019) which show that there is a relationship between family income and the incidence of stunting in children aged 6-59 months in MataramIlir Village, Seputih District, Surabaya in 2019 (P value 0.000). While the *OR value* is 5.132 where families with low income are at five times higher risk of experiencing stunting than those with high incomes. This can happen because low income will affect the quality and quantity of food consumed by the family. Low levels of income and weak purchasing power make it possible to overcome eating habits in certain ways that impede the effective improvement of nutrition, especially for their children. vitamins and minerals, thereby increasing the risk of malnutrition. These limitations will increase the risk of family members experiencing stunting. (Nurmalasari, Anggunan and Febriany, 2020).

The results of this study are in line with the results of the study (KhoirunNi'mah) which shows that there is a relationship between family income and by occurrence of *stunting* in toddlers in the working area of the Tanah Kali Kedinding Health Center, Surabaya City (p = 0.044) while the *OR value* is 3.250 where families with low incomes are at three times higher risk of experiencing *stunting* compared to high income.

Families with good economic status will be able to get better public services such as education, health services, road access, and others that can affect the nutritional status of children. In addition, the purchasing power of families will increase so that family access to food will be better (Ni'mah and Rahayu, 2015).

The results of this study are in line with the results of the study (Elsa NurAini) which shows that there is a relationship between family income and by occurrence of *stunting* in toddlers aged 24-59 months in the working area of Cepu Health Center, Blora Regency (*p-value* 0.001). While the value of OR = 5.385 where toddlers with less family per capita income are at five times higher risk of *stunting* compared to toddlers with sufficient family per capita income. In addition, low family income causes a reduction in family purchasing power for foods that contain good nutrients, causing malnutrition in both macronutrients and micronutrients (Aini, Nugraheni, and Pradigdo, 2018).

Based on the results of this study, it can be concluded that there is a relationship between family income and *stunting* in BanjarsariWetan Village, Dagangan District, Madiun Regency. Respondents with low incomes and *stunting toddlers* from low-income families can affect the provision of family food and purchasing power for nutritious food in the family. With low income, it can result in less fulfillment of family food needs such as the purchasing power of foods containing animal protein, namely only eating eggs if the price of eggs is cheap and eating chicken meat 1 month 2 times the lack of protein intake can affect the growth of toddlers.

Based on interviews, respondents with low income but have toddlers are not *stunted* because toddler mothers are more creative in making food to meet the nutritional needs of toddlers, such as making broccoli nuggets, corn pudding, green bean porridge, and others so that children's nutrition is still fulfilled even with makeshift foodstuffs. Respondents with high incomes but have stunted toddlers are caused by mothers less creative in providing food for children who do not like vegetables, as well as a lack of maternal monitoring of toddlers entrusted to caregivers so that parents do not know what foods are consumed by toddlers.

## Conclusion

The results of the study of the toddler sex category were the most dominant men, namely 60%. Meanwhile, the results of the research category of family income in BanjarsariWetan Village have a high income (51.7%). The results of the chi-square test analysis can be seen that the family opinion variable obtained *p* values of  $0.002 < 0.05$  which means that there is a relationship between the incidence of *stunting* in BanjarsariWetan Village. Suggestions for future research are expected to use other variables, for example using variables of basic immunization history and parenting. With the results of this study, it is expected to encourage village midwives to play a role in preventing *stunting* by taking a comprehensive approach

## Author Contributions

Toddler cadres in Banjarsari Wetan village

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## Institutional Review Board Statement

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## Conflicts of Interest:

The authors declare no conflict of interest.

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