

## ANALYSIS OF THE RELATIONSHIP OF FOOD SECURITY WITH STUNTING INCIDENCE IN SUMBANG DISTRICT, BANYUMAS REGENCY

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### ABSTRACT

Food security is a condition of fulfilling food for the state down to individuals, which is reflected in the availability of sufficient food, both in quantity and quality, safe, diverse and nutritious, equitable and affordable and does not conflict with religion, belief, culture of the community to be able to live a healthy life, active and productive in a sustainable manner. If these needs are not met, both the quantity and quality at the individual and household level will interfere with achieving a healthy, active and sustainable quality of life and can cause various health and nutrition problems. Baduta stunting is a chronic nutritional problem caused by low access to and affordability of food. The purpose of this study was to determine the relationship between food security and stunting in toddlers in Karangcegak Village, Sumbang District, Banyumas Regency. The type of research used in this study is observational analytic with a case control design. The total sample used in the study was 14, namely toddlers who were stunted. The sampling technique uses the total sampling method. Data analysis using correlation test. This test can conclude that there is a significant relationship between the two variables (95% confidence level or alpha 0.05). The results of the Pearson correlation test analysis showed a p value of 0.04 ( $p < \alpha = 0.05$ ). shows that there is a relationship between household food security and the incidence of stunting in toddlers in Karangcegak Village, Sumbang District.

**Keywords:** Food Security, Stunting.

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### 1. Introduction

Food security is an important aspect in realizing people's welfare, from the aspect of availability, affordability, and price stability, it can be seen that food security also has a close relationship with the problem of inflation, especially in the aspect of affordability which includes purchasing power and the price itself, in the end, the condition Food security will affect the creation of a conducive macroeconomic climate. Fulfilling the needs of several strategic food commodities is also still dependent on imports, the problem of technology adoption in the context of increasing productivity is also still hampered due to the low transfer of technology from formal research institutions to farmers. Household food security also has a significant impact on the nutritional status of children under five, this is related if the adequacy and availability of nutritious food is limited or does not meet the needs of children under five,

it will cause food insecurity and disruption to the growth and development of children under five, which is called stunting.

Stunting is defined as growth retardation due to chronic nutritional deficiencies and recurrent infections, especially during the golden period of growth, namely the first 1000 days of life (HPK). The world prevalence rate of stunted children tends to be static. The World Health Organization (WHO) stated that the prevalence of stunting under five in 2018 was 21.9% or as many as 149 million. In 2019 it fell to 21.3% or 144 million. Then it rose to 22% or as many as 149.2 million children under five who were stunted in 2020.

One of the causal factors that has the most impact on the incidence of stunting is a lack of protein intake. This is because toddlers need more protein for the formation of muscles and antibodies. However, data from the 2014 Individual Food Consumption Survey reported that children aged 6 months and over had less animal protein intake, namely <5%. In addition to intake, toddlers and their families need to improve sanitation hygiene because toddlers are a group prone to nutrition and infection.

Stunting can cause developmental disorders in children, especially in children under two years old. Children who are stunted will generally experience obstacles in their cognitive and motor development which will affect their productivity as adults. Economically, this will certainly become a burden for the state, especially due to increased health financing. The potential for economic losses caused by stunting is enormous (Republic of Indonesia Ministry of Health Data and Information Center, 2018).

## **2. Literature Review**

### **2.1 Food Security**

Food is the most essential basic need for humans to sustain life and life. Food security is a condition of fulfilling food for the country down to individuals, which is reflected in the availability of sufficient food, both in quantity and quality, safe, diverse and nutritious, equitable and affordable and does not conflict with religion, belief, culture of the community to be able to live a healthy life, active and productive in a sustainable manner (Republic of Indonesia Law No.18 of 2012 concerning Food).

FAO defines food security as a situation where all households have access, both physically and economically, to obtain food for all family members and households are not at risk of losing both accesses. Food security is an important and strategic matter, experience in countries shows that no country can carry out development properly before being able to realize food security first (Chaireni et al., 2020).

#### **2.1.1 Food vulnerability**

The condition of food insecurity can be chronic and transient. In chronic conditions, there are symptoms of continuous lack of food due to the inability to obtain sufficient food, both by buying and by producing it yourself (Hendriadi & Ariani, 2020). Thus, food insecurity conditions will emerge as a result of a long process such as poverty and can also arise at any time due to natural or non-natural disasters, both of which are food insecure characteristics that can occur in households and regions (Hendriadi & Ariani, 2020).

## **2.2 Stunting**

### **2.2.1 Definition of Stunting**

Stunting is a condition of failure to thrive in toddlers (babies under five years old) as a result of chronic malnutrition so that children are too short for their age (National Team for the Acceleration of Poverty Reduction, 2017). According to the Indonesian Ministry of Health, stunting is a toddler with a Z-score less than -2 SD (stunted) and less than -3 SD (severely stunted) (Dewi & Mu, 2020).

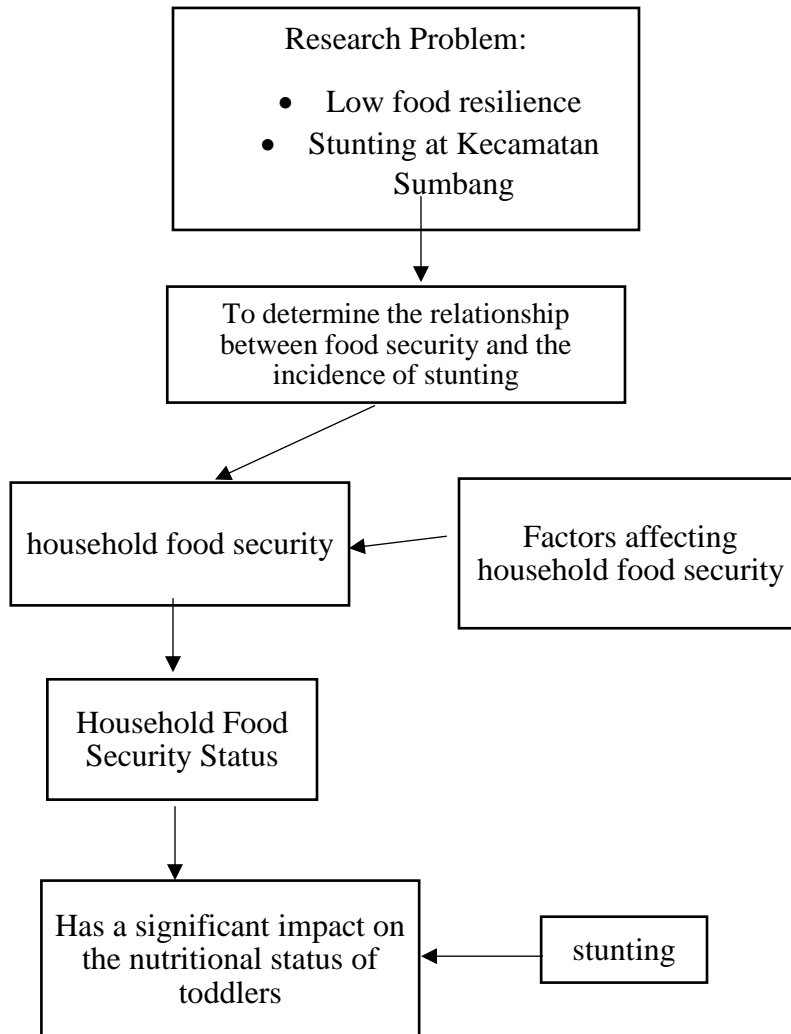
### **2.2.2 Stunting Impact**

Severe stunting in the long term in children will result in long-term deficits in physical and mental development so that they are unable to learn optimally at school, compared to children with normal height. Stunting will greatly affect the health and development of children. The effect of nutrition on young children who experience stunting can interfere with growth and lack of cognitive development.

## **2.3 Previous Study**

Much research on stunting has been carried out, such as research conducted by (Sihite et al., 2021) concerning Analysis of Food Security and Household Characteristics with Stunting Incidents. In this study it was found that there was a significant relationship between household food security and household size with the incidence of stunting, while the variables of maternal age and educational level of the mother were found to have no significant relationship with the incidence of stunting. Household food security is directly related to the incidence of stunting, families in households that are food insecure tend to have toddlers who are classified as stunting, this is due to a lack of nutritional intake received both in terms of quantity and quality and does not meet the nutritional adequacy standards for stunting toddlers. It is hoped that in an effort to reduce the incidence of stunting, the government needs to add local food-based work programs to reduce the incidence of stunting.

## 2.4 Framework Thinking



## 2.5 Hypothesis

Food security has a real relationship and is related to the nutritional status of toddlers and the incidence of stunting experienced during infancy. Therefore, the hypothesis in this study is that there is a relationship between food security and stunting in Sumbang District, Banyumas Regency.

## 3. Research Methodology

### 3.1 Types of research

The type of research conducted in this study is quantitative research that is research by obtaining data in the form of numbers or collected qualitative data (Sugiyono, 2013).

### 3.2 Place and Time of Research

This research was conducted in one of the locus of stunting villages in Sumbang District. The village is Karangcegak Village. This research begins with the preparation of a proposal in April 2023 until the thesis trial examination in June 2023

### 3.3 Population and Sample

#### 3.3.1 Population Study

The population in this study were 230 mothers who had toddlers.

#### 3.3.2 Sample Study

The total sample used in the study was 14, namely toddlers who were stunted.

#### 3.3.3 Sampling Technique

Sampling of this study was carried out using a purposive sampling technique. Purposive sampling is selecting a sample by selecting a sample from among the population according to what the researcher wants, so that the sample can represent the characteristics of the existing population (Lenaini, 2021). Determination of respondents was selected according to predetermined criteria based on posyandu from the research area, namely the Karangcegak Health Center.

### 3.4 Variables and Operational Definitions

#### 3.4.1 Variable Study

Research variable can be defined as a thing in whatever form is determined by the researcher to be studied and then obtain information about it. In this study, two types of variables were used, namely the food security status variable and the stunting event variable

#### 3.4.2 Operational Definition

*Table 3.1 Definition operational*

Variable	Definition operational	Measuring Tool	Scale	Results Measure
Endurance Food Status	Condition fulfillment need food for every member go out in 1 month	Questionnaire	Nominal	<ol style="list-style-type: none"> <li>share expenditure food &lt; 60%</li> <li>share expenditure food ≥ 60%</li> </ol>
Stunting events	Indication problem nutritional nature chronic as consequence from long standing situation	Studies Documentation	Nominal	<ol style="list-style-type: none"> <li>Stunting: z-score &lt; -2SD</li> <li>Non stunting: ≥ -2SD</li> </ol>

### 3.5 Data Source

#### 3.5.1 Primary Data

Primary data is data obtained directly from the object under study and then processed by researchers (Jatmiko & Gernowo, 2014). The primary data in this study included the age and sex of the toddlers, the height and weight of the toddlers, as well as household food security which were obtained by interviewing the respondents.

### 3.5.2 Secondary Data

Secondary data is data obtained indirectly by researchers, but comes from other people or even documents (Jatmiko & Gernowo, 2014). The secondary data used in this study is data on toddlers at the Karangcegak Health Center.

### 3.6 Data Analysis

Bivariate analysis is an analysis that shows the relationship between one independent variable and one dependent variable. Bivariate analysis in this study was used to determine the significance of the relationship between food security status and the incidence of stunting by using the chi square test. This test can conclude that there is a significant relationship between the two variables (95% confidence level or alpha 0.05) with the interpretation of the test results as follows:

1. If the p-value < 0.05, then there is a significant relationship between the two variables.
2. If the p-value is > 0.05, then there is no significant relationship between the two variables.

## 4. Results

### 4.1 Overview of the Research Area

Sumbang District is one of 27 districts in Banyumas Regency which is a rural area. The total area of Sumbang District is 53.42 [Km] ^2 divided into 19 villages. Most of the Sumbang District area is dry land with a proportion of 51.76 percent. The village with the largest area is Limpakuwus Village with an area of 11.70 [Km] ^2, while Karangcegak Village has an area of 1.20 [Km] ^2 (Fatmawati, 2022). Most of the livelihoods of the Karangcegak Villagers are farmers, the rest are Penderes (coconut sap pickers), traders and factory workers. It is because of these conditions that young people on average migrate to more developed areas, or work in factories in Purbalingga

### 4.2 Proportion Expenditure Food Respondents

Jonsson and Toole (1991) in (Maxwell et al., 2000) state that if the share of expenditure is > 60% then the household is food secure, but if the share of food expenditure is  $\geq 60\%$  then the household is food insecure.

*Table 4.1 Proportions Expenditure Food in the Village Karangcegak*

Category	Amount ( soul )	Percentage (%)	Information
share Expenditure Food < 60%	4	28.5	Resilience
share Expenditure Food $\geq 60\%$	10	71.5	Not Resilience
Amount	14	100	

Source : Research Primary Data , 2023 (1)

Based on the table above, it can be seen that the number of respondent households with a category of food expenditure share < 60% or food security is 4 (28.5%) respondents. Meanwhile, the number of households with a share of food expenditure  $\geq 60\%$  or food insecure was 10 (71.5%) respondents. This shows that most of the respondent households in Karangcegak Village are not included in the food security category. According to the data obtained, the average household income that is food insecure is < Rp. 1,500,000. Most families have a high proportion of household food expenditure. The higher proportion of food expenditure reflects household poverty and poverty. Low income causes limited purchasing power which will lead to household food insecurity.

The level of food security of farmer households can be influenced by several factors such as income level, price of staple foods, number of family dependents, level of education, knowledge

of nutrition, consumption of animal and vegetable protein and living environment. (Aritonang et al., 2020) argues that the living environment and consumption patterns affect household food security, for example, households in urban areas generally have a proportion of rice expenditure which tends to be less so that their share of food expenditure will be low and have a high level of food security. However, this is different from households living in rural areas because generally in rural communities the proportion of rice expenditure is quite high, resulting in a high share of food expenditure and low food security.

## 5. Discussion

The results of the Pearson correlation test analysis showed a p value of 0.04 ( $p < \alpha = 0.05$ ). This indicates a relationship between household food security and the incidence of stunting in Karangcegak Village, Sumbang District. This is in line with previous research on the Relationship between Food Security and Family Characteristics and the Nutritional Status of Toddlers Aged 2-5 Years in the City of Surabaya which found that there was a relationship between household food security status and the nutritional status of toddlers.

### correlations

		stunt	resilience Food
stunt	Pearson Correlation	1	.544 *
	Sig. (2-tailed)		.044
	N	14	14
resilience Food	Pearson Correlation	.544 *	1
	Sig. (2-tailed)	.044	
	N	14	14

\*. Correlation is significant at the 0.05 level (2-tailed).

The proportion of food expenditure is also an indicator that can provide an overview of people's welfare. Research has found a significant relationship between the proportion of food expenditure and the incidence of stunting. This is because most of the respondents admit that they have insufficient income so that almost all of the total family income is used to buy daily food. In addition to food, income is also spent on electricity, water, transportation and other expenses. Most households with low incomes do not spend money on tertiary needs such as family recreation or new clothes on a regular basis.

## 6. Conclusion

The results of the Pearson correlation test analysis showed a p value of 0.04 ( $p < \alpha = 0.05$ ) based on the problem formulation above. This shows that there is a relationship between household food security and the incidence of stunting in toddlers in Karangcegak Village, Sumbang District

The causes of food and nutrition insecurity are very diverse and complex with a broad perspective, so the handling must be comprehensive, not partial and sustainable. This effort must be carried out in earnest with policies that are consistent in planning and implementation which include aspects of food provision down to the sub-district or village level, the ease and ability of households to access food and the accuracy of food distribution among family members. Building community food security independently is directed at specific areas, based on local resources and culture that can provide a variety of foods and provide consumption choices for local communities. Other policies carried out through community empowerment, especially the poor as an effort to increase income in a sustainable manner and develop basic infrastructure in food insecure areas. The



government and legislative institutions at the central and regional levels, as well as the community, including the individuals themselves, must jointly make this happen.

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