

## The Relationship Between Mother's Knowledge, Family Income, and Parenting Pattern with Stunting in Toddlers Aged 24-59 Months in the Working Area of Abepura Primary Health Center



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**ABSTRACT:** Stunting is a disorder of growth and development of children due to chronic malnutrition and repeated infections, which are characterized by their length or height being below standard. The purpose of this study was to determine the relationship between mother's knowledge, family income and parenting style with stunting in toddlers aged 24-59 months in the working area of the Abepura Primary Health Center. This research is an observational study conducted using a cross-sectional study approach, carried out in October 2022. The number of samples was 71 respondents, namely all mothers who have toddlers in the working area of the Abepura Primary Health Center obtained through a purposive sampling technique. Collecting data on mother's knowledge, family income and parenting patterns used a questionnaire while determining stunting using the height for age indicator. Data analysis was carried out using the Chi Square test with an error rate of 95% using SPSS version 21. The results showed that there was a relationship between mother's knowledge and stunting, there was a relationship between family income and stunting and there was a relationship between parenting style and stunting.

**KEYWORDS:** Mother's Knowledge, Family Income, Parenting, Stunting.

### I. INTRODUCTION

Stunting is a condition where a toddler has a length or height that is less when compared to age. This condition is measured by length or height that is more than minus two standard deviations (-2 SD) of the WHO median child growth standard [1]. Stunting under five is a chronic nutritional problem caused by many factors, such as socioeconomic conditions, maternal nutrition during pregnancy, infant illness, and lack of nutritional intake in infants. Stunted toddlers in the future will experience difficulties in achieving optimal physical and cognitive development [1].

The prevalence of stunting under five is one of the nutritional problems currently being experienced by toddlers in the world. In 2017 there were 22.2% or around 150.8 million toddlers in the world experiencing stunting. However, this figure has decreased when compared to the stunting rate in 2000, which was 32.6%. Data on the prevalence of stunting under five collected by the World Health Organization (WHO), Indonesia is included in the third country with the highest prevalence in the Southeast Asia/South-East Asia Regional (SEAR). The average prevalence of stunting under five in Indonesia in 2005-2017 was 36.4% or nearly 9 million under five [1].

Riskesdas data in 2018 shows the stunting rate in Papua was 33.1%, where the prevalence of very short nutritional status was 15.3% and short 17.8% [2]. Based on data from the Jayapura City Health Office from Regional Health Research or Riskesdas in Jayapura City, stunting cases were at 34.8% in 2013 and the 2018 Riskesdas were at 31.4%.

The cause of stunting in children under five due to the economic crisis is influenced by various interrelated factors, especially food intake and infectious diseases. Both of these factors are influenced by family purchasing power, family size, eating habits, parenting patterns, child care and pregnancy, basic health services, sanitation and other environmental and social factors

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[3]. The mother's knowledge factor about stunting has an important role in preventing stunting, knowledge is an important aspect of the domain to shape one's actions. The wider a person's knowledge, the more positive the behaviour he does [4].

Stunting is defined as a short or very short body condition based on the index of Body Length for Age or Height for Age with a threshold (z-score) between  $-3$  SD to  $< -2$  SD [5]. Stunting is a chronic condition of growth disturbance which is described on the z-score height for age  $< -2$  SD caused by inadequate nutrition at the time of mass growth [6]. Stunting is a state of chronic malnutrition due to insufficient nutritional intake for quite a long time and other factors that can be seen based on the height/age indicator with a z-score value  $< -2$  SD [7].

Here are some of the characteristics that appear in stunted children: 1). The face looks younger than its age, 2). Growth slows down, the lower limit of growth speed is 5 cm/year, 3). Late tooth growth, 4). Children aged 8-10 years are quieter, do not make much eye contact [8].

**Table 1. Classification of Nutritional Status Based on the height for age Index.**

Index	Nutritional Status	Standard Deviations (SD) (Z-Score)
Height for age or Body length for age	Very Short	$< -3$ SD
	Short	$-3$ SD to $< -2$ SD
	Normal	$-2$ SD to $3$ SD
	Tall	$>+3$ SD

Source: Indonesian Health Ministry, 2020

### Mother Knowledge

Knowledge is a result of knowing that is obtained by individuals from sensory devices such as sight and hearing of an object, so that the individual is able to process all the things he gets. Mother's knowledge of stunting is a mother's understanding of stunting as well as the food she will consume and the relationship between food composition and health. Knowledge related to stunting is very important for mothers to have in order to prevent their children from stunting. Research found that there is a significant relationship between maternal knowledge and the incidence of stunting with a risk of 1.644 times greater [9].

### Family Income

According to Sulistyaningsih (2011), the ability of a family to buy food is influenced by the size of the family income level because if the income level is relatively low, it will be unable to meet its food needs, especially in various types of food [10]. Aridiyah's research (2015) revealed that family income influences the incidence of stunting in children under five in rural and urban areas [11]. Poverty in Indonesia is related to malnutrition causing stunted growth in children. Based on UNICEF data in 2012, one of the growth problems in toddlers is the stunted growth of children's height so that children grow tall not according to their age which is called short toddlers or stunting.

### Parenting

Parenting is how parents treat children, educate, guide, and discipline children in reaching the maturity process to the effort to form the norms expected by society in general [12].

Poor parenting or feeding patterns from the time the child is born causes the child to become short. The occurrence of short nutritional problems (height for age) as a result of long-lasting conditions that are not appropriate parenting. Inadequate parenting factors given by mothers to children are factors that can cause nutritional problems. In this case, the parenting style that can be given by the mother includes taking the time, paying attention to and supporting the fulfillment of the physical, social and mental needs of children who are in a phase of growth and development. Parenting is also closely related to sanitation practices, health and healthy and clean living, and health care. In addition, parenting is also related to how to provide and provide nutritious food for children in the growth and development phase [13].

## II. METHODS

### A. Types of Research

This research is a quantitative observational study conducted using a cross-sectional approach, meaning that the measurements of the variables studied, both independent and dependent variables, are carried out simultaneously [14].

### B. Location and Time of Research

This research was conducted in the Work Area of the Abepura Primary Health Center for 1 month, namely in October 2022.

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## C. Population and Sample

The population in this study were all mothers aged 24-59 months who were in the working area of the Abepura Primary Health Center, namely 276 respondents, then using the Lemeshow formula (1997) the number of mothers under five was obtained as many as 71 respondents. So, the number of samples for both mothers of toddlers and toddlers is 71 respondents each .

## D. Concept and Hypothesis Framework

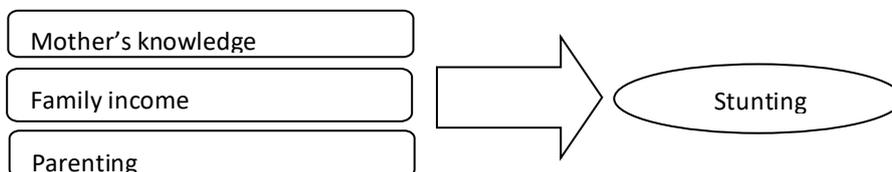


Figure 1. Research Concept Framework

Based on the research concept framework above, a research hypothesis is made as follows:

1. There is a relationship between mother's knowledge and stunting in toddlers aged 24-59 months in the working area of the Abepura Primary Health Center
2. There is a relationship between family income and stunting in toddlers aged 24-59 months in the working area of the Abepura Primary Health Center
3. There is a relationship between parenting style and stunting in toddlers aged 24-59 months in the working area of the Abepura Primary Health Center.

## E. Variables and Operational Definitions of Variables

Table 2. Variables and Variable Operational Definitions

No	Variable	Operational definition	Measuring Method	Criteria	Scale
1	Stunting	The condition of the height of the toddler is below the WHO standard as measured using height / age.	Microtoise (cm)	1. Stunting: If, the Z-Score value for height for age $\geq 2$ SD 2. Not Stunted: If, the Z-Score value for height for age $\geq -2$ SD [1]	Ordinal
2	Mother Knowledge	All information regarding stunting that is known and understood by the mother	Questionnaire	Poor knowledge: If Score $< 6$ (median) Good knowledge: If Score $\geq 6$ (median)[15]	Ordinal
3	Family Income	Total family income compared to UMP.	Questionnaire	Low: If Income $<$ UMP Rp. 3,561,932/month. High: If Income $\geq$ UMP Rp. 3,561,932/month.	Ordinal
4	Parenting	Actions taken by parents in fulfilling nutrition from the food consumed by children according to their age based on the type of food consumed, the amount of food consumed	Child Feeding Questionnaire	1 = Incorrect category, if the answer score $< 60\%$ 2 = Correct category, if the answer score is $\geq 60\%$ [16]	Ordinal

The above table describes variables and variable operational definitions used in this study.

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## F. Data analysis

The data in the study were analyzed by two methods, namely: 1). Univariate analysis which aims to see the description of the distribution and characteristics of each variable which is then displayed in the form of tables and descriptions. 2). Bivariate analysis which aims to examine the relationship between the independent variables and the dependent variable which is suspected to have a correlation relationship. This analysis was carried out by the chi square test with a degree of confidence used was 95% (0.05).

## III. RESULTS

### A. Results of Univariate Analysis

#### 1. Distribution of Respondents Based on Stunting Incidents

**Table 3. Distribution of Respondents Based on Stunting Events**

Under Five Children	(n)	(%)
Stunting incidence (height for age)		
Stunting	43	60,6
Not Stunting	28	39,4
Total	71	100

(Primary Data, 2022)

Based on table 3 above, it is known that the highest number of respondents are stunted, namely 43 people or 60.6%.

#### 2. Distribution of Respondents Based on Mother's Knowledge Level

**Table 4. Distribution of Respondents Based on Mother's Knowledge Level**

Knowledge	(n)	(%)
Lack of knowledge	33	46,5
Good knowledge	38	53,5
Total	71	100

(Primary Data, 2022)

Based on table 4 above, it is known that the highest number are respondents with a good level of knowledge, namely 38 people or 53.5%.

#### 3. Distribution of Respondents Based on Family Income

**Table 5. Distribution of Respondents Based on Family Income**

Family Income	(n)	(%)
Low	46	64,8
High	25	35,2
Total	71	100

(Primary Data, 2022)

Based on table 5 above, it is known that the highest number are respondents with low income, namely 46 people or 64.8%.

#### 4. Distribution of Respondents Based on Parenting Style

**Table 6. Distribution of Respondents Based on Parenting Style**

Parenting	(n)	(%)
Inappropriate	36	50,7
Appropriate	35	49,3
Total	71	100

(Primary Data, 2022)

Based on table 6 above, it is known that the highest number are respondents with inappropriate parenting, namely as many as 36 people or 50.7%.

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### B. Results of Bivariate Analysis

#### 1. Relationship between Mother's Knowledge and Stunting in Toddlers Age 24-59 months in the Work Area of Abepura Primary Health Center

**Table 7. Results of the Chi Square Test for Knowledge of Mothers with Stunting in Toddlers Aged 24-59 Months in the Work Area of the Abepura Primary Health Center**

Mother Knowledge	Stunting		Total	p-value
	Stunting	Not Stunting		
Lack	27	6	33	0,002
Good	16	22	38	
Total	43	28	71	

(Primary Data, 2022)

Based on table 7 above, it is known that the results of the chi-square test obtained  $p\text{-value} = 0.002 < 0.05$ , which means that there is a relationship between maternal knowledge and stunting in toddlers in the working area of the Abepura Primary Health Center.

#### 2. Relationship between Family Income and Stunting in Toddlers Aged 24-59 months in the Work Area of the Abepura Primary Health Center

**Table 8. Results of the Chi Square Test on Family Income with Stunting in Toddlers Aged 24-59 Months in the Working Area of the Abepura Primary Health Center**

Family Income	Stunting		Total	p-value
	Stunting	Not Stunting		
Low	40	6	46	0,000
High	3	22	25	
Total	43	28	71	

(Primary Data, 2022)

Based on table 8 above, it is known that the results of the chi-square test obtained  $p\text{-value} = 0.000 < 0.05$ , which means that there is a relationship between family income and stunting in toddlers in the working area of the Abepura Primary Health Center.

#### 3. Relationship between Parenting Style and Stunting in Toddlers Aged 24-59 Months in the Working Area of the Abepura Primary Health Center

**Table 9. Results of the Chi Square Test on Parenting with Stunting in Toddlers Aged 24-59 Months in the Work Area of the Abepura Primary Health Center**

Parenting	Stunting		Total	p-value
	Stunting	Not Stunting		
Inappropriate	30	6	36	0,000
sAppropriate	13	22	35	
Total	43	28	71	

(Primary Data, 2022)

Based on table 9 above, it is known that the results of the chi-square test obtained  $p\text{-value} = 0.000 < 0.05$ , which means that there is a relationship between parenting style and stunting in toddlers in the working area of the Abepura Primary Health Center.

## VI. DISCUSSION

### 1. Relationship between Mother's Knowledge and Stunting in Toddlers Aged 24-59 Months in the Work Area of the Abepura Primary Health Center

Research by Hutabarat Gilbert A (2021) [15], Rizqita Catur Wulandari [17] and Femidio (2020) [18], also Langi, et al (2019) [19] show that there is a significant relationship between mother's knowledge and the incidence of stunting.

Based on UNICEF (1997) in BAPPENAS (2018) it is explained that knowledge is an indirect causal factor that can affect the nutritional status of children, good knowledge about nutrition will affect individual behaviour in providing good food and parenting

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of children and vice versa, if knowledge is lacking in nutrition, it will have an impact on children's health and nutrition problems which can cause stunting problems.

Primary Health Care (Puskesmas) can partner with community organizations and the local government to form stunting cadres so they can reach the community in providing stunting CIE easily so that mothers with toddlers can have good knowledge of stunting and can prevent stunting and a good level of mother's knowledge does not guarantee having toddlers with normal nutritional status. Mothers who have less knowledge are expected to be able to apply the knowledge they have in everyday life.

### **2. Relationship between family income and stunting in toddlers aged 24-59 months in the working area of the Abepura Health Center**

Putri Anindita's research showed that there was a relationship between family income levels and stunting in children aged 6-35 months in the Tambalang sub-district, Semarang city [20]. The results of Ardiyah's research (2015) also revealed that family income influences the incidence of stunting in children under five in rural and urban areas [11]. Research by Nuralmasari et al., (2020) also shows that there is a relationship between family income and the incidence of stunting [21].

Family income is related to the ability of the household to meet the basic, secondary and tertiary needs of life. High family income makes it easier to meet life's needs, on the contrary, low family income has more difficulty in meeting life's needs. 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 which impede 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 [22].

### **3. The Relationship between Parenting Style and Stunting in Toddlers Aged 24-59 Months in the Work Area of the Abepura Health Center**

Research by Prakhasita (2018) found that there is a relationship between feeding patterns and the incidence of stunting in toddlers aged 36-59 months [16]. Another study conducted by Fauziah (2020) also found that toddlers who have a history of poor feeding patterns have less chance of experiencing stunting when compared to toddlers who have a history of good feeding patterns [23]. In line with previous research, research in 2022 also shows that there is a relationship between feeding patterns and the incidence of stunting in toddlers [18].

According to Sunardi (2000) who said that the mother's knowledge and role in fostering healthy eating is highly demanded in order to maintain the correct pattern of feeding to children [24]. Child snacks need to be introduced since the child enters the family diet. Children's health can be achieved through balanced feeding efforts according to their nutritional needs. Balanced eating, namely eating according to the composition of food ingredients needed by the body in portions that are adjusted to the needs of children at each age.

The pattern of feeding that has an impact on the incidence of stunting is due to the lack of knowledge of the mother about the quality of food that is processed properly and correctly without reducing the intake of protein, iron, calcium, energy and zinc. During the cooking process that requires it to be given at the right time. Toddlers who have a history of poor feeding patterns have less chance of experiencing stunting when compared to toddlers who have a history of good feeding patterns. If the pattern of feeding is wrong, it can cause stunting in toddlers.

## **V. CONCLUSION**

In conclusion, there was a relationship between mother's knowledge and stunting, there was a relationship between family income and stunting and there was a relationship between parenting style and stunting. Several recommendations based on this study result are:

- A. Health service institutions through health workers need to carry out activities aimed at increasing public knowledge about the selection and processing of food ingredients as well as good and correct presentation.
- B. Communities must try to maintain food security at the household level, for example by using the yard as a source of food for the family.

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