

## The Effectiveness Of Parents' Role In The Prevention Of Stunting Toddlers In Highlands Of Bengkulu

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### ABSTRACT

*Stunting is condition of failure to develop in babies (0-11 months) and toddlers (12-59 months) due to chronic malnutrition, especially in the first 1,000 days of life so they are too short for toddler. In 2019, toddlers in Rejang Lebong there were 399 stunted. This study aimed to determine factors cause stunting in toddlers in the highlands of Bengkulu in 2020. Study used analytical observational design with cross-sectional. The results of the this study obtained a value of  $p < 0.05$ , is a income ( $p = 0.032$ ). There is a significant relationship between income and stunting incidence in the highlands of Bengkulu in 2020. Meanwhile, there is a relationship between income and stunting incidence in the highlands of Bengkulu in 2020.*

**Keywords:** parents' role, stunting, toddlers

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### INTRODUCTION

The incidence of short stature toddlers or commonly referred to as stunting is one of the nutritional problems experienced by toddlers in the world today (Ramayulis, 2018). Stunting is a chronic condition that describes stunted growth due to malnutrition in the long term. The problem of short stature toddlers describes chronic nutritional problems, influenced by the condition of the mother/prospective mother, pregnancy, and infancy, including diseases, suffered during infancy (Coordinating Minister for People Welfare of the Republic of Indonesia, 2013). Meanwhile, according to (Nababan, 2015), maternal educational background, parental occupations, iodine energy intake, and protein intake are predictors of height for school-age children. There is a significant relationship between the intensity of single or mixed Soil-Transmitted Helminths (STH) infection and supplementary food enriched with multi-micronutrients in pregnant women and nutritional status. There is no relationship between the effect of iron and increased body weight and height in children. There is no relationship between the incidence of underweight and STH. There is no

relationship between parental income level and children's nutritional status. There is a relationship between baby birth conditions, parental characteristics, and nutritional intake and stunting prevalence.

Toddlers who are stunted will have a lower level of intelligence, be more susceptible to disease, and, in the future, be at risk of decreasing productivity levels. Growth disorders suffered by children in their early days of life can cause permanent damage (Anisa 2012). Factors that can influence stunted growth and development of toddlers include poor maternal health and nutrition, unbalanced baby and child feeding, and infections. Particularly, these factors also include the nutritional status and health of the mother before, during, and after pregnancy, which influences the growth and early development of the baby in the womb. Furthermore, other maternal contributors to stunting also include young-age (teenage) pregnancy, which impairs the availability of nutrients to the fetus (due to the ongoing competitive demands of maternal growth) (WHO, 2014).

In 2017, 22.2% or around 150.8 million toddlers in the world experienced stunting. Indonesia's stunting prevalence in 2018 was 29.9% and in 2019 was 15.0%, the decrease in the figures was based on Prevalence Data from the Directorate General of Public Health, Ministry of Health of the Republic of Indonesia. In 2018, the highest percentage of nutritional problems in Bengkulu province was short stature toddlers, with a prevalence of 9%.

Study results by Aridiyah et al (2015) reveal that and urban areas are parental income, maternal knowledge about nutrition, and exclusive breastfeeding. There is a significant relationship between the level of energy intake, history of duration of infectious disease, birth weight, maternal educational level and parental income level and stunting incidence. There is a relationship between exclusive breastfeeding, maternal knowledge about nutrition, and parental income and stunting incidence (Nasikhah, 2012). (Pengan et al 2016) reveal that there is a relationship between a history of exclusive breastfeeding and stunting in children aged 12-36 months in the working area of Puskesmas Luwuk (Luwuk Community Health Center), Luwuk Selatan Sub-district, Banggai Regency, Central Sulawesi.

According to (Simbolon, Suryani, and Yorita 2019), stunting protective factors are the prevention of LBW (Low Birth Weight) in infants, limitation of number of children by three, improved parenting for the boys, prevention of young-age pregnancy and stunting in the female adolescent. Other factors are completing immunization, improving maternal education and the health services of toddlers in rural areas, and improving Fe consumption for pregnant mothers (Basri, Sididi, and Sartika 2021) state that there is a relationship between the toddler's birth length, history of exclusive breastfeeding, parental income, maternal education, and maternal knowledge about the effect of nutrition on stunting incidence in toddlers. Studies show that children who are stunted tend to come from families with low parental educational background, and socioeconomic status.

## METHOD

This study used an analytical observational with a cross-sectional research design (Dharma, 2011). In this study, researchers will conduct observations on mothers with stunting toddlers to determine the extent of knowledge and care carried out at home for their stunting toddlers, to determine the relationship between the independent variable and the dependent variable identified at the same time unit.

A hypothesis is the researchers' initial statement regarding the relationship between variables which becomes the researchers' answer about the possible research results (Dharma, 2011). A hypothesis test is used to determine whether there is a relationship or difference obtained from the sample data studied (Sastroasmoro, 2011). An operational definition aims to measure or assess the research variables and then provide an overview of the variables or make a correlation between the variables. The operational definition in this study consisted of the characteristics of the respondents, the environment, and the immunization status of toddlers. This study was conducted in the highlands of Bengkulu.

The population in this study were all mothers with stunting toddlers in Rejang Lebong Regency in 2019 which amounted to 399 people (Rejang Lebong Health Office Report, 2018). The sample of this study were all mothers with short and very short toddlers in Rejang Lebong Regency the Highlands of Bengkulu. The sample size after being corrected was 20 people respondents.

Administrative procedures carried out by researchers before conducting research include ethical approval and research permission. In this study, data were collected by giving questionnaires to respondents. The researchers conducted an initial survey to the research site (the working area of Puskesmas Kampung Delima (Kampung Delima Community Health Center). The respondents were selected according to the inclusion criteria, namely mothers with stunting toddlers and willingness

to participate in the study which was shown by returned informed consent.

Direct data collection at the puskesmas was done by distributing questionnaires to mothers with stunting toddlers. The questionnaire contained questions about respondent characteristics, respondent knowledge about stunting, and their house environment which should be answered for 20-30 minutes accompanied by researchers/assistant data collectors.

This questionnaire consisted of 2 parts, namely data on respondent characteristics and questions about their house environment. Data on respondent characteristics consisted of their identification number (given by researchers), the age of the toddler, educational background, and occupation.

## RESULT & DISCUSSION

### a. Description of Respondent Characteristics

Respondent characteristics studied in this study were the toddlers' development, stimulation of the toddlers' development, maternal age, maternal educational background, parental economic status, the toddler's breastfeeding status, the toddler's birth weight, and maternal employment status.

Based on Table 1, it is known that in the intervention group of mothers with stunting toddlers, more than half of the respondents are adult mothers with a percentage of 85%, more than half of the respondents have a low educational background with a percentage of 80%, more than half of the respondents have a low income with a percentage of 85%, more than half of the toddlers have a history of nonexclusive breastfeeding with a percentage

Table 1. Distribution of respondent characteristics based on maternal age, educational background, parental economic status, the toddler's breastfeeding status, the toddler's birth weight, and maternal employment status and stunting incidence in the highlands of Bengkulu in 2020 (n=40)

No.	Variable	Intervention		Control		p-value
		Total (n=20)	Percent (%)	Total (n=20)	Percent (%)	
1	Maternal Age					0.199
	Teenager	3	15.0	5	25.0	
	Adult	17	85.0	15	75.0	
2	Maternal Educational Background					0.068
	High	4	20.0	5	25.0	
	Low	16	80.0	15	75.0	
3	Parental Income					0.017
	High	3	15.0	2	10.0	
	Low	17	85.0	18	90.0	
4	Toddler's Breastfeeding Status					0.852
	Exclusive	6	30.0	10	50.0	
	Nonexclusive	14	70.0	10	50.0	
5	Toddler's Birth Weight					0.153
	< Normal	4	20.0	3	15.0	
	Normal	16	80.0	17	85.0	
6	Maternal Employment Status					0.079
	Working	4	20.0	3	15.0	
	Doesn't work	16	80.0	17	85.0	

Table 2. Stunting Toddler's Development Before and After the Toddler Stimulation Intervention in the Highlands of Bengkulu in 2020

No.	Parents' Role Variables	Toddler's development		p value
		Before Intervention (mean, SD)	After Intervention (mean, SD)	
1	Control group	8 (40.0)	12 (60.0)	0.001
2	Intervention group	4 (20.0)	16 (80.0)	0.004

of 70%, more than half of the toddlers have a history of normal birth weight with a percentage of 80%, and more than half of the respondents do not work (do not have employment status) with a percentage of 80%.

A bivariate analysis is used to determine the independent variable (parents' role) which is most related to the dependent variable (toddler's development), as shown in the following table 2.

Based on Table 2, it is known that in the control group, parents' role after the stimulation of toddler's development intervention was carried out is 12 (60%) respondents and in the intervention group is 16 (80%) respondents.

Based on Table 3, it is known that the difference in p-value in the group after the intervention is 0.001 in the control group and in the intervention group is 0.004. It can be concluded that there are differences in the categories of stunting toddler's development before and after the intervention (p-value < 0.003). Overall, there is an increase in care for stunting toddlers in both groups.

Based on Table 4, it is known that there are five variables that have a p-value of < 0.25, namely maternal age (p = 0.206), parental income (p = 0.032), parental occupation (p = 0.079), maternal educational background (p = 0.079), and toddler's birth weight. (p = 0.153). This means that the toddler's breastfeeding status variable cannot be included in the multivariate analysis because (p = 0.852).

Table 4. Bivariate Selection between Stunting Incidence in the Highlands of Bengkulu in 2020 (n=40)

Variable	P
Maternal Age	0.206*
Parental Income	0.032*
Parental Occupation	0.079*
Maternal Educational Background	0.079*
Toddler's Birth Weight	0.153*
Toddler's Breastfeeding Status	0.852*

Based on Table 5, it is known that the variable that has a p-value of < 0.05 is only parental income, with a p-value = 0.016. So, it can be concluded that only parental income that is

Table 3. Differences in the Average Development of Stunting Toddlers Before and After the Intervention in the Highlands of Bengkulu

No	Toddler's Development Variables	Stunting Toddler Stimulation		The difference in p-value in the group	The difference in p-value between groups
		Before Intervention (mean, SD)	After Intervention (mean, SD)		
1	Control group	8 (40.0)	12 (60.0)	0.001	0.003
2	Intervention group	4 (20.0)	16 (80.0)	0.004	

Table 5. Multivariate Test between Parents' Role in Stimulating Stunting Children in the Highlands of Bengkulu in 2020 (n=40)

<b>Intervention Characteristics</b>	<b>B</b>	<b>SE</b>	<b>B</b>	<b>P</b>
Maternal Age	- 0.197	0.248	- 0.200	0.440
Parental Income	0.650	0.242	0.660	0.016
Toddler's Birth Weight	0.371	0.195	0.377	0.075
Constanta	0.927	0.174		0.00

likely to influence parents' role in stimulating stunting toddlers.

The problem of short stature toddlers describes chronic nutritional problems, influenced by the condition of the mother/prospective mother, pregnancy, and infancy, including diseases, suffered during infancy. In 2017, 22.2% or around 150.8 million toddlers in the world experienced stunting. Indonesia's stunting prevalence in 2019 was 27.67%. The prevalence of very short and short toddlers aged 0-59 months in Bengkulu in 2018 was 18.2% very short and 9.8% short. Meanwhile, in Rejang Lebong Regency, in 2018, the incidence of stunted toddlers was 399 toddlers or 3.5%. The 2018 Indonesia Basic Health Research Report result presented a stunting prevalence has remained high, approximately 30.8%, which means that 1 out of 3 Indonesian children is still stunted. It can be caused by several factors, both direct factor and indirect factor. Direct factor affecting child growth and development is low birth weight (LBW), while the level of mother's knowledge of health becomes an indirect factor that affects the toddlers' growth conditions. The results of this study showed that at the beginning of the session before being given a treatment (education about early detection of stunting), mothers with stunted toddlers had lower knowledge (73.3%) than mothers with normal toddlers (77%). However, the average level of mother's knowledge regarding to health (mothers with stunted toddlers) has increased, from 73.3% to 89%, than others with normal toddlers (87.6%) with a significant increase in knowledge in each group ( $P < 0.05$ ). Stunting prevention needs to be done as early as possible. The importance of knowledge to mothers about providing nutrition for children

can prevent stunting in children. Health workers, including nutritionist and Posyandu cadres should provide health education especially related to stunting periodically to mothers who have babies in choosing a balanced diet for children so that children grow up healthy and avoid stunting. As reported by Sari (2021), stunting is considered to be a major public health problem that interferes children aged less than five years and it is highly associated with several long-term health consequences.

The results of hypothesis testing in this study after the multivariate test obtained a p-value of  $< 0.25$ , namely toddlers' birth weight ( $p = 0.153$ ), maternal age ( $p = 0.206$ ), parental occupation ( $p = 0.079$ ), maternal educational background ( $p = 0.079$ ), parental income ( $p = 0.032$ ), exclusive breastfeeding ( $p = 0.852$ ), and maternal employment status ( $p = 0.079$ ), because the p-value  $> 0.05$ , it can be concluded that there is no significant relationship between toddlers' birth weight, maternal age, parental occupation, maternal educational background, exclusive breastfeeding, and maternal employment status and stunting incidence in the highlands of Bengkulu in 2020.

According to (Ministry of Health of the Republic of Indonesia, 2015), factors influencing stunting incidence include low balanced-nutrition intake, health status (infectious disease), and other factors such as maternal educational background (educational level), parental income (economic status), parental occupation and maternal age. The cause of stunting is lack of nutritional intake in the long term, and usually these food intake is not in accordance with nutritional needs. The risk factors that contribute to stunting incidence

in toddlers including giving complementary foods too early, parenting style, unhealthy house (living) environment, unhealthy lifestyle pattern, and unhealthy living behavior. Improvements in nutritional status since the preconception period and during pregnancy, clean and healthy living behavior, and a history of infection are expected to reduce stunting incidence in toddlers.

The results of the study show that maternal age is 15%, adult with adolescent maternal educational background low 80%, toddler's breastfeeding status nonexclusive 70%, toddler's birth weight normal 80%, maternal employment status doesn't work ada 80%. Study results by (Health, University, and Ratulangi, 2017) in the working area of Puskesmas Sonder (Sonder Community Health Center) show that babies who are exclusively breastfed have stunting nutritional status of 20.7% and babies who are not exclusively breastfed have stunting nutritional status of 26.8% with p-value of  $> 0.05$ , namely  $p = 0.376$ , which means that there is no significant relationship between exclusive breastfeeding and stunting incidence in toddlers aged 13-36 months in the working area of Puskesmas Sonder.

This is in line with the results of Syabandini's (2018) study that LBW is a risk factor for stunting with  $p = 0.01$ , a history of infection is a risk factor for stunting with  $p = 0.001$ , and low protein intake is a risk factor for stunting with  $p = 0.015$ . However, low maternal educational level, low maternal knowledge, low parental income, poor nutritional parenting, non-exclusive breastfeeding, and low energy intake are not risk factors for stunting in toddlers aged 6-24 months. The results of the study found that those who did not get exclusive breastfeeding, namely 70%. breastfeeding really depended on the mother's desire whether to give it or not. Currently, there are many working mothers and young mothers who are reluctant to breastfeed because they are busy working and do not understand the importance of exclusive breastfeeding. Thus, there is a relationship between exclusive

breastfeeding and short stature toddlers, but there is no relationship between complementary feeding and short stature toddlers. It can be said that toddlers with exclusive breastfeeding pattern are more likely to have short stature (stunted) than children with non-exclusive breastfeeding pattern. This difference may be caused by other factors, namely the amount of breast milk given and the nutritional intake of breastfeeding mothers that influence exclusive breastfeeding. There is no significant relationship between the type of complementary feeding and short stature toddlers. Apart from the factors mentioned above, another factor that can influence toddlers' nutritional status is socioeconomic conditions.

Many studies show an increase in cases of malnutrition due to parental economic conditions. Not only that, maternal education, maternal occupation, parental income, number of children in the family, parenting patterns, and history of infectious diseases also influence the growth of toddlers. In this study, the dominant parental (father) occupation is entrepreneur/trader, so it can be estimated that parental income is low 85%, thus it will influence the choice of food ingredients which eventually will also influence the growth of toddlers. This is in line with the study by (Subandra, Zuhairini, and Djais 2018). That there is a significant relationship between exclusive breastfeeding and the incidence of short toddlers.

According to (Dengan et al, 2018), birth weight and stunting incidence in toddlers aged 24-59 months have a significant relationship ( $p = 0.002$ ). Exclusive breastfeeding and stunting incidence in toddlers aged 24-59 months have no significant relationship ( $p=0.327$ ). The provision of complementary feeding and stunting incidence in toddlers aged 24-59 months have a significant relationship ( $p=0.001$ ). Energy intake and stunting incidence in toddlers aged 24-59 months have a significant relationship ( $p = 0.005$ ). In conclusion, birth weight, complementary feeding, and energy intake have a significant

relationship with stunting incidence in toddlers aged 24-59 months while exclusive breastfeeding has no significant relationship with stunting incidence in toddlers aged 24-59 months.

Based on a study conducted by (Rufaida, Raharjo, and Handoko 2020), it can be concluded that stunting incidence is directly influenced by the maternal height of  $< 147\text{cm}$ , parental income that is below the minimum wage in Jember, and the male gender of toddlers. While indirectly, it is influenced by the number of children in the family of  $> 2$ . Furthermore, factors that do not influence stunting incidence are toddler age, paternal education, maternal education, maternal employment status, and birth spacing. The maternal height of  $< 147\text{cm}$  is an influencing factor. Meanwhile, according to (Rizki et al, 2022) that the characteristics of stunting toddlers get roles in the good category only for 1 toddler, while toddlers who get roles in the sufficient category get a total of 52 (60.5%) toddlers. On the demographics of the respondent's parents working as private employees, high school basic education, income level  $< \text{Rp. } 2,000,000$ . Based on gender, the most stunted toddlers were female with a total of 48 (55.8%) toddlers, while the stunted toddlers who were male were 38 (44.2%) toddlers. If seen from the results of this study, the nutritional status of children under five is much influenced by the height of the mother, the amount of family income that is  $< \text{UMK}$ , the status of working mothers. This happens because mothers with a height  $< 147$  have an effect on during pregnancy, where physiologically a short mother will have a small abdominal cavity so that when the baby grows it pushes the mother's pelvis and other internal organs causing the baby to be born quickly, and also conditions others that will affect the delivery process. In families that have income  $< \text{UMK}$ , this will clearly affect the nutrition consumed by the mother during pregnancy. With so many needs that must be met in the family but limited finances, it will affect the type of food and nutritional quality eaten by the mother.

Study results by (Wahyuni and Fithriyana 2020) show that some parents in the stunting toddler group have elementary school educational background with 102 respondents (92.86%), most of them have occupations as laborers with 70 respondents (67.87%) and most of them have an income that is below the minimum wage with 65 respondents (58.62%). The results of the bivariate study reveal that two variables (Education and Income) are significantly related to stunting incidence ( $p\text{-value} < 0.05$ ). It is recommended that parents of toddlers, both in stunting and non-stunting groups, to be able to manage time even though they are working, so they can still provide adequate parenting to their toddlers. Parents should be able to meet the needs of their toddlers.

Based on a study conducted by (Yuwanti, Mulyaningrum, and Susanti 2021)), food abstinence, history of consuming iron tablets, history of antenatal care, history of comorbidities in pregnancy, history of exclusive breastfeeding, clean water sanitation, smoking environment and economic conditions have no with relationship stunting in toddlers with  $p\text{-value}$  of  $> 0.05$ . Nutritional status, maternal height, and eating instant foods habit simultaneously are risk factors for stunting in toddlers. Based on the discussion, the conclusion of this study is that nutritional status, health problems in children, eating instant foods habit, and maternal height are related to stunting in toddlers. The need to modify health promotion programs regarding how to deal with stunting toddlers through parenting, eating patterns and sanitation and being able to evaluate parents of toddlers so that they can prevent and minimize stunting, so that parents can show positive reactions and have a mild level of anxiety while the child is hospitalized (Dhaifina, 2019). According to (Salsabila et al., 2021) Children's growth and development is an important thing that must be considered from an early age so that children achieve optimal development with the best quality for a better future for the nation. The role of parents in carrying out parenting is good and democratic so that it is more dominant in

making the nutritional status of toddlers better than parenting parents who are not good. Meanwhile, poor parenting patterns can result in the nutritional status of toddlers who are not stunted, because stunting is not only caused by external factors but can be caused by internal factors such as parental genetic factors which can indirectly affect the nutritional status of toddlers.

In line with (Briawan & Herawati, 2008) that parents have an important role in raising children. Not all parents, especially fathers are able to practice parenting properly and correctly, where the stimulation done by parents is related to the child's growth and development. According to Hati et al (2019), that all toddlers are there, and as a cause of cases, malnutrition is the presence of comorbidities, congenital abnormalities from birth and due to wrong parenting. So far, parents of children with stunting have focused on treatment to restore their anthropometric growth but do not know about the stimulation efforts that need to be made. Providing education affects the provision of stimulation of child growth and development to parents of children with stunting. Meanwhile, according to (Maryati et al., 2022) stunting is still a major problem in public health which has a direct impact on the country's growth and development. Parents play an important role in overcoming children's nutritional intake, considering the impact on the selection and amount of food products that can be obtained by children. Dietary diversity showed improvement for the intervention caregivers compared to controls. This is evidenced by an increase in rankings in more varied dietary practices.

According to (Lukman et al., 2021) birth weight, birth length, and age are significantly related to stunting. Therefore, maternal nutrition during pregnancy is the main key to preventing stunting. In line with (Putri et al., 2022) that low birth weight increases the risk of stunting in the 60-month-old toddler population by 6.95 times compared to non-LBW babies. Pregnant women need to follow the

recommendations of health workers in maintaining nutrition during the pre-conception, antenatal, Christmas and postnatal periods with the help of their husbands and family. Because according to (Sawitri et al., 2021) (Aryastami et al., 2017), that birth weight and birth length are related to the incidence of toddler stunting. As health workers who are close to the community, nurses play an important role in providing education to families, especially families of couples of childbearing age so that they can plan pregnancies from an early age so that they can provide good nutrition for mothers as a prevention of stunting in children. Furthermore, nurses are also encouraged to participate in research activities on the function of parenting, especially its relevance to stunting, research that discusses the relationship and correlation between parenting functions and stunting, because the concept of the first parenting function will make it function well in research efforts in the field of nursing discipline.

## **LIMITATION**

The limitations of this study are the number of missing data on the characteristics of the respondents, the sampling technique used creates a selection bias in the course of this research and the analysis only looks at two variables without analyzing the cofounding in them, so that the results obtained have a cofounding bias.

## **RESEARCH ETHICS**

This study pays attention to aspects of autonomy, benefits and consent. Researchers provide an explanation of benefits and research objectives for respondents. In addition, this research has pass the ethics test at Health Research Ethics Committee, Health Polytechnic of the Ministry of Health, Bengkulu with number KEPK/100/12/2020.



## CONFLICT OF INTEREST

No conflict of interest was found in this study.

## THANK-YOU NOTE

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## CLOSING

This study aimed to determine what factors cause stunting in toddlers in the highlands of Bengkulu in 2020. This study used an analytical observational with a cross-sectional research design. The results of the multivariate test in this study obtained a value of  $p < 0.05$ , where toddlers' birth weight ( $p = 0.153$ ), maternal age ( $p = 0.206$ ), parental occupation ( $p = 0.079$ ), maternal educational background ( $p = 0.079$ ), parental income ( $p = 0.032$ ), exclusive breastfeeding ( $p = 0.852$ ), and maternal employment status ( $p = 0.079$ ). For the last stage of modeling with a  $p$  value  $< 0.05$ , this study conclude that there is no significant relationship between toddlers' birth weight, maternal age, parental occupation, maternal educational background, exclusive breastfeeding, and maternal employment status—and stunting incidence in the highlands of Bengkulu in 2020.

Based on the results of this study, there is a need for integrated and multisectoral cross-program collaboration to increase family income, increase maternal education, increase maternal knowledge about toddler nutrition, and exclusive breastfeeding to reduce stunting incidence.

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