

## Are Maternal Education, Maternal Occupation, and Breastfeeding Escalate Nutrition Status in Stunted Children?

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### ABSTRACT

**Background:** Stunting is a nutritional problem that has a negative impact on achieving optimal growth and development in children. The Tangerang District Health Office has a high percentage of stunting children. Improving the nutrition of stunting children is influenced by providing balanced nutrition to children. Stunting children have an old orange with elementary-high school education. This study aims to determine the relationship between mother's education, mother's occupation and exclusive breastfeeding with the improvement of nutritional status in stunting children.

**Subjects and Method:** This research was conducted using cross sectional with a total sample of 45 subjects. The dependent variable is the improvement of stunting nutritional status. The independent variables were the mother's education level, occupation and exclusive breastfeeding status. Data was collected using a questionnaire. Data were analyzed using multiple logistic regression test.

**Results:** Low education affects the improvement of nutritional status in children (aOR= 1.68; 95% CI= 0.53 to 5.31; p= 0.660), Employment as a protective factor on nutritional status in stunted children (aOR= 0.64; 95% CI= 0.16 to 2.87; p = 0.450)

**Conclusion:** Mother's education affects the improvement of nutritional status in stunted children.

**Keywords:** balanced nutrition, education, employment, exclusive breastfeeding, stunting.

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### BACKGROUND

Stunting is one of the global nutritional problems experienced by toddlers in the world today, especially in developing countries, in 2018 around 22.2% or 150.2 million children under five in the world experienced stunting (Kemenkes 2018). Stunting is indicated by the Z-score (TB/U) of height versus age less than -2SD. The short category is less than -2SD and the very short category is less than -3SD (Ministry of Health, 2016). In 2019, 1 in 3 children under five or around 149 million children under five in the world suffers from

stunting (UNICEF, 2020). More than half of stunted toddlers in the world come from Asia (55%) while more than a third live in Africa (39%) (Ministry of Health, 2018).

Based on data from Riskesdas, stunting events in Indonesia from 2013-2018 decreased from 37.2% to 30.8% (Ministry of Health RI, 2018), but in 2020 there was an increase due to COVID-19 This number is estimated to increase by 15% due to the presence of a decline in people's purchasing power during this COVID-19 crisis (UNICEF, 2020).

In 2017, Indonesia was listed as the third country with the highest prevalence of stunting in Southeast Asia or South East Asia Regional (SEAR) after Timor Leste and India (Ministry of Health, 2018), while in 2018 according to According to East Asia and Pacific (EAP). Indonesia is in the second place with an average of children under 5 years old experiencing stunting, wasting and obesity.

The prevalence of stunting in children under five in Banten province in 2019 was 24.11%, while in 2018 it was around 26.6% with the percentage of short toddlers 17.7% and very short toddlers 9.60% (Kemenkes RI, 2020). The prevalence distribution of nutritional status (weight for age) in children aged 0-59 months in the province of Banten, namely Lebak, occupies the first position with the percentage of very short toddlers 17.61% and short toddlers 22.58% followed by pandegelang 19.38% and short toddlers 20.09%, attacked very short toddlers 14.18% and short toddlers 17.86%, town attacked toddlers very short 10.99% and short toddlers 13.69%, Cilegon city very short toddlers 7.23% and short toddlers 16.09%, very short toddlers 7.93% and short toddlers 15.30%, South Tangerang city for very short toddlers 3.13% and short toddlers 16.72% and lastly, Angerang city 3.11% and short toddlers 15.96%, (Riskesdas, 2018). Stunting will become a health problem if the prevalence reaches 20% or more (Kemenkes, 2016).

Preliminary study found in several working areas of Puskesmas in Tangerang Regency. The decline in the stunting rate every year is because the Health Service of the Republic of Indonesia, including the Tangerang District Health Office, has carried out health promotions about stunting. At the time of the visit to the Kemiri and Rajeg health centers there were children aged 1-59 months with measurements categorized as short. Interventions that have been carried out are counseling on balanced nutrition for

children and parents and given additional food, but previous implementations have been carried out by providing balanced nutritional food and given for 30 days. As well as checking for TB before the intervention and after the intervention was carried out with the results that there was an effect on the provision of balanced nutrition by improving nutritional status with children aged 1-59 months. Education of parents in the areas of the Rajeg and Kemeru Public Health Centers 9 out of 10 mothers have elementary school education so they do not know about stunting and balanced nutrition.

Several studies state that the level of education of parents, especially mothers, is very influential on the process of child growth and development. Several studies also state that the higher the education level of a mother, the higher the knowledge about nutrition for her child. Vice versa, the lower the education of a mother, the lower the mother's knowledge about nutrition for her child. In addition, employment and exclusive breastfeeding are suspected as risk factors for improving nutrition (Ni'mah et al., 2015). This study aims to determine the relationship between education, employment and exclusive breastfeeding with the improvement of nutritional status in stunting children.

## SUBJECTS AND METHOD

### 1. Study Design

The research design used is cross-sectional, which aims to determine the relationship between education, employment, and exclusive breastfeeding with the improvement of the nutritional status of stunted children. In this study, 2 times the initial height measurement data was taken and 1 month after the measurement the stunting child's height would be measured again. The first measurement took place on April 13, 2021 and the second measurement on May 14, 2021.

## 2. Population and Sample

Sampling in this study was carried out using the Probability Sampling technique of Simple Random Sampling type with a total of 45 subjects.

## 3. Study Variable

The dependent variable was the improvement in the nutritional status of stunting children. Independent variables were education, occupation and breastfeeding status.

## 4. Operational Definition

**Nutritional status** was the nutritional status of stunting children which is measured using anthropometry, measuring tools and methods using anthropometry, with an ordinal measurement scale.

**Mother's education** was formal education that has been successfully taken by the mother, the measuring instrument used is a questionnaire in the form of demographic data, with an ordinal measurement scale.

**Mother's occupation** was the work owned by the mother, tools and methods of measurement Questionnaire in the form of demographic data, with a dichotomous measurement scale.

**Breastfeeding status** was a child who receives exclusive breastfeeding or not from the mother, questionnaire measuring tools and events in the form of demographic data, with a dichotomous measurement scale.

## 5. Study Instrument

The research instrument used was a questionnaire and anthropometric measurements.

**Table 1. Sample Characteristics**

Characteristics	Category	Frequency	Percentage
<b>Maternal Education</b>	Bachelor	0	0
	SHS	5	11.1%
	JHS	15	33.3 %
	PS	25	55.6%
<b>Maternal Occupation</b>	Working	1	2.22%
	Not working	44	97.78%
<b>Exclusive Breastfeeding</b>	Breastfeed	26	57.78%
	Not breastfeed	19	42.23%

## 6. Data Analysis

Data for all subjects were collected through the editing, coding and processing processes, which were then analyzed using the Multiple Logistics Regression test.

## 7. Research Ethics

This research has passed the ethical test from the STIKES Yatsi Tangerang Ethics Commission with No. 102/LPPM-STIKES-YATSI/-II/2021.

## RESULTS

### 1. Sample Characteristics

Based on the results of the characteristics of the primary education level, there are more than 25 subjects (55.6%). Based on the results of the characteristics of the mother's work more than not working, namely 44 subjects (97.78) %. Based on the characteristics of the highest breastfeeding status, children who were breastfed were 26 subjects (57.78%).

### 2. Bivariate Analysis

Maternal education was associated with improved nutritional status, but this result was not statistically significant (OR= 1.60; 95%CI= 0.51 to 4.98; p= 0.439). Maternal occupation (OR= 0.00; p= 0.528) and exclusive breastfeeding (OR= 0.67; 95% CI= 0.16 to 2.75; p= 0.416) were not associated and these results were not statistically significant (Table 2).

**Table 2. Relationship of Education, Employment and Exclusive Breastfeeding with Stunting**

Variable	Nutritional Status Improvement						OR	95% CI		p
	Up		Down		Stable			Lower limit	Upper Limit	
	N	%	N	%	N	%				
<b>Maternal Education</b>										
PS	6	24	19	76	25	55.56	1.60	0.51	4.98	0.439
JHS	4	26.7	11	73.3	15	33.34				
SHS	0	0	5	100	5	11.1				
<b>Maternal Occupation</b>										
Working	0	0	1	100	0	0	0.00	0.00	-	0.528
Not working	21	47.72	4	9.1	19	43.18				
<b>Exclusive breastfeeding</b>										
Breastfeed	5	19.23	0	0	21	80.77	0.67	0.16	2.75	0.416
Not breastfeed	5	26.32	0	0	14	73.68				

**3. Multivariate Analysis**

The results of multiple logistic regression showed that low education had an effect on improving nutritional status in children (aOR= 1.68; 95% CI= 0.53 to 5.31; p= 0.660),

working mothers as a protective factor on nutritional status in stunted children (aOR= 0.64; 95% CI= 0.16 to 2.87; p= 0.450) (Table 3).

**Table 4. Results of multiple logistic regression analysis maternal education, maternal occupation and breastfeeding status with nutritional improvement status in stunting children**

Independent variable	aOR	95% CI		p
		Lower limit	Upper Limit	
Education	1.68	0.53	5.31	0.660
Exclusive breastfeeding	0.64	0.16	2.87	0.450
N observation= 45				
-2 log likelihood= 46.077				
Nagelkerke R <sup>2</sup> = 5.3%				

**DISCUSSION**

Stunting is a condition of toddlers who have a height or body length that is not in accordance with their age. This condition is seen from the measurement of height minus two standard deviations of the median standard deviation of child growth according to WHO. Stunted toddlers are included in chronic nutritional problems where the causative factors are socioeconomic conditions, maternal nutrition during pregnancy, infant morbidity, and lack of nutritional intake for toddlers. Toddlers who experience stunting

are at risk of having difficulty in achieving optimal physical and cognitive development in the future (Bappenas, 2018).

Based on the observations of the researchers, there were more mothers with elementary school graduates than mothers with middle and high school education. However, mothers with elementary school graduates are able to give their children food with a balanced nutritional menu, while mothers with high school graduates prioritize their children, what is important is that they eat not what the food they eat is not in

accordance with a balanced nutritional menu. This research is in line with Virdani's research. (2012) which states that in the research group the most categories found are sufficient knowledge levels of 55%, followed by a lack of knowledge level of 36% and sufficient knowledge levels of 9%. Mothers have an important role in changing nutritional intake in toddlers. Mothers with a better level of knowledge are more likely to apply their knowledge in caring for their children, especially providing food according to the nutrients needed by toddlers, so that toddlers do not experience a lack of food intake. A high level of mother's knowledge does not guarantee having a toddler with a normal nutritional status. Mothers who have good knowledge are expected to be able to apply the knowledge they have in everyday life. However, behavior is not only influenced by the level of knowledge but also influenced by other factors such as socio-economic, socio-cultural, and environmental (Notoatmodjo, 2007).

The results of this study are different from those of Astuti and Taurina (2012) which states that there is no relationship between the mother's education level and the nutritional status of preschool and elementary school children in Godean District based on the body weight for body height (WHZ). Similar study states that there is no relationship between maternal education level and stunting in children under five (Anindita, 2012).

Brar et al. (2020) stated that the trigger for stunting reduction in Senegal West Africa was Senegal's success in reducing stunting largely due to the country's political stability, government priorities for nutrition and the implementation of nutrition efforts with a multi-sectoral approach, increased availability of maternal health and education services, access to water facilities piping and sanitation, and poverty reduction. Further efforts in the health, water and sanitation,

and agriculture sectors will support continued success.

A study in Ethiopia shows that the highest factors influencing the decline in stunting in Ethiopia are nutrition-specific and sensitive sectors, with particular focus on agriculture, access to health care, sanitation, and education. Key factors include an increase in total edible crop yields (32% of change), an increase in the number of health workers (28%), a decrease in open defecation (13%), parental education (10%), maternal nutrition (5 %), an increase in the economy (4%), and a decrease in the incidence of diarrhea (4%) (Tasic, 2020).

Based on the study, height increase is also influenced by maternal factors, not maternal education factors. Maternal factors associated with moderate and severe stunting in Ethiopian children. Therefore, educating and empowering women, increasing access to family planning and ANC services, and addressing maternal malnutrition are important factors that should be included in policies aimed at reducing child stunting in Ethiopia and every centimeter increase in maternal height reduces the likelihood of stunting by 0.5 % (Amaha, 2020).

Nagahori's research (2015) shows that there are five factors that were found to be statistically significant in relation to child malnutrition, including maternal age, child age, mother's education level, mother with family planning information, and source of tap water. A high percentage of stunting is positively related to a high percentage of chronic malnutrition. We speculate that inadequate nutrition is more likely to begin after weaning (Nagahori, 2015).

Another similar study was conducted by Nur et al. (2020) that protein intake can increase / increase body weight and height in stunting children. The protein consumed was in the form of vegetable protein by 20 people (67%) and animal protein by 10 people



(33%). The incidence of stunting in the Tangerang District Office area, especially in Kemiri Health Center and Rajeg Health Center, is caused by a lack of awareness of parents in providing balanced nutrition to children, economic factors because parents with incomes below the minimum wage but choose to spend money for other purposes and focus appeals. nutrition in children. Improving the nutritional status of stunting children is influenced by the provision of balanced nutrition (PMK 41, 2014). This study concludes that parental education affects the improvement of nutritional status in stunted children.

#### **AUTHOR CONTRIBUTION**

Ria Setia Sari, Febi Ratnasari, and Yuni Susilowati collected the data, did data analysis and wrote the manuscript.

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#### **CONFLICT OF INTEREST**

There is no conflict interest in this study.

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