



Relationship Between Fulfilling Balance Nutrition and Stunting in Toddlers Aged 24-26 Months

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Abstract

Stunting is a chronic malnutrition problem caused by insufficient nutritional intake for a long time due to feeding that is not in accordance with nutritional needs. Stunting can be a major threat to the quality of Indonesian people and also a threat to the nation's competitiveness. This can occur because stunted children are not only disturbed by their physical growth, but also their brain development which greatly affects their ability and achievement at school, productivity and creativity at productive age. This research was conducted to determine the relationship between the fulfillment of balanced nutrition and the incidence of stunting in children under five. The design of this study was an observational analytic epidemiology using cross sectional. The population in this study were 200 respondents with a quota sampling technique. Furthermore, bivariate analysis was carried out using the chie square. The results showed that the majority of the level of fulfillment of balanced nutrition in toddlers was 143 (71.5%) and the incidence of stunting was mostly not stunted by 161 respondents (80.5%). Analysis of data using the chi square test with a significant level of 0.05 obtained p value is 0.000, which means that the value is smaller than the value of the significant level ($0.000 < 0.05$) which indicates a relationship between the fulfillment of balanced nutrition and the incidence of stunting in children under five. The results of statistical data analysis also showed an Odds Ratio (OR) of 0.119 which means that the fulfillment of unfulfilled nutrition will have a chance of 0.119 with the incidence of stunting compared to the fulfillment of fulfilled balanced nutrition.

Keywords: balanced nutrition ; stunting ; toddlers

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Introduction

Indonesia as a developing country still has various problems that need attention and improvement, one of which is the problem of people's nutrition. Nutritional problems in Indonesia and other developing countries are still dominated by malnutrition. Malnutrition is a problem that requires attention, because it is an important risk factor for morbidity and mortality in pregnant women and toddlers (Krisnansari, 2010).

One of the unresolved nutritional problems in toddlers is *stunting*. *stuntis* not only a national under-five nutrition problem, but has become a global problem. Stunting is a chronic malnutrition problem caused by inadequate nutritional intake over a long period of time and the provision of food intake that is not in accordance with nutritional needs. According to the World Health Organization (WHO), cases of short toddlers are a public health problem if the prevalence reaches $\geq 20\%$. Based on Nutrition Status Monitoring (PSG) (2017), shows the prevalence of stunting under five in Indonesia is 29.6% (Erika Fitria Lestari, 2020).

The problem of stunting is a problem that does not only occur nationally but is a global problem, especially in poor

and developing countries. In 2017 there were 22.2% or around 150.8 million toddlers in the world experiencing stunting where half of the stunted toddlers in the world came from Asia (55%) while more than a third (39%) lived in Africa. 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) region. The average prevalence of stunting under five in Indonesia in 2005-2017 was 36.4% (Kementerian Kesehatan RI, 2018).

Stunting can be a major threat to the quality of Indonesian people and also a threat to the nation's competitiveness. This can happen because stunted children are not only disturbed by their physical growth, but also by disrupted brain development which greatly affects their ability and achievement in school, productivity and creativity in productive age. Children who suffer from stunting will be more susceptible to disease and when they become adults are at risk of developing degenerative diseases. Cases of stunting in children can be used as an indicator of the

low quality of a country's human resources. Stunting can lead to poor cognitive abilities, low productivity and an increased risk of disease resulting in long-term losses for the Indonesian economy (Setiawan et al., 2018).

The research conducted by Artanti (2022) with title Stunting and Factors Affecting Toddlers in Indonesia found that stunting is influenced by several complex factors not only at the individual level but also at the family and community levels. A comprehensive synthesis of the available evidence on the determinants of stunting in children in Indonesia outlines who is most vulnerable to stunting, which interventions are successful, and what new research is needed to fill knowledge gaps (Artanti, 2022).

The research conducted by Shinsugi (2015) about Factors associated with stunting among children according to the level of food insecurity in the household: a cross-sectional study in a rural community of Southeastern Kenya found that among 404 children, the prevalence of stunting was 23.3%. The percentage of households with severe food insecurity was 62.5%. In multivariate analysis, there was no

statistically significant association with child stunting (Shinsugi et al., 2015).

Balanced nutritional intake from food plays an important role in the process of child growth (Mentari & Agus, 2018). The application of a balanced nutritional diet emphasizes the pattern of food consumption in the type and quantity of the principle of diversity of food to prevent nutritional problems. Components that must be met in implementing a balanced nutritional diet include adequate quantity, quality, contain various nutrients (energy, protein, vitamins and minerals) for daily life and can store nutrients to meet the body's needs (Izwardi, 2016).

Other research conducted by Yulianti (2022) shows the qualitative results produced seven themes, including mother's perception of illness (stunting), child health development, maternal health history, mother's adaptive and maladaptive behavior during child care, mother's form and source of support during child care, mother's form and source of obstacles during child care, and mother's psychological response (Mona Yulianti, Puji

Nurfauziatul, Sutisna Sutisna, Karwati Karwati, 2022).

Qualitative studies through focus group discussions show that mothers of toddlers are not too worried about 'stunting'. Children who are short and not tall are not too worried about them because the important thing is that children are healthy, can play and are not fussy. It was also said that being shorter than friends of his age was not too much of a problem because his parents were also short(Margawati & Astuti, 2018). Other research shows that the consumption of children under five is in the category of lacking energy (55.9%), protein (52.6%) and calcium (52.0%) and is statistically significant with an OR value of 4.53;5.34;3 ,93. Low energy, protein, and calcium intake is caused by limited variety of food and the number of meals that are only eaten twice a day is related to the low education of parents of toddlers(Nabuasa et al., 2016). Other research also shows that parenting is a risk factor for stunting with an Odds Ratio value of 8.07. This shows that toddlers with poor eating parenting styles have an 8 times greater chance of experiencing stunting, when compared to toddlers with good eating parenting styles.(Widyaningsih et al., 2018).

A good diet does not necessarily mean that the food contains the correct nutritional intake. Many toddlers have a good diet but do not meet the number and composition of nutrients that meet the requirements for balanced nutrition. Balanced nutritional intake from food plays an important role in the process of child growth(Mentari & Agus, 2018). Diet is the most important ingredient in overcoming the problem of stunting(Kementerian Kesehatan RI, 2018). The application of a balanced nutritional diet emphasizes food consumption patterns in the type, quantity and principle of diversity of food to prevent nutritional problems. Components that must be met in implementing a balanced nutritional diet include adequate quantity, quality, contain various nutrients (energy, protein, vitamins and minerals), and can store nutrients to meet the body's needs.(Izwardi, 2016).

Methods

The type of research in this study was descriptive correlation research, namely analyzing the relationship between the fulfillment of a balanced nutritional diet and the incidence of stunting. Time approach using the Cross Sectional method.The population of this

study were mothers who had toddlers aged 24-60 months as many as 200 toddlers using a quota sampling technique obtained from 10 Posyandu. Data collection was carried out using the Food Frequency Questionnaire (FFQ) to measure food intake and a questionnaire to measure the incidence of stunting using the Z-Score.

Results and Discussion

Respondents in this study consisted of 200 people who met the inclusion criteria.

Table 1. Distribution of Fulfillment of Balanced Nutrition in Toddlers Age 24-60 Months

Variable	Category	Frequency
Nutrition Fulfillment	Not fulfilled	57 (28.5%)
	Fulfilled	143 (71.5%)
Total		200

Table 1 shows an overview of the fulfillment of balanced nutrition in toddlers. The number of respondents in the fulfilled category was 143 people (71.5%) while the unfulfilled were 57 people (28.5%).

Fulfillment of balanced nutrition includes daily consumption of foods that contain nutrients in the type and amount according to the body's needs, taking into account the

principles of food diversity, physical activity, clean living behavior and monitoring body weight regularly in order to maintain normal body weight to prevent problems. Nutrition (Peraturan Menteri Kesehatan Republik Indonesia Nomor 41 Tahun 2014 Tentang Pedoman Gizi Seimbang, 2014). Based on the results of the study, 109 people (54.5%) consumed vegetables (54.5%) and 91 people (45.5%) fulfilled balanced nutrition based on indicators of food consumption. Consumption of vegetables that contain vitamins, minerals and fiber is a simple indicator in realizing the fulfillment of balanced nutrition. As for the consumption of carbohydrates, proteins, fats and fruits have been fulfilled. A decline in the quality of household food consumption which is characterized by limited purchases of food sources of protein, vitamins and minerals will result in malnutrition, both macro and micro nutrients (Nasikhah, Roudhotun. Margawati, 2012).

The main cause of malnutrition in toddlers is poverty so that children's access to food is disrupted. Another cause is parents' ignorance due to lack of education resulting in low knowledge of nutrition and the emergence of food taboo behavior,

where nutritious food is taboo and may not be consumed by children under five. Ignorance about nutrition can result in a person choosing the wrong food ingredients and how to serve them. On the other hand, mothers with good nutritional knowledge usually practice healthy eating patterns for their children to fulfill their nutritional needs.(Suryani, 2017)

The factors that affect the fulfillment of balanced nutrition in toddlers are mother's education, mother's occupation, family income, number of children and mother's upbringing. Of these factors the most influential factor is family income(Putri et al., n.d.). Mothers who are highly educated will usually have a job which will affect the limited time in caring for children so that attention in providing food intake to children will decrease. This can affect the fulfillment of nutrition and growth and development of toddlers. The socioeconomic level of the family is related to the purchasing power of the family. The family's ability to buy groceries also depends on the size of the family's income, the price of groceries and its management. Limited family income will also determine

the quality of toddler food both in quality and quantity(Nasikhah, Roudhotun. Margawati, 2012).

The number of family members is also one of the factors that influence the fulfillment of toddler nutrition in the family. The number of family members that is not matched by an increase in family income will have an impact on fulfilling toddler nutrition(Hapsari, 2010). Fulfillment of balanced nutrition in toddlers really needs to be emphasized in efforts to prevent cases of short toddlers (stunting). Stunting is a condition in which toddlers have less length or height compared to their age(Toddler, 2016). Balanced nutrition is food that is consumed by various individuals on a daily basis and fulfills the 5 groups of nutrients in sufficient quantities, not excessive and not lacking.(Toddler, 2016). The implementation of the four pillars in fulfilling balanced nutrition in toddlers needs to pay attention to the diversity of foods, get used to healthy living behaviors, carry out physical activities, maintain and monitor normal body weight.

Table 2. Distribution of Stunting Incidents in Toddlers Age 24-60 Months

Variable	Category	Frequency
Incident stunting	Yes	39 (19.5%)
	No	161 (80.5%)
Total		200

Table 2 shows an overview of the incidence of stunting in toddlers. The number of respondents in the stunting category were 39 people (19.5%) while those who were not stunted were 161 people (80.5%).

The toddler period is a period that is very sensitive to the environment so that more attention is needed, especially nutritional adequacy (Kurniasih, 2010). Nutritional problems, especially stunting in toddlers can hinder children's development, with negative impacts that will take place in later life such as intellectual decline, vulnerability to non-communicable diseases, decreased productivity leading to

poverty and the risk of giving birth to babies with low birth weight(Nadhiroh, 2015).

Stunting is a condition of failure to thrive in children under five (babies under five years) resulting from chronic malnutrition so that children are too short for their age. Malnutrition occurs since the baby is in the womb and in the early days after the baby is born, however, stunting is a new condition after the baby is 2 years old. Stunted and severely stunted toddlers are toddlers with body length (PB/U) or height (TB/U) according to their age compared to WHO-MGRS (Multicentre Growth Reference Study) standards.(Health, 2014).

Table 3. The relationship between fulfilling a balanced nutritional diet and stunting in toddlers aged 24-60 months

Fulfillment of Balanced Nutrition	Stunting events				Total		P-values	OR
	Yes		No		f	%		
	F	%	F	%				
Not fulfilled	26	45,6	31	54,4	57	100	0.000	0.119
Fulfilled	13	9,1	130	90.9	143	100		
Total	39	19.5	161	80.5	200	100		

Table 3 shows the fulfillment of balanced nutrition with the incidence of

stunting in toddlers aged 24-60 months. It can be seen that 26 people (45.6%) did not

fulfill balanced nutrition with stunting and 31 people (54.4%) did not. Meanwhile, 13 people (9.1%) fulfilled balanced nutrition with stunting incidents and 130 people (90.9%) without stunting.

The results of statistical data analysis obtained a p value of 0.000 with a significance level of 0.05. The results of the hypothesis test of the fulfillment of balanced nutrition ($p = 0.000$) are related to the incidence of stunting in toddlers. The table also shows that the Odds Ratio (OR) is 0.119, which means that unfulfilled balanced nutrition will have a 0.119 chance of stunting compared to fulfilled balanced nutrition.

The factors that affect the fulfillment of balanced nutrition in toddlers are mother's education, mother's occupation, family income, number of children and mother's upbringing. Of these factors the most influential factor is family income(Princess et al., n.d.). Mothers who are highly educated will usually have a job which will affect the limited time in caring for children so that attention in providing food intake to children will decrease. This can affect the fulfillment of nutrition and growth and development of toddlers. The

socioeconomic level of the family is related to the purchasing power of the family. The family's ability to buy groceries also depends on the size of the family's income, the price of groceries and its management. Limited family income will also determine the quality of toddler food both in quality and quantity(Nasikhah, Roudhotun. Margawati, 2012).

Provision of appropriate food ingredients and menus for toddlers in an effort to improve nutritional status will be realized if the mother has a good level of nutritional knowledge. Ignorance regarding information about nutrition can lead to a lack of quality or nutritional quality of family food, especially food consumed by toddlers (Sjahmien, 2003). One of the causes of nutritional disorders is a lack of knowledge of nutrition and the ability to apply information about nutrition in everyday life. The mother's nutritional knowledge level influences attitudes and behavior in choosing food ingredients, which will further affect the nutritional status of her family(Mugianti et al., 2019).

Nutritional status is also very much determined by other factors such as family support in providing nutritious food and the

family's socioeconomic level. Families with poor socioeconomic conditions accompanied by a large number of children will result in not only a lack of attention and affection for children but also primary needs such as food, clothing, and shelter or housing not being met.

Conclusion

Based on research that has been conducted on 200 respondents, it can be seen that the majority of the fulfillment of balanced nutrition in toddlers is fulfilled by 143 (71.5%) and most of the stunting incidents did not experience stunting by 161 respondents (80.5%). Data analysis used the chi square test with a significant level of 0.05 and obtained a p value of 0.000, which means that the value is smaller than the significant level ($0.000 < 0.05$) which indicates that there is a relationship between fulfilling balanced nutrition and the incidence of stunting in toddlers. The results of statistical data analysis also show that the Odds Ratio (OR) is 0.119, which means that unfulfilled nutrition will have a 0.119 chance of stunting compared to fulfilled balanced nutrition.

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