

# The Feeding Pattern Related to Stunting in Toddlers Age 24-59 Months

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**Abstract**— One of the main causes of stunting in children in Indonesia is due to the wrong feeding patterns of parents. Feeding patterns that occur in children, such as fault in determining the type of food, the amount of food and the feeding schedule that is not given based on the child's age can result in unfulfilled balanced nutritional intake in these children which can lead to stunting. This research uses descriptive correlational method with a retrospective time approach. The number of samples in this study were taken using a total sampling technique of 40 respondents. The tools used in this study used a stature meter and processed them into standardized values (*Z*-score) using anthropometry to measure stunting, the instrument used Child Feeding Questionnaire (CFQ) to measure feeding patterns. Analyze data used Kendall's Tau statistical test. The result using Kendall's Tau obtained  $p$ -value  $0.01 < \alpha$  (0.05). The conclusion of this research there is a significant correlation between the feeding pattern and stunting on toddlers in the Work Area of the Jetis Public Health Center II Bantul, Yogyakarta.

**Keywords**— *Feeding patterns, Stunting, Toddlers*

## I. INTRODUCTION

Stunting (dwarfism) is a chronic nutritional problem in toddlers which is characterized by a shorter height compared to children at their age. Children who are stunted will be more susceptible to disease and as adults are at risk for degenerative diseases. The impact of stunting is not only on health but also on the level of intelligence of children. Children are the nation's assets in the future. If Indonesia in the future has many children suffering from stunting, it is certain that this nation will not be able to compete with other nations in facing global challenges [1].

The impact if a child is stunted will lead to the proportion of the quality of human resources that will be produced. This means that the magnitude of the problem of stunting in children today will have an impact on the quality of the nation's future. Increased incidence of morbidity and mortality, suboptimal cognitive, motor and verbal development in children, increased health costs, less optimal posture as adults are shorter than usual, increased risk of obesity and other diseases, decreased reproductive health, learning capacity and performance less than optimal during school years, productivity and work capacity that are not optimal.

The prevalence of stunting for Indonesian toddlers is the second largest in the Southeast Asia region after Laos, which reached 43.8%. However, based on the 2017 Nutritional Status Monitoring (PSG), toddlers who experienced stunting were recorded at 26.6%. This figure consists of 9.8% in the very short category and 19.8% in the short category. In the first 1,000 days toddlers are a golden age, but in fact there are still many toddlers aged 0-59 months who experience nutritional problems. In order to suppress the nutritional problem of toddlers, the government carried out a national movement to prevent stunting and collaborate in multi-sector partnerships. The National Team for the Acceleration of Poverty Reduction (TNP2K) has implemented 160 priority districts for stunting reduction. Based on Basic Health Research (Riskesdas, 2013), there are 15 districts / cities with a prevalence of stunting above 50% (UNICEF, 2017-).

One of the main causes of stunting in children in Indonesia is due to parenting or wrong feeding patterns from parents. Parenting mistakes that occur in children such as fault in feeding which result in unfulfilled nutritional intake in these children can lead to stunting. So that sufficient knowledge of parents greatly affects the nutritional status of a child. Children whose nutritional requirements are fulfilled will increase the potential of these children so that they can improve the quality of human resources, especially in Indonesia.

The prevalence of toddlers with stunting in DIY in 2016 was 11% and this figure decreased from 2016 of 14.36 and again decreased to 13.86 in 2017. The largest prevalence of toddlers with stunting was Gunung Kidul Regency (20.60), from this figure. It can be seen that the prevalence of very stunting toddlers in DIY is higher compared to Riskesdas 2013 (8.2%) (DIY, 2017).

## II. RESEARCH METHOD

This research is a descriptive correlational study with a retrospective time approach. The population in this study were mothers who have a stunting toddler aged 24-59 months in the working area of Jetis Public Health Center II Bantul amounted to 40 respondents. The sampling technique used Total Sampling. The instrument used Child Feeding Questionnaire (CFQ) to measure feeding patterns.

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**III. RESULT AND DISCUSSION**

Characteristics of respondents in this study were mothers who had toddlers who were in the working area of Jetis Public Health Center II Bantul, Yogyakarta ages 24 - 59 months a total of 40 people who are willing to take data on the feeding patterns of stunting children. General characteristics that are explored and considered in this study include toddler age, toddler sex, mother's age, education, income. Characteristic data respondents in this study is as follows:

TABLE I. THE CHARACTERISTICS OF RESPONDENTS BASED ON THE AGE OF THE TODDLERS, GENDER, MATERNAL AGE, EDUCATIONAL HISTORY, INCOME IN THE WORK AREA OF JETIS PUBLIC HEALTH CENTER II BANTUL YOGYAKARTA

Characteristics	Frequency (f)	Percentage (%)
Toddler age		
24-30	5	12.5
31-37	14	35.0
38-44	8	20.0
45-51	10	25.0
52-59 Months	3	7.5
Gender		
Male	23	57.5
female	17	42.5
Mother's Age		
<21	2	5.0
21-35	21	52.5
> 35 Years	17	42.5
Education		
Middle School	7	17.5
High School	28	70.0
College	5	12.5
Income		
Rp. 1,649,000	11	27.5
> Rp. 1,649,000	29	72.5

Source: Primary Data, 2020

Based on table 1 it's known that parents who have stunting toddlers as many as 40 people with majority aged 31-37 months as many as 14 toddlers (35.5%). Majority male Toddlers are 23 toddlers (57, 5%). Majority mothers in the age range 21-35 as many as 21 (52.5%) have a history of high school education as many as 28 people (70.0%). And majority income of parents who have stunting toddlers > Rp. 1,649,000 as many as 29 people (72.5%).

*A. Feeding Patterns in Stunting Toddlers*

TABLE II. THE FREQUENCY OF FEEDING PATTERNS IN STUNTING TODDLERS IN THE WORKING AREA OF JETIS PUBLIC HEALTH CENTER II BANTUL, YOGYAKARTA

Category	Frequency (f)	Percentage (%)
Well	7	17.5
Enough	15	37.5
Less	18	45.0
Total	40	100.0

Source: Primary Data, 2020

Table 2 shows the feeding pattern of stunting toddlers, most of the categories Less, as many as 18 people (45.0%). Diet in toddlers plays an important role in the growth process in toddlers, because the food contains a lot of nutrients. Nutrition is a very important part of growth. Nutrition in it has a very close relationship with health and intelligence. If the diet is not achieved properly in toddlers, the toddler's growth will be disturbed, the body is thin, short, and even malnutrition can occur in toddlers. The pattern of feeding, especially in the first 2 years of life, the pattern of feeding can affect the quality of toddler food consumption, so that it can affect the nutritional status of children [2].

This feeding pattern includes the frequency of eating at least three times a day, which is in the good category, but there is also a low category. Most of the energy supply adequacy (AKE) and protein adequacy rates (AKP) are in the good category, but not all. The frequency of food consumption can be an estimator of the level of nutritional adequacy, while adequate energy is used to maintain body functions, muscle activity and growth, and adequate protein is used for growth and maintenance of body tissues, regulators and as burner [3].

The highest percentage of toddlers in the age range 31-37 months was 14 toddlers (35.0%) with the less category as much as 18 toddlers (45.0%). Children aged 24-59 months and over need more nutritional intake, toddlers aged 0-23 months have a lower risk of feeding patterns because of the protection they receive from breast milk (Cintya & Dewi, 2015). The feeding pattern of children must be adjusted according to the child's age so as not to cause health problems, based on the nutritional adequacy ratio (RDA) the ages are grouped into 0-6 months, 7-12 months, 1-3 years, 4-6 years [4].

It is recommended that children eat regularly 3 times a day, starting with breakfast, lunch and dinner. Food for children aged 1-5 years, at this age the child must eat like a family diet, namely: breakfast, lunch, dinner and 2 intervals. The imbalance of food during toddlerhood will result in physical and mental disorders that can hinder the development and growth of toddlers [5].

TABLE III. STUNTING INCIDENT IN TODDLERS IN THE WORK AREA OF JETIS PUBLIC HEALTH CENTER II BANTUL, YOGYAKARTA

Category	Frequency (f)	Percentage (%)
Stunting		
Short	22	55.0
Very short	18	45.0
Total	40	100.0

The results of the study based on table 8 show that Most of the 40 stunting toddlers were in the short category as many as 22 (55.0%). Stunting was defined as height for age below the WHO median standard of child growth curve. Stunting is a chronic condition of poor linear growth of a child which is the accumulation of the effects of various factors such as poor nutrition and health before and after the child's birth. Nutritional status is classified according to the Ministry of Health anthropometry (2018) based on body length according to age (PB / U) or height according to age (TB / U), namely very short, short, normal, and tall. [6].

According to Putri's research, T.A. (2018) bad effects that can be caused by nutritional problems in toddlers in the short term are disruption in brain development, intelligence, physical growth disorders, and metabolic disorders in the body. Whereas in the long term the bad consequences that can be caused are decreased cognitive abilities and learning achievement, decreased immunity so that they get sick easily, and a high risk of diabetes, obesity, heart and blood vessel disease, cancer, stroke, and disabilities in old age. as well as uncompetitive quality of work which results in low economic productivity. Stunting in children is a serious problem because it is associated with a greater risk of morbidity and mortality, obesity, and non-communicable diseases in the future, short adults, bad cognitive development, and low productivity and income.

The results of the study based on table 9 show that stunting by toddlers' age. The highest percentage of toddlers in the age range 31-37 months were 14 children (35.0%) with a short category of 22 people (55.0%). This is in line with research conducted by Kumala (2013) toddlers under 2 years of age who experienced stunting was 18.5% and toddlers above or equal to two years who experienced stunting was 54.3% [7]. The difference of this age group is due to the age 0-2 years is a golden period or "window of opportunity" to improve the quality of life of children so that it will be effective and efficient for nutrition improvement interventions as early as possible. This shows that toddlers with stunting at the age of 6-12 months will still experience stunting at the age of 3-4 years if early intervention is not given [8].

Toddlers are defined as baby under five years of age where the body and brain grow very rapidly in achieving their functions. Toddlers have two characteristics, namely children aged 1-3 years called toddlers and pre-school children. Toddler is a child aged 12-36 months where this period is most important for intellectual growth and development of children's intelligence. Toddlers, especially those aged 1-3 years, are a period of rapid physical growth, so they require the most nutritional needs compared to subsequent periods. Children will easily suffer from stunting. One of the contributing factors is that nutritional needs are not handled properly [9].

**B. The Correlation between Feeding Pattern and Stunting Incident**

Crosstabs analysis test or cross tabulation between the characteristics of respondents with feeding patterns and stunting in toddlers by using test statistics Kendall's Tau, can be seen in the following table:

TABLE IV. CROSS TABULATION OF THE CORRELATION BETWEEN FEEDING PATTERNS AND STUNTING TODDLERS AND KENDALL'S TAU TEST RESULTS IN THE WORK AREA OF JETIS PUBLIC HEALTH CENTER II BANTUL YOGYAKARTA

Feeding Patterns	Stunting				Total	P value	
	Short		Very short				
	f	%	f	%	f	%	
Well	7	17.5	0	0	7	17.5	0.001
Enough	10	25	5	12.5	15	37.5	
Less	5	12.5	13	32.5	18	45	
Total	22	55	18	45	40	100	

Based on the table 4 The results of statistical calculations using the Kendall's Tau correlation are 0.001 this means that the p value <0.05, that is there correlation between feeding pattern and stunting incident. Based on the results of this study, it can be seen that most toddlers are stunted with feeding patterns with in good category as many as 7 people (17.5), enough as many as 15 people (37.5%), and less as many as 18 people (45.0%).

Based on these data it can be concluded that there is correlation between feeding patterns and stunting in good category was 7 people (17.5). of whom are 5 male toddler and 2 female toddlers. During infancy and toddlerhood, girls tend to be less likely to be malnourished than boys. besides that female baby can survive longer compared to male baby, one of the factors causing toddlers is maternal parenting and cultural factors especially in developing countries including Indonesia [10].

The factors that influence growth and development include genetic factors, gender, age, occupation or family income, father's or mother's education, number of siblings [11]. This is in line with the research conducted by Kumala (2013) that there are more malnourished boys than girls where the male body is bigger and requires a lot of nutritional intake, so if it is not fulfilled, it can affect growth in the long term [7].

Based on this research There is a correlation between feeding pattern and toddlers stunting as many as 18 (5 short toddlers and very short toddler13). Appropriate Feeding Pattern is a feeding pattern in accordance with the type of meal, the amount of food and the child's eating schedule. Hal this is in line with the research Prakhasita, R.C. (2018) who conveys that there is a correlation between feeding patterns and the incidence of stunting [12]. The nutritional status of stunting children is an accumulation of previous eating habits, so that the feeding pattern on certain days cannot directly affect their nutritional status. The key to fulfilling children's nutrition habits lies in the mother. Good eating habits depend on the mother's knowledge and skills in how to prepare food that meets nutritional requirements.

The type of food consumption also determines the nutritional status of children. This is because toddlers are a nutrient-prone group so that the type of food given must be in accordance with the child's body needs and digestibility. Types of food that are more varied and have sufficient nutritional value are very important to prevent children from being malnourished. Good feeding patterns must be done from an early age by providing a variety of foods and providing information to children when to eat well. Thus, the child will get used to a healthy diet.

Every mother needs to learn to provide nutritious food at home, starting with various types of food in an amount according to the needs of each individual in the household. The uncontrolled consumption pattern of toddlers, such as excessive eating habits, must be watched out by parents, especially mothers. The ideal feeding schedule is three main meals and two nutritious snacks to complete the balanced nutritional composition in a day that has not been fulfilled in the main meal [13]. One of the causes of stunting is the mother's parenting style for her toddler, inadequate knowledge can make the mother's parenting style less so that it affects the incidence of stunting in toddlers. Maternal

parenting has a role in the incidence of stunting in toddlers because the food intake for toddlers is fully regulated by the mother. Mothers with good parenting tend to have toddlers with better nutritional status than mothers with less parenting [14].

#### IV. CONCLUSION

The conclusion of this research is that the feeding pattern of stunting toddlers in the working area of Jetis Public Health Center II Bantul Yogyakarta is mostly in the less category as many as 18 people (45.0%). The incidence of toddlers with stunting in the working area of Jetis Public Health Center II Bantul, Yogyakarta, was mostly in the short category as many as 22 toddlers (55.0%). There is a correlation between feeding patterns and stunting in toddlers in the working area of Jetis Public Health Center II Bantul, Yogyakarta, with the results of the Kendall's Tau correlation test sign  $p$ -value  $0.01 < 0.05$ . The advice for mothers who have stunted toddlers aged 24-59 month to pay more attention to the feeding patterns of their toddlers and provide balanced nutrition by determining the type of food, the amount of food, and the food schedule according to the needs of children of their age.

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