Factors of stunting in toddlers (Analytical Study in the Work Area of the Tena Teke Health Center, Southwest Sumba, NTT)

Florensia Anjela Ina, Nabila Nur Azisa*, Andi Alim, Erni Kadir
Faculty of Public Health, University of Pejuang Republic Indonesia
Email korespondensi: nabilanurazisah29@gmail.com

ABSTRACT

Stunting is a nutritional problem that hurts the quality of life of children in achieving optimal growth and development according to their genetic or hereditary potential. This study aims to determine the relationship between mother's knowledge, food intake, and history of LBW with stunting in toddlers at the Tena Teke Health Center, Southwest Sumba Regency, NTT in 2022. This study used a survey method with a cross-sectional study design. A sample of 233 people was taken using a non-probability sampling technique (accidental sampling). Data were analyzed through editing, coding, tabulation, and data entry processes. Knowledge instruments were tested for validity and reliability, while instruments for food intake, history of LBW, and stunting were considered valid and reliable because they were standardized by the Indonesian Ministry of Health. The results showed that there was no relationship between maternal knowledge (p=0.504) and food intake (p=0.137) with the incidence of stunting in toddlers and there was a relationship between history of LBW and stunting in toddlers (p=0.000). This study concludes that there is no relationship between maternal knowledge and food intake with the incidence of stunting in toddlers and there is a relationship between a history of LBW and the incidence of stunting in toddlers. It is necessary to increase the mother's knowledge about nutrition during pregnancy to prevent LBW. Future studies should consider external factors that could influence the results of the study.

Keywords: *Mother's knowledge, food intake, history of LBW, stunting*

INTRODUCTION

Stunting is one of the nutritional problems that can hurt the quality of life of children in achieving optimal growth and development according to their genetic and hereditary potential. Stunting can also hinder the process of growth and development in children under five. Stunting or short stature in children is caused by a lack of nutritional intake for a long time resulting in impaired growth in children, namely the child's height is lower or shorter (dwarf).

Stunting in toddlers requires special attention because it can cause delays in physical growth, mental development and health status in children. Recent studies have shown that the presence of stunted children is associated with poor school performance, low educational attainment and low income as adults. Stunted children tend to grow up to be unhealthy and poor adults.

Stunting causes poor cognitive abilities, low productivity, and an increased risk of disease resulting in long-term losses for the Indonesian economy. The problem of stunting (short toddlers) is one of the nutritional problems faced by the world, especially in poor and developing countries. Stunting is a serious health problem when it is associated with high morbidity and mortality, suboptimal brain development, delaying motor development and retarding mental growth. These various problems are very easy to find in developing countries like Indonesia. This is a serious threat to the existence of children as the next generation of a nation. Stunting children are widely accepted as poor quality human resources, which further reduces the productive capacity of a nation in the future (1).

Stunting is a nutritional problem in the world, there are 165 million children under five in the world who are stunted. Eighty percent of stunted children are spread across 14 countries in the world and Indonesia is ranked fifth in the country with the largest number of stunting (1). Stunting data in Indonesia shows that the national prevalence of stunting has increased from 35.6% (2010) to 37.2% (2013) and 30.8% (2018) (2, 3, 4). Meanwhile, data from the

2017 Nutritional Status Monitoring results show that the percentage of stunted children in the toddler group (29.6%) is greater when compared to under-fives (20.1%) (5).

Stunting is a condition of failure to thrive in toddlers due to chronic malnutrition so children are too short according to the World Health Organization (WHO) 2005 standards (3). The problem of short toddlers illustrates the existence of chronic nutritional problems that are influenced by the condition of the mother/to-be mother, fetal period, and infancy/toddler period, including diseases suffered during infancy and other problems that indirectly affect health (6).

Globally, around 162 million children under five experience shortness. Sub-Saharan Africa and South Asia are home to three-quarters of the world's stunted children. Data shows that 40% of children under five in Sub-Saharan Africa are stunted, while in South Asia it is recorded at 39% (7). Head of Balitbang Health Siswanto explained, Basic Health Research showed an improvement in the nutritional status of toddlers in Indonesia. The proportion of stunting or short toddlers due to chronic malnutrition decreased from 37.2% in Basic Health Research (2013) to 30.8% in Riskesdas (2018). Likewise, the proportion of poor nutritional status and malnutrition is less than 19.6% Basic Health Research (2013) to 17.7% (8).

Based on data from the Central Statistics Agency, East Nusa Tenggara (NTT) Province ranks first with the highest ratio of people with malnutrition in 2018 (per 10,000 population), namely 9.7%. The 2019 Indonesian Ministry of Health's Study on the Nutritional Status of Toddlers also shows that NTT is the province with the highest stunting prevalence rate in Indonesia, reaching 43.8 per cent (9).

In 2018, the percentage of stunting rates in the East Sumba district was 39.3%, a decrease of 12%. In 2019 the local government carried out 8 convergence actions to accelerate the control and treatment of stunting in East Sumba Regency. The implementation of the 8 convergence actions is carried out through program activities contained in the Regional Government Work Plan, to support the acceleration of reducing the stunting rate which is carried out by taking into account the priority development indicators (10).

Based on the results of implementing convergence actions at the provincial level, the East Sumba Regency Government ranks 15th out of 22 regencies where this assessment is to find out the commitment of the local government in fighting stunting (Stunting Eradication). In 2019, East Sumba Regency obtained a stunting prevalence rate of 25%, this illustrates that the problem of stunting is serious and needs to be handled in collaboration between the government and related parties because the problem of stunting is a multidimensional and cross-national problem that must be resolved using methods and systems applicable (10).

Stages and mechanisms for regional government convergence action through Bappeda as the leading sector coordinating and collaborating with related technical devices have been carried out under the coordination of the Provincial Government and the Directorate General of Regional Development Development Ministry of Home Affairs resulting, 10 locus stunting villages in 2019 and 30 villages as locations stunting priorities in 2020 and through this online stunting consultation will be committed to establishing a stunting priority locus for planning the 2021 activity program resulting from the first action, namely Situation Analysis which will be determined by a Decree of the Regent so that the main target is to reduce stunting rates below 25% by 2021, which is the final year of the Regional Medium Term Development Plan 2016-2021 (10).

Entering 2019, the Central Sumba District Health Office again took measurements in 65 villages where there were 1,409 stunted toddlers out of 7,225 toddlers who were measured and weighed with the category of 588 very short toddlers and 821 stunted toddlers or around 19.5%. Entering 2020, precisely in February, through a weighing operation, 1,109 stunted toddlers were measured from 7,428 toddlers spread across 65 villages in Central Sumba Regency (11). Along with the results of measurements in 2019 and 2020 in Central Sumba District which revealed a high rate of stunting, these data reflect serious problems in nutritional status in Indonesia, including the high rate of stunting.

Based on Basic Health Research (2018), Indonesia's nutritional status problems include malnutrition 8%, growth stunting/dwarfing 30.8%, and wasting 10.2%. This nutritional problem has the potential to reduce the quality of life and productivity of the community. Fish

as a source of protein has a complete nutritional content, contributing to improving community nutrition in preventing stunting. In addition, fish also contain Omega 3 which is good for the growth of brain intelligence (12).

In addition, the 2018-2020 Basic Health Research noted that cases of stunting in children had decreased from 30.8 per cent in 2018 to 20.6% in 2020 (decreased by 12.2%). Even though it has decreased, this figure is still very worrying when compared to the cut-of-point prevalence of stunting in Indonesia and the World Health Agency (WHO). It is not surprising that Indonesia is ranked fifth in the world for the highest number of children with stunting. Southwest Sumba Regency is one of the areas that has a fairly high prevalence of stunting (38.2%) with a total of 6,074 stunted children (short and very short) (13).

The knowledge possessed by parents, especially mothers with toddlers regarding insights about stunting can be a determinant of mothers' attitudes in maintaining health so that stunting is prevented (14). The socio-economic conditions of the people in the working area of the Tena Teke Health Center show that most of them work as farmers growing a variety of food crops, but the produce of food crops is sold more than consumed. This happens because of the lack of education and knowledge from the community in managing these foodstuffs into a nutritious food menu. This is what causes the problem of stunting in toddlers.

According to data in the working area of the Tena Teke Health Center in 2020, in Wewewa Selatan District the number of toddlers is 720. The number of toddlers with short toddlers is 314 toddlers (43.61%), and the number of toddlers based on height/age status for very short is 406 (56.38%). Whereas in 2021, the number of toddlers is 590 toddlers. The number of toddlers with short toddlers was 308 (52.20%), and the number of toddlers based on height/age status for very short was 282 (47.79%) (15).

The theory of the Window of Opportunity is that certain periods in human life are "windows of opportunity" where optimal nutritional fulfilment is very important. This window of opportunity covers the early period of a child's life, especially from the womb to the first two years. If a child does not get adequate and quality nutrition during this period, the growth of the brain and organs will be permanently stunted. One of the causes of stunting is the mother's lack of nutrition knowledge. Mother's knowledge of nutrition plays an important role in determining food choices and nutritional practices in the family. Mothers who have good knowledge of nutrition tend to provide balanced and nutritious food for their children. Conversely, if knowledge of nutrition is low, mothers may not realize the importance of providing proper nutritious food, which can lead to nutritional deficiencies in children, including stunting.

In addition to the lack of knowledge of mothers about nutrition, stunting is also caused by an inadequate intake of proper nutrition, especially in the first 1,000 days of a child's life, from pregnancy to two years of age. During this critical period, the growth of the body's organs and nervous system occurs rapidly, and if you do not get adequate nutrition, your child's physical and cognitive growth will be hampered. Adequate and quality food intake is important in supporting the growth and development of children. Children who suffer from malnutrition or receive non-nutritious food will experience stunted growth and are at risk of stunting. Poor food intake can also lead to deficiencies of important nutrients such as protein, iron, vitamins and minerals, which contribute to stunting.

Another factor that causes stunting is that children born with low birth weight have a higher risk of experiencing stunting later in life. LBW can be caused by malnutrition during pregnancy, infection, or other maternal health problems. LBW can cause long-term growth disorders because babies don't get enough nutrition during their initial development, and this can affect the growth and development of body organs and brain function. Environmental conditions during critical periods of a child's growth can "program" later patterns of growth and health. If a child experiences malnutrition or low birth weight in their early life, the body will adapt to these conditions and try to survive with limited resources. As a result, children tend to experience stunting and are at risk of experiencing health problems in the future.

Several factors cause stunting, namely; Mother's knowledge, food intake and history of LBW. Based on the background above, the researcher is interested in conducting research

with the title "Stunting Incidents in Toddlers in the Working Area of the Tena Teke Health Center, Wewewa Selatan District, Southwest Sumba Regency, NTT Province.

METHOD

The type of research used is the quantitative method of analytic observational research using a cross-sectional study design. This study aims to determine the incidence of stunting in toddlers in the working area of the Tena-Teke Health Center, Wewewa Selatan District, Southwest Sumba Regency. The variables in this study consist of independent variables and dependent variables. The independent variable is the variable that influences or causes the change/emergence of the dependent variable (bound) dependent variable. Both the influence is positive but the influence is negative. The independent variables used were the mother's knowledge about nutrition, food intake and history of LBW. Meanwhile, the dependent variable is the variable that is affected or is the result, because of the independent variables. The dependent variable used is the incidence of stunting. This research is located in the working area of the Tena Teke Health Center, Wewewa Selatan District, Southwest Sumba Regency.

The sampling technique in this study was using non-probability sampling with an accidental sampling approach. Non-probability sampling is a sampling technique that is not randomly selected. The element selected to be the sample is anyone who accidentally meets the researcher can be used as a sample (respondents) (16). Sampling was carried out for three months from June to August 2022. The population is all research objects or objects being studied (17). The population for this study is 590 toddlers in the working area of the Tena-Teke Health Center in 2022. The sample is part of the population that is used as the object of research, with the word sample being part of the population. The research samples were mothers of toddlers and their toddlers. Determining the number of samples in this study is to use the Stanley Lemezshow formula with the formula $n = \frac{N.Z^2.p.q}{d^2(N-1)+Z^2.p.q}$, where n = sample size; N = Normal Standard Value (95%=1.96); p = Proportion (50%= 0.05); q = Proportion of population not counted (1-p); and d = degree of deviation from the desired population (0.05). Thus, the sample in this study were all toddlers as many as 233 children. While the respondents were mothers under five, the sample was taken by accidental sampling. Accidental sampling is the accidental sampling of respondents who happen to exist or are available somewhere according to the research context (17).

The data used in this study were obtained through data collection in the form of primary and secondary data. Primary data was collected by filling out a questionnaire. Primary data was collected by filling out a questionnaire. To measure the level of mothers' knowledge about nutrition a questionnaire. The questionnaire contains 10 questions and each question contains 2 answer choices, namely: Yes (Score 1) and No (Score 0). To be able to assess knowledge, an assessment questionnaire was used. Questionnaire assessment was carried out using the Guttman scale, with the formula $I = \frac{R}{K}$. Description: I = Interval; R = Range (Highest score (10)-lowest score (0) equals 10%); K = Category (The number of criteria arranged on the objective criteria of a variable (2)). So the obtained interval value of 100% - 50% is said to be sufficient while <50% is said to be insufficient.

To find out that the questionnaire that was made is good as a measuring tool, a validity test and a reliability test were carried out on May 29, 2022, for mothers who have children under two years old in Waimangura Village who have the same characteristics as a sample of 15 pregnant women who will be studied using the IBM computerized system SPSS Statistics 23. The questionnaire on knowledge of nutritional fulfillment consisting of 20 questions, obtained 10 valid questions, namely questions number 1, 2, 3, 4, 8, 9, 12, 15, 16, and 19 with an r table value of 0.514. So, the questionnaire is said to be reliable.

For food intake, the amount of energy consumed in one day was measured which was obtained by the food recall method for 3 consecutive days and was averaged and then analyzed using computer software and compared with the 2019 Nutrition Adequacy Rate in units of a percent (%). For a history of Low Birth Weight (LBW) obtained through the Maternal and Child Health (MCH) book by looking at the child's birth weight record by

comparing the standard birth weight of a normal child, which is 2,500 grams. The stunting questionnaire instrument is a questionnaire adopted from the Indonesian Ministry of Health, consisting of 2 questions, namely Height for Age or Body Length for Age and Weight for Age for toddlers. To conclude the stunting questionnaire, we need to have data on height and age, as well as data on weight for toddlers. After that, this data can be entered into the "Dr.Sapto-Anthro" application, which helps in assessing the nutritional status of toddlers and calculating the z-score. We can assess the questionnaire according to the indicators of the anthropometric table, with toddlers being classified as stunted if the z-score is between -3 SD to -2 SD, and non-stunting if the z-score ranges from -2 SD to +3 SD. For data collection instruments on food intake, history of low birth weight (LBW), and stunting, no validity and reliability tests have been carried out because these instruments are standardized according to guidelines from the Indonesian Ministry of Health."

Secondary data is supporting data that is relevant to research obtained from related agencies such as the Puskesmas, village office, or sub-district office. In the data processing process some steps must be taken, including 1) Editing, which is re-checking the incoming data and examining the answers; 2) Coding, which is giving a symbol or code to a complete choice; 3) Tabulation, namely grouping data in tables or according to purpose and 4) Data Entry, namely entering data into a computer using the IBM SPSS Statistics 23 program.

Data analysis was carried out in two stages, namely: Univariate analysis was carried out to obtain an overview of the distribution and frequency of the independent and dependent variables. The data are presented in tabular form and interpreted and Bivariate Analysis is performed to measure the association between two or more quantitative variables. Data for each sub-variable was entered into the contingency table (cross table) and then the contingency table was analyzed using the chi-square test statistic at the 95% confidence level and tested with a significance level of α = 0.05. Meanwhile, the data that has been processed and analyzed is then presented in the form of narratives and tables based on the variables studied.

This study has passed the research protocol inspection process and obtained a Certificate of Passing Ethics Review by the Health Research Ethics Committee of the Faculty of Public Health, University of Pejuang Republic Indonesia with No: 240-KEPK-FKM-UPRI.

RESULTS AND DISCUSSION

Based on the results of research that was carried out in August 2022 in the working area of the Tena Teke Health Center, Tena Teke Village, Wewewa Selatan District, Southwest Sumba Regency, the following results were obtained:

Table 1. Distribution of Respondents (Based on Educational and Occupational Characteristics), Sample (Based on Gender, Age Group, Weight Group and Children's Height Group) and Research Variables (Based on Stunting Incidents, Mother's Knowledge of Nutrition, Food Intake and History of LBW Children) in the Work Area of the Tena Teka Health Center, Southwest Sumba Regency in 2022

Characteristics of Respondents	**n**	**%**
Education		
No school	32	13,7
Graduated from elementary school	58	24,9
Middle school graduate	50	21,5
Graduated from high school	68	29,2
Bachelor	25	10,7
Work	**n**	**%**
Doesn't work	39	16,7
Farmer	118	50,6
Self-employed	51	21,9

Characteristics of Respondents	n	%
Civil Servant	25	10,7
Gender		
Man	126	54,1
Woman	107	45,9
Age Group (Month)		
<12	26	11,2
12-24	53	22,7
25-36	41	17,6
37-48	56	24,0
49-60	57	24,5
Weight Group (Kg)		
<5	5	2,1
5-10	91	39,1
10,1-15	125	53,6
≥15	12	5,2
Height Group (Cm)		
51-60	9	3,9
61-70	31	13,3
71-80	56	24,0
81-90	66	28,3
91-100	69	29,6
≥100	2	9
Research variable		
Stunting Status		
Stunting	139	59,7
Not Stunting	94	40,3
Mother Knowledge		
Not enough	109	46,8
Enough	124	53,2
Food supply		
Not enough	96	41,2
Enough	137	58,8
LBW history		
LBW	139	59,7
Not LBW	94	40,3
Total	**233**	**100**

Source: Primary Data, 2022

Based on Table 1 above regarding the distribution of respondents based on educational characteristics, it can be seen that the majority of respondents have a high school level educational background, namely as many as 68 people (29.2%) and a minority with an undergraduate educational background, namely as many as 25 people (10.7%). As for the distribution of respondents based on job characteristics, it can be seen that the majority of respondents work as farmers, namely as many as 118 people (50.6%) and a minority of respondents work as civil servants, 25 people (10.7%).

Based on Table 1 above regarding the distribution of children under five by sex, it can be seen that the number of under-five boys is slightly higher than that of under-five girls, namely 54.1% compared to 45.9%, while for the distribution of under-five by age it can be seen that the distribution of under-five fairly evenly distributed across age groups. No age group has a significant dominance, and the number of children under five tends to be the same in each age group.

Table 1 above also shows the distribution of toddlers' weight showing that the majority of toddlers weigh between 10.1 kg and 15 kg, which is 53.6%, and a minority of toddlers weigh between less than 5 kg, which is 2.1%. of the total toddlers. Meanwhile, the distribution of children's height shows that children's height tends to be evenly distributed in various height groups, without any significant domination in certain groups.

Based on Table 1 above regarding the distribution of stunting events in toddlers, it can be seen that the majority of toddlers experience stunting, which is as much as 59.7% of the total toddlers. While the distribution of the sample based on the mother's knowledge of nutrition can be seen the majority of the sample of mothers have sufficient knowledge about nutrition, namely as much as 53.2% of the total sample of mothers. Table 1 above also shows the sample distribution based on food intake, it can be seen that the majority of the sample children have sufficient food intake, which is as much as 58.8% of the total sample of children. While the sample distribution is based on LBW history, it can be seen that the majority of the sample under five have a history of LBW, which is as much as 59.7% of the total under five.

Based on the results of interviews and data obtained by researchers in the field, it turns out that several factors can influence the occurrence of stunting in toddlers in the working area of the Tena Teke Health Center, Wewewa Selatan District, Semba Barat Daya Regency, NTT Province including mother's knowledge, food intake and history of LBW as illustrated in the following table:

Table 2. Relationship between Mother's Knowledge of Nutrition, Food Intake and LBW History with Stunting Incidents in the Work Area of the Tena Teke Health Center, Southwest Sumba Regency in 2022

Research variable	Stunting Status				Amount		*p*
	Stunting		Not Stunting				
	n	%	n	%	n	%	
Mother Knowledge							
Not enough	68	65,0	41	44,0	109	100,0	0,504
Enough	71	74,0	53	50,0	124	100,0	
Food supply							
Not enough	63	57,3	33	38,7	96	100,0	0,137
Enough	76	81,7	61	55,3	137	100,0	
LBW history							
LBW	139	82,9	0	56,1	139	100,0	0,000
Not LBW	0	56,1	94	37,9	94	100,0	
Total	**139**	**139,0**	**94**	**94,0**	**233**	**100,0**	

Source: Primary Data, 2022

Stunting is a body condition that is not normal or a body that is not tall/short for its age based on the body length index for age or height for age. Stunted children are the result of chronic malnutrition and unfavourable conditions. The condition of stunting in children can be prevented by improving the nutritional status of mothers during adolescence and fertile women, proper feeding of infants and children, and increasing access to clean water and adequate sanitation, immunization and treatment for infectious diseases (18).

Parents' knowledge about nutrition helps improve the nutritional status of children to reach growth maturity. In children with stunting, health problems, both physical and psychological, easily arise. Therefore, not all children can grow and develop according to their age, some children experience obstacles and abnormalities (19).

The results of this study indicate that a mother's knowledge does not affect the incidence of stunting. From the results of statistical tests using the chi-square test, the results

obtained are (p = 0.504) > (α = 0.050), this means that Ho is accepted and Ha is rejected or there is no relationship between the mother's knowledge and the incidence of stunting in toddlers in the Work Area Tena Teke Community Health Center, Southwest Sumba Regency in 2022.

This research is not in line with the research conducted by Ramdhani et al. (2021) also showed a dissimilar thing, namely the lack of maternal knowledge about stunting and maternal knowledge related to stunting (20). Mothers' lack of knowledge about stunting can be caused by age and education factors. The research by Jumiarsih Purnama AL et al. (2021) in Sidrap District found that mothers' knowledge is related to the incidence of toddler stunting. Mother's knowledge can help improve children's nutritional status. Inadequate knowledge of mothers will affect the attitudes and behaviour of mothers in providing nutritious food for their children (21). Nela Fauzia & Riska Fitriyani (2021) in their research in Kute Panang District, Central Aceh District also added that mother's knowledge and attitude are related to stunting incidents (22). Knowledge is the result of knowing and occurs through the five human senses and can be influenced by age, education, occupation and social culture (23).

Knowledge or cognition is a very important domain for the formation of one's actions (over behaviour) (24). Nutritional knowledge is what is known about food about optimal health. Research conducted by Siti Nur Ramdaniati & Dian Nastiti (2019) found that there was a significant relationship between the level of knowledge of toddler mothers about nutrition and the incidence of stunting in toddlers in Labuan District with an OR value of 3.167, which means mothers who have a low level of nutrition knowledge will be 3.167 (95% CI: 1, 195-8.389) times more at risk of causing stunting in their toddlers compared to mothers who have high knowledge (25). The results of this study are in line with the research of Khoirun Ni'mah & Siti Rahayu Nadhiroh (2015) in Surabaya and Yulestari's research (2013) which stated that mother's knowledge is a factor related to stunting. This shows that the low knowledge of mothers about nutrition affects the incidence of stunting in toddlers. Mother plays a very important role in choosing a nutritious food menu for the family. The low knowledge of mothers about nutrition can lead to a lack of nutritional quality of food for families, especially food for toddlers. This of course will affect the lack of intake of toddlers which can hinder their growth and development during the golden age (28, 27).

From the above, the researchers assume that a mother's knowledge influences the incidence of stunting in children aged 12-59 months. Parents' knowledge can help improve the nutritional status of children to reach growth maturity. Inadequate knowledge, lack of understanding about good eating habits, and insufficient understanding of stunting determine the attitude and behaviour of mothers in providing food for their children, including the right type and amount so that children can grow and develop optimally. Based on the results of a study conducted in August in the Working Area of the Tena Teke Health Center, Wewewa Selatan District, Southwest Sumba Regency, NTT Province, it was found that the number of respondents who said they had insufficient knowledge of stunting incidents was more than sufficient knowledge.

Lack of good mother's knowledge about stunting, one of which is the lack of information which greatly affects mother's knowledge. Another cause is the lack of knowledge of mothers about stunting because not all mothers of toddlers visit Posyandu. Knowledge is very closely related to education, where it can be assumed that with higher education, the person's knowledge will also be wider. Low education does not guarantee that a mother does not have sufficient knowledge about the nutrition of her family. The existence of high curiosity can affect mothers in obtaining information about the right food for their children. Increased knowledge is not obtained from formal education, but can be obtained through non-formal education. One's knowledge of an object contains two aspects, namely positive aspects and negative aspects. These two aspects will determine a person's attitude, the more positive aspects and objects that are known, the more positive attitudes towards certain objects will arise.

In contrast to the findings of this study, as the results of statistical tests using the chi-square test obtained a value of (p=0.504)>(α=0.050), this means that Ho is accepted and Ha

is rejected or there is no relationship between the mother's knowledge and incident stunting in toddlers in the Work Area of the Tena Teke Health Center, Southwest Sumba Regency in 2022. There was no relationship between mother's knowledge about nutrition and the incidence of stunting at the study site because there were external factors "confounding" which influenced the knowledge variable where the Work Area of the Tena Teke Health Center, West Sumba Regency As a national locus of intervention, Daya received assistance from the Stunting Prevention Acceleration program by carrying out educational activities for mothers of toddlers about increasing nutrition knowledge.

Nutritional status in infancy is a very important determinant of their health in the future. Lely Khulafa'ur Rosidah & Suleni Harsiwi (2017) stated that good nutrition contributes to the development of toddlers (29). Malnutrition that occurs in toddlerhood affects the process of growth and development (30). The stages of the child's growth and development process at the age of the first 3 years are rapid (31). Normal growth is characterized by a toddler's height increasing with age (32). Height that is not according to age can identify toddlers with malnutrition. One of the nutritional problems that gets a lot of attention in toddlers is stunting. According to Hana Sofia Anugraheni (2012), lack of food intake is the cause of stunting (33). According to Nurlailis Saadah (2020), stunting is a condition where a person's height is shorter than the height of other people in general who are the same age (34). Stunting is defined as a stunting syndrome which can cause several pathological changes, characterized by linear growth retardation, increased morbidity and reduced physical abilities/capacity and neurodevelopmental (35). Stunting is a nutritional problem in toddlers around the world, including Indonesia.

Nutritional problems from stunting have a negative impact both directly and indirectly on toddlers. According to Hardisman Dasman (2019), the impact of nutritional problems on toddlers is in the form of a weak cognitive and stunted motor psyche, more susceptible to degenerative diseases and low-quality human resources (36). Stunting that occurs early in life can cause permanent damage (37). Stunting has biological implications for brain and neurological development which translates into cognitive decline. Toddlers with stunting experience a 7% decrease in cognitive development and toddlers who experience stunting in the first 2 years of life have the opportunity to have a non-verbal IQ <89 and an IQ 4.57 times lower than the IQ of children who are not stunted (38). Stunting provides a serious picture of the nutritional status of toddlers.

Stunting is defined as a stunting syndrome which can cause several pathological changes, characterized by linear growth retardation, increased morbidity and reduced physical abilities/capacity and neurodevelopmental (neurodevelopmental). Adequacy of food intake is the focus for the growth and development of toddlers. Food intake in the form of energy and protein is needed for the growth and development of toddlers to prevent stunting.

Food intake that is not appropriate to the needs of toddlers affects nutritional adequacy. According to Risani Rambu Podu Loya & Nuryanto (2017), food intake for stunted toddlers is not to their nutritional needs (39). Intake of nutrients, especially energy and micronutrients, is classified as lacking in stunted toddlers (40). The results of Rahma Fauziah's research (2020) show that insufficient food diversity can cause stunting in toddlers. So good food intake is very important for toddlers (41).

Adequacy of food intake is the focus for the growth and development of toddlers. Rotua Suriany Simamora & Ratu Kresnawati (2021) the components that must be met in applying food intake include sufficient in quantity, and quality, containing various nutrients in daily life and being able to store nutrients to meet the needs of a toddler's body (42).Food intake with complete and varied nutrients supports the growth and development of toddlers. According to Apri Sulistianingsih & Desi Ari Madi Yanti (2016) food intake in the form of energy and protein is needed for the growth and development of toddlers to prevent stunting (43).

The results of research conducted at the Tena Teke Health Center in August found that the number of toddlers whose food intake was insufficient could affect stunting in toddlers. This can be seen from the results of the 24-hour recall for 3 days, many respondents paid little attention to the amount of food intake their children needed. However, in this study, there was no relationship between food intake and the incidence of stunting where the

results of statistical tests using the chi-square test obtained the results of (p=0.137) > (α=0.050), this means that Ho is accepted and Ha is rejected or there is no relationship between food intake and stunting in toddlers as shown in table 2 above. Stunting is the result of stunted growth over a long period, while the studies related to food intake observed in this study only reflect short-lived conditions. Therefore, food intake during the study may not be sufficient to affect growth status significantly.

Stunting is still a problem in toddlers' lives today, stunting experienced by toddlers can have a negative impact when toddlers grow up and become adults later. The impact of stunting toddlers can reduce intelligence so that it can reduce the quality of human resources in the future, LBW is suspected as a risk factor for stunting in toddlers.

Based on a preliminary study conducted by Fatimah Chandra Murti et al. (2020) in the village of Umbulrejo, Ponjong District, Gunung Kidul Regency, the most common problems experienced during pregnancy are Chronic Energy Deficiency and anaemia (45). Research conducted by Antun Rahmadi (2017) states that there is no relationship between Low Birth Weight (LBW) and the incidence of stunting (46). Meanwhile, research conducted by Lidia Fitri (2018) stated that there was a relationship between Low Birth Weight (LBW) and the incidence of stunting (47).

These results are from research conducted by Lidia Fitri (2018) in Pekanbaru which found that LBW has a significant relationship to the incidence of stunting (47). Research conducted by Surajudin in Onetusfifsi Putra (2015) states that short children are 3 times larger than non-LBW babies, have impaired growth, cause wasting, and are at risk of malnutrition (48). This research is in line with research in Tanjung Langkat conducted by Ade Ira Zahriany (2017) which shows that there is a relationship between a history of low birth weight and the incidence of stunting. Low Birth Weight has a risk of stunting 3 times greater than toddlers with normal birth weight (49). Meanwhile, research in Lampung conducted by Antun Rahmadi (2017) stated that there was no relationship between birth weight and the incidence of stunting (46). While research in Kendal also stated that there was no relationship between birth weight and the incidence of stunting in toddlers (50).

Low birth weight is a feature of public health malnutrition including long-term maternal malnutrition, poor health, hard work and poor health care and pregnancy. Individually, LBW is an important predictor of the health and survival of newborns and is associated with high risk in children (51). Birth weight is generally strongly associated with long-term growth and development. Thus, the follow-up impact of LBW can be a failure to thrive (growth faltering). A baby born with LBW will find it difficult to catch up with the initial growth lag. Growth that lags normal will cause the child to become stunted (52).

Based on Table 2 above, shows the relationship between LBW history and the incidence of stunting, namely toddlers with a history of LBW without stunting 0 (56.1%), toddlers with no history of LBW without stunting as many as 94 people (37.9%) and toddlers with history of LBW with stunting as many as 139 people (82.9%), toddlers with no history of LBW with stunting as many as 0 (56.1%). From the results of statistical tests using the chi-square test, the results obtained are (p=0.000) <(α=0.050), this means that Ha is accepted and Ho is rejected or there is a relationship between LBW history and the incidence of stunting in toddlers.

This study is in line with research conducted by Rahayu et al., (2015) regarding a history of birth weight with stunting in children under two years of age with multivariate results showing that LBW is one of the most dominant risk factors associated with stunting. Low birth weight is a multifaceted public health problem including long-term maternal malnutrition, poor health, overwork and poor health care and pregnancy (53).

CONCLUSION

Based on the results of this study regarding the incidence of stunting in toddlers in the Work Area of the Tena Teke Health Center, Southwest Sumba Regency, it can be concluded that there is no relationship between mother's knowledge and food intake and the incidence of stunting in toddlers, while there is a relationship between LBW history and stunting in

toddlers in working area of the Tena Teke Health Center, Tena Teke Village, South Wewewa District, Southwest Sumba Regency, NTT Province in 2022. It is hoped that mothers will increase their knowledge about balanced and healthy nutritious food, especially during pregnancy, so they can avoid the birth of babies with Low Birth Weight (LBW). In addition, for further research, it is recommended to consider the knowledge variable by paying attention to external factors that can influence (confounding), as well as paying attention to food intake variables in the longer term related to stunting.

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