Factors Affecting the Event of Stunting in Children Age to 24-59 Months in Centro Saude Internamento Gleno, Municipiu Ermera, Timor-Leste

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Abstract

Stunting is a developmental disorder in children caused by poor nutrition, repeated infections, and inadequate psychosocial stimulation. There are several factors that can cause stunting in children under five, such as family and socioeconomic characteristics. The purpose of this study was to determine the factors that influence the incidence of stunting in children aged 24-59 months. This research is quantitative research with a cross-sectional study design. The total population is 3,747 households, while the total sample is 110 which is divided proportionally from 7 villages (Sucos) which are included in the working area of the centro saude internamento Ermera. Based on the results of existing research, shows that there is an influence between children's eating patterns ($\rho = 0.24$), family income ($\rho = 0.034$), children's health care patterns ($\rho = 0.037$), and food consumption patterns in the family ($\rho = 0.024$) to the incidence of stunting. Meanwhile, family size ($\rho=0.392$), mother's education ($\rho=0.360$), and health condition ($\rho=0.419$). There is no effect on the incidence of Stunting. Interventions are needed to focus on several factors that trigger stunting problems in children under five so that they do not interfere with the growth and development process of children under five. It also requires high awareness through outreach activities to the community on the importance of child nutrition parenting and food consumption patterns in the family.

Keywords: Nutritional Asu Pattern; food consumption; Stunting

Introduction

Stunting is a chronic malnutrition problem caused by a pattern of inadequate nutritional intake for a long time due to feeding that is not in accordance with nutritional needs. Stunting begins when the fetus is still in the womb and only appears when the child is two years old (Mellenium challenge account-Indonesia, 2014). stunting of children is a form of malnutrition due to the limitations of the overall socio-economic situation in the past. Stunting is defined as a height index for age (TB/U) less than two standard deviations (<-SD) or the height is shorter than what should be achieved at a certain age (Lestari et al., 2018).

According to a World Bank report (2016) that Child Malnutrition Estimates stated that in 2013 ten countries had stunting >30.0%. The first are the Africans Regions, South Asia Regions, and South-East Asia Regions. stunting   Most Africans Regions were the Republic of Congo 42.6%, Zambia 40.0%, Sierra Leone 37.9%, the Republic of Tanzania 37.1%, Nigeria 36.4%, and Liberia 32.1%. Afghanistan is the largest contributor to stunting for the South Asia Regions at 40.9%, followed by Bangladesh at 38.7%. Indonesia ranks first in the prevalence of stunting among the South-East Asia Regions at 36.4% and the Philippines at 30.3%. Compared to 2007, South-East Asia Regions (Timor Leste 53.9%) is number 1 with the largest prevalence of stunting in the world, followed by South Asia Regions occupying number 4, namely Bangladesh 43.2%. This illustrates that most stunting occurs in Asia, especially South Asia and Southeast Asia, but is not as high as in Africa. Stunting is a public health problem in almost all developing countries and is a global problem faced by many countries in the world.

The results of Mardewi's research (2014) show that there are around 178 billion children under the age of five in the world who experience stunting, of which 167 billion live in developing countries. And the data published by UNICEF-WHO and the World Bank (2015) also shows that the prevalence of stunting in Timor-Leste nationally is 50.2%, very high, wasting 11.0 seriously, Underwigth 37.7 high and Overnutrition1.5 of all children under five. stalled in 2013.

Based on the Timor-Leste Demographic And Health Survey (TLDHS) in 2010 that stunting in Timor Leste nationally (58%), stunting occurred in rural areas /Rural Areas with a percentage rate (61%), stunting in urban areas /Urban Areas with a percentage rate of (49%) while the prevalence of malnutrition among children under five currently still occurs in all districts, namely: 1. Ermera Municipality (69%), 2Bobonaro (73%), 3. Covalima Municipality (65%), 4 Ainaro (%), 5.Viqeqe Municipality (52%), 6 REOA (69%) and . Lautem Municipality (51%) The high prevalence of stunting was evident among poor households (59.3%) compared to richer households (39.1%) but overall, Timor-Leste has the highest malnutrition rate among countries in the Asia-Pacific region. Pacific has shown an inadequate level of improvement and as a result, there has been no progress on Millennium Development Goal 1.

Stunting in children under five is a consequence of several factors that are often associated with poverty, nutritional consumption, health care patterns, health conditions, family characteristics in terms of (education, income, and family size) increased exposure to infectious diseases, exclusive breastfeeding, and public access to health services. Children under five who experience stunting will find it difficult to achieve optimal growth and development, both physically and psychomotor.

The purpose of this study was to determine the factors that influence the incidence of stunting in children aged 24-59 months in the working area of Centro Saude Internamento Ermera, Postu Adminitrativo Gleno, Municipiu Ermera in 2018.

Method

This study is an observational analytic with a cross-sectional design. This means that researchers collect data on research variables at the same time Approach) Time Point. (Family size, family income, child health care patterns, food consumption patterns and health conditions.

The sampling technique in this research is cluster random sampling, where the sampling is done randomly on individual groups in the population that occurs scientifically, in the region (village, kelurahan). The data analysis used was univariate and multivariate with the aim of knowing the relationship of each variable to be studied. The degree of confidence used is with = 0.05.

Result

1. **univariate analysis**

   Events stunting and health conditions in toddlers are as follows:

Table 1. The distribution of the frequency of stunting in the working area of the centro saude internamento Gleno in 2018

Univariate Analysis	Category	Frequency	Percentage (%)
Incidence *Stunting*	Normal	47	42.7
	Stunting	63	57.3
Health State	Healthy	75	68.2
	Sick	35	31.8
Parenting pattern	Good	65	59.1
	Less	45	40.9
Child health parenting	Good	75	68.2
	Less	35	31.8

Based on table 1 above, it can be explained that most of the children in the stunting category are 63 respondents (57.3%), and 47 respondents (42.7%). Some of the respondents with health conditions in the healthy category, namely 75 respondents (68.2%) 35 respondents (31.8%) in the sick category, the child's eating pattern in the good category as many as 65 respondents (59.1 %), 45 respondents (40.9%) in the poor category. While the pattern of child health care 75 respondents (68.2%) was in a good category, and 35 respondents (31.8%) in the poor category.

2. Multivariate analysis

The effect of characteristics on the incidence of stunting in children under five aged 24-59 months.

The influence of characteristics which include parents' education, family income, occupation, family size on the occurrence of stunting for children under five in the working area of Centro Saude Internamento Gleno can be seen in table 2 below.

Table 2 Effect of family characteristics on the incidence of stunting in children under five aged 24-59 months

Variable Name	Incident *Stunting*				ρ-value
	Normal		*Stunting*		
	N	%	n	%	
Parenting style					
- Good	22	33.8	43	66.2	0.025
- Less	25	55.6	20	44.4	
Child health pattern					
- Good	27	36.0	48	64.0	0.039
- Less	20	57.1	15	42.9	
food consumption					
- low	36	52.9	32	47.1	0.03
- Medium	5	22.7	17	77.3	
- HIgh	6	30.0	14	70.0	
Health status					
- Health	34	45.3	41	54.7	0.419
- Sick	13	37.1	22	62.9	

Based on the results of the simple Logistic Regression in the respondent characteristics table above, it can be explained that table 2 has the effect of family characteristics on the incidence of stunting in toddlers aged 24--5 months.

Based on the results of the analysis that has been carried out in table 2 above, it shows that there are 2 variables that have a significant influence, namely the income variable where the value -value is 0.03 with a significance rate of 5% -value (0.03<0.05). Then the alternative hypothesis or the family income hypothesis can be accepted. It can be concluded that there

is an effect of family income with the incidence of stunting in children under five from 24 to 59 months.

The test results between work and the incidence of stunting prove that there is an influence between work and the incidence of stunting where the values 0.43 <0.05). It can be concluded that there is an effect of work with the incidence of stunting in children under five aged 24-59 months. As for the variables of education and family size, it can be explained that there is no effect on the incidence of stunting in children under five aged 24-59 months. The values obtained are>0.05. Then the hypothesis or education and work cannot be accepted. It can be concluded that there is no influence between education and family size with the incidence of stunting in children aged 24-59 months.

Table. 3 The influence of several variables on the incidence of stunting in children under five aged 24-59 months.

Family Characteristics		Incidence *Stunting*		Total	ρ-value
		Normal	*Stunting*		
		N	N	n	
Mother's education	High Low	28 19	32 31	60 50	0.364
Family income	Good Less	34 13	33 30	67 43	0.036
Big Family	Big Small	27 20	31 32	58 52	0.392
Employment	Not working work	37 10	38 25	75 35	0.43

In table 3 it can be seen that in the feeding pattern variable, it can be seen that children under five with stunting 66.2%. Toddlers with normal nutritional status are 33.8%, while for toddlers with poor nutritional status 55.6%. The results of statistical tests with simple logistic regression obtain the p -values (<0.05 means that Ho is accepted. It can be explained that there is a significant influence between the child's diet and the incidence of stunting.

In the pattern of child health care, it can be seen that 36.0% of children under five who have good health care patterns, 64.0% of toddlers with stunting, while 57.1% of children under five who experience poor health parenting. The results of the statistical test showed that the child's health parenting pattern had a significant effect where the value = 0.039 (<0.05) means that the alternative hypothesis can be accepted. It can be concluded that the better the child health care pattern, the lower the incidence of stunting.

From the results of statistical tests for food consumption patterns, a significancevalue (0.03 < 0.05) was found. This means that there is a relationship between food consumption and the incidence of stunting. This means that if the level of food consumption in the community is good, there is an opportunity to increase the degree of public health.

The state of health shows that after being tested with statistics where the p-value > (0.05). This means that health conditions have no influence on the incidence of stunting in children under five in the working area of Centro Saude Internameto Gleno.

Discussion

Malnutrition is an ecological problem as a result of the interplay between several factors, one of which is a socio-economic factor. The family is often used as a unit in a study, this is because in the family there are all social, economic, and cultural factors that influence each other. lead to malnutrition or malnutrition. Factors related to the family include parental education, family size, occupation, and income (Supriasa, 2001).

Based on family characteristics which include the mother's education, the mother's employment status, family income, and the number of family members, the following results are obtained. The number of mothers of stunting with low education each is 50 children under five, while children under five with high education are 60 children under five. However, statistically, the mother's education in this study had no effect, this was due to the values (0.364 > 0.05).

The results of this study are in line with research conducted by previous studies by Semba et al (2008) which found that maternal education had a significant effect on the incidence of stunting.

The results of the test of the effect of a mother's employment status on the incidence of stunting in children under five had a significant effect, this was caused by the values (0.43 <0.05). This happens because most mothers who do not work will have more time with their children which affects the improvement of the nutritional quality of children. The results of this study are in line with research conducted by previous studies by Semba et al (2008) which found that the mother's occupation had a significant effect on the incidence of stunting.

The results of the family income influence test show that family income is a factor that can affect the occurrence of stunting in children under five with a value (0.036<0.05). This shows that the child's growth process is slow due to the low economic status of the family which will eventually affect the incidence of stunting in those aged < 5 years.

Based on the results obtained that the number of family members is not a factor that can affect the occurrence of stunting in children under five with a value of -value (0.392 > 0.05). The results of this study can be explained that the variable number of family members is not an indicator for the occurrence of stunting in children aged <5 years.

Factors that influence the incidence of diagnosed

Stunting is a public health problem associated with an increased risk of morbidity, mortality and stunted growth, both motor and stunting through an anthropometric index of height for age which reflects the linear growth achieved in pre and postpartum with indications of deficiency. long-term nutrition, as a result of poor diet and disease (Unicef, 2012).

The results of the final model analysis with multiple logistics in the multivariate test conducted on the incidence of stunting there is 1 variable that is significantly related to the incidence of stunting, namely food consumption which is a determining factor for stunting Furthermore, the value and explanation of the determining variable will be discussed as follows:

1. **The influence of local food consumption on the incidence of stunting**

The pattern of food consumption is the composition of the type and amount of food consumed by a person or the level of diversity within a certain time. The relationship between food consumption and the incidence of stunting in this study is to assess how food consumption among children under five in the working area of Centro Internamento Saude Gleno is seen from three categories, namely low diversity, medium diversity, and high diversity.

Based on the research results, it is known that the pattern of food consumption in the family is one of the determinant factors in this study on the incidence of stunting in the work area of Centro Saude Internamento Gleno. It has been proven that the pattern of food consumption in the family is tested with the results of Simple Logistics there is a significant effect with values (<0.05) and when tested the modeling with multiple logistic regression in multivariate analysis, it turns out that from the 4 variables that are thought to be the determining factors on the incidence of stunting is food consumption with a value of -value (0.03 <0.05).

The results of this study are not in line with the research results of Helmi Nitbani (2018), it is known that the food consumption of toddlers in the working area of the Nulle Health Center, is because as many as 62 children under five have good food consumption with 46 of them having a relatively good nutritional status, the results of statistical tests logistic regression of the variable food consumption on the nutritional status of children under five has values (> 0.05) which means that there is no significant relationship between food consumption patterns and the nutritional status of children under five.

2. **Effect of nutrition parenting with stunting**

Parenting patterns can be grouped into four, namely: (1) eating patterns, (2) hygiene and health parenting, (3) psychosocial-related parenting, and (4) social support-related parenting patterns. These four aspects will have an influence on the incidence of stunting and the occurrence of diseases which will ultimately affect nutritional status (Luciano et al., 2008).

This study shows that 25 children have good eating parenting and 22 children have poor eating parenting. Hajj statistical tests on bivariate analysis showed that in this study there was a significant influence between child feeding patterns on the incidence of stunting with values (0.025 <0.05).

This is in line with previous studies (Leba et al., 2019) which concluded that there is a relationship between parenting and the incidence of stunting in children. The low parenting pattern shown in this study is related to the low education of parents, especially mothers so it has an impact on childcare patterns. Good parenting is a very important factor to ensure optimal child growth.

Regarding health care patterns, table 15 shows that there are 48 children who have poor health parenting, while 15 children have good health care patterns.

Thus, statistical tests found that there was a significant effect between child health parenting on the incidence of stunting with a p-value of <0.039 and a risk factor of 2.3 times. The results of this study are not in line with previous studies which stated that apart from parenting and cognitive stimulation, other variables related to parenting that also affect the incidence of stunting in children under five are the ability of parents to organize the home environment, play materials, parental involvement, stimulation variations, parental acceptance of children's creativity, sense of fluctuation during parenting, level of parental control over children. These factors are categorized as environmental factors. Statistically, environmental factors directly affect the intelligence function of children even after the socioeconomic factors are controlled (Fathia & Jama, 2011).

3. **The influence of health conditions on the incidence of stunting**

The health condition of children, especially during the growth period is one of the risk factors for stunting. Children who are often sick have a greater risk of stunting than normal children. The findings in this study can be discussed that health conditions do not have a significant effect between stunting and the value (0.419 > 0.05). This means that health is a protective factor for stunting.

This is reinforced by the results of research by Tando (2012) and (Aramico & Husna, 2017) which state that the frequency and duration of illness are at risk for stunting. Children who suffer from illness, especially infections, cause a decrease in appetite so that their nutritional intake cannot meet the needs for tissue growth.

Conclusion

Based on the results of this study regarding the factors that influence the incidence of stunting in children aged under five (24-59 months) at Centro saude internamento Gleno, postu Gleno Municipiu Ermera, the following conclusions can be drawn:

1. The results of the partial analysis indicate that the factors of child feeding parenting, child health parenting, family income, occupation and number of family members have an effect on the incidence of stunting in children under five in the Centro Saunde Internamento Gleno work area.

2. Factors of health condition, family size and mother's education had no effect onstunting in children under five in the working area ofCentro saunde Internamento Gleno.

3. The results of the simultaneous analysis show that the factor of food consumption with the incidence of stunting   in children under five in the working area of Centro saunde Internamento Gleno.

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