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RESEARCH ARTICLE

Risk Factors for Stunting in Toddlers Aged 24-59 Months with Stunting Events in Padang Village Manggeng District of Southwest Aceh Regency

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Abstract

Stunting is a condition of failure to thrive in children under five due to chronic malnutrition. This study aimed to see whether there is a definite relationship between maternal height, maternal education, maternal nutrition knowledge, maternal age, and maternal employment status against stunting cases in Manggeng village, Southwest Aceh Regency. Research is an observational analysis with a cross-sectional approach. They were held for two months (November September 2021) in Padang village Manggeng district of Southwest Aceh Regency. The sample withdrawal was a saturated sample of 45 mothers with toddlers ages 24-59. The results of the analysis concluded that there was no meaningful relationship between the characteristics of the mother of toddlers (height, age, education level, knowledge of nutrition, and employment status) or stunting factors that were examined against the number of stunting cases in Padang village which means the variables used statistically less precisely as variables predicator stunting rate. The level of risk of observed factors consisting of maternal height means that Stunting tendencies are riskier in mothers with short size than mothers with a high body, as well as the risk factors of the education level, Knowledge and status of the mother's work.

Keywords: Social; Genetic; Mother; Stunting; Padang

Introduction

Stunting is a condition of failure to thrive in children under five due to chronic malnutrition, so children are too short for their age. Multi-dimensional factors cause stunting—the most decisive intervention at 1,000 HPK (First 1000 Days of Life). Stunting is also chronic malnutrition caused by insufficient nutritional intake for quite a long time due to inadequate food that does not match nutritional needs (EKO, 2018). Impaired growth (stunting) or failure to develop in children is not a diagnosis but is a term used to describe a specific problem. Stunted growth is a long-term consequence of malnutrition in early childhood. A child with small growth will experience a lifetime of poor health and underachievement (UNICEF, 2009).

Stunted and severely stunted toddlers are toddlers with body length (pb/u) or height (tb/u) according to their age compared to the who-mgrs standard (multicenter growth reference study) 2006. While the definition of stunting According to the Ministry of Health (Kemenkes), children under five have a z-score of less than -2SD/standard division (stunted) and less than -3 (severely stunted). Stunting in children is also a risk factor for death, problems with low motor development, low language skills, and functional imbalances (Mauludyani, 2014). Nationally, the highest prevalence of stunting cases occurs in East Nusa Tenggara (NTT), with a stunting toddler percentage of 42.7%. Or above the national stunting toddler rate of 30.8%. Compared to the prevalence of stunting in the province of Aceh is 22% (Bappenas & UNICEF, 2020).

Several empirical studies have found factors related to stunting, one of which is nutritional status, nutritional status is an assessment of nutritional status that is measured by a person at one time by collecting

data (Arisman, 2005). Nutritional status describes whether a person's body needs are met or not. One of the studies in the Working Area of the Nanggalo Padang Health Center conducted by Putri, Sulastri, and Lestari showed that nutritional status in society was influenced by several factors such as socioeconomic, parents' education, parents' occupation, number of children in the family, upbringing, and parenting patterns, foster.

Factors that cause stunting do not only come from the characteristics of the child but can come from the characteristics of the mother; according to Hein and Hoa in Darteh et al. (2014), three significant factors cause stunting, namely distal factors, including socioeconomic factors, intermediate factors including environmental factors and maternal factors and proximal factors include the characteristics of the child. According to Riskesdas data for 2013, the prevalence of nutritional status in children had not changed due to uneven monitoring of growth in toddlers, and there was a tendency for the proportion of toddlers never to be weighed in the last six months to increase from 25.5% in 2007 to 34.4% in 2013. (Kemenkes, 2013).

A preliminary study at the Aceh Barat Daya District Health Office found that several 35 puskesmas areas had stunted. The number of stunting incidents in Aceh Barat Daya district is 12.5% or around 510 children aged 0-59 months. Of the 35 working areas of the puskesmas, the highest stunting rate was in the working area of the puskesmas, with the number of stunted children aged 0-59 months as much as 44.2% or as many as 191 toddlers who were stunted. % or as many as 240 children (Southwest Aceh Health Office, 2021).

Genetic and sociodemographic conditions of parents are thought to be one of the causes of stunting. Padang village is an administrative area of the Manggeng sub-district, Southwest Aceh Regency, with 45 toddlers aged 24-59 months. The results of initial observations found physical characteristics suspected of being stunted, so the authors were interested in studying the risk factors for checking from sociodemographic factors of mothers under five, especially the mother's height, mother's education, knowledge of mother nutrition, mother's age, and mother's employment status. Based on this description, the purpose of this study was to see whether or not there was a definite relationship between the mother's height, mother's education, knowledge of the mother's nutrition, mother's age, and mother’s employment status on stunting cases in Padang village, Manggeng District, Aceh Barat Daya District.

Methods

This research is an observational analysis research with a cross-sectional form. The breakdown occurred for two months (November and September 2021) in the Padang, Manggeng District, Kabupaeten, Southwest Aceh village. The study population was all mothers with toddlers aged 0-59 months, with 45 respondents. The sample used was saturated, or all population members were sampled (Sugiyono, 2012).

The stunting factor variable in this study was the characteristics of mothers under five consisting of the mother's height (<150 short >150 tall); the mother's age variable was measured when 28-39 years old were included in the young age category, if 40-45 years old were included in the old age category, mother's education is the level of education completed by mothers under five, junior-high school education level is included in the low education category, DIII-SI level is included in the higher education category, 12 questions measure toddler nutrition knowledge if the real answers obtained are <70 per cent of the ideal score is categorised in common knowledge if the total solutions> 80 per cent of the absolute perfect score are included in the high knowledge category. The child's height data was obtained by measuring the height with a microtoise. The data was processed using the WHO Anthro (Anthropometric Calculator) to get a Z-score for TB/Age index. Data analysis was performed using univariate and bivariate analysis, chi-square approach. The univariate analysis aims to see the frequency distribution, while the bivariate analysis uses the Chi-square test to determine the relationship between the two variables. Bivariate analysis was performed with crosstab.

Table 1. Characteristics of Research Variables

Variable	Category	n	%
Child Age	0-23 Month	4	8,9
	24-59 Month	41	91,1
Gender	Female	29	64,4
	Male	16	22,9
Nutritional Status	*Stunting*	13	28,9
	Normal	32	71,1
Mother's Age	28-39	33	73,3
	40-45	12	26,7
Mother's Height	Short	24	53,3
	Normal	21	46,7
Mother's Education	Lower	32	71,1
	Higher	13	28,9
Nutrition Knowledge	Good	16	35,6
	Not Good	29	64,4
Mother's Employment Status	Work	29	64,4
	Does not Work	16	35,6

Source; Primary Data Processed 2022

The data in the table above makes it clear that the number of toddlers in the age range of 0-23 months is four people or 8.9 per cent of the total sample, toddlers who are in the age range of 24-59 months are 41 people or 91.1 per cent of the entire sample study. Based on gender, the number of samples of toddlers with the male gender was 16 people (22.9 per cent), and the selection of toddlers with the female gender was 29 or 64.4 per cent of the sample. The data processing results stated that the condition of the nutritional status of toddlers (cases) in this study, 13 or 28.9 per cent of the study sample experienced stunting, and 32 other children were included in the normal category. Based on these results, the age range for toddlers in this paper consists of 33 people aged 28-39 years or 73.3 per cent, and the age range for mothers of toddlers 40-45 years is 12 people, with a percentage of 26.7 per cent of the total sample of observations.

The height level of the mothers under five in this observation consisted of the short height category, with a total of 24 people or 53.3 per cent of the total observation sample, and the average height category, which amounted to 21 people or 46.7 per cent of the number of mothers under five in the observation. The stunting factor that was observed later in this study was the education level or education level of mothers under five, the first category was mothers who had completed junior high school education, totalling 32 people or 71.1 per cent of the total observations, and the second category was DIII-Bachelor education level with a full sample of 13 people (28.9 per cent). The level of knowledge of mothers on stunting is categorised into two categories; the first is mothers with a level of expertise in the category of understanding stunting, with 16 mothers under five or 35.6 per cent, and the second is mothers with a level of knowledge of stunting in the category of not understanding with a total of 29 people or 64. 4 per cent of the observation sample. The last stunting factor variable observed was mothers' employment status under five consisting of 29 working categories (64.4 per cent) and 16 non-working categories.

Table 2. Results of Analysis of the Influence of Stunting Factors

***Stunting* Factor**	**Nutritional Status of Toddlers**				**OR 95% CI**	**P-Value**
	Stunting		**Normal**			
	n	**%**	**n**	**%**		
Mother's Height:						
Normal	6	28,6	15	71,4	1,029 (0,283-3,70	0,965
Short	7	29,2	17	70,8		
Mother's Age:						
28-39	9	27,3	24	72,7	1,333 (0,321-5,38)	0,692
40-45	4	33,3	8	66,7		
Mother's Education:						
SLTP-SLTA (Low)	8	25,0	24	75,0	1,875 (0,474-7,411)	0,367
D III-SI (High)	5	38,5	8	61,5		
Mother's Knowledge of Nutrition:						
Low	7	24,1	22	75,9	1,886 (0,503-7,073)	0,344
High	6	37,5	10	62,5		
Mother's Occupational Status:						
Work	4	25,0	12	75,0	1,350 (0,340-5,356)	0,669
Doesn't work	9	31,0	20	69,0		

Source, Primary Data Processed 2022

Nutritional Status of Toddlers

Nutritional status is a condition of the body that describes the results of food intake consumed; in the long term, insufficient food intake will impact the shape of a skinny body (Sulastri, 2012). The nutritional state that is the topic of this study is the height/age index with the category of undernourishment (stunting) if it is ≤-2 SD and normal (not stunting) if the index value is ≥ 2 SD. Stunting cases in the study amounted to 13 toddlers or 28.9 per cent of 45 toddlers. The high stunting rate in the study area is one of the effects of economic conditions and family size. In addition, the low level of mothers' nutrition knowledge tends to cultivate the habit of snacking on children without considering the protein level and other nutritional elements in toddler snacks.

Relationship between Mother's Height and Number of Stunting Cases

Based on observed indicators of genetic factors (mother's height), the number of cases of stunting was found more in mothers with short height categories (7 toddlers) than in mothers of toddlers with average size.

Still, this study found no direct relationship between stunting rates and these genetic factors. This. Immunity factors, food and non-food family expenses and environmental factors can affect stunting rates apart from genetic factors (Amin & Julia, 2016). Apart from that, the results of this study stated that the risk tendency of mothers with short height was 1.029 times more at risk of having stunted children; these results were similar to research by Amin and Julia (2016).

Relationship between Maternal Age Level and Stunting

The risk factor for maternal age found that the number of cases of stunting under five was higher in mothers aged 28-39 years compared to the rate of stunting (9 under five) that occurred in toddlers with parents aged between 40-45 years. This condition occurs due to the mother's level of experience (parenting style); this tendency occurs in the second child as a result of the productive age of the mother, who has high mobility. The facts found in the field are that mothers of children under five in the age range of 28-39 years in the research area are employees of the private sector and other informal sectors, even though they have an additional level of income, consumption patterns have not fully taken into account the growth and development of children so that the allocation of income tends to be more significant for lifestyle: child living and parenting costs. The results of the study were substantial in that there was no direct relationship between the age of the mother and the rate of stunting; however, the tendency for young mothers to have a 1.33 times greater risk of stunting under-fives compared to older mothers is in line with research (Wanimbo & Wartiningsih (2020), the absence of a direct relationship between the level of maternal age and the level of stunting in Padang village characterises that access to health facilities and information and services related to the nutritional status of toddlers is relatively young.

Relationship between mother's level of knowledge about nutrition and stunting

The risk factor for knowledge of toddler mothers about nutrition is a condition of knowledge of toddler mothers about the nutritional value of toddler food; the results of this study state that mothers with a low level of knowledge are more likely to have the potential to be 1.889 times at risk of stunting, in this variable category it is known that the number of cases of stunting is seven toddlers or 24.1 per cent, but not much different from the number of children under five with stunting nutritional status with a higher level of nutrition knowledge. This states that the understanding of nutritional information received by mothers under five needs to be adequately realised. This means that information or knowledge of dietary problems must be more applied. One of the factors causing the implementation of nutritional expertise and information to be unrealised in the life of a toddler's family is the mother's creativity and stimulation that attracts the child's attention to a food menu that meets nutritional requirements, which collides with the economic conditions of the family. Research has found that there is no significant relationship between the level of knowledge of mothers about nutrition and stunting; this is to Sulastri's study (2012) that environmental factors, information from various media, and family can affect a person's level of knowledge and actions in food intake patterns. The absence of a significant direct relationship between a mother's knowledge of nutrition and the number of cases of stunting in toddlers is the impact of the child's growth and development level, which is influenced by family income, household stability and parental personality (Setiawan et al., 2018).

Relationship between Mother's Education Level and Stunting

In simple terms, a person with a higher education level is more precise in understanding and managing information and adopting a healthy lifestyle, including a greater possibility of maintaining a healthy body and a balance of nutritious food for other family members (Setiawan et al., 2018). From the point of view of the mother's level of education, the tendency for stunting is more significant for children with low levels of parental education. Still, there is no important relationship between the two variables. The results are supported by Amin & Julia's research (2016) which found no meaningful direct connection between the mother's education level and cases of stunting in Sedayu District. The nutritional status of height/age is a portrait of dietary conditions in the past that were less sensitive to nutritional intake; height levels are very different from conditions where body weight can change up, stay or fall relative to nutritional intake, height can only grow (increase) or fixed for a certain period which means that size will typically increase with age (Anindita, 2012). There is no significant relationship between the mother's education level and the case of stunting, reflecting that access to education and information centres in Padang village is relatively young, with accessible physical and non-physical facilities (Amin & Julia, 2016).

The Relationship Between Mother's Employment Status and Stunting

Work is an effort made to improve the income and economic status of the family. In this study, the

number of cases of stunting was found to be higher in non-working homemakers compared to working mothers. This occurs because the economic level of working mothers is better than mothers who do not have a job. Mothers with income can meet the needs of food diversity compared to mothers who do not have income. This study did not find a definite and significant relationship between the mother's employment status and the incidence of stunting in Padang village. The results of this study align with Amin & Julia's research (2016) that permanent employment status in the informal sector will affect the level of income, which will directly affect the food intake of family members. Empirical evidence states that the risk of stunting is nationally in toddlers from families with low-income levels (Apriluana & Fikawati, 2017). Several cases found that the income level did not always guarantee that children's nutritional needs were met; this depended on the portion of the income allocation, whether for food needs or other needs (Anindita, 2012).

The risk factors in this study did not have a significant direct relationship to stunting; this is to the statement of the World Health Organization that the dominant factors influencing stunting rates are the level of maternal nutrition, the level of breastfeeding, food intake, and a history of infectious diseases (Wanimbo & Wartiningsih, 2020), research by Apriluana & Fikawati, (2017) found that in developing countries the dominant factors that influence and have a close relationship with the stunting rate consist of birth weight, household income, and sanitation hygiene. Amin & Julia's research (2016) and Setiawan et al. (2018) show that the number of household members is the distinguishing household factor closely related to the stunting rate.

Conclusion

The results of the analysis of the data in this study stated that there was no significant relationship between the characteristics or factors of stunting studied and the number of cases of checking in the Padang village, which means that the variable used statistically was not quite right as a predictor variable for stunting rates. The level of risk factors observed, which consisted of the mother's height, meant that the tendency for stunting was more at risk in mothers with short stature than in mothers with tall bodies, as well as risk factors for the education level, knowledge and employment status of the mother.

Sugesstion

The results of data analysis, which stated that there was no significant relationship between the observed risk factors and the number of stunting cases, did not mean that this variable was ignored; in other cases, the variables observed had a significant effect, meaning that statistically in this study there was not enough evidence. It is expected that other researchers will add several variables to the sample. And for the sake of development, implementing good knowledge and parenting is highly likely. Establishing a qualified nutritional education information centre at the village level that mothers of toddlers can access is very important.

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Author Contributions and Competing Interests

The author has stated that no competitor's interest exists.

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