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Research Article **Open Access**

RISK FACTORS OF STUNTING IN THE SUB-DISTRICT OF SOUTH WAKORUMBA MUNA REGENCY

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Abstract

Background: Malnutrition is the cause of one third of deaths in children. Nutritional Status Monitoring data in Muna Regency obtained 1,279 cases of stunting in toddlers aged 0-24 months and 1,397 cases in toddlers 24-59 months.The high incidence of stunting is caused by several factors. This research aims to analyzing risk factors for stunting in South Wakorumba District, Muna Regency, Southeast Sulawesi Province.
Methods: This type of research is a case control study conducted from March to April 2021,the sample used are 63 cases taken by simple random sampling and 63 controls.
Results: Using Odds Ratio (OR). OR value of family income is 0,294< 1, OR value of dietary habit is 0,323< 1, OR value of exclusive breastfeeding history is 0,327< 1, OR value of LBW history is 0,359< 1, and OR value of history of infection is 0,229< 1.
Conclusion: Family income, dietary habit, exclusive breastfeeding history, LBW history, and history of infection are risk factors of stunting incident in South Wakorumba District, Muna Regency, Southeast Sulawesi Province.

Key words: *Income, Dietary, Breastfeeding, Infection, Stunting.*

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INTRODUCTION

Malnutrition is the cause of one third of deaths in children. The period when children are under the age of five years (toddlers) is a critical period of development and growth in the human life cycle, children experience rapid physical growth and this period is also called the golden period of brain development(1). Stunting describes the chronic or chronic undernutrition status during the period of growth and development since the beginning of life, starting from undernutrition of pregnant women (KEK) and during pregnancy until the child is born(2).

The prevalence of stunted toddlers becomes a public health problem if the prevalence is 20% or more because the percentage of stunted toddlers in Indonesia is still high and is a health problem that must be addressed compared to some neighboring countries, the prevalence of stunted toddlers (16%) and Singapore (4%)(3). The Riskesdas data for Southeast Sulawesi Province in 2019 shows that the highest prevalence of stunting is in children with an age range of 24-59 months compared to children with an age range of 0-23 months, while for 2020 the stunting prevalence data is 31%(4).

Based on data from the Nutrition Status Monitoring (PSG) of Muna Regency in 2018, there were 1,062 toddlers or (7.7%) who were stunted for toddlers aged 0-24 months and there were 2,431 toddlers or (12.4%) who were stunted aged 24-59 month. Furthermore, in 2019 there were 1,135 toddlers or (9.7%) who were stunted for the age category 0-24 months and there were 2,547 toddlers or (13.4%) who were stunted aged 24-59 months. Then for 2020 there are 1,279 or (11.4%) stunting for the category of toddlers aged 0-24 months and 1,397 or (13.6%) toddlers who are stunted for the age category 24-59 months(5).

Based on the initial survey, information was obtained that the feeding pattern of some toddlers in Muna Regency was irregular. Then it is also known that the mother's knowledge of the nutritional content contained in the food consumed daily is still lacking. Many mothers who work outside the home make parenting diverted by grandmothers but with the problem that if the child does not want to eat rice and side dishes, the grandmother will give snacks and even sweets or whatever the child wants without paying attention to the nutritional intake needed by the child so that there are still many stunted children. with low body weight. Then for the history of Low Birth Weight (LBW) there are still many babies who have low birth weight in Muna Regency.The contributing factor is family income which cannot cover their lives so that many children have low birth weight. Based on the description of the problem, the researcher wants to examine the Risk Factors for Stunting Incidence in South Wakorumba District, Muna Regency, Southeast Sulawesi Province.

METHOD

The research method used is a quantitative method with a case control study design(6). To determine the risk factors between the independent variables and the dependent variablein the District of South Wakorumba, Muna Regency (7). The population in this study were all toddlers suffering from stunting in 2020 in South Wakoromba District aged 24-59 months as many as 127 toddlers. With a total sample of 63 cases and 63 controls. The variables in this study were income, diet, exclusive breastfeeding, history of LBW, history of infectious diseases and incidence of stunting. Data analysis was carried out in several stages, namely descriptive, inferential analysis using Odd Ratio(8). This data analysis was performed using the IBM SPSS version 20.0 application.

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RESULT

The table 1 shows that of the 127 respondents studied there are 40 respondents who have a family income in the sufficient category and there are 87 respondents who have a family income in the less category. Furthermore, of the 40 respondents who have family income with sufficient category, there are 13 respondents (32.5%) who are cases and there are 27 respondents (67.5%) who are controls. Then from 87 respondents who have family income with less category there are 54 respondents (62.1%) who are cases and there are 33 respondents (37.9%) who are controls. The results of data analysis obtained the value of Odds Ratio (OR) = 0.294 < 1

The table 2 shows that of the 127 respondents studied, there are 41 respondents who have an adequate diet and there are 86 respondents who have a poor diet. Furthermore, of the 41 respondents who have an adequate diet, there are 14 respondents (34.1%) who are cases and there are 27 respondents (65.9%) who are controls. Then, of the 86 respondents who have a poor eating pattern, there are 53 respondents (61.6%) who are cases and there are 33 respondents (38.4%) who are controls. The results of data analysis obtained the value of Odds Ratio (OR) = 0.323 < 1.

Table 3 shows that of the 127 respondents studied there are 36 respondents who are exclusively breastfed and there are 91 respondents who are not exclusively breastfed. Furthermore, of the 36 respondents who were exclusively breastfed, there were 12 respondents (33.3%) who were cases and there were 24 respondents (66.7%) who were controls. Then from the 91 respondents who were not exclusively breastfed, there were 55 respondents (60.4%) who were cases and there were 36 respondents (39.6%) who were controls. The results of data analysis obtained the value of Odds Ratio (OR) = 0.327 < 1.

Table 4 shows that of the 127 respondents studied there are 44 respondents in the LBW category and there are 83 respondents in the normal category. Furthermore, from 44 respondents in the LBW category there are 16 respondents (36.4%) who are cases and there are 28 respondents (63.6%) who are controls. Then from 83 respondents in the normal category there are 51 respondents (61.4%) who are cases and there are 32 respondents (38.6%) who are controls. The results of data analysis obtained the value of Odds Ratio (OR) = 0.359 < 1.

Table 5 shows that of the 127 respondents studied there are 36 respondents who have a history of infectious diseases and there are 91 respondents who do not have a history of infectious diseases. Furthermore, from 36 respondents who had a history of infectious diseases, there were 10 respondents (27.8%) who were cases and there were 26 respondents (72.2%) who were controls. Then from the 91 respondents who did not have a history of infectious diseases, there were 57 respondents (62.6%) who were cases and there were 34 respondents (37.4%) who were controls. The results of data analysis obtained the value of Odds Ratio (OR) = 0.229 < 1.

Table 1
Risk Factors of Family Income on Stunting Incidents

Family Income	Stunting Incident				Amount		Statistic test
	Case		Control				
	n	%	n	%	n	%	
Enough	13	32.5	27	67.5	40	100	OR = 0.294 LL = 0.133 UL = 0.649
Not enough	54	62.1	33	37.9	87	100	
Amount	67	52.8	60	47.2	127	100	

Source: Primary data 2021

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Table 2
Dietary Risk Factors for Stunting Incidents

Dietary habit	Stunting Incident				Amount		Statistic test
	Case		Control				
	n	%	n	%	n	%	
Enough	14	34.1	27	65.9	41	100	OR = 0.323
Not enough	53	61.6	33	38.4	86	100	LL = 0.148
Amount	67	52.8	60	47.2	127	100	UL = 0.703

Source: Primary data 2021

Table 3
Risk Factors of Exclusive Breastfeeding History on Stunting Incidents

Exclusive Breastfeeding History	Stunting Incident				Amount		Statistic test
	Case		Control				
	n	%	n	%	n	%	
Exclusive Breastfeeding	12	33.3	24	66.7	36	100	OR = 0.327
No Exclusive Breastfeeding	55	60.4	36	39.6	91	100	LL = 0.146
Amount	67	52.8	60	47.2	127	100	UL = 0.736

Source: Primary data 2021

Table 4
Risk Factors History of LBW with Stunting Incidence

LBW history	Stunting Incident				Amount		Statistic test
	Case		Control				
	n	%	n	%	n	%	
LBW	16	36.4	28	63.6	44	100	OR = 0.359
Normal	51	61.4	32	38.6	83	100	LL = 0.168
Amount	67	52.8	60	47.2	127	100	UL = 0.764

Source: Primary data 2021

Table 5
Risk Factors History of Infectious Diseases with Stunting Incidence

History of Infectious Diseases	Stunting Incident				Amount		Statistic test
	Case		Control				
	n	%	n	%	n	%	
There's History	10	27.8	26	72.2	36	100	OR = 0.229
No History	57	62.6	34	37.4	91	100	LL = 0.099
Amount	67	52.8	60	47.2	127	100	UL = 0.534

Source: Primary data 2021

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DISCUSSION

Risk Factors of Family Income on Stunting Incidents

Based on the results of the study, it shows that from 40 respondents who have family income with sufficient category there are 13 respondents (32.5%) who are cases and there are 27 respondents (67.5%) who are controls. The respondent's income is sufficient but stunting still occurs because many family members live in the same house, so it affects the availability of food. Then from 87 respondents who have family income with less category there are 54 respondents (62.1%) who are cases and there are 33 respondents (37.9%) who are controls. This is because low family income is very at risk of stunting. Family purchasing power for nutritious food is influenced by family income because in determining the type of food to be purchased depends on the level of income.

The purchasing power of household food follows the level of family income. With a high income, it is possible to fulfill the food needs of all family members. On the other hand, the low level of family income results in low household food purchasing power. Low purchasing power of foodstuffs causes under-fulfilment of the nutritional needs of toddlers(9).

The results of this study are in line with research conducted by Candra, et al., in Semarang which stated that low income levels are a risk factor for stunting, where families with low incomes have a 2.3 times greater risk of having stunting children than families with moderate income (10).

Dietary Risk Factors for Stunting Incidents

Based on the results of the study, it showed that of the 41 respondents who had an adequate diet, there were 14 respondents (34.1%) who were cases and 27 respondents (65.9%) were controls. This is because the mother does not regulate the diet according to the time that has been set. If the eating schedule is not established, then the child's eating pattern will not be formed. The meal schedule is very important to monitor the frequency of meals and nutritional needs according to the needs of the child. Then, of the 86 respondents who have a poor eating pattern, there are 53 respondents (61.6%) who are cases and there are 33 respondents (38.4%) who are controls. This is because mothers are able to arrange menus for toddlers/toddlers that must be varied in terms of ingredients, processing techniques and the nutrients contained therein. This is to avoid boredom. as well as sufficient nutritional elements for toddlers. Mothers serve food served to children cooked by themselves using natural ingredients, not instant or packaged foods.

In this study, most of the respondents had applied the right feeding pattern to stunting toddlers in the short category. This is because the feeding patterns obtained in this study only describe the current state of children under five, the nutritional status of stunting toddlers is an accumulation of previous eating habits, so that the pattern of feeding on certain days cannot directly affect their nutritional status. The key to success in fulfilling children's nutrition lies in the mother. Good eating habits really depend on the mother's knowledge and skills on how to prepare food that meets nutritional requirements(11). Where knowledge influences someone to take action or decide what action they will take(12). If the mother has good knowledge about healthy and nutritious food substances and the consequences of not meeting the nutritional needs of toddlers, then her actions in an effort to fulfil the nutritional status of toddlers will be carried out well, and vice versa.

This is in line with research conducted by Rita Sari and Apri Sulistianingsih (2017) that the risk of parents who do not feed well is 18.0 times the risk of

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their toddler suffering from stunting when compared to toddlers whose parents have a good feeding pattern (13). Supported by research conducted by Perdani (2016), the results of the analysis of the relationship between feeding practices and the nutritional status of children aged 3-5 years, it was found that the majority of parents were less than optimal in feeding their children, optimal parents in feeding children had a relationship with nutritional status. nutrition p-value = 0.000(14).

Risk Factors of Exclusive Breastfeeding History on Stunting Incidents

Based on the results of the study showed that of the 127 respondents studied there were 36 respondents who were exclusively breastfed and there were 91 respondents who were not exclusively breastfed. This is due to other factors, namely the respondents' lack of education and knowledge so that not many respondents do not know the benefits of exclusive breastfeeding, besides that most mothers help their husbands in farming. Of the 91 respondents who were not exclusively breastfed, there were 55 respondents (60.4%) who were cases and 36 respondents (39.6%) were controls. This is due to the large number of children that affect the production of breast milk, besides the development of the mother's age is also an obstacle

The benefits of exclusive breastfeeding for babies include complete nutrition, increase body power, increase mental and emotional intelligence that is stable and spiritually mature followed by good social development, easy to digest and absorb, has a composition of fat, carbohydrates, calories, protein and vitamins, protection infectious diseases, allergy protection because breast milk contains antibodies, provides intelligence and nerve stimulation, improves health and intelligence optimally(15). Stunting can occur as a result of malnutrition, especially during the First 1000 Days of Life (HPK). Poor nutrition during pregnancy, growth and early childhood can cause children to become stunted(16).

This is in line with research conducted by Ni'mah and Nadhiroh showing that there is a relationship between exclusive breastfeeding and the incidence of stunting. Nutrient needs at the age of 0-6 months can be met from breast milk. Children who are not exclusively breastfed are at a higher risk for lack of nutrients needed for the growth process(17). Then continued by Arifin, Irdasari, and Sukandar (2012) research, which was conducted in Puwakarta Regency, where the results of the analysis of the relationship between breastfeeding and the incidence of stunting showed that there were 38 (76%) under-fives with non-exclusive breastfeeding suffering from stunting, while those who did not. suffer from stunting as much as 76 (46%)(18).

Risk Factors of LBW History on Stunting Incidence

Birth weight has a major impact on the growth, development and subsequent height of a child. Babies born with LBW will be at high risk of morbidity, mortality, infectious diseases, underweight and stunting in the early neonatal period to childhood(19).

Based on the results of the study showed that from 44 respondents with LBW category there were 16 respondents (36.4%) who were cases and there were 28 respondents (63.6%) who were controls. This is because mothers can take care of the food and nutritional needs of their toddlers so that even though the respondent is in the LBW category, they do not suffer from stunting. Then from 83 respondents in the normal category there are 51 respondents (61.4%) who are cases and there are 32 respondents (38.6%) who are controls. This is due to another factor, namely the lack of knowledge of mothers about how to maintain the nutritional status of toddlers so that not a few respondents still have toddlers who suffer

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from stunting, besides that the mother's education level is also one of the causes.

The results of this study are in line with research conducted by Swathma, 2016 which shows that LBW is a risk factor for stunting in toddlers aged 12-36 months in the working area of the Kandai Health Center, Kendari City (20). The results of another study conducted by Oktarina and Fajar (2017) in Lampung, obtained p value <0.05, which means that there is a significant relationship between birth weight and stunting. The OR value is 1.3 times suffering from stunting compared to toddlers with normal weight(21).

Risk Factors History of Infectious Diseases for Stunting Incidence

The presence of infectious diseases causes the child's health condition to decline so that it has an impact on appetite and will reduce the amount of food intake, resulting in a lack of nutrients entering the body. Infectious diseases such as diarrhea, pneumonia, and malaria are the cause of most deaths.

Based on the results of the study showed that of the 36 respondents who had a history of infectious diseases, there were 10 respondents (27.8%) who were cases and there were 26 respondents (72.2%) who were controls. This is because the parents' income is low and the level of household cleanliness is also far from what is expected. In addition, the spread of bacteria and viruses is transmitted through the media or the people closest to children under five. Then from 91 respondents who did not have a history of infectious diseases, there were 57 respondents (62.6%) who were cases and there were 34 respondents (37.4%) who were controls.

Children who suffer from infectious diseases with a longer duration of time are more likely to experience stunting. And are more likely to experience sequelae due to common infections that will weaken the child's physical condition(22). The results of this study are in line with research conducted by Novianti, et al (2018) which states that a history of infectious disease is one of the dominant factors affecting stunting in toddlers(23). In addition, research conducted by Welasasih (2017) in his research from the Chi-Square test results obtained p = 0.021 (p <), meaning that there is a significant relationship between the frequency of illness and the nutritional status of stunting toddlers(24).

CONCLUSION

In this study, family income, diet, history of exclusive breastfeeding, history of LBW, and history of infectious diseases are risk factors for stunting in South Wakorumba District, Muna Regency, Southeast Sulawesi Province.

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