

## Risk Factors For Malnutrition in Toddlers at Manggeng Community Health Center Southwest Aceh District

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**Abstract:** The Manggeng Health Center report in 2020 showed that 25.8% of children under five were malnourished, this case was the highest among other health centers. This malnutrition must be prevented immediately because it has an impact on toddlers, namely the disruption of the immune system in toddlers. This study aims to determine the risk factors for the incidence of malnutrition in children under five at the Manggeng Health Center, Manggeng District, Southwest Aceh Regency in 2021. This research is descriptive analytic with a case design with a total sample of 41 undernourished toddlers and a control with a total sample of 41 undernourished toddlers. Data was collected by interview using a questionnaire. The population in this study was 130 toddlers and the sample was determined by proportional sampling technique, namely 82 toddlers. This research was conducted from March 30 to April 12, 2021. The statistical test used was chi square. The results of the univariate study showed that children under five who were undernourished by 50%, low family income 65.9%, insufficient energy intake 68.3%, had infectious diseases 70.7%, food insecure families 65.9%, parenting less good 70.7% and poor health services 73.2%. The results of the bivariate analysis showed that there was a relationship between family income (p value = 0.001, OR = 7.9), energy intake (p value = 0.001, OR = 6.6), infectious diseases (p value = 0.001, OR = 8.5), availability of food ingredients (p value = 0.001, OR = 6.8), parenting style (p value = 0.001, OR = 9.9), and health services (p value = 0.001, OR = 5.9), with the incidence of malnutrition in infants. The conclusion of this study is family income, energy intake, infectious diseases, availability of food, parenting patterns and health services are risk factors associated with the incidence of malnutrition in children under five at the Manggeng Health Center, Manggeng District, Southwest Aceh Regency in 2021. It is recommended at the Puskesmas provide counseling to mothers how to provide good parenting in caring for and preventing children at risk of malnutrition, such as increasing mother's knowledge and how to make ORS when a child has diarrhea.

**Keywords:** Malnutrition, Family Income, Energy Intake, Infectious Diseases, Availability of Foodstuffs, Parenting Patterns, Health Services

### Introduction

Improve Efforts of community nutrition aim to improve the nutritional quality of individuals and communities, among others, through improving food consumption patterns, improvement of nutrition conscious behavior, increasing access and quality of nutrition and health services in accordance with science and technology<sup>1</sup>. Good nutrition is the foundation of health, nutrition that can affects immunity, susceptibility to disease, as well as physical, mental growth and development<sup>2</sup>. Good nutrition will reduce morbidity, disability and mortality thereby improving the quality of human resources<sup>3</sup>.

Malnutrition is a nutritional status based on the Weight for Age index (BW/U) <-3 SD which is the equivalent of the term severe underweight<sup>4</sup>. There are 3 types of malnutrition that are

often encountered, namely kwashiorkor, marasmus and a combination of the two, marasmiks-kwashiorkor<sup>5</sup>. The nutritional status of toddlers is an important thing that every parent must know. The need for more attention to the growth and development of children at the age of toddlers is based on the fact that malnutrition in this golden age is irreversible (cannot be recovered), while nutritional deficiencies can affect children's brain development<sup>6</sup>.

Poor nutritional status in toddlers can cause effects that can inhibit physical, mental and thinking abilities, toddlers who suffer from malnutrition can experience a decrease in intelligence (IQ) up to ten percent, The worst impact of malnutrition is death at a very early age<sup>7</sup>. UNICEF revealed that as many as 165 million children worldwide are stunted in their physical and brain development, this condition can occur because the baby is malnourished<sup>8</sup>.

Based on the 2019 Indonesian Health Profile, it shows that in the last three years the incidence of malnutrition in children under five increased, namely in 2017 by 14.0%, decreased to 13.8% in 2018 and increased again in 2019 to 13.9% in Indonesia, seen from provincial data, NTT is one of them with the number of children under five suffering from malnutrition as much as 22.2%, NTB as much as 20.5%, South Kalimantan as much as 19%, and Aceh 16%<sup>9</sup>.

Based on Aceh's health profile, it shows that the prevalence of undernourished children under five years old based on the measurement of BW/U in the last three years increased by 15.2% in 2017 to 15.8% and in 2019 increased to 16%, seen from the highest district with nutritional rates. less in children under five, namely Simeulue as much as 84%, Bener Meriah as much as 31%, Gayo Lues as much as 21%, and Southwest Aceh as much as 13.3%<sup>10</sup>.

Based on the health profile of Southwest Aceh, it shows that the prevalence of malnourished children under five years old based on BW/U measurements was 18.3% in 2019 and increased in 2020 to 18.4% (573 cases). The highest health centers with under-five malnutrition rates were Manggeng Health Center as much as 25.8%, A.S. Public Health Center. Pinang 23.6%, Ie Mirah Health Center 9.1%, and Lhang Health Center 9.1%<sup>11</sup>.

Based on the Manggeng Health Center report in 2020, 25.8% of children under five were malnourished. From the results of the initial observations of researchers with 10 mothers who brought toddlers to the puskesmas, 7 of them experienced malnutrition, health workers said that mothers had poor knowledge in providing energy intake so that toddlers were protected from malnutrition, mothers did not exclusively breastfeed, energy intake was not sufficient. sufficient for toddlers, incomplete immunization status so that children are susceptible to infectious diseases such as ARI and diarrhea so that it affects the nutrition of toddlers, this is also influenced by the low socioeconomic status seen from the income and occupation of the respondent's family.

Based on the above background, researchers are interested in researching "risk factors for the incidence of malnutrition in toddlers at the Manggeng Health Center, Manggeng District, Southwest Aceh Regency in 2021".

## **Methods**

This research design uses case control research (case control). The population in this study is the number of mothers who have toddlers as many as 130 toddlers. The sample size was taken using the case control study formula for hypothesis testing on the Odds Ratio. The sample in this study used a ratio of 1:1 so that the total sample obtained was 82 toddlers consisting of a case group of 41 undernourished toddlers and a control group of 41 well-nourished toddlers. The sampling technique was done by random sampling. For each village, it is done by taking

several samples from the population of each population using the proportional sampling formula.

## Result

The results of the study are described by univariate, bivariate and multivariate analysis. Univariate analysis shows a picture of the frequency distribution of variables studied by both dependent and independent variables. Following, we will show our research results by distribution frequency on table 1.

This research was conducted from March 30 to April 12, 2021 on 82 respondents. The results of the study can be seen in the table below:

**Table 1.** Univariate Analysis

Variable		F	%
The incidence of malnutrition	Malnutrition (Case)	41	100
	Well (Control)	41	100
Family Income	Low	35	42,7
	Tall	47	57,3
Energy Intake	Not Enough	38	46,3
	Enough	44	53,7
Infectious Disease	There Is	38	46,3
	There Is Not Any	44	53,7
Availability of food ingredients	Food Insecurity	36	43,9
	Food Resistant	46	56,1
Parenting Style	Not Good	37	45,1
	Well	45	54,9
Health Services	Not Good	36	43,9
	Well	46	56,1

**Table 2.** Bivariate Analysis

Variable	The Incidence of Obesity				Total	OR	P
	Case		Control				
	n	%	N	%			
Family Income							
Low	27	65,9	8	19,5	35	42,7	7,95 0,001
Tall	14	34,1	33	80,5	47	57,3	
Energy Intake							
Not enough	28	68,3	10	24,4	38	46,3	6,67 0,001
enough	13	31,7	31	75,6	44	53,7	
Infectious disease							
There is	29	70,7	9	22	38	46,3	8,59 0,001
There is not any	12	29,3	32	78	44	53,7	
Availability of food ingredients							

Food insecurity	27	65,9	9	22	36	43,9	6,85	0,001
Food resistant	14	34,1	32	78	46	56,1		
<b>Parenting style</b>								
Not good	29	70,7	8	19,5	37	45,1	9,96	0,001
well	12	29,3	33	80,5	45	54,9		
<b>Health services</b>								
Not good	30	73,2	6	14,6	36	43,9	5,90	0,001
well	11	26,8	35	85,4	46	56,1		

Source : Data Analysis

## Discussion

### Relationship between Family Income and Malnutrition in Toddlers

Based on the results of the study which showed that there was a relationship between family income and the incidence of malnutrition in children under five at the Manggeng Community Health Center, Manggeng District, Southwest Aceh Regency in 2021, with P value = 0.001 and an OR value of 7.95, this indicates that children with low income Low families have a risk of malnutrition 7 times greater than toddlers with high family income. Based on the results of the analysis showed that respondents with low family income of 65.1% under five experienced malnutrition. While respondents with high family income of 80.5% under five experienced good nutrition.

The results of this study are in line with research conducted by Budi in 2015 with the title "Analysis of Factors Relating to Cases of Malnutrition in Toddlers". The results showed that respondents with low family income 83.3% experienced poor nutrition compared to respondents with high family income 16.7% who experienced good nutrition. Based on the results of statistical tests with chi square, the value of Value = 0.002, OR = 5.12. so that it can be interpreted that there is a relationship between family income and cases of malnutrition in children under five in 2015<sup>12</sup>.

Another source of theory that is in line with this research is the theory from Suharjo (2015) that low family income is closely related to the lack of fulfillment of food nutrition in a family. This is because with a lack of family income, the purchasing power of diverse and nutritious food to meet the nutritional coverage of children under five will be reduced so that children with less family income will be more vulnerable to malnutrition<sup>13</sup>.

According to the Department of Nutrition and Public Health (2010), family income will affect the purchasing power of the family so that it will affect health status. The family's ability to buy food depends, among other things, on the size of the family's income, the price of the food itself, and the level of management of land and yard resources. Families with limited income are likely to be less able to meet their food needs in accordance with the nutrients needed by the body.

Based on the facts in the field that the researchers found, it is known that there is a relationship between family income and the incidence of malnutrition in toddlers because families with low economics are < 2.9 million per month but the responsibilities in the family are many such as the number of children > 2 people, there are younger siblings or parents and those who work only 1 person then this feels heavy so that to meet the nutritional needs of children complete with good nutrition cannot be met, this is also influenced by the habits of parents who provide ready-to-eat food to children so that children's nutritional intake is not enough which causes malnutrition

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### **Relationship between Energy Intake and Malnutrition in Toddlers**

Based on the results of the study which showed that there was a relationship between energy intake and the incidence of undernutrition in children under five at the Manggeng Community Health Center, Manggeng District, Aceh Barat Daya Regency in 2021, with P value = 0.001 and an OR value of 6.67, this indicates that toddlers with Insufficient energy has a risk of malnutrition 6 times greater than toddlers who have sufficient energy intake. Based on the results of the analysis showed that respondents with insufficient energy intake of 68.3% under five experienced malnutrition. While respondents with sufficient energy intake of 75.6% of children under five experienced good nutrition.

The results of this study are in line with research conducted by with the title "The Relationship of Family Food Security and Consumption Patterns with the Nutritional Status of Toddler Family Farmers (Study in Jurug Village, Boyolali Regency in 2017)". The results showed that from 43 respondents, families with food insecurity were 65.1%, compared to only 34.9% food insecure. Based on the results of statistical tests with chi square, the value of Value = 0.004, OR = 5.12. so that it can be interpreted that there is a relationship between family food security and the nutritional status of toddlers in farmer families in Jurug Village, Boyolali Regency in 2017. Another source of theory that is in line with this research is Riyanto (2011) theory that under-fives who are malnourished and have a deficit level of energy consumption are caused by the consumption of rice as the main energy source. The habit of toddlers who do not eat dinner and only consume biscuits, bread, or other snacks results in an imbalance between energy intake and energy expended<sup>14</sup>.

Based on the facts in the field that the researchers found, it is known that there is a relationship between energy intake and the incidence of malnutrition in toddlers because parents do not have good knowledge in providing the type of food that meets the energy intake of children and factors of family income and the number of family members are also things that affect the supply of food ingredients. at home for toddlers. Toddlers with insufficient energy intake cause children to experience malnutrition.

### **Relationship between Infectious Diseases and Malnutrition in Toddlers**

Based on the results of research showing that there is a relationship between infectious diseases and the incidence of malnutrition in children under five at the Manggeng Community Health Center, Manggeng District, Southwest Aceh Regency in 2021, with P value = 0.001 and an OR value of 8.59, this shows that toddlers with no Infectious diseases have an 8 times greater risk of malnutrition than toddlers who do not have infectious diseases. Based on the results of the analysis showed that 70.7% of respondents with infectious diseases were undernourished. Meanwhile, 78% of respondents with no infectious diseases experienced good nutrition.

The results of this study are in line with research conducted by Budi in 2015 with the title "Analysis of Factors Relating to Cases of Malnutrition in Toddlers". The results showed that respondents with a history of infectious diseases 81.2% experienced poor nutrition compared to respondents with no history of infectious diseases 18.8% experienced good nutrition. Based on the results of statistical tests with chi square, the value of Value = 0.001, OR = 7.12. so that it can be interpreted that there is a relationship between a history of infectious diseases and cases of malnutrition in children under five in 2015<sup>15</sup>.

Another source of theory that is in line with this research is the theory from Armini (2017) that toddlers affected by infectious diseases tend to lose weight, this is due to an increase in

metabolism in the toddler's body and usually followed by a decrease in appetite. Continuous weight loss can lead to a decrease in nutritional status. In line with this study, which showed that most of the under-fives with malnutrition in Sampang District were affected by infectious diseases. So that the need for fast and accurate handling of infectious diseases to prevent worsening of the nutritional status of children under five<sup>16</sup>.

Based on the facts in the field found by the researchers, it is known that there is a relationship between infectious diseases and the incidence of malnutrition in toddlers because toddlers often experience infectious diseases such as whooping cough and diarrhea twice a month, also influenced by maternal factors who do not understand the handling of diarrhea or whooping cough in children. affect the child's appetite when the child has the infectious disease.

### **The Relationship between Availability of Foodstuffs and the Incidence of Malnutrition in Toddlers**

Based on the results of the study which showed that there was a relationship between the availability of food ingredients and the incidence of malnutrition in children under five at the Manggeng Community Health Center, Manggeng District, Southwest Aceh Regency in 2021, with P value = 0.001 and an OR value of 6.85 showed that toddlers with the availability of materials Food insecure foods have a risk of malnutrition 6 times greater than toddlers who have food insecure food available. Based on the results of the analysis showed that the respondents with the availability of food insecure food amounted to 65.9% of children under five experienced malnutrition. While respondents with the availability of food-resistant foodstuffs amounted to 78% of children under five experienced good nutrition.

The results of this study are in line with research conducted by Suharjo (2015) that the level of ease in obtaining this food source certainly affects the level of nutritional adequacy of the family, including their toddlers. If the family's diet is good and does not experience a reduction in the frequency and size of meals, the variety of food is varied and does not suffer from disease or infection, the level of nutritional adequacy of the family will also be good. The next impact will be an increase in good nutritional status for families, especially for toddlers<sup>13</sup>.

According to Riyanto (2016), poverty can lead to worsening food availability. This situation is indirectly related to an increased risk of disease, as well as insufficient consumption of energy and nutrients. Based on the facts in the field found by researchers, it is known that there is a relationship between the availability of food ingredients and the incidence of malnutrition in toddlers because parents in providing nutritious food to children do not meet the requirements of a balanced menu and the number of servings of children's meals is not according to health recommendations, so that when children do not consume food according to with the portion that the mother should not try or persuade the child with other types of food so that this can lead to malnutrition in toddlers<sup>14</sup>.

### **The Relationship of Parenting Patterns with Malnutrition In Toddlers**

Based on the results of the study which showed that there was a relationship between parental parenting and the incidence of malnutrition in children under five at the Manggeng Community Health Center, Manggeng District, Aceh Barat Daya Regency in 2021, with P value = 0.001 and an OR value of 9.96, this indicates that toddlers with this pattern Poor parenting has a 9 times greater risk of malnutrition than toddlers with good parenting. Based on the results of the

analysis showed that respondents with poor parenting, 70.7% of children under five were malnourished. Meanwhile, 80.5% of respondents with good parenting have good nutrition.

The results of this study are in line with research conducted by Setyawati in 2018 with the title "Relationship between Parenting Patterns and Nutritional Status of Children in Pulutan District, Talaud Regency". The results showed that respondents with poor parenting, 70% of toddlers were undernourished, compared to respondents with good parenting, 30% of toddlers had good nutrition. Based on the results of statistical tests with chi square obtained the value of Value = 0.003, OR = 6.71. so that it can be interpreted that there is a relationship between parenting patterns and nutritional status in children in Pulutan District, Talaud Regency<sup>17</sup>.

Another source of theory that is in line with this research is the theory from Pratiwi (2015) that there is a relationship between parenting and child development, because parenting is a description of the attitudes and behavior of parents and children in interacting, communicating during parenting activities. In this parenting activity, parents will provide attention, rules, discipline, rewards and punishments, as well as responses to their children's wishes.<sup>18</sup> There is a relationship between maternal parenting and nutritional status because the role of parents is very influential in the nutritional state of children, parenting plays an important role in the occurrence of growth disorders in children, parental care for children affects children's growth and development through adequate food and health conditions (Melia *et.all*, 2020)<sup>19</sup>.

Based on the facts in the field found by researchers, it is known that there is a relationship between parenting patterns and the incidence of malnutrition in toddlers because mothers in providing food or providing food do not meet the requirements of balanced nutrition. low family income.

### **Relationship of Health Services with Malnutrition Incidence in Toddlers**

Based on the results of the study which showed that there was a relationship between health services and the incidence of undernutrition in children under five at the Manggeng Community Health Center, Manggeng District, Southwest Aceh Regency in 2021, with P value = 0.001 and an OR value of 5.90 showed that toddlers with poor health services Children with good health have a 5 times greater risk of malnutrition than toddlers who have good health services. Based on the results of the analysis showed that respondents with poor health services amounted to 73.2% of children under five experiencing malnutrition. Meanwhile, 85.4% of respondents with good health services had good nutrition.

The results of this study are in line with research conducted by Erna Kusumawati in 2016 with the title "The Effect of Health Services on Malnutrition in Toddlers". The results showed that respondents with poor health services 79.1% under five experienced poor nutrition, while respondents with good health services 21.9% under five experienced good nutrition. Based on the results of statistical tests with chi square, the value of Value = 0.002, OR = 6.87. so that it can be interpreted that there is an effect of health services on malnutrition in children under five<sup>20</sup>.

Another source of theory that is in line with this research is the theory from Rani *et.all* (2019) that mothers who have children with malnutrition are less active coming to the posyandu because they feel less confident in relation to their child's condition. Some mothers feel that they do not need to come to health services if their child is sick (eg coughing and cold) because they feel that they can be treated with over-the-counter medicines and will recover on their own. The ability of a household to access health services is related to the availability of health

service facilities and the economic capacity to pay the cost of services. The inaccessibility of health services is possible because families cannot afford to pay and lack of education and knowledge so that it becomes an obstacle for families in utilizing available health services. This can have an impact on the nutritional status of the community<sup>21</sup>.

Based on the facts in the field found by researchers, it is known that there is a relationship between health services and the incidence of malnutrition in children under five because the mother is not active in checking the development of children and also consults with health workers, especially child nutrition workers at the puskesmas so that in health services children do not get maximum nutrition services and during covid nutritional improvements such as additional food are not provided for a while.

## Conclusion

Based on the research conducted, it can be concluded that: there is a significant relationship between family income, energy intake, infectious diseases, the availability of food ingredients, parenting patterns, health services, and the incidence of malnutrition in children under five at the Manggeng Community Health Center, Manggeng District, Southwest Aceh Regency in 2021. The dominant risk factors are infectious diseases (OR value = 8.59.) and parenting patterns (OR value = 9.96) with the incidence of malnutrition in children under five at the Manggeng Community Health Center, Manggeng District, Southwest Aceh Regency in 2021.

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