



Determinants Of Malnutrition Among Children Under Five In North Lombok Regency A Cross-Sectional Study

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Abstract

Malnutrition is a global issue that remains a serious and complex problem to this day. However, in North Lombok Regency, malnutrition rates remain high and exceed the average rates of West Nusa Tenggara Province and the national average. Various factors are believed to influence malnutrition among children under five, including knowledge, family income, childcare practices, and cultural factors. This study aims to analyze the factors influencing malnutrition among children under five in North Lombok Regency. This study employed a quantitative observational analytical method with a cross-sectional design. Data were collected through questionnaires administered to 100 children under five selected via random sampling. The variables studied include family knowledge, family income, parenting practices, culture, and malnutrition incidence. The findings indicate a significant influence of family knowledge and family income on malnutrition incidence, while parenting practices and culture do not have a significant influence on malnutrition incidence. Family knowledge and family income have a significant influence on malnutrition incidence among children under five in North Lombok District. Therefore, efforts to reduce malnutrition incidence should be intensified by strengthening educational programs, economic support, and improving the availability and access to nutritious food.

Keywords: Nutritional Status; Malnutrition; Children Under Five

INTRODUCTION

Malnutrition is a serious and complex global health issue. Despite economic and technological advancements worldwide, malnutrition remains a significant challenge for many countries, particularly developing nations. According to data from the Food and Agriculture Organization of the United Nations (FAO), in 2020, there were more than 820 million people worldwide suffering from chronic hunger (Yun, 2020).

The causes of malnutrition in Indonesia are complex, including poverty, low food security, inadequate child care practices, and limited access

to good health and sanitation services (Unicef Indonesia, 2019). Geographical variations, socio-cultural conditions, and development disparities between urban and rural areas also contribute to this problem.

The causes of malnutrition are diverse, ranging from poverty, lack of access to nutritious food, inadequate parenting practices, poor sanitation, and lack of knowledge and awareness about balanced nutrition (Ahmed, 2021). Geographical conditions, conflicts, natural disasters, and climate change also contribute to this problem (Pal, 2021). The causes of malnutrition are

not solely influenced by internal and external factors. Internal factors such as inadequate food intake and infectious diseases are not the only causes. External factors such as low education levels, parental factors, unstable employment, low parental income, lack of maternal knowledge, limited food availability, and unvaried dietary patterns are also not entirely responsible. (Adriani, 2014)

West Nusa Tenggara (NTB) is one of the provinces in Indonesia that still faces major challenges related to malnutrition. According to data from the 2023 Indonesia Health Survey (Ministry of Health, 2023), the prevalence of stunting (short stature) among children under five in NTB reached 19.3%, higher than the national average of 15.8% (Ministry of Health, 2023). Meanwhile, the prevalence of wasting (acute malnutrition) in NTB is also quite high at 7.2%, higher than the national average of 6.4% (Ministry of Health, 2023), while the prevalence of underweight is 20.8%, higher than the national average of 12.9%. (Ministry of Health, 2023). This situation has a significant impact on children's growth and development, both physically and cognitively. These figures remain a public health issue that requires serious attention and intervention in the region.

Several factors contributing to malnutrition in NTB include: Poverty and Food Security: NTB is one of the provinces with a relatively high poverty rate, reaching 13.7% in 2019 (BPS NTB, 2020). This poverty limits people's access to nutritious food. Suboptimal Childcare and Feeding Practices: There are still practices of feeding children that do not meet balanced nutritional standards, such as the inappropriate provision of complementary foods for breastfeeding. Limited Access to Health Services and Sanitation: Some areas in NTB still face limited access to adequate health facilities and sanitation services, particularly in remote areas. Geographical Conditions

and Infrastructure: NTB has challenging geographical conditions with numerous small islands, which can hinder the distribution and equitable access to food.

The NTB Provincial Government has made various efforts to address malnutrition, such as strengthening supplementary feeding programs, improving access to sanitation, and developing agriculture and food security at the local level. However, better synergy between the government, the community, and other stakeholders is needed to accelerate malnutrition eradication. However, data and facts on the ground show that malnutrition rates remain high (43.7%).

North Lombok is one of the districts located in West Nusa Tenggara Province with high rates of malnutrition (underweight, stunting, and wasting), which remain above the provincial and national averages. According to the 2023 Indonesia Health Survey (SKI), the prevalence of underweight in North Lombok was 24.8%, stunting was 33.5%, and wasting was 9.8%. All three figures are above the provincial and national averages for West Nusa Tenggara. (Ministry of Health of the Republic of Indonesia, 2023)

Addressing malnutrition requires comprehensive and collaborative efforts from various parties, including the government, international organizations, NGOs, the private sector, and the community. The interventions required include increasing food production and distribution, empowering communities economically, improving access to sanitation and clean water, and promoting healthy lifestyles and good childcare practices (WHO, 2020). Only with strong and sustained global commitment can we achieve a world free from malnutrition and ensure that everyone, especially children, can grow and develop to their full potential.

The North Lombok Regional Government has made efforts to address malnutrition through various programs and policies, such as providing technical guidance and assistance in implementing programs at community health centers, improving the capacity of both cadres and health workers, coordinating across sectors and programs to accelerate stunting reduction, meeting the need for standardized measuring tools, and providing local supplementary food (PMT) as a preventive measure against new cases of stunting. However, despite the implementation of various programs, stronger commitment and coordination among stakeholders, including the government, private sector, and civil society, are still needed to accelerate efforts to eradicate malnutrition in North Lombok.

RESEARCH PROCEDURE

The type of research used in this study is quantitative observational analytical with a cross-sectional research design. The aim is to analyze the factors influencing malnutrition in children under fives in North Lombok Regency.

The study population consists of all mothers with malnourished and non-malnourished children under fives. The study sample comprises 100 mothers with malnourished and non-malnourished children under fives, selected through *simple random sampling*.

RESULTS AND DISCUSSION

This study was conducted in North Lombok District, West Nusa Tenggara Province, using questionnaires and observations of 100 respondents with children under fives. The research data are presented in several tables as follows.

Table 1. Distribution of Characteristics of Toddler Families in North Lombok Regency 2024

Characteristics	Number	
Age Group of Family Card	n	%
a. < 20 years	1	1.0
b. 20–39 years	72	72
c. 40 years and older	27	27

Mother's Age Group		
a. < 20 years	1	1
b. 20–35	79	79
c. >35 years	20	20
Household Head's Occupation		
a. Not working	1	1
b. Laborer	30	30
c. Farmer	30	30
d. Merchant	3	3
e. Employee	36	36
Mother's occupation		
a. Not working	8	8.0
b. Laborer	57	57.0
c. Farmer	2	2
d. Merchant	9	9.0
e. Employee	3	3
Family education		
a. TTSD	11	11.0
b. Elementary	14	14
c. Junior High School	9	9.0
d. High School	49	49.0
e. University	17	17
Mother's education		
a. TTSD	7	7.0
b. Elementary	16	16.0
c. Junior High School	19	19.0
d. High School	36	36.0
e. University	21	21
Number of family members		
a. ≤4 people	72	72
b. >4 people	28	28
Income		
a. Below Minimum Wage	75	75
b. Above minimum wage	25	25
TOTAL	100	100

The table above shows that the majority of households are of productive age between 20 and 39 years old, totaling 72 households (72%), and the majority of mothers of children under fives are also of reproductive age, totaling 79 mothers of children under fives (79%). In terms of household head occupations, the majority are laborers and farmers, each accounting for 30 households (30%), while the majority of mothers are housewives, totaling 57 mothers (57%).

The educational level of households and mothers of children under fives is mostly high school, with 49 and 36 people, respectively, or 49% and 36%. The number of family members is mostly nuclear families (father, mother, and two children), with 72 families

(72%), while the family income is mostly below the minimum wage, with 75 families (75%).

Table 2. Distribution of the number of children under fives in the sample based on characteristics in North Lombok Regency in 2024

Characteristics	Number	
Children under five Age Group		
a. 0-11 months	8	8.0
b. 12-23 months	22	22
c. 24-35	26	26.0
d. 36-47 months	19	19.0
e. ≥48 months	25	25
Children under five Gender		
a. Male	50	50
b. Female	50	50
Birth history		
a. LBW	1	10
b. Non-LBW	90	90
Birth order		
a. Primipara	32	32.0
b. Multi	66	66.0
c. Grande Multi	2	2
TOTAL	100	100

As shown in Table 2 above, the majority of the children under five sample are in the 24–35 month age group, totaling 26 children under fives (26%), with an equal gender distribution of 50 children under fives (50%) each. while the past history at birth shows that 10 children under fives were born with low birth weight (LBW) (10%) and were born as the second to fourth child (66%).

Table 3. Results of family knowledge analysis on malnutrition in North Lombok District in 2024

Knowl edge	Malnutrition Incidence				Number		P value
	Malnutritio n		Not Malnourishe d				
	n		n	%	n	%	
Less	6	85.7	1	14.3	7	100	0.014
Suffici ent	26	54.2	22	45.8	48	100	
Good	15	33.3	30	66.7	45	100	
Total	47	47	53	53.0	100	100	

The analysis results obtained a probability value of 0.014 ($\alpha=0.05$), which means that there is a significant effect of family knowledge on the incidence

of malnutrition in toddlers. These results suggest that good knowledge about nutrition and health among families can improve the selection of nutritious foods, proper feeding practices, and understanding of hygiene and sanitation. Families with better knowledge are more likely to provide adequate nutrition for their children, which ultimately helps prevent malnutrition.

To study the status of malnutrition among toddlers based on the income level of their families in North Lombok Regency, see the following table.

Table 4 Results of the analysis of family income on malnutrition incidence in North Lombok District in 2024

Income Level	Malnutrition Status				Number		P value
	Malnutritio n		Not Malnourish ed				
	n		n	%	n	%	
Below minimum wage	38	55.1	31	44.9	69	100	0.016
Above minimum wage	9	29	22	71.0	31	100	
Total	47	47	53	53.0	100	100	

The analysis results obtained a probability value of 0.016 ($\alpha=0.05$), which means that there is an influence of family income on the incidence of malnutrition in toddlers. This result indicates that family income influences the occurrence of malnutrition. Families with higher income tend to have better access to nutritious food, health services, and nutrition education, all of which contribute to preventing malnutrition.

The Influence of Child-rearing Practices on Malnutrition

To study the malnutrition status of children under fives based on the level of maternal care in North Lombok District, please refer to the following table.

Table 5 Results of analysis of parenting patterns on malnutrition in North Lombok district in 2024

Parent ing Style Level	Malnutrition Status				Number		P value
	Malnutriti on		Not Malnouris hed				
	n		n	%	n	%	
Less	-	0	-	0	-	0	0.551
Suffici ent	27	50.0	27	50.0	54	100	
Good	20	43.5	26	56.5	46	100	
Total	47	47.0	53	53.0	100	1	

The analysis results yielded a probability value of 0.551 ($\alpha=0.05$), indicating no significant influence of parenting patterns on the occurrence of malnutrition among children under fives. In this study, all families with children under fives currently have good parenting patterns and proper feeding and nutritional practices, which have a positive impact on the occurrence of malnutrition.

Cultural Influence on Malnutrition

To study the malnutrition status of children under fives based on the socio-cultural level of their mothers in North Lombok Regency, see Table 3.4 below.

Table 6 Results of cultural analysis on malnutrition incidence in North Lombok District in 2024

Socio-Cultural	Malnutrition Status				Number		P value
	Malnutriti on		Not Malnouris hed				
	N		n	%	n	%	
Less Suffici ent Good	1	33.3	2	66.7	3	100	0.883
	43	47.3	48	52.7	91	100	
	3	50	3	50	6	100	
Total	47	47	53	53.0	100	100	

The analysis results obtained a probability value of 0.883 ($\alpha=0.05$), which means that there is no cultural influence on malnutrition in toddlers. In this study, families with toddlers are no longer influenced by traditions that previously existed in the community and had an impact on malnutrition.

Multivariate Analysis

In this study, multivariate analysis was conducted using *logistic regression* to identify variables influencing the malnutrition status of children under fives. The results of the logistic regression test are presented in the following table.

Table 4.1. Distribution of Malnutrition Status Among Children under fives Based on Mothers' Socio-Cultural Background in North Lombok District in 2024

Influential Variables	P Value	Coefficients (β)
Knowledge	0.008	0.220
Income level	0.048	0.211
Parenting Style	0.958	0
Social culture	0.842	-0.116

Based on the results of the statistical regression test, a tolerance value of 0.932 (<0.10) and a VIF value of 1.073 (<10.0) were obtained, indicating that the model does not exhibit multicollinearity. The test results obtained a significance value for the knowledge variable of 0.008 () and income of 0.048, indicating that heteroscedasticity is present. The bar chart shows that the data is normally distributed. The Durbin-Watson value of 1.570 indicates that there is no autocorrelation. The coefficient value (β_1) is 0.220, indicating that every increase in the level of knowledge by 0.220 will reduce the incidence of malnutrition. The coefficient value (β_2) is 0.211, indicating that every increase in the level of income by 0.211 will reduce the incidence of malnutrition.

CONCLUSION

Family knowledge and family income are factors that influence the incidence of malnutrition in North Lombok Regency, while parenting patterns and culture do not influence the incidence of malnutrition in North Lombok Regency. Efforts are needed from the Health

Office, the North Lombok Regency Government, and the community to improve family knowledge about nutrition and support family economic well-being in order to create better conditions for children under five in North Lombok Regency.

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