

Research Article



Is It Truly Household Income Affect Underweightin Children Under Five Years Old ? Evidence From Indonesia

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ABSTRACT

Background: Underweight is a nutritional problem that still often occurs in children under five in Indonesia and abroad. Indonesia is a maritime country, where most of the territory is water so that the population living in coastal areas is not small. Many factors influence the occurrence of under-nutrition under five in coastal areas. Toddlers who experience underweight will experience physical growth disorders, morbidity and even risk of death. The purpose of this study was to determine the dominant factor in the incidence of underweight in children under five in the coastal area.

Methods: This type of research is analytic observational with a cross sectional study design. The population in this study were mothers who had toddlers aged 12 – 59 months with a total sample of 68 toddlers who were selected using simple random sampling technique. Data was collected by interview method using a questionnaire and then analyzed using chi-square test and logistic regression.

Results: This study found that household income was the main factor for underweight in children under five years of age, although there were many other contributing factors such as mother's knowledge, parenting style, history of infectious diseases.

Conclusions: Low income causes the purchasing power of food to be low, causing family food consumption to decrease which ultimately affects the weight of children under five. For this reason, the role of mothers, families and the government is needed in reducing the prevalence of underweight in toddlers in the coastal area, Indonesia.

Keyword : underweight, children, household, income

INTRODUCTION

The problem of malnutrition is still a health problem in both developed and developing countries. Malnutrition is a condition of lack of nutrients which includes short and thin elements, defined as the percentage of children aged 12 to 59 months whose body weight for age (W/U) is at <-2 to $>-3SD$ from the WHO-NCHS growth standard (1). Undernourished children in the world reach 104 million children and malnutrition is the cause of one third of all causes of child mortality worldwide. South Asia is the area that has the largest prevalence of malnutrition in the world, which is 46%, followed by sub-Saharan Africa 28%, Latin America/Caribbean 7%, and the lowest is in Eastern Central Europe, and the Commonwealth of Independent States (CEE/ CIS) by 5%. The state of malnutrition in children under five can also be found in developing countries, one of which is Indonesia (2).

The problem of underweight requires special attention and serious treatment because it is associated with morbidity and mortality (mortality). In 2012, there were 6.6 million under-five deaths in the world or which means that around 18,000 children under five died every day and underweight indirectly contributed 60 percent of under-five deaths as the underlying causes of infectious diseases which are the direct causes of underweight (3). In addition, in 2017 it was recorded that around 50.5 million children under five years of age (toddlers) in the world suffered from underweight and 15.95 million children under five were affected by underweight and stunting which increase the risk of death in children under five (4,5).

Based on the 2018 Basic Health Research, the proportion of undernourished

and malnourished status was at 17.7%, this figure was still above the 2019 National Medium Term Development Plan target of 17%. While the proportion of undernourished status (BB/U) in Indonesia based on Riskesdas data from 2007 to 2018, there was no significant change, namely in 2007 it was 13.0%, in 2013 it was 13.9%, and in 2018 it was 13.8% (6). Data from the Southeast Sulawesi Provincial Health Office, the prevalence of undernutrition tends to fluctuate, where in 2017 it was 17.30%, in 2018 it decreased by 16.40%, and in 2019 it increased by 18.5% (7). Malnutrition cases of underweight toddlers based on weight/TB were found in Kendari City in 2020 amounting to 1,823 cases, with the highest cases being in the Nambo District area of 268 cases (14.8%) and the lowest case being in Kambu District as many as 119 cases (6.5 cases) (8). From the Nambo Health Center report, the number of underweight children under five is distributed in five sub -districts. In Tondonggeu Village there were 69 cases, in Bungkutoko Village there were 82 cases, in Sambuli Village there were 92 cases, in Nambo Village there were 106 cases, and in Petoaha Village there were 118 cases. Of the 5 sub-districts in the working area of the Nambo Health Center, the highest number of cases of underweight toddlers is in the Petoaha Village as many as 118 cases (9).

Children under five are an age group that is included in the nutritionally vulnerable group of people, namely the group of people who are most susceptible to nutritional disorders while at this time they are experiencing a very rapid growth process (10). Malnutrition in toddlers has a negative impact on physical and mental growth which in turn will hinder learning achievement. Another consequence is a decrease in endurance, causing the loss of a healthy life



span for toddlers, and a more serious impact is the emergence of disability, high morbidity, and accelerated death (11). The condition of malnutrition in toddlers occurs due to the interaction of several factors including inadequate food intake, non-exclusive breastfeeding, mother's knowledge, infectious diseases suffered by toddlers, family parenting patterns, health services, number of family members, mother's education level, perception mothers related to nutrition, low socioeconomic and cultural (12, 13).

Previous studies conducted at the research location found that some mothers who had children aged 12-59 months said they rarely took their children to Posyandu or when counseling was carried out because they were busy working. Several mothers of toddlers also said their children had suffered from diarrhea and ARI in the last three months. Then, in terms of providing food to their children, several mothers said that their children did not like to eat vegetables and really liked to consume snacks sold in kiosks, this was because their household income was lacking, so that the fulfillment of food ingredients was not sufficient. Thus this study aims to prove whether household income is the main factor of underweight in children under five years?

METHOD

This type of research is a quantitative research with a cross sectional study design which is a research design with the intention that all measurements of research variables are carried out in the same time period . The population in this study were mothers who had children with an age range of 12 - 59 months in Petoaha Village, Nambo District, Kendari City as many as 210 children with a total sample of 68 mothers who were

selected using the Simple Random Sampling technique , namely simple random sampling, where each population have an equal chance of being selected as respondents. Data was collected using a questionnaire that was filled out by the parents of children under five who were willing to be respondents and had signed an informed consent with instructions for filling out the existing questionnaire. Bivariate analysis using chi-square test and multivariate analysis using logistic regression.

RESULTS

The results showed that 67.6% of the respondents were aged < 30 years, 33.8% had junior high school education and 82.3% were housewives. Bivariate analysis was then carried out to determine the relationship between mother's knowledge, feeding patterns, history of infectious diseases and income. families with underweight events. The results of the bivariate analysis as clearly depicted in table 1.

Table 1. Bivariate analysis of underweight events

Variable	Underweight Status		p-value
	Normal	underweight	
Mother's Knowledge			
Enough	19 (61.3)	12 (38.7)	0.002
Not enough	8 (21.6)	29 (78.4)	
Parenting Eating			
Well	20 (69.0)	9 (31.0)	0.000
Bad	7 (17.9)	32 (82.1)	
History of Infectious Diseases			
Suffer	5 (13.5)	32 (86.5)	0.000
No Suffering	22 (71.0)	9 (29.0)	
Household income			
Enough	23 (71.9)	9 (28.1)	0.000
Not enough	4 (11,1)	32 (88.9)	

Based on the results of the bivariate analysis in table 1 above, we can see that all independent variables have Sig values. which is less than 0.05 . This identifies that the variables of mother's knowledge, feeding patterns, history of infection and household income are related to the incidence of underweight in toddlers in the coastal area of Petoaha Village, Nambo District, Kendari City. Furthermore, to determine the dominant factor in underweight, a multivariate analysis was performed using logistic regression. Before conducting multivariate analysis, candidate selection was first carried out based on the significance value in the bivariate analysis with a significance value of <0.25 . The results of the analysis in table 1 show that all independent variables have a significance value of < 0.25 so that all independent variables can be included in the multivariate analysis.

Table 2. Results of multivariate analysis of underweight events

Risk Factor	Sig.	Exp(B)	95% CI	
			Lower	Upper
Mother's Knowledge	0.508	1,762	0.329	9,436
Parenting Eating	0.073	4,712	0.867	25.601
History of Infectious Diseases	0.005	0.040	0.004	0.380
Household income	0.002	40,370	4.028	404.577
Constant	0.181	0.036		

The results of the multivariate analysis in table 2 show that the dominant factor in the incidence of underweight in the coastal area of Petoaha Village, Nambo District, Kendari City is household income. This is evidenced by the OR value in Exp (B) of 40.370, meaning that toddlers with a low household income level are 40.370 times at risk of underweight compared to those with a high income level. In addition, it is also

proven by the smallest significance value of 0.002 , meaning that household income is the factor that is most related to the incidence of underweight.

DISCUSSION

Knowledge is everything that the mother knows through what she sees, hears and feels about the information she gets where she interacts. Basically, the mother's knowledge is influenced by the mother's own internal and external factors(14). The low knowledge of mothers is caused by the low education of mothers, where the results of the study show that the average education is only elementary school (SD) and junior high school. In addition, the lack of information understood by the respondents. This is known from many things that are not understood by respondents from counseling materials related to nutritional problems given by health workers at the posyandu so that mothers of toddlers do not know the impact of undernutrition and the selection of good food menus for toddlers. Respondents who have a low level of education are elementary and junior high schools. Low education can have difficulty understanding the content of the material on nutritional health in children under five because the content of the material has some health scientific language, both information from online media, print and from health counseling. People with high school education, D3, and bachelor degrees will more easily absorb information than people with elementary and junior high school education because it will be easier to understand the scientific language of health when getting health counseling related to nutritional health materials for children under five so that it is easier to apply it in daily life and can prevent malnutrition in

children under five . The higher the level of education a person has, the more knowledge he has. On the other hand, a lack of education will hinder the development of one's attitude towards the new values introduced (15). Then, the lack of socialization by the puskesmas and the Health Office to the community about MCH and under-five nutrition in the coastal area of the Petoaha village resulted in less public knowledge and resulted in the absence of preventive measures by the community regarding the incidence of malnutrition in children under five. Consistent research reveals that maternal knowledge is associated with underweight events (16, 17).

Maternal Parenting includes maternal attention or support in feeding practices, psychosocial stimulation and health practices that can affect the nutritional status of children under five (18). The results showed that 57.3 % lack of parenting eating patterns. This right is due to the lack of variety in food intake so that toddlers feel bored and bored in consuming the food provided. In addition, allowing their children to consume other foods, such as snacks at the kiosks, causes reduced nutritional intake . Basically, eating parenting includes the practice of feeding toddlers, setting menus, toddlers eating 3 times a day, variations in food menus, variations in taste, variations in color (19). The results of the study in line reveal that eating parenting plays an important role in determining the nutritional intake of toddlers such as vegetables, additional vitamins so that a child does not get bored in consuming food with the portion of food given to children the adult portion, including rice, side dishes, vegetables, and fruit (20). In addition to declining other studies, the attitude of mothers when experiencing problems with toddlers is very difficult,

children still need a mother's guidance in choosing food so that their growth is not disrupted (21).

Another factor that causes underweight is infectious disease. The state of infection is one of the factors that cause malnutrition problems in children under five because infection can cause under-five children to be malnourished related to the release of food ingredients in the body and reduce the appetite of children under five themselves as well as an increase in nutritional needs in the body of children under five due to inadequate nutritional intake. entry is spent by the parasite itself (22). The results showed that 86.4 % of children under five had an infectious disease. This is due to the lack of mother's attention to the intake of nutritious food and allowing the child to consume more snacks than nutritious food so that children experience slow growth and development which is affected by malnutrition in toddlers (23). Consistent research reveals that infection plays a major role in the etiology of nutrition because infection results in increased energy requirements and expenditure, low/decreased appetite, loss of nutrients due to vomiting, poor digestion, low absorption and utilization of nutrients, and impaired metabolic balance (24).

The level of household income is the level of income received by the family which is expressed in the form of money within a certain period of time (25). The results showed that 71,9 % of respondents with low household income. This is because parents of toddlers who have low education , namely elementary and junior high schools, make it difficult to get jobs with wages above the minimum wage so that it will affect the availability of food and food to be consumed. Similar research reveals that household income is the cause of

underweight in the Petoaha village (26). Economic factors are one of the root causes of malnutrition and if it is focused on nutrition, it is related to purchasing power to meet food needs and is influenced by the level of household income. Families with relatively low incomes find it difficult to meet their food needs, on the other hand, families with income above the minimum wage will be able to fulfill their food requirements (27, 28).

CONCLUSION

This study found that household income was the main factor for underweight in children under five years of age, although there were many other contributing factors such as mother's knowledge, parenting style, history of infectious diseases. Mother's lack of nutritional knowledge can indeed be one of the determinants of the nutritional status of toddlers because it determines the attitude or behavior of the mother in choosing food to be consumed by toddlers as well as parenting patterns related to the amount, type and frequency that will affect the child's food intake. Children who lack nutritional intake will also result in decreased immune system so that they are susceptible to infectious diseases. But all of these things depend on economic conditions which are one of the root causes of underweight. Income level is the most determining factor on the type and amount of food consumed. Low income causes the purchasing power of food to be low, causing family food consumption to decrease which ultimately affects the weight of children under five.

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