

Relationship of Food Security, Health Services and Family Income to Wasting Incidence in Toddlers Age 0-59 Months in North Polombangkeng District Takalar District in 2022

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Abstract: This study aims to see the relationship between health services and family income on the incidence of wasting in toddlers aged 0-59 months in North Polombangkeng sub-district, Takalar district in 2022. The type of research used is quantitative with a cross sectional study design. The population in this study were toddlers aged 0-59 months in the north polombangkeng sub-district with a total sample of 146 toddlers. The sampling technique used is probability sampling. The analysis used is the chi-square test. Based on the results of the chi-square test, it shows that household food security does not have a relationship with the incidence of wasting with a p value of 0.590 (> 0.05), in health services there is no relationship between monitoring growth on the incidence of wasting with a p value of 0.0240 (> 0.05), there is no relationship between the completeness of immunization status on the incidence of wasting with a p value of 0.776 (> 0.05), while in family income there is also no relationship to the incidence of wasting with a p value of 0.032 (< 0.05). This study shows that food security and health services do not have an impact on the incidence of wasting. Meanwhile, family income which is the main cause of nutritional problems has an impact on the incidence of wasting.

Keywords: wasting, health services, family income, toddlers

1. Introduction

According to WHO 1998, wasting is a condition of acute malnutrition in the form of : consequence of the combination of inadequate dietary intake and the high incidence of infectious diseases, especially diarrhea (World Health Organization, 1988). Wasting is a condition where toddlers experience acute malnutrition, namely the toddler's weight is not comparable with height, namely the value of z-score $< -2SD$. WHO classifies wasting in children with severe or moderate categories based on weight for height.

The Ministry of Health of the Republic of Indonesia defines undernutrition (wasting) is a nutritional condition of toddlers which is characterized by one or more of the following: 1) BB/PB or BW/TB is at -3 to -2 standard deviations, 2) upper arm linkage (LILA) less than 12.5 to 11.5 cm in toddlers aged 6-59 months [1].

Wasting can lead to less-than-optimal child growth and inhibit muscle building in children. In addition, toddlers who are wasting will have a strong immune system weak and make children susceptible to diseases such as flu, cough, diarrhea, or more severe infectious disease. Wasting also has an impact on stunted growth brain development in toddlers. This can cause disruption of brain function permanent, including lowering the power of thinking [1].

The prevalence of wasting in children under five in the world in 2016 is estimated at 7.7% where this figure increased based on wasting prevalence data in 2014 of 7.5% and is

said to be quite high on the WHO target in 2025 which is <5%, WHO, Year 2016 in [2]. According to Riskesdas [3], the prevalence of under-fives is thin and very low thin in Indonesia reached 10.2% and 7.1% in 2021. This is still a one of Indonesia's nutritional problems, so the government set a wasting target in Indonesia RPJMN 2020-2024 reaches 7% [1] South Sulawesi Province percentage of children aged 0-23 months who are severely wasting was 4% and wasting was 8.3%, while children aged 0-59 months were categorized as severe wasting of 2.50% and wasting of 7.50% [1].

Based on the results of the survey on the nutritional status of Indonesian toddlers (SSGBI in 2019), especially in south Sulawesi Shows that the prevalence of data on nutritional status of children aged 0-59 months based on weight/height (BB/TB) by 6.8% and in 2021 it will be 6.2%. In South Sulawesi Province, there are 3 districts with an incidence rate of the highest wasting district, namely the Pangkajene Islands district at 11.3%, then the new 13.1% and Takalar district 17.5%. Thus, takalar district is the district with the first highest wasting prevalence rate [3]. Meanwhile, the results of the SSGI in 2021 show the prevalence of wasting in takalar district by 10.7%.

Based on the health profile data of South Sulawesi, Takalar district also ranks second with the highest percentage of underweight children under five in South Sulawesi, namely 10.2 [3]. Based on data on nutritional status of children under five In 2019-2021 in Takalar Regency it is known that the highest amount of wasting is in north polombangkeng sub-district, namely 151 children under five or about 15.8% among 17 sub-districts in takalar district which has data on wasting toddlers. Subdistrict Polombangkeng itself has 5 sub-districts and 2 villages, namely with a total population of children aged 0-59 as many as 2629 toddlers including Panrannuangku Village 474 toddlers, mannongkoki 476 toddlers, malewang 560 toddlers, palлеко 259 toddlers, mattompodalle 362 toddlers, pa'rappunganta 328 toddlers and machete bado 170 toddlers.

Based on the theoretical framework of the causes of malnutrition developed by UNICEF 1998 (in Gusmelia, 2018), shows that malnutrition (undernutrition) is caused by many related causal factors, namely, directly affected by infectious disease and inadequate nutritional intake based on the amount needed, while the indirect factors are caused by access and level of health services, patterns of care that are still inadequate and poor environmental hygiene and lack of food security [4]. Pandemic Covid-19 is currently a more risk factor for wasting. Therefore, in maintain and improve the nutritional status of children, these factors need to be known and prevented early on (Gibney, 2009 in (Amirullah, Andreas Putra and Daud Al Kahar, 2020).

The purpose of this study was to see the relationship between health services and family income on the incidence of wasting in children aged 0-59 months in the sub-district North Polombangkeng, Takalar Regency in 2022.

2. Methods

This type of research is quantitative research with an analytical approach observational with cross sectional study design. This research was conducted in the sub-district of North Pombangkeng, Takalar Regency. The population in this study were toddlers aged 0-59 months who are domiciled in the north polombangkeng sub-district, takalar district, namely as many as 2629 toddlers. The sample in this study is part of the population that will be researched and can represent the population. Sampling technique used namely the probability sampling technique or sampling technique that provides opportunity for each member of the population to be used as a sample. The data collection method is carried out in two ways, namely primary data and primary data secondary. Primary data were obtained

through direct interviews and filling out questionnaires and on the toddler's MCH book and to find out the nutritional status of wasting toddlers. This is done by measuring the child's height and weight using a measuring instrument multifunction and digital scale. While secondary data were obtained from puskesmas, local government offices, health and literature review sources, especially related previous studies factors that cause wasting. Data processing is carried out using scoring and categorization in each variables which are then analyzed through a computerized program, namely SPSS (package system) social science) to test the relationship between the dependent variable and the variable independent. Data analysis includes univariate and bivariate analysis.

3. Result

Based on the table 1, it can be seen that from 146 toddlers there are 85 toddlers (58.2%) who are in the 24-59 month age group and 61 children under five (41.8%) are in the age group 7-23 months. Meanwhile, in terms of gender, there were 76 toddlers (52.1%) who had female and 70 children under five (47.9%) male. As well as There are 82 toddlers (56.2%) who have wasting nutritional status and 64 toddlers (43.8%) who have nutritional status normal nutrition.

Table 1. Distribution of Frequency Based on Characteristics of Toddlers in Kecamatan

Toddler Age Group	Frequency (n)	Percentage (%)
7-23 months	61	41.8
24-59 months	85	58.2
Total	146	100
Gender	Frequency (n)	Percentage (%)
Man	70	47.9
Woman	76	52.1
Total	146	100
Nutritional status	Frequency (n)	Percentage (%)
wasting	82	56.2
Normal	64	43.8
Total	146	100

source: Primary Data for 2022

Based on the table 2, it can be seen that from 146 households there are 117 households (80.1) which are included in the category of moderate food insecurity, 29 households (19.9%) who food security, there are 116 toddlers (79.5%) who routinely monitor growth, 30 toddlers (20.5%) who are included in the non-routine category. There are 129 children under five (88.4%) who have complete immunization status, 17 toddlers (11.6%) have incomplete immunization status, and There are 130 households (89.0%) which are included in the low-income category and 16 households (11.0%) have high income.

Table 2. Distribution of Frequency Based on Food Security, Monitoring growth, immunization status and family income in Polombangkeng

Food security	Frequency (n)	Percentage (%)
Food Resistant	29	19.9
Moderate Food Insecurity	117	80.1
Total	146	100
Growth Monitoring	Frequency (n)	Percentage (%)
Not a routine	30	20.5

Routine	116	79.5
Total	146	100
Immunization Status	Frequency (n)	Percentage (%)
Incomplete	17	11.6
Complete	129	88.4
Total	146	100
Family Income	Frequency (n)	Percentage (%)
Low Income	130	89.0
High Income	16	11.0
Total	146	100

Source: primary data for 2022

Based on Table 3, it can be seen that the variables that have a relationship with the incidence of wasting is family income based on the results of the chi-square test conducted obtained p-value <0.05. While the variables that do not have a relationship with wasting events are monitoring growth, immunization status and food security with the results of the chi-square test carried out, the p-value > 0.05.

Table 3. Relationship of Health Services, Food Security and Family Income Against Wasting Incidents in Toddlers in North Polombangkeng District

	n	%	n	%
Growth Monitoring				0.240
Not a routine	14	46.7	16	53.3
Routine	68	58.6	48	41.4
Immunization Status				0.776
Incomplete	9	52.9	8	47.1
Complete	73	56.6	56	43.4
Food security				0.590
Food insecurity level	67	57.3	50	42.7
Food Resistant	15	51.7	14	48.3
Family Income				0.032
Low Income	69	53.1	61	46.9
High Income	13	81.3	3	18.8

4. Discussion

Gender in this study can be seen that from 146 toddlers. Gender under five in women as many as 76 children under five of that number there are 34 children under five (41.5%) were wasting and 42 were normal (65.7%). and the sex of the toddlers, namely male as many as 70 toddlers of that number, there were 48 toddlers (58.5%) wasting and 22 toddlers (34.3%) normal. This matter shows that toddlers with male sex are more dominant wasting compared to women. In this study, it was divided into 2 age groups, namely 7-23 months and 24-59 months. so, it can be seen that from 146 toddlers.

There are 25 wasting toddlers included in age group 7-23 months and 57 toddlers wasting in the group 24-59 months. Meanwhile, on normal toddlers, there are 36 children in the age group 7-23 months and in the age group 24-59 months only 28 normal toddlers. The average value of the z- score of 146 toddlers is -1.5801. Score The highest z-score is 1.21 and the lowest is -2.66. this shows that wasting is dominant occurred in the 24-59-month age group. Based on research conducted by Nepal stated that children aged 0-23 months had a

significantly higher risk low nutritional status, when compared to children aged > 23 months in [5].

The nutritional status category of 146 Toddlers based on BB/TB is 82 Toddlers (56.2%) who experienced wasting and normal toddlers were 64 toddlers (43.8%). One of the factors that has an important role in increasing the level of health, namely good nutritional status. According to Adriani, 2012 stated that nutritional status is one of the factors that can determine the quality of a person's growth and development which will ultimately affect on the quality of human resources. Nutritional status in the community is usually inferred that with the magnitude of nutritional problems in the group of children under five, which is a group that nutritional vulnerability Adriani, et al, 2012 in [3].

4.1. The Relationship between Food Security and Wasting Incidents in Toddlers

Food is an essential need related to food security. Based on law no. 18 of 2012 the implementation of food system strengthening food that aims to produce quality human resources [6]. In the refinement of the new definition of food security in (Act) No. 18 of 2012) that food security is regulated from the state to the individuals, the nutritional aspect gets an adequate portion of the basic regulation, and the need for aspects of spiritual food safety, by adding the phrase: "not against religion, belief, and culture of the people" Jayanti and Firdau, 2019 in Hidayat et al. [7], Jayatissa et al.,[8]. Based on the results of this study, there are 29 households that fall into the category of food security and 117 households have moderate food insecurity category. Besides that, 67 households with under-five children are included in the category of food insecurity level moderate and 50 households with normal children under five are categorized as food insecure level currently. From the results of the chi-square test, it can be concluded that there is no significant relationship There is a significant relationship between household food security and the incidence of wasting in children under five. On This study shows that households that are included in the food security category It is also found in normal and wasting toddlers. There are 67 toddlers wasting and 50 toddlers normal people who have moderate level of food insecurity for their households.

Food security is one of the indirect causes of the incidence of wasting. In this study, the condition of food security in a household does not affect the food intake of toddlers based on the results of the chi-square test, namely energy (p . value) value = 0.357) carbohydrates (p-value = 0.808), protein (p-value = 0.469), and fat (p-value = 0.079). Based on the UNICEF theory, it states that food intake is a one of the direct factors for wasting. These food needs can be affected by economic income in a household. In addition, based on the results of research Urbanus Sihotang and Rumida [9], in 2020 stated that food security in a household can be seen based on the proportion of the level of expenditure on food and household energy consumption [10]. So that food security in a household is not a risk factor for wasting or the nutritional status of children under five others [9]. The results of this study are in line with research conducted by Anggraini [11] about the relationship between food security and nutritional quality (MGP4) of families with the nutritional status of children under five in Paluh Sibaji Village, Pantai Labu Subdistrict, stated that there was no relationship There is a significant relationship between food security and the nutritional status of children under five.

4.2. Relationship between Growth Monitoring and Wasting Incidence in Toddlers

Monitoring growth in children includes physical, psychological, and social aspects. Monitoring is carried out regularly and continuously. Apart from parents, monitoring Community growth can also be carried out through posyandu activities. Activity This monitoring aims to find out as early as possible any growth disturbances what happens to toddlers. Posyandu as a child development monitoring unit has important role in this [12].

In this study, there were 116 toddlers who did routine growth monitoring for 3 months in a row and only 30 children under five who did not do routine monitoring. A total of 68 toddlers who carry out routine monitoring are included in the wasting category 48 normal toddlers. Based on the bivariate test, there is no relationship between monitoring growth with wasting events. This study shows that there are 68 (58.6%) toddlers are wasting but routinely monitors growth. This is because stunted growth of infants and toddlers due to lack of adequate intake inadequate macronutrients and micronutrients such as energy, carbohydrates, protein, fat. And micronutrients include vitamins and minerals [13]. As we know that growth monitoring which is part of health services are an indirect factor causing wasting Ricci JA & Becker S. 1996 in Sisca [14].

4.3. Relationship of Immunization Status to Wasting Incidence in Toddlers

One of the direct causes of wasting is an infectious disease. Disease occurrence Infection is certainly influenced by immunization status. Toddlers with low immunization status complete, tend to be easily infected with disease, thus affecting the level of nutritional intake of these toddlers [15]. Immunization is an effective form of health intervention in reducing infant mortality and toddlers. Children who do not get immunized have much more immunity susceptible to infectious diseases, so it is easy to fall ill [16]. In this study, there were 129 children under five who received complete immunization and only 17 which is incomplete. Of the 82 wasting toddlers studied, as many as 73 children were immunized complete and only 9 children were immunized incompletely. Based on the results of the chi-square test, It was found that there was no relationship between immunization status and the incidence of wasting in toddler. This study shows that toddlers who have complete immunization status The baseline also experienced wasting nutritional status. Basic immunization status is part of the variable health services which are an indirect causal factor for the incidence of wasting. However, this immunization status has a relationship with a history of disease incidence infection in toddlers which is one of the direct causes of wasting. In addition, toddlers with incomplete immunization status tend to be infected more quickly infectious diseases such as ARI (acute respiratory infection) and diarrhea which may will affect the level of nutritional intake of toddlers themselves [15].

This is not in line with the research conducted by Wulandari et al [15] which states that there is a significant relationship between immunization and wasting. There is a relationship between these two things because toddlers who are not immunized are more basic susceptible to disease. Immunization can prevent toddlers from getting sick because toddlers who have receiving early immunization is not susceptible to infectious diseases [15].

4.4. Relationship of Family Income to Wasting Incidents in Toddlers

Nutritional problems in children are influenced by socio-economic factors, one of which is family income level. Income is the amount of income earned by a company family in one month to meet the daily needs of family members [17]. In this study, researchers determine

the level of family income based on the regional minimum wage (UMR) of Takalar Regency in 2021, which is IDR 3,165,876. In the north polombangkeng sub-district, 130 households have an opinion low, and only 16 households with high income. The number of households Low income is certainly related to the work of parents, especially father's work. In this study, the father's occupation was predominantly a farmer and entrepreneur. In addition, it is also known that the majority of wasting toddlers are in families who have low income, namely 69 children under five. There are only 13 wasting toddlers from high income family. In this study, there were 13 (81.3%) toddlers who wasting but the economic income is high. This is due to other factors which causes the toddler to experience wasting, namely breastfeeding that is not optimal, nutrient intake, maternal education, diarrhea and respiratory tract morbidity, sanitation and people living in rural areas [18].

Based on the results of the bivariate test, it was found that there was a significant relationship between the level of family opinion on the incidence of wasting in toddlers. This happened because low-income families are not able to meet nutritional needs their children more adequately, especially to buy nutrient-rich foods. Status Socio-economic conditions can affect the growth and development of children. This can seen children with high socio-economic, of course the fulfillment of nutritional needs is very sufficient good when compared to children from low socio-economic conditions, in 2012 [18].

5. Conclusion

Based on research on the relationship between food security, health services and family income on the incidence of wasting in children aged 0-59 months in the sub-district North Pombangkeng, Takalar Regency in 2022, it can be concluded that there are significant relationship between family income on the incidence of wasting and not there is a significant relationship between growth monitoring, immunization status and food security against wasting incidents in overcoming wasting problems in toddlers This can be done by paying more attention to the provision of food intake for toddlers and perform specific and sensitive interventions in the management of nutritional problems in a sustainable manner.

Conflicting Interest

All authors declare no conflict of interest.

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