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THE RELATIONSHIP BETWEEN MATERNAL KNOWLEDGE, EXCLUSIVE BREASTFEEDING, AND INFECTIOUS DISEASES WITH THE INCIDENCE OF WASTING IN TODDLERS AT UPTD PUSKESMAS JOHAN PAHLAWAN, WEST ACEH REGENCY, 2024.

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Abstract

Wasting is a condition of thinness characterized by a weight-for-height index (W/H) with a Z-Score limit of <-2 SD. The problem in this study is the high incidence of wasting in 2022, which was 139 people (6.9%), and in 2023, it was 91 people (5.7%). These numbers are considered high because, according to WHO targets, the wasting rate should be <5%. The purpose of this study is to analyze the relationship between maternal knowledge, exclusive breastfeeding, and infectious diseases with the incidence of wasting in toddlers at UPTD Puskesmas Johan Pahlawan, West Aceh Regency. With a cross-sectional approach and a correlational design, this study employed a quantitative research methodology that examines the relationship between variables at the same time (point time approach). Seventy toddlers with wasting made up the study's population, and the total sampling approach was applied. The Chi-Square test was employed in both univariate and bivariate analysis.The findings demonstrated a strong correlation between the occurrence of toddler wasting and maternal knowledge (p=0.042), exclusive breastfeeding (p=0.028), and infectious illnesses (p=0.000). In conclusion, the value (p < α 0.05) indicates a correlation between the occurrence of wasting in toddlers, infectious illnesses, exclusive breastfeeding, and maternal knowledge. It is recommended that healthcare workers, especially at the health center, increase education for mothers of toddlers on the importance of exclusive breastfeeding and prevention of infectious diseases (diarrhea and ARI), and that mothers of toddlers can be more active in seeking information and participating in health counseling activities organized by posyandu/health centers to understand the importance of exclusive breastfeeding.

Keywords: ***Wasting, Maternal Knowledge, Exclusive Breastfeeding, dan Infectious Diseases.***

INTRODUCTION

A weight-for-height index that is either severely wasted (z-score < -3 SD) or wasted (z-score -3 SD to < -2 SD) indicates wasting, a kind of malnutrition in which a child's weight is too low for their height (Ministry of Health, 2020). Rapid weight loss or failure to gain weight can lead to acute malnutrition, often known as wasting. There is a significant chance of death for children who suffer from wasting (UNICEF, 2021). Additionally, wasting exposes toddlers to greater severity, susceptibility to infectious illnesses, immune system impairment, and long-term growth and development delays (WHO, 2019). The Ministry of Health states that wasting can lead to suboptimal child growth and development, hinder muscle formation, and weaken the immune system, making children more susceptible to diseases like flu, diarrhea, or more severe infections. Wasting also affects brain development in toddlers, leading to permanent cognitive impairment and decreased cognitive abilities (Ministry of Health RI, 2017). The impacts of wasting include reduced exploratory behavior, increased crying frequency, decreased social interaction, lack of joy, apathy, cognitive impairment, decreased learning abilities, behavioral problems, and increased risk of death (De Onis et al., 2016). If left unaddressed, wasting can lead to a lost generation, resulting in decreased productivity, increased morbidity, and mortality in Indonesian children (Insani HM, 2017). High wasting rates can also lead to economic losses and impact a country's economy (BS Renyoet & HME Nai, 2019). A number of reasons contribute to waste, including direct variables like food consumption and infectious diseases. Inadequate settings, childcare practices, health services, and family food security are examples of indirect influences (De Onis

& Branca, 2016). According to Rochmawati et al. (2016), the incidence of wasting is correlated with exclusive breastfeeding, infectious illnesses, and completeness of immunizations. Exclusive breastfeeding and the prevalence of wasting are related, according to a study done in Nepal (Aguayu et al. 2016). In the study (Waliyo et al., 2017), it was found that maternal knowledge is related to the incidence of wasting. Meanwhile, infectious diseases and wasting have a reciprocal relationship. This is in line with the study conducted by (Hasanah et al., 2022), which found that 73% of children with wasting had a history of infectious diseases. In the study conducted by (Akombi et al., 2017), it was found that wasting is closely related to the presence of infectious diseases and non-exclusive breastfeeding.

Prevention efforts that can be made to prevent wasting include actively taking toddlers to posyandu or health centers to monitor their growth and development every month, by weighing and measuring their height and then monitoring it through the KMS (Health Card), actively taking toddlers to posyandu to get complete immunizations to prevent infectious diseases, consuming foods that contain energy to support weight gain, and consuming other nutrients such as protein, vitamins, and minerals to accelerate the formation of new tissues (Almatsier, 2019). The global prevalence of wasting in 2020, according to the United Nations Children's Fund (UNICEF), reported that 45.4 million or 6.7% of children under the age of 5 suffered from wasting. According to (SSGBI), in 2021, it increased again to 7.1%. In 2022, it increased again to 49 million children with wasting (7.7%), according to (WHO, 2022). And in 2023, it decreased again to 6.8% of children with wasting, of which approximately 13.7 million children suffered from severe wasting (UNICEF, WHO, 2023). The Sustainable Development Goals (SDGs) set an international target for 2025 to reduce the incidence of wasting to below 5% in children under 5 (UNICEF, 2021).

According to the Indonesian Nutrition Status Survey (SSGI) 2023, the prevalence of wasting in children under 5 years old in Indonesia in 2019 was 7.44%. Meanwhile, the prevalence of wasting in children under 5 in Indonesia in 2021 decreased to 7.1% (Ministry of Health RI, 2021). In 2022, the prevalence of wasting in children under 5 in Indonesia increased again to 7.7% (Ministry of Health RI, 2022). Then, according to data from the Indonesian Health Survey (SKI), it shows that there was an increase in the prevalence of wasting in children under 5 in 2023 to 8.5% (SKI, 2023). The Indonesian Nutrition Status Survey (SSGI) in 2023 reported that Aceh Province ranked third in the highest prevalence of wasting compared to other provinces in Indonesia, with 10.70% in 2021. Then, it increased again in 2022 to 11.25% of children under 5 experiencing wasting. And in 2023, the prevalence of wasting rose to 13.60%, while in 2022 it was 11.25%, meaning an increase of 2.35%.

The West Aceh District Health Profile states that in 2022, West Aceh ranked fifth in the highest prevalence of wasting. In 2021, the prevalence of wasting in children under 5 decreased by 2.2% to 8.1%, whereas in the previous year (2020), the prevalence of wasting was 10.3%. However, in 2022, the prevalence of wasting in West Aceh increased again by 2.4% to 10.5%. And in 2023, the number of children with wasting in West Aceh decreased again by 312 people (5.3%). Out of 13 sub-districts in West Aceh, the working area of Johan Pahlawan Health Center is one of the areas with a high prevalence of wasting in 2024. In 2022, the number of children with wasting increased by 139 people (6.9%), then decreased again in 2023 by 91 people (5.7%), and as of November 2024, the number of children with wasting decreased by 70 people (4.8%). Based on the profile of Johan Pahlawan Health Center (2024). Besides Johan Pahlawan Health Center, there are several sub-districts with high prevalence of wasting, including Kuala Bhee sub-district with 49 cases, Kuta Padang Layung with 32 cases, and Mentulang with 28 cases (West Aceh District Health Office, 2024). Based on a preliminary survey conducted by the author in the field by interviewing 5 mothers of children under 5 with wasting, 2 mothers stated that they still lacked knowledge about wasting and nutritious food for their children, 2 mothers said they rarely gave breast milk to their children, and 1 mother said her child had health problems (infectious diseases). Based on the background and problems above, the author is interested in conducting research on "The Relationship between Maternal Knowledge, Exclusive Breastfeeding, and Infectious Diseases with the Incidence of Wasting in Children Under 5 at UPTD Puskesmas Johan Pahlawan".

LITERATURE REVIEW

Wasting is a condition where a child's weight decreases, becomes severely underweight, or falls below the normal range, or an inability to gain weight (UNICEF, 2019). The Regulation of the Minister of Health of the Republic of Indonesia No. 2 of 2020 on Child Anthropometric Standards divides wasting into two categories: severely wasted if the z-score is < -3 SD and wasted if the z-score is between -3 SD and < -2 SD (Ministry of Health, 2020). Wasting in children is the result of rapid weight loss or failure to gain weight (UNICEF/WHO/The World Bank, 2019 in Soedarsono & Sumarmi, 2021). Wasting can lead to suboptimal growth and hinder muscle

development in children. Additionally, children under 5 who suffer from wasting have weaker immune systems and are more susceptible to various diseases. Wasting also contributes to delayed brain development in young children, which can cause permanent damage to brain function, including decreased cognitive abilities (Syarfaini, 2022). Wasting in the early life of a child, especially in the first two years, can cause permanent damage. This period is a critical time for child growth and development and is often referred to as the "Golden period" (Oktavia et al., 2023). A mother's level of knowledge about child nutrition affects the selection and consumption of appropriate, diverse, and balanced food, and can prevent diseases. Individuals with good nutritional knowledge tend to make more rational decisions about the nutritional value of food for their children. According to Masturoh (2018), knowledge about an object can have varying levels of intensity, and cognitive domains are divided into six levels. Maternal knowledge about nutrition is essential for mothers to provide the best intake for their children (Yuwansyah et al., 2021). A mother's level of knowledge significantly influences the nutritional status of her child, as she plays a primary role in childcare. Children spend more time with their mothers than with other family members, making mothers more aware of their children's needs (Yanti et al., 2021). Maternal knowledge also affects the occurrence of wasting, as mothers with better knowledge will provide food intake that meets the balanced nutritional needs of their children. Conversely, mothers with limited knowledge may negatively impact the nutritional intake of their children. Research conducted by Eriza Midia Sari found a relationship between maternal knowledge and the incidence of wasting in children under 5 (Sari, 2023). The nutritional input provided to children under 5 depends on the mother, making her crucial in providing food with good nutritional content for her child (Sari, 2022).

METHOD

This type of research uses quantitative research with a correlational design and a cross-sectional approach. The correlational design aims to examine the relationship between one variable and another (Notoatmodjo, 2018). Quantitative research is an effort to find knowledge using data in the form of numbers, which are then used as a tool to analyze and find the results of the object being studied (Donsu, 2019). Cross-sectional is a research design that collects data at one point in time (point time approach) to analyze the relationship between variables (Notoatmodjo, 2018).The independent variables in this study are maternal knowledge, exclusive breastfeeding, and infectious diseases, while the dependent variable is the incidence of wasting. The sample in this study used a total sampling method, involving 70 children under 5 with wasting as samples, based on inclusion and exclusion criteria. Bivariate analysis aims to determine the relationship between the independent and dependent variables in this study. The chi-square test is used to examine whether there is a significant relationship between the two variables. The significance level is set at p-value < 0.05. If the p-value is less than 0.05, the alternative hypothesis (Ha) is accepted, indicating a significant relationship between the independent and dependent variables (Sugiyono, 2016).

RESULTS AND DISCUSSION

RESULTS

These are the findings of the statistical tests that were performed in light of the study that was done. The p-value (0.05) establishes the significance level for this analysis, which looks at the relationship between the independent and dependent variables. The outcomes are as follows:

Table 1.1 Cross-Tabulation of the Relationship between Maternal Knowledge and the Incidence of Wasting in Children Under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024.

Maternal Knowledge	Prevalence of Wasting						
	underweight		**- Severely underweight**				
					Overall		**Nilai *p Value***
	f	**%**	**f**	**%**	**f**	**%**	
Inadequate	23	32,86	9	12,86	32	45,72	
Enough	11	15,71	11	15,71	22	31,42	**0,042**
Good	14	20,00	2	2,86	16	22,86	
Overall	**48**	**71,43**	**22**	**28,57**	**70**	**100**	

Based on the results in Table 1.1, it shows that out of 70 respondents studied, mothers with inadequate knowledge had 23 cases (32.86%) of moderate wasting in children under 5, and 9 cases (12.86%) of severe wasting in children under 5. Meanwhile, mothers with sufficient knowledge had 11 cases (15.71%) of moderate wasting and 11 cases (15.71%) of severe wasting in children under 5. Additionally, mothers with good knowledge had 14 cases (20.00%) of moderate wasting and 2 cases (2.86%) of severe wasting in children under 5. Based on the Chi-Square analysis in Table 1.1, there is a significant relationship between maternal knowledge and the incidence of wasting in children under 5 at UPTD Puskesmas Johan Pahlawan. The analysis results show a p-value of 0.042, which means that the alternative hypothesis (Ha) is accepted.

Table 1.2 Cross-Tabulation of the Relationship between Exclusive Breastfeeding History and Wasting Incidence in Children Under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024

Asi Eksklusif	**Wasting incidence**						
	underweight		**- Severely underweight**				
					Overall		**Nilai *p Value***
	f	**%**	**f**	**%**	**f**	**%**	
Non-exclusive breastfeeding	22	31,43	17	24,29	39	55,72	
exclusive breastfeeding	26	37,14	5	7,14	31	44,28	**0,028**
Overall	**56**	**80**	**14**	**20**	**70**	**100**	

Based on the results in Table 1.2, it shows that out of 70 respondents studied, non-exclusive breastfeeding was associated with 22 cases (31.43%) of moderate wasting and 17 cases (24.29%) of severe wasting in children under 5. Meanwhile, exclusive breastfeeding was associated with 26 cases (37.14%) of moderate wasting and 5 cases (7.14%) of severe wasting. Based on the Chi-Square analysis in Table 1.2, there is a significant relationship between exclusive breastfeeding and the incidence of wasting in children under 5 at UPTD Puskesmas Johan Pahlawan. The analysis results show a p-value of 0.028, which means that the alternative hypothesis (Ha) is accepted.

Table 1.3 Cross-Tabulation of the Relationship between Infectious Disease and Wasting Incidence in Children Under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024

Infectious disease	**Wasting incidence**						
	underweight		**- Severely underweight**				
					Overall		**Nilai *p Value***
	f	**%**	**f**	**%**	**f**	**%**	
No Infectious disease	43	61,43	1	1,43	44	62,86	
Has Infectious disease	13	18,57	13	18,57	26	37,14	**0,000**
Overall	**56**	**80**	**14**	**20**	**70**	**100**	

Based on the results in Table 1.3, it shows that out of 70 respondents studied, children without infectious disease had 43 cases (61.43%) of moderate wasting and 1 case (1.43%) of severe wasting. Meanwhile, children with infectious disease had 13 cases (18.57%) of moderate wasting and 13 cases (18.57%) of severe wasting. Based on the Chi-Square analysis in Table 1.3, there is a significant relationship between infectious disease and the incidence of wasting in children under 5 at UPTD Puskesmas Johan Pahlawan. The analysis results show a p-value of 0.000, which means that the alternative hypothesis (Ha) is accepted.

DISCUSSION

a. The Relationship between Maternal Knowledge and Wasting Incidence in Children Under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024

Research at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024, shows a significant relationship between maternal knowledge and the incidence of wasting in children under 5, based on a Chi-Square test with a p-value of 0.042 ($p < 0.05$). Out of 70 respondents, it was found that mothers with inadequate knowledge were more likely to have children experiencing wasting, both in the thin and severely thin categories.Maternal knowledge plays

a crucial role in childcare, feeding practices, and health care. Mothers with good knowledge tend to be able to provide nutritious food, maintain hygiene, and respond to disease symptoms more quickly, even in limited economic conditions. In contrast, mothers with low knowledge tend to rely on traditional information and lack understanding of the importance of balanced nutrition, which increases the risk of wasting, especially when combined with low income. Case studies in the field show that even with a small income, mothers with good knowledge can still manage their children's nutrition by utilizing local nutritious ingredients. However, limited income remains a major challenge in meeting nutritional needs and accessing healthcare. Conversely, high income does not guarantee that children are free from wasting if not accompanied by parental knowledge and concern for child nutrition and health. These findings are consistent with other studies, such as those by Aritonang (2022) in South Nias and Pehe (2022) in Kupang, which also show a relationship between maternal knowledge and the incidence of wasting in children under.

b. The Relationship Between Exclusive Breastfeeding Disease and the Incidence of Wasting in Children Under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024

A Chi-Square test with a p-value of 0.028 ($p < 0.05$) indicates a significant association between exclusive breastfeeding and the occurrence of wasting in children under five, according to research conducted at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024. In comparison to children who had exclusive nursing, who exhibited a lower rate of severe wasting (7.14%), children who did not receive exclusive breastfeeding had a higher likelihood of experiencing wasting, both in the thin (31.43%) and severely thin (24.29%) categories, out of 70 responses. Exclusive breastfeeding for the first 6 months is crucial because it contains complete nutrients and antibodies that protect infants from infections. Infants who are not exclusively breastfed are at a higher risk of malnutrition and infections, both of which are causes of wasting. However, the practice of exclusive breastfeeding in the field is still low, due to factors such as breastfeeding difficulties, family pressure, misconceptions, and lack of support and education from healthcare workers.Many working mothers do not have supportive facilities for breastfeeding, while stay-at-home mothers often lack confidence in the quality of their breast milk. The introduction of complementary foods too early, such as bananas or porridge, is often driven by traditional beliefs that contradict WHO and Ministry of Health recommendations.Penelitian ini sejalan dengan studi sebelumnya seperti oleh Evin Noviana Sari (2021) dan Sari (2022), yang juga menemukan adanya hubungan antara pemberian ASI eksklusif dan kejadian wasting, dengan p-value masing-masing 0,001 dan 0,000.

c. The Relationship between Infectious Disease and the Incidence of Wasting in Children Under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024

Research at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024, shows a significant relationship between infectious disease and the incidence of wasting in children under 5, with a Chi-Square test result of $p = 0.000$ ($p < 0.05$). Out of 70 respondents, children who experienced infectious disease showed a higher proportion of severe wasting (severely thin) with 13 cases (18.57%), compared to children without infection.Infections such as ARI, diarrhea, and worm infestation affect the nutritional status of children by causing decreased appetite, impaired nutrient absorption, nutrient loss, and increased energy needs. Although the number of thin children was higher in children without infection overall, the severity of wasting was higher in children who experienced infection.Environmental factors are the main trigger for high infection rates, such as poor sanitation, limited clean water, open domestic waste, and unhygienic living habits. Many children play without shoes, do not wash their hands before eating, and are given food or milk with unsterile equipment. This creates a vicious cycle: infection → decreased nutrition → increased susceptibility to infection → worsening condition.This situation is exacerbated by low coverage of exclusive breastfeeding, lack of education for mothers, and minimal environmental intervention. Therefore, prevention and management of infectious disease must be an essential part of the strategy to address wasting in children under 5. This research is in line with the theory of Pratama (2019), which states that infection is a direct cause of wasting due to its impact on metabolic processes and nutrient absorption in children.This research is also consistent with the study by Evi Hasnita et al. (2023) on factors affecting wasting in children aged 36-59 months in the working area of Puskesmas Rao, Pasaman Regency, which found a relationship between a history of infectious disease and wasting with a p-value of 0.014 ($p < 0.05$). This study is also in line with the research by Dwi et al. (2022), which stated that there is a relationship between infectious disease such as pneumonia and nutritional status of children under 5, with a p-value of 0.003 ($p < 0.05$).

CONCLUSION

Based on the results and discussion of this study, the following conclusions can be drawn:

1. There is a relationship between maternal knowledge and the incidence of wasting in children under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024, with a p-value of 0.042 < α = 0.05, which means Ha is accepted and H0 is rejected.
2. There is a relationship between exclusive breastfeeding and the incidence of wasting in children under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024, with a p-value of 0.028 < α = 0.05, which means Ha is accepted and H0 is rejected.
3. There is a relationship between infectious disease and the incidence of wasting in children under 5 at UPTD Puskesmas Johan Pahlawan, West Aceh Regency, 2024, with a p-value of 0.000 < α = 0.05, which means Ha is accepted and H0 is rejected.

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