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CORRELATION BETWEEN EXCLUSIVE BREASTFEEDING AND HISTORY OF INFECTIOUS DISEASE WITH WASTING

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ABSTRAK : HUBUNGAN ASI EKSLUSIF DAN RIWAYAT PENYAKIT INFEKSI DENGAN KEJADIAN WASTING

Latar belakang: Wasting merupakan kondisi anak yang berat badannya menurun seiring waktu hingga total berat badannya jauh di bawah standar kurva pertumbuhan atau berat badan berdasarkan tinggi badannya rendah (kurus) dan menunjukkan penurunan berat badan (akut) dan parah. Faktor penyebab langsung wasting disebabkan oleh asupan dan penyakit infeksi. Prevalensi balita wasting di Provinsi Lampung sebesar 7%. Sedangkan kejadian wasting di Kabupaten Way Kanan pada tahun 2021 sebesar 3.9% meningkat pada tahun 2022 sebesar 6% sehingga menjadikan Way Kanan dengan kenaikan tertinggi sebesar 153.8% dibandingkan Kab/Kota lainnya. Wasting di UPT Puskesmas Tanjung Rejo diatas cut off point yaitu 6.04%.

Tujuan: Mengetahui hubungan ASI ekslusif dan riwayat penyakit infeksi dengan kejadian wasting pada balita usia 6-59 bulan.

Metode: Penelitian yang digunakan kuantitatif dengan rancangan case control. Dilakukan dari Mei sampai dengan Juni terhadap 66 responden balita dan menggunakan kuesioner kemudian dianalisa secara univariat dan bivariat.

Hasil: Hasil penelitian bahwa distribusi frekuensi kejadian wasting didapatkan 33 (100%) balita mengalami wasting. Dari 33 responden pada kelompok kasus sebesar 23 balita (69.7%) yang tidak ASI ekslusif dan 10 balita (30.3%) yang ASI ekslusif. Sedangkan pada kelompok kasus sebesar 15 balita (45.5%) yang ada infeksi dan 18 balita (54.4%) yang tidak ada infeksi. Ada hubungan ASI ekslusif dengan kejadian wasting dengan (p-value 0.047). Serta ada hubungan riwayat penyakit infeksi dengan kejadian wasting (p-value 0.034).

Kesimpulan: Ada hubungan ASI ekslusif dan riwayat penyakit infeksi dengan kejadian wasting.

Saran: Dimana perlu edukasi efektif dengan memperhatikan metode atau media yang efektif dalam pemberian materi tentang ASI ekslusif dan penyakit infeksi.

Kata kunci: ASI Esklusif, Penyakit Infeksi, Wasting

ABSTRACT

Background: Wasting refers to a condition of a child whose weight decreases over time until his total body weight is far below the growth standards curve or weight-for-height which is low (thin) and shows acute and severe weight loss. The direct causes of wasting are poor nutrition intake and infectious diseases. The prevalence of wasting in children under five years in Lampung Province was 7%. Meanwhile, wasting in Way Kanan Regency in 2021 was 3.9%, increasing in 2022 by 6% and it makes Way Kanan Regency become the regency with the highest increase of wasting incidence (153.8%) compared to other regencies/cities. Wasting incidence at Tanjung Rejo Public Health Center UPT was above the cutoff point of 6.04%.

Objective: To determine the correlation between exclusive breastfeeding and the history of infectious diseases with wasting in children aged 6-59 months

Methods: This study used a quantitative approach with a case-control design. This study was conducted from May to June 2023 on 66 children under five years. The data were collected using questionnaires and then analyzed using univariate and bivariate data analysis.

Results: The results of this study showed that based on the frequency distribution of wasting incidence, 33 children under five years (100%) experienced wasting. Of the 33 children under five years in the case group, 23 children (69.7%) were not exclusively breastfed and 10 children (30.3%) were exclusively breastfed. Whereas, in the case group, 15 children (45.5%) had a history of infectious diseases and 18 children (54.4%) had no history of infectious diseases. There was a correlation between exclusive breastfeeding and wasting (p-value = 0.047), and there was a correlation between the history of infectious diseases and wasting (p-value = 0.034).

Conclusion: There was a correlation between exclusive breastfeeding and the history of infectious diseases with wasting

Suggestion: Giving effective education is very necessary by paying attention to effective methods or media in providing material about exclusive breastfeeding and infectious diseases

Keywords: Exclusive breastfeeding, Infectious Diseases, Wasting

INTRODUCTION

Wasting refers to a condition of a child whose weight decreases over time until his total body weight is far below the growth standards curve or weight-for-height which is low (thin) and shows acute and severe weight loss (Perpres, 2021). Wasting is divided into two categories, namely thin (wasted) and very thin (severely wasted) (KEMENKES RI, 2019). Undernutrition (wasted) refers to weight-for-height (BW/BL or BW/H) with Z-Score -3 SD to <-2 SD and severely wasted refers to weight-for-height (BW/BL or BW /H) with Z-Score <-3 SD (PERMENKES, 2020).

Based on data on the prevalence of wasting in 2020, 6.7% or around 45.4 million children under 5 years in the world experience wasting (UNICEF et al, 2021). The results of the 2022 Indonesian Nutritional Status Survey showed that wasting in Indonesia increased from 7.1% in 2021 to 7.7% in 2022. The prevalence of wasting in children under five years in Lampung Province was 7%. Meanwhile, wasting in Way Kanan Regency in 2021 was 3.9%, increasing in 2022 by 6% and it makes Way Kanan Regency become the regency with the highest increase of wasting incidence (153.8%) compared to other regencies/cities. The work area of UPT Tanjung Rejo Public Health Center includes the areas of Tanjung Rejo, Bandar Kasih, Mulya Agung, Mulya Sari, Rejosari, and Kotabumi village. Based on the data from Tanjung Rejo Public Health Center in 2022, of the 877 children under five years measured, 53 children (6.04%) experienced wasting. According to the Ministry of Health in 2019, the cutoff point (separation limit value/threshold value) for wasting is 5%. Based on the results of the pre-survey conducted with 10 research subjects, 2 children under five years experienced wasting (20%), and both of them (100%) were not exclusively breastfed and had infectious diseases. Then, 8 children under five years (80%) did not experience wasting, of which 2 children (25%) were not exclusively breastfed and 1 child (12.5%) had an infectious disease.

Wasting in children can cause an increased risk of illness and death. Children who experience wasting are susceptible to infection because their immune systems are weakened. If the condition of malnutrition in children under five years of age lasts for a long time, this can affect their physical condition and health in the future (Purba et al, 2021).

Wasting in children is a very life-threatening condition and can be caused by poor nutrition intake and/or disease. Children who experience wasting have a weakened immune system and are at risk for long-term developmental delays, as well as an increased risk of death, especially in cases of severe wasting (UNICEF et al., 2021). The direct causes of wasting are poor nutrition intake and infectious diseases. Meanwhile, the indirect causes of wasting are inadequate food availability, parenting, inadequate sanitation and clean water, and inadequate basic healthcare services (Lamid and Winarto, 2020 in Purba et al., 2022).

This study aimed to determine the correlation between exclusive breastfeeding and a history of infectious diseases with the incidence of wasting in children aged 6-59 months at UPT Tanjung Rejo Public Health Center in 2023

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RESEARCH METHODS

This study was quantitative research and was conducted from March to June 2023. The research design used was a survey with a case-control study approach. The population in this study were children aged 6-59 months in the work area of UPT Tanjung Rejo Public Health Center, with as many as 859 children. The sampling technique used in this study was proportional random sampling. The number of samples was 66 children. The variables in this study were the independent variables including exclusive breastfeeding and a history of infectious diseases. The data were collected using interviews and questionnaires. The category of exclusive breastfeeding was exclusive breastfeeding and no exclusive breastfeeding. While the category of the history of infectious diseases was that there is infection and no infection. The dependent variable was wasting measured using a Lengthboard (6-23 months) with an accuracy of 0.1 cm, a Microtoise or Stadiometer (24-59 months) with an accuracy of 0.1 cm, and Dacin (6-59 months) with an accuracy of 0.1 kg. The results of the wasting measurements were wasting (-3SD to <-2SD) for the case group, and

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normal (-2SD to +1SD) for the control group. Univariate analysis included general data in the form of age and gender of children under five years, and specific data in the form of wasting frequency distribution, exclusive breastfeeding, and history of infectious diseases. Bivariate analysis was carried out to determine the correlation between exclusive breastfeeding and the history of infectious diseases with wasting. Bivariate analysis was conducted using the Chi-square test. The value of the significance level (p-value) was compared with the value of the error rate or alpha (α), with a value of α = 0.05.

RESEARCH RESULTS

Univariate Analysis

Table 1
Frequency Distribution based on Variables

Variables	Frequency			
	Case		Control	
	N	%	N	%
Nutritional Status	33	100	33	100
Gender				
Male	27	60	8	57.1
Female	18	40	6	42.9
Age				
12-23 Months	2	6	0	0
24-35 Months	8	24.2	8	24.2
36-47 Months	11	33.3	17	51.6
48-59 Months	12	36.5	8	24.2
Exclusive Breastfeeding				
Exclusive breastfeeding	23	69.7	14	42.4
Without exclusive breastfeeding	10	30.3	19	57.6
History of Infectious Diseases				
Infection	15	45.5	6	18.2
No Infection	18	54.5	27	81.8

Table 1 above shows that regarding the frequency distribution based on nutritional status, there were 33 children under five years (100%) in the case group and 33 children (100%) in the control group. The frequency distribution based on sex was most common in female children, namely the case group of 18 children (54.5%) and the control group of 18 children (54.5%). The highest frequency distribution based on age was in the case group aged 48-59 months as many as 12 children (36.5%) and the control group aged 36-47 months as many as 17 children (51.6%).

Regarding the frequency distribution based on exclusive breastfeeding, in the case group, 23 children under five years (69.7%) were not exclusively breastfed. In the control group, 14 children (42.4%) were not exclusively breastfed and 19 children (57.6%) were exclusively breastfed. Then, in terms of the frequency distribution based on a history of infectious diseases, in the case group, 15 children (45.5%) were with infections and 18 children (54.4%) were with no infections. Whereas in the control group, 6 children (18.2%) were with infections and 27 children (81.8%) were with no infections.

Bivariate Analysis

Table 2 above shows that the results of the chi-square test obtained a p-value of 0.047 <0.05, meaning that there is a correlation between exclusive breastfeeding and wasting. The value of OR was 3.121, meaning that respondents who are not exclusively breastfed are 3.121 times more likely to experience wasting compared to respondents who are exclusively breastfed. The results of the chi-square test obtained a p-value of 0.034 <0.05, meaning that there is a correlation between the history of infectious diseases and wasting. The OR-value was 3.75, meaning that respondents who have a history of infectious diseases are 3.75 times more likely to experience wasting compared to respondents who have no history of infectious diseases.

Table 2
Correlation between Exclusive Breastfeeding and History of Infectious Diseases with Wasting

Variables	Nutritional Status				P-value	OR
	Case		Control			
	N	%	N	%		
Exclusive Breastfeeding						
Exclusive breastfeeding	23	69.7	14	42.4	0.047	3.121
Without exclusive breastfeeding	10	30.3	19	57.6		(1.133 - 8.603)
History of Infectious Diseases						
Infection	15	45.5	6	18.2	0.034	3.75
No Infection	18	54.5	27	81.8		(1.225 - 11.481)

DISCUSSION

Based on Table 1 above, regarding the frequency distribution based on nutritional status, there were 33 children under five years (100%) in the case group and 33 children (100%) in the control group. Wasting is the result of acute malnutrition which can be measured by referring to the indicators of weight-for-height (BW/H) or weight-for-body length (BW/BL). Wasting nutritional status occurs when children experience rapid weight loss due to insufficient food intake and exposure to recurrent infectious diseases (Purba et al., 2021). Wasting is defined as a condition in which the nutritional status of children under five years is based on BW/H with a Z score <-2 SD. Wasting is commonly due to insufficient food intake, one of which is exclusive breastfeeding in children under five years with adequate quality and quantity, and infectious disease (Agustiawan, 2022).

The results of this study are in line with a study conducted by Aritonang et al. (2022) showing that 43 children under five years (100%) experienced wasting and 43 children (100%) were normal. A study carried out by Saleh et al. (2022) showed that 25 children under five years (100%) experienced wasting and 25 children (100%) were normal. The results of this present study indicate that wasting is a nutritional problem in children under five years due to direct causes including a history of infectious diseases, and inappropriate nutritional intake, one of which is exclusive breastfeeding. Exclusive breastfeeding is giving only breast milk to infants from birth to the age of 6 months without any additional food or liquid. Then, a history of infectious diseases is a history of health problems caused by viruses, bacteria, fungi, or parasites that infect children's bodies.

The frequency distribution based on sex was most common in female children as many as 18 children (54.5%) in the case group and 18 children (54.5%) in the control group. According to Rahayu et al. (2018), cultural factors affect the nutritional status of male and female children. In some groups of society, women and girls receive lower priority than men in terms of regulating food consumption. The results of this study showed that the percentage of undernourished female children under five years was higher than that of male children.

The cultural values of the villagers are more viscous than the cultural values of the city dwellers. This is because the cultural values of the villagers have not been displaced by foreign cultures. While, the cultural values of city dwellers have assimilated with foreign cultures because foreign cultures can easily enter into the lives of city dwellers who have open and modern thoughts (Hisyam, 2020).

Based on the results of this study, the highest frequency distribution based on age was in the case group aged 48-59 months as many as 12 children (36.5%), and in the control group aged 36-47 months as many as 17 children (51.6%). A study conducted by Daulay et al. (2021) showed that when the developmental characteristics of height and weight are getting closer to the basic age, children's body shape is more like adults. The baby fat has begun to decrease, because the legs and arms grow longer, and the body is thinner. Then, the ability to run, jump, and throw improve, so that the older they get, the thinner the children will be.

Regarding the frequency distribution based on exclusive breastfeeding, 23 children under five years (69.7%) in the case group were not exclusively breastfed. In the control group, 14 children (42.4%) were not exclusively breastfed and 19 children (57.6%) were exclusively breastfed.

Exclusive breastfeeding is giving only breast milk to infants from birth to the age of 6 months without any additional food or liquid except for medications or vitamins. In exclusive breastfeeding, infants are only given breast milk without additional liquids such as infant formula, orange juice, honey, tea, or water, and without solid foods such as bananas, papaya, milk porridge, biscuits, rice porridge, and teams. Exclusive breastfeeding is recommended for the first 6 months of an infant's life to meet their nutritional and growth needs. Exclusive breastfeeding has many benefits for both

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mother and infant. Exclusive breastfeeding for six months is the best way to feed infants because it provides the nutrients needed for growth and development and boosts the infants' immune system (Najahah et al., 2022).

The results of this study are in line with a study carried out by Saleh et al. (2022) showed that, in the case group,17 children under five years (68%) were not exclusively breastfed and 8 children (32%) were exclusively breastfed. Whereas, in the control group, 15 children under five years (60%) were not exclusively breastfed and 10 children (40%) were exclusively breastfed.

The results of many previous studies show that exclusive breastfeeding for children for six months has many good benefits such as providing the best quality and quantity of nutrition, increasing the immune system of the children, increasing intelligence, and strengthening affection between mother and children. Exclusive breastfeeding should be carried out so that children grow and develop appropriately in terms of height and weight.

Then, regarding the frequency distribution based on the history of infectious diseases, in the case group, 15 children (45.5%) were with infections and 18 children (54.4%) were with no infections. Whereas in the control group, 6 children (18.2%) had a history of infectious diseases, and 27 children (81.8%) had no history of infectious diseases. Infectious disease is a health problem caused by viruses, bacteria, fungi, or parasites that infect children's bodies and cause some symptoms. This type of disease is an infectious disease that can spread from one individual to another (Siringoringo et al., 2022).

The results of this study are in line with a study carried out by Sari and Maringga (2022) stating that in the case group 13 children under five years (72.2%) had a history of infectious diseases and 20 children (25.6%) had no history of infectious diseases. Whereas in the control group, 5 children under five years (27.8%) had a history of infectious diseases and 61 children (74.4%) had no history of infectious diseases. In addition, the results of this present study indicate that infectious diseases occur when organisms (viruses, bacteria, fungi, or parasites) enter a child's body and start to multiply, causing damage to tissues and cells. This requires the body's response to eliminate these organisms and repair the damage caused by the infection by sending fluids, blood, and nutrients, one of which comes from exclusive breastfeeding. Exclusive breastfeeding has many benefits because it provides the nutrients needed for growth and development and boosts the children's immune system. Exclusive breastfeeding for six months protects against digestive tract infections.

Further, based on Table 2 above, the results of the chi-square test obtained a p-value of 0.047 <0.05, meaning that there was a correlation between exclusive breastfeeding and wasting. The value of OR was 3.121, meaning that respondents who were not exclusively breastfed were 3.121 times more likely to experience wasting compared to respondents who were exclusively breastfed. Exclusive breastfeeding for six months is the best way to feed infants because it provides the nutrients needed for growth and development and boosts the infants' immune system. Moreover, exclusive breastfeeding for six months protects against gastrointestinal infections and iron deficiency anemia in infants. Breastfeeding can improve infants' sensory and cognitive development. In addition, breastfeeding can also help infants recover more quickly from illness and reduce the risk of infant mortality (Najahah et al., 2022).

Infants who are not exclusively breastfed will be more likely to experience nutritional problems that can hinder their growth and development, one of which is wasting (Wulandari et al., 2022). Exclusive breastfeeding that is not maximized will cause a lack of breast milk intake. Insufficient intake of breast milk causes malnutrition or is called malnutrition. Malnourished children have symptoms such as having a poor immune system that is susceptible to infection, stunted growth, reduced muscle mass (Saragih, 2022), and slowing growth, or known as growth faltering. Untreated growth faltering will cause weight loss or the child to become wasted, then become very thin (severely wasted) so that they experience wasting (Prawirohartono, 2021).

The results of this study are also in line with a study carried out by Sitoayu et al. (2021) showing that there was a significant correlation between exclusive breastfeeding and wasting with a p-value of 0.009. In addition, a study carried out by Sari and Maringga (2022) showed that there was a significant correlation between exclusive breastfeeding and wasting with a p-value obtained of 0.001, and respondents who were not exclusively breastfed were 6.695 times more likely to experience wasting compared to respondents who were exclusively breastfed. This is also supported by the results of a study carried out by Sari (2022) showing that there was a significant correlation between exclusive breastfeeding and wasting with a p-value of 0.001. Aritonang et al. (2022) in their study showed that there was a correlation between a history of giving exclusive breastfeeding and wasting with a p-value of 0.000.

The results of this study indicate that exclusive breastfeeding for children under five years must be carried out according to their age, from birth to six months of age. Exclusive breastfeeding

must be done continuously for the first six months so that it does not stop in the middle because the mother or parents are impatient dealing with the children's character which does not easily feel full so they are fed using other foods that are not appropriate. This is exacerbated by the characteristics of children's grandmothers who have habits and thoughts not to give exclusive breastfeeding to their children in the past. It is very important to keep breastfeeding exclusively because if it fails it is irreversible which can cause wasting. This can be viewed from the results of the analysis in this study showing that many parents have given infants formula, honey, bananas, porridge, or biscuits to their children before the age of six months and currently their children are experiencing wasting.

The results of this study also showed that some children were exclusively breastfed but experienced wasting. Mothers of children complain of pain in their nipples or swollen breasts. Infants who have been given expressed breast milk are used to use baby pacifiers due to the condition of the mother's nipples which are flat or immersed. This can be due to improper positioning and attachment of breastfeeding so that the duration of breastfeeding is not what it should be. Infants who have been given expressed breast milk using baby pacifiers experience nipple confusion so that they are lazy and even refuse to suckle directly into the mother's breast.

A study carried out by Taufiqa (2021) indicated that if the breastfeeding process does not go well, the milk intake that the infant receives will not be able to meet his needs. As a result, exclusive breastfeeding is ineffective so the infants' weight does not increase as expected. Syamsuriyati (2022) in her study stated that the duration of breastfeeding is related to the presence of a prolactin reflex, which is a lactogenic hormone that is important for starting and maintaining milk secretion. The infant's sucking stimulus will send a message to the hypothalamus which stimulates the anterior pituitary to release prolactin, a hormone that increases milk production by the alveolar cells of the mammary glands. The amount of prolactin secreted and the amount of milk produced is related to the magnitude of the sucking stimulus, namely the frequency, intensity, and duration of the infant sucking. The large number of infants whose weight does not increase is largely due to the short duration of breastfeeding. It is because the milk they get is only the first milk and not until the final milk so many infants do not get optimal nutrition which makes them not gain weight. If this condition continues, it will result in wasting.

Based on Table 2 in this study, the results of the chi-square test obtained a p-value of 0.034 <0.05, meaning that there was a correlation between the history of infectious diseases and wasting. The OR-value was 3.75, meaning that respondents who had a history of infectious diseases were 3.75 times more likely to experience wasting compared to respondents who had no history of infectious diseases. Infectious diseases in children under five years are also one of the main causes of death in the world. The t children's immune system is not as perfect and strong as adults'. Children also do not fully understand and care about cleanliness around them, so they are more susceptible to exposure to germs. Because the children's immune system is not strong enough, the risk of getting sick is higher. Children are often exposed to many bacteria and viruses, so their immune systems must first adapt and strengthen themselves (Siringoringo et al., 2022).

Infants and children under five years are exposed to many dangerous diseases, infectious diseases, infections caused by microorganisms, and intestinal damage such as diarrhea, resulting in growth disorders (Majid et al., 2022). If they are exposed to an infectious disease it will affect the absorption of nutrients resulting in malnutrition, and conversely, a lack of nutrition will increase the possibility of contracting an infectious disease (Rasmaniar et al., 2023). The results of this present study are in line with a study carried out by Hasanah et al. (2022) showing that there was a significant correlation between a history of infectious diseases and the incidence of wasting with a p-value of 0.045, and children with infections were 2.255 times more likely to experience wasting than children without infection. In addition, a study conducted by Sari and Maringga (2022) showed that there was a significant correlation between the history of infectious diseases and the incidence of wasting with a p-value of 0.001, and children with infections were 4.678 times more likely to experience wasting than children without infection. This is supported by the results of a study carried out by Aritonang et al. (2022) showing that there was a correlation between infectious diseases and wasting with a p-value of 0.000.

The results of this study indicate that infectious diseases must be prevented considering the children's immune system is not strong enough. Prevention by parents can be in the form of understanding and caring about cleanliness around children. If the cleanliness of the children is not maintained, they will experience an infection that affects the absorption of nutrients resulting in growth disorders, wasting. This can be viewed from the results of analysis in this study showing that many children experience diarrhea and some experience UTIs. Diarrhea and UTI are infectious diseases caused by not keeping children clean.

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CONCLUSIONS

The frequency distribution based on nutritional status showed that 33 children under five years (100%) were in the case group and 33 children (100%) were in the control group. In the case group, 23 children under five years (69.7%) were not exclusively breastfed and 10 children (30.3%) were exclusively breastfed. 15 children (45.5%) had a history of infectious diseases and 18 children (54.4%) had no history of infectious diseases. There was a correlation between exclusive breastfeeding and wasting with the p-value of 0.047. There was a correlation between a history of infectious diseases and wasting with a p-value of 0.034.

SUGGESTION

Giving effective education is very necessary by paying attention to effective methods or media in providing material about exclusive breastfeeding and infectious diseases.

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