



The Relationship between Behavior, Maternal Education and the Prevalence of Wasting among Toddlers in Meureubo and Kaway Xvi Districts, West Aceh Regency

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Wasting is a condition of acute malnutrition when there is an imbalance between body weight and height (BB/TB) and has a Z-score <-2 SD. The problem in this research is the increasing prevalence of wasting under five over the last three years in West Aceh Regency one of which is in Meureubo and Kaway Districts, direct surveys conducted by researchers in the field show that maternal education is still relatively low, knowledge is lacking, attitudes are indifferent and nutrition for toddlers is not yet met. The purpose of this study was to determine the relationship between maternal behavior and education with the prevalence of wasting in children under five years old in Meureubo and Kaway XVI sub-districts of West Aceh district. This study used a quantitative

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approach with a *cross-sectional* design, using univariate and bivariate analysis, followed by the application of the Fisher's exact test. The total sampling used included the entire population of wasting mothers of toddlers, resulting in a total sample of 41 respondents. The findings showed a statistically significant relationship between maternal knowledge and the prevalence of wasting in children under five (P value = $0.008 \leq 0.05$). Apart from that, there is a significant relationship between mothers who have a negative attitude and the prevalence of wasting in toddlers (P value = $0.005 \leq 0.05$). Apart from that, there is a relationship between poor maternal actions and the prevalence of wasting in toddlers (P value = $0.015 \leq 0.05$). In addition, there was a correlation between maternal education level and the prevalence of wasting in children under five (P value = $0.008 \leq 0.05$). In conclusion, the analysis showed a correlation between maternal knowledge, attitude, and action, as well as a relationship between maternal education level and the prevalence of wasting in children under five years old, as evidenced by a P value $\leq \alpha 0.05$. It is recommended that health workers and other relevant stakeholders intensify efforts to socialize and educate mothers to encourage positive behavioral changes in meeting the nutritional needs of toddlers. This initiative aims to improve the nutritional status of toddlers.

Keywords: Toddler wasting; knowledge; attitude; action; education.

1. INTRODUCTION

Wasting is a combination of wasted and several wasted which is characterized by an index of weight according to height (BB/TB) and body weight according to body length (BB/PB) with a Z-score < -2 SD [28]. Wasting is a major threat to the existence and development of toddlers, can cause stunting, and can cause long-term growth problems [6,26,29,31]. One of the causes of wasting in toddlers is an acute usually due to insufficient food intake or a high incidence of infectious diseases [1,3,4,10]. Wasting can result in impaired immune function and can result in susceptibility to infectious diseases and increase the risk of death [32]. The effects of wasting are reduced ability to explore the environment, reduced social interaction, reduced happiness and a tendency to be apathetic. Long-term effects include cognitive decline, decreased academic performance, behavioral problems, and even increased risk of death [8,9,10,11,12].

Factors that can influence wasting, direct and indirect factors. Food shortages and infectious diseases are direct causes of nutritional problems [13,14,16,17]. Food scarcity at the household level causes food scarcity. Maternal behavior or poor parenting, such as parents who prefer to wear jewelry rather than provide nutritious food, can also cause underfeeding. Mother's level of knowledge, number of family members, employment, family income and breastfeeding are indirect factors [27,34,37,39].

The World Health Organization (WHO) states that 69% of wasted children live in Asia and 27% in Africa. Indonesia is the fourth most wasting

country in the world, with 2 million children under five wasting, half of whom are in NTT [35]. According to UNICEF, the number of wasting children under five in Indonesia will increase 0.6 points from 7.1% in 2022 to 7.7% [33]. In 2020, Aceh was ranked fifth highest in wasting compared to other provinces in Indonesia, with prevalence of wasting is 6.9%. The results of the 2021 Indonesian nutritional status survey (SSGI) are that 7.1 percent of Indonesian toddlers experience wasting [20,21,23,25]. However, the percentage of wasted toddlers will decrease to 0.9 percent and 4.0% in 2022, with a prevalence of wasted toddlers of 7.7% [36,38]. In 2022, the Health Service reported that 158 toddlers in West Aceh district experienced wasting, namely in Meureubo subdistrict, and 23 toddlers in Kawai XVI subdistrict (Profile of West Aceh District Health Service, 2022).

Research [18] states that maternal knowledge about nutritional status greatly influences the prevalence of wasting in toddlers. Apart from knowledge, attitudes, actions and education also have a relationship with the prevalence of wasting in toddlers [28]. The results of the initial survey that the author conducted by interviewing mothers of underweight toddlers showed that the author found problems related to low levels of education, poor knowledge, mothers feeling indifferent to improving their toddlers' nutrition, and mothers not providing nutritious food to their toddlers.

1.1 Formulation of the Problem

Based on the background above, the formulation of this research problem is: How is Maternal

Behavior and Education Correlated with the Prevalence of Wasting Toddlers in Meureubo and Kaway XVI Districts in West Aceh Regency?

1.2 Objective

The aim of this research is to analyze the relationship between maternal behavior and education and the prevalence of toddler wasting in Meureubo and Kaway XVI districts, West Aceh district.

1.3 Hypothesis

There is a relationship between education, knowledge, attitudes and actions and the prevalence of wasting under five in Meureubo and Kaway XVI Districts, West Aceh Regency.

1. **Education:** The level of maternal education is related to the prevalence of wasting in toddlers because mothers with low education are less able to receive understanding, which affects their ability to receive information, it could be that mothers think that wasting is not very important.
2. **Knowledge:** Lack of maternal knowledge about nutritional status and how to choose food can be one of the causes of the prevalence of wasting in toddlers. If the mother does not have an understanding of nutrition, the mother does not realize that her child is wasting.
3. **Attitude:** Attitude is related to the prevalence of wasting toddlers where mothers who have a negative attitude may not care about how their toddler grows.
4. **Action:** action that do not support improving toddler nutrition can be related to the high prevalence of wasting toddlers.

Thus, the hypothesis proposed is that low levels of education, knowledge, attitudes and actions are related to the increasing prevalence of wasting toddlers.

2. METHODS

The type of research used is an analytical survey with the Survey Cross-Sectional approach which aims to analyze the relationship between behavior and education and the prevalence of wasting toddlers in Meureubo and Kaway XVI Districts, West Aceh Regency. I conducted this research in July 2023. The population of my research was all mothers of

wasting toddlers. Sampling was carried out using the total sampling method, namely the entire population was taken as 41 respondents. Next, the data were analyzed using univariate and bivariate, then tested using Fisher's exact test.

2.1 Research Design and Timing

The type of research currently used is an analytical survey with a Cross-Sectional Survey approach carried out in Meureubo and Kaway XVI Districts, West Aceh Regency.

2.2 Research Location

Meureubo and Kaway XVI sub-districts, West Aceh Regency

2.3 Study Participants

All mothers under five are wasting and all types of basic health services are available in Meureubo District and Kaway XVI District, there is a Government Community Health Center Unit which meets all basic service needs for the community in its working area.

2.4 Sample Size

The sample size in this study used the total sampling method, namely the entire population sampled was 41 respondent.

2.5 Sampling Procedure

Total sampling is the entire sample interviewed using the questionnaire that has been provided, where all samples meet the predetermined sample criteria, namely all wasting mothers of toddlers in Meureubo and Kaway XVI Districts, West Aceh Regency.

2.6 Data Collection

This paper-based questionnaire is administered and is semi-structured and consists of three parts: Knowledge about wasting toddlers, attitudes about wasting toddlers, actions that mothers take in managing food for wasting toddlers and maternal education level with the prevalence of wasting toddlers. The questions in the questionnaire were prepared taking into account the criteria recommended according to previous research. The questions are arranged in an understandable order [7].

2.7 Research Variable

The level of maternal education and the prevalence of malnutrition in toddlers, malnutrition is a situation where the child's weight does not correspond to height z-score < -2 SD, low maternal education level affects the mother's ability to receive nutritional information

Mothers' knowledge about nutrition with the prevalence of toddler wasting z-score -2 SD, increasing mothers' understanding of nutrition and the nutritional status of toddlers can make toddlers grow healthily.

The mother's attitude regarding the prevalence of wasting in toddlers, the mother's positive attitude towards toddler nutrition has an influence on the nutritional status of toddlers.

Maternal actions regarding the prevalence of wasting in toddlers, good maternal practices in processing and giving food to toddlers can influence the incidence of wasting.

2.8 Statistic Analysis

In this research, Fisher's exact test was used with P -value $< \alpha 0.05$. Univariate analysis is an analysis involving a variable in research which is carried out either through questionnaires or interviews to determine the frequency distribution and distribution value of the variable. [7]. Bivariate data analysis can be carried out using Fisher's exact statistical test which is used to test hypotheses by determining the relationship between the independent variables (Education, Knowledge, Attitudes and Actions) and the dependent variable (prevalence of under-five wasting).

3. RESULTS

3.1 General Description of the Research Location

West Aceh is a district in the province of Aceh. Meureubo and Kaway XVI subdistricts are one of the subdistricts in West Aceh district. Meureubo subdistrict consists of 2 mukims and 26 villages/gampongs with a total population of 15%, while Kaway XVI subdistrict consists of 4 mukims and 44 villages/gampongs.

3.2 Level Education of Wasting Mothers of Toddlers

Based on the results of questionnaire analysis from 41 respondents, it shows that 32 respondents (78%) had higher education, and 9 respondents (22%) had low education

3.3 Knowledge of Wasting Mothers of Toddlers

Based on the results of the questionnaire analysis, 32 respondents (78%) had good knowledge, and 9 respondents (22%) had poor knowledge had poor knowledge.

3.4 The Attitude of Mothers of Wasting Toddlers

Based on the results of the questionnaire analysis, based on the respondents' answers, it is known that the respondents have an attitude positive that is 33 person (80.5%), whereas 8 person (19.5%) own attitude negative

3.5 Actions of Mothers of Underweight Toddlers

Based on questionnaire data, the results of the answers that researchers obtained from respondents. There were 30 respondents who took action (73.2%), while 11 people (26.8%) did not take action.

Table 1. Frequency distribution of education, knowledge, attitudes and actions on the prevalence of wasting toddlers

Category	N	%
Education		
Low	9	22
Tall	32	78
Knowledge		
Good	32	78
Not good	9	22
Attitude		
Positive	33	80.5
negative	8	19.5
Action		
Done	30	73.2
Are not done	11	26.8
Wasting		
Thin	38	93
Very thin	3	7

3.6 Wasting

Of the total 41 respondents, the majority of respondents had wasting toddlers in the

underweight category, namely 38 people (93%), and 3 wasting toddlers in the very thin category (7%).

Table 2. Results of Fisher's Exact Test analysis

Variables	Fisher's Exact Test < 0.05
Education	0.008
Knowledge	0.008
Attitude	0.005
Action	0.015

4. DISCUSSION

4.1 Analysis the Relationship between Maternal Education and the Prevalence of Wasting in Toddlers

Based on the results of statistical analysis using Fisher's exact test between education level and wasting rate in toddlers, Pvalue = 0.008 < 0.05. There is a relationship between the level of maternal education and the prevalence of wasting among toddlers in Meureubo and Kaway XVI Districts. The mother's education level also influences the ability to receive information, mothers with higher education understand nutritional information better than mothers with low education levels. Mothers who are highly educated better understand and apply nutritional health knowledge to their children. This is in accordance with research [25] which shows that there is a relationship between the level of parental education and the prevalence of wasting in toddlers. Based on the chi-squared results, the P value is (0.001). Research conducted by [15] shows that there is a significant relationship between the level of parental education and the prevalence of wasting under five, namely the P value = 0.001 and OR 4.750, which means that parents with low education have a significant relationship between the level of education. parents with incidents of wasting toddlers. Mothers with a low level of education are 4 time the risk of experiencing wasting toddlers. In research [19] which stated that there was a relationship between the level of maternal education and the prevalence of wasting, the P value $\alpha = 0.000$ was obtained.

4.2 Analysis of the Relationship between Mother's Knowledge and the Prevalence of Wasting in Toddlers

The results of statistical analysis using Fisher's exact test between maternal knowledge and the

prevalence of wasting obtained P value = 0.008 0.05. There is a relationship between maternal knowledge and the prevalence of wasting under five in Meureubo and Kaway XVI Districts. Knowledge is the result of knowing through one's senses or the fact that someone knows an object through one's senses. All of these senses can produce information which is influenced by the intensity of attention and perception of the object. Most information comes from hearing and sight. His knowledge of the hands used to work. This is in accordance with research [30] where there is a relationship between knowledge and education about children's nutritional status and the results of analysis of two variables using the chi-square test, obtained P value = 0.034. This research is also in line with research [22] where the statistical test of this research obtained a value of P = 0.003, which means there is a significant relationship between maternal knowledge and the prevalence of wasting in toddlers.

4.3 Analysis of the Relationship between Maternal Attitudes and the Prevalence of Wasting in Toddlers

The results of statistical analysis using Fisher's exact test between maternal actions and the prevalence of wasting in toddlers showed an P value of 0.015 < 0.05 is a relationship between maternal actions and the prevalence of wasting under five in Meureubo and Kaway XVI Districts. According to Elfandes et al [2] parents have an important role as models or examples for their children in terms of behavior in improving nutritional status and in terms of choosing food for toddlers. This research is in line with study [5], The results of statistical tests using the Chi-Square test provide a P-value = 0.021 to understand statistically that there is a relationship between maternal behavior and the nutritional status of underweight children under 5 years of age. In order for a mother to do something or not, it depends on whether she knows what she is going to do or what she is facing [32]. In line with research [5] there is a relationship between actions and the nutritional status of toddlers with a P value = 0.000.

4.4 Analysis of the Relationship between Maternal Actions and the Prevalence of Wasting Toddlers

The results of statistical analysis using Fisher's exact test between maternal actions and the prevalence of wasting in toddlers showed an P

value of $0.015 < 0.05$ is a relationship between maternal actions and the prevalence of wasting under five in Meureubo and Kaway XVI Districts. According to [2] parents have an important role as models or examples for their children in terms of behavior in improving nutritional status and in terms of choosing food for toddlers. This research is in line with study [5], The results of statistical tests using the Chi-Square test provide a P-value = 0.021 to understand statistically that there is a relationship between maternal behavior and the nutritional status of underweight children under 5 years of age. In order for a mother to do something or not, it depends on whether she knows what she is going to do or what she is facing [32]. In line with research [5] there is a relationship between actions and the nutritional status of toddlers with a P value = 0.000.

5. CONCLUSION

There is a statistically significant relationship between the mother's education level and values (P-value = $0.008 < 0.05$), knowledge values (P-value $0.008 < 0.05$), attitude values (P-value $0.005 < 0.05$) and action values (P-value $0.015 < 0.05$) on the prevalence of wasting under five. The results of the analysis show that knowledge, attitudes and actions as well as maternal education are related to the prevalence of wasting in toddlers. To increase knowledge, attitudes and actions, it is necessary to provide socialization about selecting and how to manage and process food properly and correctly as well as education about nutritional problems for toddlers.

6. SUGGESTION

It is necessary to increase maternal knowledge regarding maternal attitudes and actions regarding the prevalence of wasting in toddlers so that mothers understand that wasting is a nutritional problem in children so that mothers can improve maternal knowledge, attitudes and actions. in caring for toddlers.

ETHICAL APPROVAL

As per international standards or university standards, written ethical approval has been collected and retained by the authors.

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