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Mother's Knowledge and Child Nutritional Status Relationship

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Abstract

Background: Children are a group that has a high risk of their nutrition. Improper breastfeeding and lack of knowledge about nutrition or ability to apply information in daily life, especially mother's knowledge, can increase mortality much higher. Eating patterns, birth weight and economic status are not related to the incidence of malnutrition. This proves that the mother's role is very important in her child's growth and development which can affect nutritional status.
Purpose: To determine the relationship between mother's knowledge and child nutritional status in Makasar Community Health Center, East Jakarta, Indonesia.
Method: This study used cross sectional design. The research sample consisted of 30 respondents. The sampling technique uses purposive sampling. The research instrument is mother's knowledge about child nutrition. Data analysis used the chi-square test to determine the relationship between variables.
Results: It was found that 3.3% of child experienced malnutrition with a low level of mother's knowledge and 50% child experience good nutrition with a good level of mother's knowledge. The results of the study obtained a p value of 0.001 <0.05 which indicates that there is a relationship.
Conclusion: There is a relationship between mother's knowledge and child nutritional status in Makasar Community Health Care.

Keywords: child nutrition, pediatric nutrition, malnutrition

Introduction

WHO shows that an estimated 149.2 million children under the age of five experience stunting, and 45.4 million children are underweight and 38.9 million are overweight or obese.[1] Basic Health Research (Riskesdas) data in Indonesia shows that in 2019 3.9% of toddlers experienced malnutrition, 13.8% of toddlers experienced malnutrition and 27.67% of toddlers who were stunted.[2] In the Food and Agriculture Organization (FAO) report, Indonesia's population is recorded as the country with the highest number of people suffering from malnutrition in Southeast Asia. There are around 17.7 million Indonesians who suffer from malnutrition.[3] Indonesian government had a program aimed at reducing child mortality and improving the quality of life for mothers as part of the fourth and fifth Millennium Development Goals (MDGs) programs. One of them is Infant and Child Feeding (IYCF). IYCF aims to improve the health, nutritional status, growth and development and survival of children in Indonesia.[4]

Based on data from the Jakarta Province Central Statistics Agency (BPS), in 2019 there were 36 residents suffering from malnutrition. in 2020 there were 6,047 children under five. Meanwhile, in the East Jakarta area, there are 1,826 toddlers suffering from malnutrition, compared to other areas of DKI Jakarta. The study at the Makasar Community Health Center, East Jakarta, show cases of toddlers with nutritional problems with specifications of 44 cases of very low body weight in toddlers, 29 cases of stunting in toddlers, 33 cases of malnutrition in toddlers and 8 cases of malnutrition in toddlers.

Children are a group that has a high risk of their nutrition. Growth is very fast, including physical growth, psychomotor, social and mental development. Toddlers should get more attention. Because, the higher the risk factors that apply to the toddler, the greater the possibility that the toddler will have nutritional problems. One of the causes of nutritional disorders in toddlers is insufficient nutrition. Toddlers who do not have enough nutrition will have an impact on nutritional disorders such as shortness or stunting. Stunting is low height compared to age which indicates chronic disturbances in growth hormone.[5] Overweight and obesity in children is a health problem whose

number of sufferers is increasing.[22] Sleep duration is related to overweight and obesity development in infants. Changes in dietary pattern are also related to sleep debt, being one of the mechanisms that contribute to excessive weight gain. [23]

Implementing balanced nutrition in families is very necessary to ensure adequate nutrition in the family, especially for children under five. Because toddlers really need attention in meeting the nutritional needs they consume. If food nutrition for toddlers is not balanced with the body's needs, malnutrition will occur.

Malnutrition includes over-nutrition and under-nutrition which is a problem that occurs in Indonesia, which has not yet been resolved. The causal factors are food and disease which can directly cause malnutrition. Indirect diseases include inadequate family food security, child rearing patterns, inadequate health services and the environment. And the main problem in society is the lack of utilization of community resources.

There are factors that influence the nutritional status of toddlers, namely mother's knowledge.[6] According to researchers, mothers who are knowledgeable know how to fulfill their child's nutrition and are able to prepare good nutritional intake, then the child's nutritional status will be good and vice versa. Mother's knowledge is a risk factor for malnutrition in toddlers.[7] Mothers with poor knowledge about nutrition are 22.6 times more likely to have children with malnutrition compared to mothers who have good knowledge. Eating patterns, birth weight and economic status are not related to the incidence of malnutrition. This proves that the mother's role is very important in her child's growth and development which can affect nutritional status.

Improper breastfeeding and lack of knowledge about nutrition or ability to apply information in daily life, especially mother's knowledge, can increase mortality much higher. One of the susceptible diseases that often occurs in babies is infection. The cause is poor nutritional status and can be influenced by the mother's lack of knowledge about nutritious food.[8] Nutritional disorders can be influenced by various factors. Apart from education, social environmental factors and frequency of contact with mass media also influence nutritional knowledge.[9] One of the causes of nutritional disorders is a lack of nutritional knowledge or the ability to apply information about nutrition in daily life.

Method

1. *Research design*

   This study used cross sectional design; observation, measurement and recording of each independent variable and related variables are carried out simultaneously and measurements are carried out only once on research subjects.[10] The researcher measured mother's knowledge using a valid and reliable questionnaire.

2. *Setting and samples*

   This research was conducted in August 2023 at Makasar Community Health Center, East Jakarta. The sample in this research is a total of 30 participants who had met the inclusion and exclusion criteria with the total sampling technique.

3. *Measurement and data collection*

   The questionnaire used in this research is a questionnaire designed by the researcher himself. Research instruments are methods or tools to collect data in research work. Questionnaire with checklist method functions as a measuring tool in this research. The research instrument used was made in the form of a questionnaire to obtain information and data from respondents, containing demographic data and a questionnaire on mother's knowledge about nutrition which contained a list of 25 true and false questions. Based on results the validity and reliability test in this research, all valid statements are proven by significance values greater than 0.468 and reliability value was 0.855. Nutritional status is assessed by measuring the child's weight and height.

4. *Data analysis;*

   The techniques used for data analysis, including the computer software used, SPSS (Statistical Package for the Social Sciences). Bivariate analysis in this research by using the *chi-square* test. The test results are said a relationship if the p value is < 0.05.

Results

Based on data analysis in this study, the following results are known:

Table 1
Characteristics of Child Respondents

Variables	Frequency	Percentage (%)
Female	6	20.0
Male	24	80.0
1 y.o.	21	70.0
2 y.o.	4	13.3
3 y.o.	2	6.7
4 y.o.	3	10.0
5 y.o.	0	0.0
7-10 kg	18	60.0
11-15 kg	11	36.7
16-20 kg	1	3.3

Notes. y.o. = years old.

Based on Table 1, characteristic of respondents based on gender in shows that most of the respondents are female, namely 6 respondents (20.0%), most of the respondents are 1 years old as many as 21 respondents (70.0%), and most of the weight of child are 7-10 kg.

Table 2
Characteristics of Mother Educational Background

Educational Background	Frequency	Percentage (%)
Junior High School	1	3.3
Senior High School	17	56.7
Diploma	5	16.7
Bachelor	7	23.3

Based on Table 2, characteristic of respondents based on educational background in shows that most of the respondents graduated from senior high school (56.7%).

Table 3
Characteristics of Mother Knowledge

Mother Knowledge	Frequency	Percentage (%)
Low	1	3.3
Enough	13	43.3
Good	16	53.3

Based on Table 3, the respondents (mother) showed that the low knowledge were represented by 1 respondent (3.3%), the enough knowledge were represented by 13

respondents (43.3%), and the good knowledge were represented by 16 respondents (53.3%).

Table 4
Characteristics of Child Nutritional Status

Nutritional Status	Frequency	Percentage (%)
Waste	5	16.7
Underweight	5	16.7
Normal	17	56.7
Overweight	3	10.0

Based on Table 4, the nutritional status variables with the waste category were represented by 5 respondents (16.7%), the underweight category were represented by 5 respondents (16.7%), the normal category were represented by 17 respondents (17%), and the overweight category were represented by 3 respondents (10%).

Table 5
Bivariate Analyses

Mother Knowledge	Child Nutritional Status								
	Waste		Underweight		Normal		Overweight		P value
	F	%	F	%	F	%	F	%	0.001
Low	1	3.3	0	0	0	0	1	3.3	
Enough	4	13.3	4	13.3	2	6.7	13	43.3	
Good	0	0	1	3.3	15	50	16	53.3	

Based on Table 5, the results of the analysis showed chi square test results obtained p value (0.001) < (0.05) then Ho is rejected and Ha is accepted, which means that there is a relationship between variables.

Discussion

Based on the results of the chi-square test that was the p = 0.001 is obtained, it can be concluded that there is a relationship between mother's knowledge about nutrition and the nutritional status of toddlers at the Makasar Community Health Center. The results of this research are in line with research conducted by Susilowati in the journal of the relationship between the level of knowledge of mothers about toddler nutrition and the nutritional status of toddlers in the working area of Gajah 1 Demak Community Health Center.[11] Based on this research; it can be seen that the majority of mothers with good knowledge have toddlers with good nutritional status. That research showed a

significant relationship between the level of mother's knowledge about toddler nutrition and the nutritional status of toddlers.

Based on another research, it can be seen that there is a relationship between mother's knowledge about nutrition and the nutritional status of toddlers.[12] The relationship between the level of mother's knowledge about nutrition and the nutritional status of toddlers in the work area of the Purworejo Community Health Center also show that there is a relationship between mother's knowledge about toddler nutrition and the nutritional status of toddlers.[13]

This phenomenon shows that although knowledge is not a direct factor influencing the nutritional status of children under five, nutritional knowledge has an important role, because by having sufficient knowledge you can know various health problems that will arise.[14] Mother education will have an influence on mother's knowledge of toddler nutrition. The knowledge in this research is the understanding of mothers of toddlers about the nutritional needs of toddlers, including understanding nutrients, the types, benefits and signs of malnutrition. The higher a person's level of knowledge, the easier it is to receive information with a relatively high mindset to apply.

Education is the ability to absorb a person's educational knowledge which is related to a person's attitude towards the knowledge they absorb. The higher the level of education, the easier it is to absorb information in the health sector. The ease with which a person absorbs information will influence the formation of behavior.[15]

However, research conducted by Burhani et al., stated that there was no relationship between the mother's level of knowledge and the family's economic level and the nutritional status of toddlers.[16] The results of a similar study conducted by Morani (2008) on toddlers in Kotaruopan District, Mandailing Natal Regency, also stated that there was no significant relationship between the level of mother's knowledge and the nutritional status of toddlers. This is because there are many things that can influence toddler nutrition, such as food availability, consumption patterns, infectious diseases, the role of community leaders, and mother activities. Mother and family parenting patterns for toddlers and the number of family members also influence the nutritional

status of toddlers with current technological developments, mothers can easily find out information from various media, so that mothers can increase their knowledge.[17]

The mother's level of knowledge about toddler nutrition greatly influences the toddler's nutritional status because the mother is the person with the greatest attachment to the child. The mother's relationship with her child is greater than that of other family members, so she understands all the needs of the child better. The knowledge that mothers have is the main key to meeting toddlers' nutritional needs. Knowledge based on good understanding can foster new good behavior as well. Mothers' knowledge about nutritional needs that is well understood will be accompanied by behavior in providing nutritious food for toddlers. Knowledge can be obtained from information from various media such as TV, radio or newspapers, as is the case in this research. Mothers receive information about the nutritional needs of toddlers from counseling provided by the community health center every time the Posyandu program is implemented. This information increases knowledge which is accompanied by new behavior in providing nutritious food for toddlers so that nutritional status becomes better. This opinion is supported by the theory that information will also have an influence on a person's knowledge. Even though someone has low education, if they get good information from various media such as TV, radio or newspapers, they will be able to increase a person's knowledge.[18]

According to the researchers' assumptions in this study, it was found that there was a relationship between mother’s knowledge about nutrition and the nutritional status of toddlers at the Makasar Community Health Center. In the research, it was found that (3.3%) of toddlers experienced malnutrition with a poor level of mother’s knowledge. (50.0%) toddlers experienced good nutrition with a good level of mother’s knowledge of 15 respondents. This means that the lower the mother's level of knowledge, the worse the nutritional status of the toddler. There are several factors that can influence the mother's level of knowledge, one of which is the level of education. The research results show that the majority of mothers' education is high school with a total of 17 respondents. This shows that the better the mother's level of knowledge, the better the toddler's nutritional status.

Limitation

During conducting this research, the researcher realizes that there are limitations of the researcher such as: the number of respondents was only 30 people, of course still not enough to describe the real situation. In the data collection process, the information provided by respondents through questionnaires sometimes does not show the respondents' true opinions

Conclusion

Based on the results of the frequency distribution of mother's knowledge at the Makasar Community Health Center, it was found that 3.3% of toddlers experienced malnutrition with a low level of mother's knowledge and 50% toddlers experience good nutrition with a good level of mother's knowledge. There is a significant relationship between mother's knowledge and the nutritional status of toddlers at the Makasar Community Health Center.

Ethical Considerations

This research had an approval from the health research ethics committee.

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Conflict of Interest

There is no conflict of interest among authors.

Author Contribution

We encourage authors to provide statements outlining their individual contributions or roles to the manuscript.

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