Factors Associated with Nutritional Status of Infants in Serang City, Indonesia

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Abstract

Nutritional status refers to the condition of the body that arises from the equilibrium between the intake of nutrients and the body's requirements. Nutritional condition can be impacted by a multitude of variables., direct factors related to nutrition are a history of infectious diseases and fulfillment of nutritional intake. The indirect factors related to nutritional status include education, knowledge and attitudes of mothers. The objective of this study is to identify the factors associated with the nutritional condition of children under the age of five in Serang City in 2022. This study employed a correlational research design utilizing a cross-sectional approach. This study had a total of 90 participants. The sampling methodology employed in this research is probability sampling using the method of accidental sampling. The bivariate study using the chi-square test revealed a significant link between mother's education, knowledge, and attitude and the nutritional status of children under five in Serang City. The p-value was determined to be 0.000, indicating a strong statistical significance at a significance level of $p < 0.05$. Recommendations for research areas, there should be cross-sectoral between the city and provincial governments in an effort to expand job opportunities to improve the economic level of the community, and the city government should further strengthen the basic sanitation infrastructure in an effort to foster a healthier environment in order to prevent the emergence of infectious diseases.

1. Introduction

Golden age is a period of childhood that is between the ages of 1-6 years, this age is a very important period for individual growth and development. Development is the process of increasing the structure, function, and capacity of a more complicated person in a regular manner because the maturation process[1]. Similarly to Krisnanto, states that the first five years of life is a period that is very sensitive to the environment, and this period is very short and cannot be repeated, this period is commonly referred to as the golden period, window of opportunity, and critical period [2]. According to UNICEF[3], toddlers are children aged 0-59 months, in this period there is a process of rapid growth and development accompanied by changes, in this period children need more nutrients balanced with high quality. Toddlers are classified into groups that are prone to malnutrition and easily experience nutritional disorders due to lack of necessary food. Food consumption has a great influence children's nutritional status because what they eat has a significant impact on their development. to achieve physical growth and intelligence. Toddlers are the age group that suffers the most from malnutrition and the population is quite large[4]. Malnutrition in young children can have very serious consequences, including inhibition of physical, mental, and cognitive growth. Malnourished infants can experience a decrease in intelligence (IQ) of up to 10%. (IQ) up to 10%. This situation shows that poor or lack of nutrition can basically mean that human resource quality will suffer[5]. Worst impact that can occur in children under five who are malnourished and undernourished is death. The case of under-five deaths in Indonesia is recorded that one under-five dies every three minutes or the equivalent of 150,000 every year. There were 2,978 cases of malnutrition and undernutrition, of which 71 died [6]. There are 50-59% of children under the age of five who are classified as "stunted. Children who are not growing well are victims of three growing malnutrition problems around the world: undernutrition, hidden hunger and overweight. Current malnutrition rates remain high and are the focus of global attention. According to the Food and Agriculture Organization (FAO), one in eight of the world's 1.7 billion people, or about 870 million people, are undernourished.

Most of them, as many as 852 million, live in developing countries[7].

World Health Organization, millions of people are undernourished and malnourished. Approximately 52 million children under the age of five suffer from undernourishment and malnutrition, where they have a BMI below the norm. Approximately 45 percent of infant fatalities are attributable to starvation, and one out of ten children are born with a low birth weight[8]. According to the Ministry of Health, "Indonesia's malnutrition rate by weight-for-age has reached 17%, which is higher than the WHO limit of 10%. The second group, by height-for-age index, has a high malnutrition rate of 27.5%, while the WHO limit is 20%. The third group, by weight-for-age index, is still above the WHO limit, with a malnutrition rate of 11% compared to the WHO limit of 5% [9]. Improvements in nutritional status can be seen nationally, according to the 2018 Basic Health Survey. There has been a significant improvement between 2013 and 2018. The prevalence of underweight decreased from 19.6% in 2013 to 17.7% in 2018. While the prevalence of wasting decreased from 12.1% to 10.2% and In 2018, the percentage of people who were stunted dropped from 37.2% to 10.2%. Stunting was less common, dropping from 37.2% to 30.8% [10]. Children's nutritional status is influenced by parents. Good stimulation from parents is necessary for child development. Parents need to understand all aspects of development that children go through at all ages. It is also very important for parents to understand efforts to check and stimulate children's early growth and development so that any delays that occur in children can be quickly identified and stimulated[11].

Optimal child development is achieved by a well-maintained dietary equilibrium. The mother's understanding of well-rounded diet is crucial. The maternal level of expertise in newborn nutrition can impact the nutritional health of the infant. because the mother is the most important attachment figure for the child. The mother's presence with her child is more frequent compared to other family members, therefore she will be more understanding of all the needs needed by the child. Maternal knowledge is the main key to meeting the nutritional needs of infants. Knowledge based on good understanding will also promote good attitude. Maternal knowledge related to good nutritional needs will also be followed by the behavior and attitude of providing nutritious food to toddlers [12]. The results of Nurmaliza & Herlina's research [13] showed that based on the chi-squared test performed, the P value was <0.05 (<0.006 <0.05) and (<0.034 <0.05), so it was concluded that there was a relationship between knowledge and education about toddler nutritional status. The results of Sundari & Khayati's research[14] showed that there were 39 (48.8%) research subjects who had a level of knowledge about infant nutrition in the good category. The nutritional status of infants is mostly in the normal category, namely 58 (72.5%). There is a relationship between maternal knowledge about nutrition and the nutritional status of young children with a p-value of 0.000. According to the research of Indrayani et al,[15] there is a relationship between maternal knowledge about nutrition with nutritional status of young children in the UPTD Puskesmas Cidahu District Cidahu Kuningan Regency with a p value = 0.006. Mothers' views on nutrition have an effect on their children's

nutritional status. in the UPTD Puskesmas Cidahu Region, Cidahu District, Kuningan Regency with a p value = 0.003.

Data from the Kasemen Health Center in 2021, Margaluyu Village has the highest percentage of malnutrition cases according to the BB/TB (wasting) indicator and the TB/U (stunting) indicator. Malnutrition cases in Margaluyu Village have increased dramatically from year to year. In 2019, the percentage of malnutrition cases in Margaluyu Village for the BB/TB (Wasting) indicator was 0.5%, then in 2020 malnutrition cases increased to 2.77% and in 2021 cases increased again to 3.2%. For the TB/U (Stunting) indicator, there were 2.5% of cases in 2019, then increased to 3.8% in 2020, and in 2021 the cases decreased to 1.9%.

Researchers interviewed 10 women with toddlers in Kasemen District, Serang City, for exploratory studies. it was found that 6 mothers did not know the definition of balanced diet, 8 mothers said that they did not give exclusive breastfeeding to their children, 5 mothers did not know the definition of nutritious food, 6 mothers were still confused in choosing and processing good food for their children, 7 mothers admitted that the food given to their children was food that their children liked without seeing the food was nutritious or even not good for the health of their children. Based on the phenomena that occurred and the information obtained, the researcher is interested in conducting additional research on newborn nutrition "Factors Associated with the Nutritional Status of Infants in Serang City in 2022".

2. Materials and Methods

This study employed a correlational research design utilizing a cross-sectional study approach. The population for this study consists of 448 mothers residing in Margaluyu Village, within the working area of Kasemen Health Center in Serang City. This study involved 90 respondents. The sampling technique in this study used Utilizing a probability sampling method, namely the accidental sampling methodology, and conducting data analysis through the use of the Chi-square test. The study was carried out in Margaluyu Village throughout the months of July and August in the year 2022. A questionnaire was employed as the data collection instrument in this investigation. An evaluation of the knowledge, attitudes, and education of mothers was conducted using a questionnaire. The nutritional status of infants was determined by assessing their anthropometric measurements, specifically the weight-for-age index, which was obtained from the Towards Health Card of each infant. This research has passed the ethical test with number: 005/KEPK.UF/VI/2022

3. Results and Discussions

Based on the results of the study table 1, it was found that the education level of mothers in Serang City, 2022, the majority were low-educated as many as 52 respondents (57.8%). Children with low-educated mothers have a higher mortality rate than children with highly educated mothers. People with greater education will respond to new information more logically and consider the potential benefits of the proposal more carefully. There are two main types of education: formal and non-formal. A student's formal education follows a well-defined progression from elementary school (madrasah ibtidaiyah, mi) and junior high (madrasah tsanawiyah), through senior

high (madrasah aliyah), vocational high school, and finally, higher education (diploma, bachelor, master, specialist, and doctoral programs offered by universities) following secondary education. People who require educational services that serve as a substitute, supplement, or addition to formal education are organized in non-formal education programs. These programs aim to foster lifelong learning. Based in Table 2. A total of 45 respondents (or 50%) had inadequate knowledge, whereas 45 (or 50%) had adequate knowledge, according to the study's findings. Knowledge about balanced nutrition plays an important role, even though it is not a direct factor affecting children's nutritional status. Having enough knowledge, particularly about health, allows one to be aware of the different kinds of health problems that can arise and seek solutions for them. Infants and toddlers whose mothers do not have enough nutrition education are at risk. According to the findings of the assessment of the questionnaire, 44 respondents answered incorrectly to question number 1, which is about the definition of balanced diet, 39 respondents answered incorrectly to question number 9, which is about the nutrients needed by children, 47 respondents answered incorrectly to question number 11, which is about the importance of food variety, portion, hygiene and safety of food for children to grow and develop properly, 31 respondents still answered incorrectly to question number 15 related to factors affecting the nutritional status of children, 40 respondents answered incorrectly to question number 19 related to the causes of malnutrition, 42 respondents answered incorrectly to question number 21 related to the effects of malnutrition on children, and 36 respondents answered incorrectly to question number 22 related to the effects of malnutrition. This is due to lack of enthusiasm on the part of mothers to seek information related to balanced nutrition and also due to unsupportive environmental factors. According to Nurul Amalia[16] , the environment is all the conditions that exist around people and their influences that can affect the development and behavior of people or groups. Lack of awareness will affect mothers in obtaining information about the balanced nutritional needs of children. After learning about the importance of the benefits of a balanced diet, mothers can they should pay more attention to the nutritional requirements of their children.

Based on table 3 the results of research from 90 respondents, it is known from the data of mothers with low education who have malnourished toddlers as many as 4 (7.7%), who have underweight toddlers as many as 17 (32.7%) and who have toddlers with good nutrition as many as 31 (59.6%). While from a total of 38 respondents with higher education, all respondents had toddlers with good nutrition as many as 38 (100%). The statistical test results obtained a p-value of 0.000 in alpha 0.05 and p-value ≤ α, it can be concluded that there is a significant relationship between education level and nutritional status of young children. The nutritional status of the infant is impacted by the mother's level of education. The reason for this is because the mother's degree of education acts as a determining factor in her attitude and behavior when confronted with a variety of challenges. When it comes to the child's overall health and development, the mother is a

very significant figure. This may be proved, among other things, by the fact that children whose moms have greater educational backgrounds have a better chance of life, grow up better, and are able to embrace larger insights on nutrition. This is a significant advantage [17]. A highly educated mother can prevent malnutrition in her child compared to a low educated mother. A mother's education will determine her attitude and action in the face of a problem. Therefore, education is necessary so that one can understand and easily receive the information obtained so that they can solve problems rationally for the simple reason that a mother's role in deciding what to eat, running the home, and the child's overall health and development is crucial. Retno et all[18], found that a mother's level of education influences her children's attitudes, lending credence to this idea. This finding is in line with the findings of a study by Toyibah et all[19], which indicated that parents with a higher level of education are better informed about health issues, prioritize preventative measures, and enjoy better overall health. Because a mother's understanding of child care is expected to improve with her education level, it follows that a kid's nutritional phases will be better when the mother's education level is higher. Based on table 4 the results of the study, 90 respondents were identified from the data of mothers with poor knowledge who had 4 (8.9%), who had 17 (37.8%) and who had 24 (53.3%). Of the total of 45 respondents with good knowledge, all respondents had 45 (100%). Statistical analysis revealed a significant correlation between news knowledge and nutritional state in Margaluyu village, Kasemen City, during the 2022 attack (p value 0.000 in alpha 0.05 and p value < α).

Their knowledge is necessary to improve the nutritional status of the package properly, the higher your knowledge the more it is done in arranging the food to be more useful to the body package. Knowledge has a close relationship with the poor nutritional quality of the food consumed. With the right knowledge of nutrition, people will know and be able to regulate their consumption patterns in such a way that, no shortage and no surplus [20]. On average, a well-informed mother will have a well-fed child. From the results of filling the questionnaire obtained the average of the mother who is well known, knowing things about child nutrition. Often knowledge is associated with a person's level of education, a highly educated mother will be easier to receive and understand the information obtained, therefore a mother who has sufficient knowledge and well-informed average has a child with good nutritional status anyway. It is important to know that a person's don't have to go to school to learn about something. You can also learn about it through non-formal education, like using public media like the Internet, reading news online, etc. A study by Aljohanim established a correlation between mothers' awareness of childhood malnutrition, lending credence to the results of the present investigation. Furthermore, studies corroborate the idea that a mother's degree of awareness is associated with her early child's nutritional state [21].

Table 1. Frequency Distribution of Education Level of Children Under Five Years Old (n = 90)

Education	N	%
Low Education	52	57.8%
High Education	38	42.2%
Total	90	100 %

Table 2. Frequency Distribution of Maternal Knowledge Level of Balanced Nutrition in Toddlers 2022 (n = 90)

Knowledge	N	%
Less Good	45	50 %
Good	45	50 %
Total	90	100 %

Table 3. Relationship between Mother's Education Level and Nutritional Status of Toddlers

Education	Nutrition Status			n	P-value
	Malnutrition	**Undernutrition**	**Good Nutrition**		
Low	4	17	31	52	<0.01
High	0	0	38	38	
Total	4	17	69	90	

Table 4. Relationship of Mother's Level Of Knowledge With Her Nutritional Status

Knowledge	Nutrition Status			n	P-value
	Malnutrition	**Undernutrition**	**Good Nutrition**		
Less Good	4	17	24	45	<0.01
Good	0	0	45	45	
Total	4	17	69	90	

4. Conclusions

There's a relationship between mother's level of education and her level of knowledge with Balita's nutritional status in Serang City in 2022. Recommendation for research areas is that there should be a cross-sectoral transit between the city government and the province in an effort to expand employment opportunities to improve the economy of the people, and it should be better for the city government to strengthen the means of basic sanitation in an attempt to build a healthier environment to prevent the emergence of infectious diseases.

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