



THE INFLUENCE OF NUTRITIONAL INTERVENTION ON CHANGES IN KNOWLEDGE AND ATTITUDE OF MOTHERS OF UNDERNUTRITIONED CHILDREN IN THE WORKING AREA OF MANUTAPEN PUSKESMAS

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ABSTRACT

*Nutrition education for mothers and caregivers of toddlers is one of Unicef Indonesia's recommendations to alleviate the problem of stunting, malnutrition and undernutrition in Indonesia. Nutrition education can be done individually or in groups. From the research that has been done, the nutritional education intervention method is proven to be able to increase the knowledge, attitudes, and behavior of mothers of toddlers. **Objectives:** This study aims to study the effect of nutrition education interventions on improving knowledge and changing attitudes in the form of feeding practices for undernourished mothers at the Manutapen Health Center. **Methods:** This study used a quasi-experimental design with one group design, with a total sample of 20 respondents. The research instrument used a questionnaire and used the Wilcoxon Signed Rank. **Results:** The results of the non-parametric analysis using the Wilcoxon Signed Ranks test showed that there were significant differences in the knowledge of mothers before and after receiving nutrition education. This is indicated by the significant value of mother's knowledge before and after nutrition education of $0.000 < 0.05$. Likewise with the attitude of the mother, there was a significant difference in the attitude of the mother before and after receiving nutrition education. This is indicated by the significant value of the mother's attitude before and after nutrition education of $0.000 < 0.05$. **Conclusions:** The research results show that there is an influence of nutrition education in the form of counseling and mentoring through short messages on increasing knowledge and changing behavior*

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1. INTRODUCTION

Nutritional status greatly determines the quality of human resources. Malnutrition has an impact on decreasing the quality of human resources. Malnutrition is the beginning of toddler health problems and is one of the things that can hinder children's growth and development. The problem of nutrition in population development is still an issue that is considered a major problem in the world population system.¹

Therefore, this issue is one of the important points that become a global agreement in the Millennium Development Goals (MDGs). Each country must gradually be able to reduce the number of under-fives who are

malnourished or undernourished so that it reaches 15 percent in 2015. In Indonesia, this nutritional problem is also one of the main problems in human development. Indonesia is faced with the dynamics of the problem of malnutrition. Even though the development process in Indonesia has been able to overcome this problem, judging from the trend of statistical data, there are still many problems that need to be resolved, especially those concerning the problem of under-five children. Gradually, in fact Indonesia has been able to reduce the prevalence of undernourished children over the last two decades.

The recent occurrence of under-fives suffering from malnutrition is a reflection of weak health, food and nutrition infrastructure, as well as inequality, injustice, poverty, economic and political policies so that the many cases of malnutrition can reduce the image of the Indonesian nation in the eyes of the world, where Malnutrition cases that appear are an iceberg phenomenon that requires serious treatment. As a result of malnutrition on children's growth, it can cause stunting (small, short stature).²

If malnutrition occurs during the golden period of brain development at the age of 0-3 years, this condition will be irreversible, that is, it will be difficult to recover. Several studies have explained that the short-term impact of malnutrition on children's development is that children become apathetic, experience speech disorders and other developmental disorders. While the long-term impact is a decrease in IQ test scores, a decrease in cognitive development, a decrease in sensory integration, attention deficit disorder, a decrease in self-confidence and a decrease in academic achievement. Almost everyone eats every time in their respective homes, thus improving family nutrition is the gateway to improving community nutrition, and family nutrition education is the key to opening the gate, in the family the mothers play a role in managing food, therefore the mothers Mothers are the main target of family nutrition education. Nutrition education, especially to increase the knowledge of mothers, aims to change wrong actions that result in the danger of undernutrition, so there is a need for nutrition education regarding feeding practices.

Nutrition education is the basis of any program aimed at improving nutrition. Knowledge of proper nutrition and a balanced diet during pregnancy is an important factor for the health of the mother and fetus. Nutritional problems can affect the mother and fetus during pregnancy, therefore special attention is needed for this. Inadequate diet during pregnancy can cause various kinds of nutritional deficiencies such as anemia and have a negative impact on the child in the future. So proper nutrition is an important part of pregnancy which should not be neglected.

In general, malnourished toddlers experience chronic malnutrition that has been going on for a long time. These toddlers will experience disturbances in physical growth and immunity, as well as decreased intelligence. 3 Clinical signs that are often found are marasmus and marasmic kwashiorkor with the characteristic of atrophy in certain body parts. In the long term, malnutrition can lead to lost generations and if this is not addressed quickly, it can increase mortality. According to theory, malnutrition is caused directly by inadequate intake of nutrients and infectious diseases, and indirectly by factors of poverty and upbringing. Lack of intake of macro and micro nutrients from daily food is the main cause of chronic malnutrition. The existence of an infectious disease as a co-morbidity can prolong the recovery process for a malnourished toddler to normal nutrition.⁴

According to the recommendations of the World Health Organization (WHO) 2003, improving the nutritional status of malnourished children is carried out by improving the intake of macro and micro nutrients by providing supplements and formula food as therapeutic food in stages, treating co-morbidities, and managing malnutrition which is carried out in an inpatient setting. and outpatient care for infants without complications.⁵

Kupang City is one of the regions in the Province of NTT which is located in the center of the Province. The existence of Kupang City as a Provincial City does not mean that Kupang City does not have health problems. Based on Kupang city profile data in 2017, it is known that the distribution achievement of vitamin A capsules was only 57.18%. This figure is far below the achievement rate in 2012 which reached 94.07%. The prevalence of undernourished toddlers from weighing results in 2017 was 372 toddlers or 2.63% (BGM indicator). Of these, the Manutapen Puskesmas is one of the puskesmas areas that contributes to the number of malnourished toddlers as many as 20 children under five.

Nutrition education according to Fasli Jalal (2010) is a continuous process to increase knowledge about nutrition, shape healthy life attitudes and behaviors by paying attention to daily eating patterns and other factors that affect food, and improve one's health and nutritional status. The purpose of providing nutrition education is to encourage positive behavioral changes related to food and nutrition.

Nutrition education can improve mother's feeding practices and the level of energy-protein consumption in toddlers even though the child's growth does not increase directly. According to Alfiah (2015) mothers who have less knowledge about nutrition education (IYCF) will affect the fulfillment of energy needs and other nutrients. The results of Jayanti's research (2015), showed a significant relationship between energy and protein consumption on the incidence of Malnutrition.



Toddlers aged 6-24 months who have a deficit level of energy consumption experience a higher incidence of undernutrition, which is 14 at 46.8%. Likewise, toddlers who have a deficit level of protein consumption experience a higher incidence of stunting (51.9%). The results of Dewi and Aminah's research (2020) show that there is an effect of nutrition education (MPASI) on the feeding practice of mothers who have stunted toddlers aged 6-24 months ($p=0.003$) using the lecture method and individual question and answer.

Nutrition education for mothers and caregivers of toddlers is one of UNICEF Indonesia's recommendations for alleviating the problem of stunting, malnutrition and undernutrition in Indonesia. Nutrition education can be done individually or in groups. From the research that has been done, the nutritional education intervention method is proven to be able to increase the knowledge, attitudes, and behavior of mothers of toddlers.

The purpose of this study was to study the effect of nutrition education interventions on improving knowledge and changing attitudes in the form of feeding practices for undernourished mothers.

2. METHOD

This type of research is experimental research with a Quasi-experimental design (quasi-experimental) One Group design. This design does not have a comparison group (control), but the first observation (pre-intervention) has been carried out which is then used as a reference for testing the changes that occur after the experiment. The experimental group in this study was given an intervention in the form of Nutrition Education.

This research was conducted in the working area of the Manutapen Public Health Center, Kupang City. The sub-districts included in the work area of the Manutapen Health Center include the Fatufeto sub-district, the Manutapen sub-district and the Mantasi sub-district. This research was conducted from August 2022 to February 2023. The population in this study were all toddlers who were recorded in the working area of the Manutapen Health Center in 2022. The population in this study was taken from toddler data, namely 800 people. The sample in this study were mothers of toddlers and toddlers who are recorded as undernourished toddlers in the working area of the Manutapen Health Center. The sample collection technique in this study was total sampling from all populations that met the inclusion criteria, namely 20 samples.

The dependent variable in this study was the knowledge and attitudes of mothers with malnutrition while the independent variables included nutrition interventions. The data obtained were then analyzed univariately with and bivariately using the T-test with an error degree of 0.05. This research has received permission from the Ethics Commission of the Faculty of Medicine, University of Nusa Cendana with Number: 86/UN15.16/KEPK/2022.

3. FINDING AND DISCUSSION

Finding

Tabel 1. Distribusi Frekuensi Anak Berdasarkan Umur, Jenis Kelamin, Riwayat ASI Eksklusif.

Karakteristik	Frekuensi	%
Umur (Bulan)		
6-11	2	10
12-36	18	90
Jenis Kelamin		
Perempuan	10	50
Laki_Laki	10	50
Riwayat ASI Eksklusif		
Ya	7	35.0
Tidak	13	65.0
Status Gizi		
Kurang	20	100
Riwayat ASI		
2 Tahun	7	35
< 2 Tahun	13	65
Berat Badan		
<10 kg	20	100
Lila		
<13cm	20	100
Pengetahuan		
Kurang	20	0
Baik	0	0

Sikap		
Positif	0	0
Negatif	20	0

Table 1 shows that most of the child respondents are aged between 12 – 36 months (90%). As many as 13 child respondents (65%) did not get exclusive breastfeeding with a history of breastfeeding <2 years by 13 respondents (65%). All respondents were undernourished children with a body weight below 10 kg and an upper arm circumference (LiLA) <13 cm..

Tabel 2. Statistik Deskriptif Pengetahuan dan sikap Ibu Balita Sebelum dan Sesudah Edukasi Gizi

Variabel	N	Mean	Std. Deviation	Minimum	Maximum
Pengetahuan_Ibu_Sebelum	20	12.30	1.380	10	14
Pengetahuan_Ibu_Sesudah	20	15.00	.000	15	15
Sikap_Ibu_Sebelum	20	12.80	1.399	10	15
Sikap_Ibu_Sesudah	20	16.00	.000	16	16

Table 2 shows the average value of knowledge of mothers under five has increased from 12.30 to 15.00 and experienced an increase in mother's attitude from 12.80 to 16.00.

Tabel 3. Hasil Test Statistik Wilcoxon Signed Ranks terhadap Pengetahuan dan Sikap Ibu Balita Sebelum dan Sesudah Edukasi Gizi

Pengetahuan_Ibu_Sebelum - Pengetahuan_Ibu_Sesudah	
Z	-3.942
Asymp. Sig. (2-tailed)	.000
Sikap_Ibu_Sesudah - Sikap_Ibu_Sebelum	
Z	-3.947
Asymp. Sig. (2-tailed)	.000

Table 3 shows the results of the non-parametric analysis using the Wilcoxon Signed Ranks test proving that there were significant differences in the knowledge of mothers before and after receiving nutrition education and that there were significant differences in attitudes of mothers before and after receiving nutrition education. This is indicated by the significant value of knowledge and attitudes of mothers before and after nutrition education of 0.000 <0.05.

Discussion

Pengaruh Edukasi Gizi terhadap Perubahan Pengetahuan Ibu Balita Gizi Kurang

Knowledge is the result of knowing, and occurs after someone senses a certain object. Without knowledge a person has no basis for making decisions and taking action on the problems faced (Achmadi, 2013). Malnutrition is a condition where the body experiences a lack of nutrients which can cause a decrease in the immune system. Malnutrition is a state of severe malnutrition caused by low consumption of protein energy from daily food and occurs for quite a long time (Sodikin, 2013).

Malnutrition can develop into malnutrition, namely a state of malnutrition that lasts a long time so that the breakdown of fat reserves takes place continuously and the impact on children's health will become increasingly complex, moreover poor nutritional status can cause death (Adiningsih, 2010). The way to prevent malnutrition in children is to provide balanced nutritional food in the amount needed, weigh them regularly at health service facilities (posyandu/puskesmas), if a child is sick, they are immediately taken to a health service facility. The family pays attention to the child's growth and development. The above cannot be done if the mother's knowledge is still minimal, therefore it is necessary to carry out interventions in the form of providing education so that the knowledge of mothers who previously did not know becomes aware.

Nutrition education is a form of health education in the form of providing information, instructions, or increasing understanding related to nutrition and health. One of the goals of nutrition education is to increase target knowledge about nutrition. Knowledge of good nutrition will have an impact on changes in attitudes and behavior of good nutrition. Academic Nutrition and Dietetics (AND) defines nutrition education as a formal process to train the client's ability or increase the client's knowledge in choosing food, physical activity, and behavior related to maintaining or improving health. Thus the activities that must be carried out to improve nutrition knowledge, attitudes, behavior are nutrition education.

Nutrition education can increase mothers' knowledge and feeding practices even though children's growth does not increase directly. Nutrition education for mothers and caregivers of toddlers is one of Unicef Indonesia's recommendations to solve nutrition problems in Indonesia. Nutrition education can be done individually or in

groups. From the research that has been done, the nutritional counseling intervention method is proven to be able to increase the knowledge and attitudes of mothers of toddlers.

Based on the results of this study, it is known that there is an effect of nutrition education on changes in the knowledge of respondents, in this case mothers of under five children. The results of the non-parametric analysis using the Wilcoxon Signed Ranks test in Table 4.5 show that there are significant differences in the knowledge of mothers before and after receiving nutrition education. This is indicated by the significant value of mother's knowledge before and after nutrition education of $0.000 < 0.05$.

The type of information provided during counseling is Proper Feeding of Infants and Children. In the process of feeding infants and children, it is necessary to pay attention to the following factors, including the type of food given must be age-appropriate. 0-6 months breast milk only, 6 months and over are given MP-ASI and continue to breastfeed until the child is 24 months old. Likewise with the texture and amount of food given must be according to the age of the child. The frequency of meals must be right, 3x main meal and 2x snack. Besides that, variety is also very necessary in feeding so that children do not get bored easily with the type of food given. And the most important thing is the cleanliness of the food. The media used are leaflets and flipcharts, as well as assistance.

Information provided in counseling can increase mother's knowledge about Feeding Infants and Children. The more often the mother gets health information, especially about nutrition, the better the mother's knowledge about Feeding Infants and Children. Efforts to increase nutritional knowledge through nutrition counseling are the right steps to be taken by health workers and supported by concerned parties, meaning that the better the mother's knowledge about Infant and Child Feeding, the child's growth will also improve (Gibney MJ et al., 2009).

This research is in line with the results of research from Azzahra and Muniroh (2019) which also showed a change in knowledge after being given an intervention. The intervention carried out was in the form of nutritional counseling. 6 The same research was also conducted by Noor, Marhaeni, and Umar (2019) regarding the effect of nutrition education on changes in mother's knowledge. This is shown based on the results of the Wilcoxon test and it is concluded that there is a significant effect of Toddler Nutrition Education on mother's knowledge with a p.value of $0.000 < \alpha = 0.05$.

According to Rahayu, Tamrin, Wulandari's research (2019) concerning 'The Effect of Nutrition Education on Toddler Mothers on Weight Changes for Toddlers Experiencing Nutritional Problems' with the results of statistical tests using the Paired Sample T-Test obtained a p value of $0.00 \leq 0.05$. 8 From These results indicate that there is an effect of nutrition education on toddler mothers on changes in the weight of toddlers who experience nutritional problems. Counseling or health education provided to mothers under five in this study were in the form of flipcharts and leaflets. The media can influence and change a person's behavior. The education carried out provides new information to mothers of toddlers regarding good parenting methods, especially how to provide the right feeding patterns, types, variations of food that are appropriate and interesting. So that the more knowledge one has, the better feeding behavior for toddlers will emerge.

In Husna's research (2019) shows that nutrition education can change the knowledge, skills and attitudes of toddler mothers in fulfilling food needs which affect the increase in toddler weight. 9 Nutrition education is quite effective and useful in terms of increasing body weight and nutritional status, reducing infectious diseases, as well as an increase in the appetite of toddlers. This means that nutrition education can provide a new picture for mothers of toddlers in processing a variety of foods so that it has an impact on increasing their toddler's appetite. Because toddlers who have a good appetite will improve their nutritional status so they can avoid various infectious diseases such as coughs, colds, fever and diarrhea.

The Influence of Nutrition Education on Changing the Attitudes of Mothers of Undernourished Toddlers

Attitude is a form of feeling, namely a feeling of support or partiality (favorable) or unfavorable feelings towards an object. Attitude is a pattern of behavior, tendency or anticipatory readiness, predisposition to adapt in social situations, or simply which is a coordinated response to social stimulation. Attitude can also be interpreted as a positive or negative aspect or assessment of an object (Rinaldi, 2016).

Attitude is how the opinion or assessment of people or respondents to matters related to health, health-illness and health risk factors. Attitude is a syndrome or a collection of symptoms in response to a stimulus or object so that the attitude involves thoughts, feelings, concerns and other psychological symptoms. 10 Information in health education can change mindsets for the better so that attitudes change. This is in accordance with the opinion expressed by Azwar that personal experience, culture, other people, mass media, religious institutions or institutions as well as individual emotional factors are factors that can influence the formation of attitudes.

Rusmiati and Hastono argue that the formation of attitudes begins with knowledge that is perceived as positive or negative, then internalized within a person. In addition, this increase in positive or positive attitudes is due to information provided when providing health education which suggests that fulfilling nutrition to prevent

malnutrition is important. Based on the Guidelines for the Prevention and Management of Malnutrition in Toddlers (Kemenkes RI, 2019), the recovery of malnourished children takes approximately 6 months, but treatment in inpatient services can be carried out until there are no medical complications, bilateral pitting edema is reduced and the appetite is good (regardless of nutritional status based on anthropometric indices), but nutritional recovery to weight/pb or weight/height > -2 SD and/or LiLA ≥ 12.5 cm and without bilateral pitting edema can still be continued with outpatient care at outpatient services if available. If outpatient services are not available, nutritional recovery until recovery is carried out in inpatient services.

The management of malnourished children consists of 4 phases of care and treatment, namely the stabilization phase, the transition phase, the rehabilitation phase and the follow-up phase. However, not all malnourished toddlers will go through these 4 phases. The stabilization and transition phases for malnourished toddlers who need inpatient services, while the rehabilitation phase can be carried out on outpatient services. If outpatient services are not available, then the rehabilitation phase until the toddler reaches the recovery criteria can be carried out in inpatient services (Ministry of Health RI, 2019). The stabilization phase is the initial phase of treatment which generally lasts 1-2 days, but can continue for up to one week according to the child's clinical condition. Monitoring in the stabilization phase is carried out by recording vital signs (pulse, respiratory rate, body temperature), signs of danger, degree of edema, formula intake, frequency of defecation, stool consistency, urine volume and body weight.

The transition phase is a period of transition from the stabilization phase to the rehabilitation phase with the aim of giving the body the opportunity to adapt to increasing energy and protein intake. Monitoring in the transition phase is the same as in the stabilization phase. The stabilization phase can be given in outpatient or inpatient services. This phase is the feeding phase for catch-up growth. Providing energy of 150-220 kcal/kgBB/day in the form of F100 or RUTF, gradually adding food according to body weight. Generally lasts 2-4 weeks. Progress in therapy was assessed by weight gain after the transition phase and received F100 or RUTF. Monitoring during the rehabilitation phase was carried out by recording formula intake and weight gain.

The follow-up phase is a continuation of feeding to catch up with growth by providing family food and Providing Supplemental Food for Recovery (PMTP-P). Based on the results of this study, it is known that there is an influence of nutrition education on changes in the attitude of respondents in this case mothers of under-fives with malnutrition. The results of the non-parametric analysis using the Wilcoxon Signed Ranks test in Table 4.7 show that there are significant differences in the attitudes of mothers before and after receiving nutrition education. This is indicated by the significant value of the mother's attitude before and after nutrition education of $0.000 < 0.05$.

The results of this study also showed an increase in knowledge and changes in attitudes of mothers in feeding after the nutrition education intervention was carried out in the form of counseling. This means that nutrition education plays an important role in improving the health status of individuals, groups and communities, especially in reducing malnutrition in toddlers.

This research is in line with the results of research from Kustiani and Misa (2018) which also showed a change in attitude after being given intervention in the form of counseling. The research design used was also the same, namely a quasi-experimental one group pretest posttest with a sample of 34 people. Counseling was carried out for 3 times (1x/week). Data collection on the variable knowledge, attitudes and practices of mothers was carried out using a questionnaire. The results showed that there were significant changes ($p < 0.05$) in knowledge, attitudes and practices of mothers in giving MP-ASI after being given nutrition counseling. Therefore, nutrition counseling has an effect on increasing knowledge, attitudes and behavior of mothers in giving MP-ASI to infants aged 6-24 months.

The same research was also conducted by Dewi and Aminah (2016) regarding the effect of nutrition education. The intervention was in the form of nutrition education using PMBA booklets. The research design uses a quasi-experimental design with a pre-post test two group design. The number of research subjects in groups one and two were 20 people respectively. The data collected included mother's age, education, working status, breastfeeding, starting MP-ASI, receiving nutrition counseling, pre-post knowledge, pre-post feeding practice. The interventions provided in this study were in the form of nutrition education using the Feeding for Infants and Children (IYCF) booklet, how to wash hands properly, a list of household measurements and examples of dishes given 3 times with an interval of 1 week. This intervention was carried out for 10 days.

According to Naulia, Hendrawati, Saudi (2021), through research entitled 'The Influence of Nutrition Education on Mother's Knowledge and Attitudes in Fulfilling Stunting Toddler Nutrition' shows that nutrition education can increase knowledge and attitudes in fulfilling nutrition so that nutritional nutrition can be an alternative intervention to improve health behavior. This is in line with the results of this study which showed an increase in knowledge and attitudes of mothers under five after counseling interventions were carried out.



4. CONCLUSION

This study shows that there is an increase in mother's knowledge from 12.30 to 15.00. there is an effect of nutrition intervention in the form of counseling on mother's knowledge, there is an effect

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