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The Effect of Nutritional Education and Healthy Food Processing Training Local Food Materials on Knowledge and Behavior of Mothers in Feeding for Toddlers

Febrina Sulistiawati[1], Dian Neni Naelasari[2]
[1,2]*Nutrition Science Study Program, Universitas Nadhlatul Ulama, Indonesia*
r_febri@yahoo.co.id, dian91neni@gmail.com

Abstract

Nutrition education and training on healthy food processing made from local food is one of the efforts to increase knowledge and improve mother's behavior in processing healthy foods that are diverse, nutritious and balanced and safe for toddlers to consume. The purpose of this study was to determine the effect of nutrition education and training on healthy food processing made from local food on mother's knowledge and behavior in feeding toddlers. The method used in this study is a quasi-experimental with non-equivalent control group design. The sample in this study was 60 mothers of children under five who were divided into 2 groups, namely the control group and the intervention group.

Keywords
nutrition education; healthy food training; local food

I. Introduction

Stunting describes chronic undernutrition status during growth and development since early life. This situation is presented with a z-score of height for age (TB/U) less than -2 standard deviations (SD) based on growth standards according to WHO. Based on Riskesdas 2018 data in Indonesia, there are 29.9% of children under two years old. (baduta) was stunted. Meanwhile, the stunting prevalence rate in NTB is currently 33.5%. Meanwhile, stunting cases in East Lombok are still high. Of the ten regencies/cities in West Nusa Tenggara Province, East Lombok Regency ranks first in stunting cases. Based on data compiled by the NTB Provincial Health Office, the prevalence of stunting in 2018 reached 43.52%; means it is in the very bad category.increasing human resources (HR), improving the quality of feeding for infants and children (PMBA), increasing nutrition education, and strengthening nutrition interventions at Puskesmas and Posyandu.

Increased nutrition education needs to be done because in food processing practices, many mothers of toddlers do not understand the nutritional content of food ingredients and how to process healthy and nutritious menus. In addition, many people think that balanced nutritious food is considered expensive food so that people need to be given understanding and training that the local food around them can be processed into high quality and nutritious food as well as an effort to prevent stunting and support government action programs. reduce stunting rates. Several previous studies have studied the influence of mother's knowledge and attitudes on children's food intake, (Shookri, 2011) the effect of nutrition education on mother's knowledge and attitudes in fulfilling stunting toddler nutrition, (Naulia, 2021) and the effect of nutritional counseling on changes in mother's knowledge and behavior in giving MP –Breastfeeding (Ade, 2020). Based on this, this study was conducted with the aim of looking at the effect of nutrition education and training on processing healthy foods made from local foods on the knowledge and behavior of mothers in feeding toddlers as an effort to prevent stunting in the community.

II. Research Methods

This study is a quantitative study using a quasi-experimental method with a non-equivalent control group design. The sample in this study were 27 respondents in each group. To anticipate drop out, 10% of the total sample was added so that 30 samples were obtained for each control group and intervention group so that the total sample in this study was 60 people. The research was conducted in South Masbagik Village, Masbagik District, and East Lombok Regency.

The research stage begins with giving a pre-test to the control group and the intervention group. Furthermore, the control group did not receive any intervention, while the intervention group was given nutrition education using lecture and discussion methods. Educational materials include nutrition during pregnancy, exclusive breastfeeding, feeding infants and children, clean and healthy living behavior, local food, and food safety. In addition, the intervention group was also given training in processing healthy food from local foods that are widely available in the area. Local food ingredients used include rice, corn, moringa vegetables, carrots, tofu, tempeh, chicken, shrimp and eggs. Seven days after being given nutrition education and training, a post test was conducted on the intervention group, as well as on the control group.

Collecting data using a questionnaire that has been tested for validity and reliability by previous researchers. Respondent characteristic data were analyzed by frequency distribution. Knowledge and behavior data were assessed and categorized into 3 categories, namely good (>70-100%), sufficient (50-70%) and less (<50%). Data analysis begins with normality test which is then continued with univariate analysis.

III. Discussion

3.1 Results

a. General Characteristics of Respondents

General characteristics of respondents include general characteristics of mothers of children under five, namely occupation, education, income and age, and general characteristics of children under five including age and gender can be seen in the following table:

Table 1. General Characteristics of Respondents

General characteristis	Frequency (n) Intervention	Percent (%)	Frequency (n) Control	Percent (%)
Work				
IRT	22	73.3	17	56.7
civil servant	1	3.3	2	6.7
Private	7	23.3	11	36.7
Total	30	100.0	30	100.0
Education did not pass elementary	0	0.0	2	6.7
school SD	4	13.3	5	16.7
junior high school	6	20.0	7	23.3
senior High School	18	60.0	8	26.7
PT	2	6.7	8	26.7

Total	30	100.0	30	100.0
Income				
<500000	15	50.0	20	66.7
500000-1000000	9	30.0	8	26.7
>1000000	6	20.0	2	6.7
Total	30	100.0	30	100.0
Mother's age				
18-40 years (young adults)	29	96.7	26	86.7
>40 years old (old village)	1	3.3	4	13.3
Total	30	100.0	30	100.0
toddler age				
0-23 months	17	56.7	9	30.0
24-36 months	7	23.3	5	16.7
37-59 months	6	20.0	16	53.3
Total	30	100.0	30	100.0
Gender				
Man	17	56.7	19	63.3
Woman	13	43.3	11	36.7
Total	30	100.0	30	100.0

Based on table 1, it is known that most of the occupations of mothers under five in the treatment group and control group are housewives (IRT) with a percentage of 73.3% in the treatment group and 56.7% in the control group. The education level of mothers under five in the treatment group was mostly at the high school level (60%), while the control group was at the high school and college level (26.7%). For the income level, most mothers of children under five have an income of <Rp. 500.000,- in both the treatment group (50.0%) and the control group (66.7%). The maternal age in both groups was almost entirely in the range of young adults (18-40) years with a percentage of 96.7% in the treatment group and 86.7% in the control group. In general characteristics of toddlers, most of the children aged 0-23 months in the treatment group.

b. Knowledge

Nutrition education and training on healthy food processing made from local food were given to the intervention group, while the control group was not given any intervention. The frequency distribution of respondents' knowledge in the control group during pre-test and post-test can be seen in Table 2.

Table 2. Distribution of the knowledge frequency of the control group

Knowledge	Pre-test		Post-test		□ (%)
	n	Percentage (%)	n	Percentage (%)	
Well	5	16.7	4	13.3	-3.4
Enough	21	70.0	22	73.3	+3.3
Not enough	4	13.3	4	13.3	0
Total	30	100	30	100	

Based on the table above, it can be seen that during the pre-test, more than half of the respondents in the control group had sufficient knowledge (70%). After the post-test, the level of knowledge increased to 73.3% (there was an increase in knowledge with a sufficient category of 3.3%). Meanwhile, the frequency distribution of knowledge in the treatment group before and after the intervention can be seen in Table 3.

Table 3. Frequency Distribution of Knowledge of the Intervention Group before and after the Intervention

Knowledge	Before		After		□ (%)
	n	Percentage (%)	n	Percentage (%)	
Well	2	6.7	16	53.3	+46.6
Enough	21	70.0	14	46.7	-23.3
Not enough	7	23.3	0	0	+23.0
Total	30	100	30	100	

In the intervention group, the knowledge of most respondents before the intervention was in the sufficient category (70%) and decreased to 46.7% after the intervention with a decrease of 23.3%. While the knowledge of respondents in the good category increased by 46.6% after the intervention where before the intervention the percentage was 6.7% and after the intervention it became 53.3%.

c. Behavior

In addition to changes in knowledge, changes in the behavior of mothers giving healthy food to their toddlers were also observed before and after the intervention. The frequency distribution of respondents' behavior in the control group during pre-test and post-test can be seen in Table 4.

Table 4. Frequency Distribution of Control Group Behavior

Behavior	Pre-test		Post-test		□ (%)
	n	Percentage (%)	n	Percentage (%)	
Well	4	13.3	3	10.0	-3.3
Enough	19	63.3	18	60.0	-3.3
Not enough	7	23.3	9	30.0	+7.7
Total	30	100	30	100	

Based on the table above, it can be seen that most of the respondents in the control group during the pre-test had sufficient behavior (63.3%) in giving healthy food to their toddlers, after the post-test it decreased to 60% (there was a decrease in behavior in the moderate category as much as 3.3%). Meanwhile, the frequency distribution of the behavior of the treatment group before and after the intervention can be seen in Table 5.

Table 5. Frequency Distribution of Behavior in the Intervention Group before and after the Intervention

Behavior	Before		After		□ (%)
	n	Percentage (%)	n	Percentage (%)	
Well	4	13.3	23	76.7	+63.4
Enough	19	63.3	7	23.3	-40.0
Not enough	7	23.3	0	0	0
Total	30	100	30	100	

Based on the table above, it can be seen that in the intervention group, the behavior of giving healthy food to children under five before the nutrition education and training intervention was in the sufficient category (63.3%), after the intervention decreased by a percentage of 23.3% (the decrease in enough behavior was 40%). A very high increase was found in the good category, from 13% to 76.7% after the intervention (an increase in good behavior by 63.4%).

3.2 Discussion

a. Knowledge

Based on the results of the research conducted, there was an increase in the knowledge of respondents in the intervention group after nutrition education and training in processing healthy food made from local food were carried out. The results of this study are in line with Ade's research (Ade, 2020) which shows that after nutrition counseling the level of knowledge of mothers with good categories increased from 14.7% to 67.7%. Several other studies also showed that there was an increase in the percentage of mother's knowledge after nutrition counseling. (Azria, 2016; Leokuna, 2016).

Nutrition education is the most important part in efforts to improve community nutrition. Counseling and education provided can affect a person's knowledge and attitude in acting so that it becomes a pattern of behavior that changes for the better. So the role of the mother is very important in an effort to improve the nutritional status of toddlers (Suhardjo, 2003). Other studies have shown that toddlers with less maternal knowledge have a significant relationship with poor nutritional status than toddlers whose mothers have good or sufficient knowledge (Ningsih, 2014). Parental responsibility for children's health is to be able to take the initiative in choosing the type of food that can meet the child's balanced nutrition (Adinda, 2019). Nutritional problems or malnutrition are closely related to children's diet. One of the nutritional problems experienced by school children is stunting (Purnasari in Aini, 2021). One of the criteria for underdeveloped districts is food insecurity (Meliyanti, 2021).

The results of Yunitasari et al's (2020) research stated that health education using the CBD method (lectures, brainstorming and demonstrations) can increase the knowledge, attitudes and actions of mothers in preventing stunting in toddlers can affect the form of maternal parenting and nutritional knowledge which in turn affects the nutritional status of toddlers (Rahma, 2016). Meanwhile, from the research conducted by Momongan and Sahelangi (2018) it was found that there was a significant difference in the knowledge of under-five mothers before and after training on making MP-ASI based on local food.

b. Behavior

The results showed that there was an increase in the behavior of giving healthy food to children under five after nutrition education and training in processing healthy food made from local food were carried out. Several studies also prove that there is an increase in maternal behavior after being given nutrition education (Ade, 2020; Kustiani, 2018; NIsa, 2020). Setyaningsih & Agustini (2014) stated that according to Precede's theory (Binkley and Johnson), factors that shape a person's behavior include predisposing factors, enabling factors, and reinforcing factors. The predisposing factor that influences good maternal behavior in this study is knowledge. Good maternal knowledge after being given education is the basis for the formation of attitudes and ultimately can form better behavior than before, where the better the mother's behavior in fulfilling child nutrition, the better the better the nutritional status of the child.

c. The Effect of Nutrition Education and Training on Healthy Food Processing Made from Local Food on Knowledge and Behavior Levels

The results showed that nutrition education and training on healthy food processing made from local food had a significant effect on the level of knowledge and behavior of respondents in the intervention group. While in the control group, from the p-value it can be seen that there is no significant difference in the pre-test and post-test of respondents. This result is in line with the results of Naulia et al's (2021) research which stated that there was an increase in knowledge in meeting the nutritional needs of their children in the intervention group after being given nutrition education, while in the control group there was no significant difference between nutrition education and the level of knowledge and attitudes of mothers of stunting toddlers. Other studies have shown that maternal nutrition education interventions significantly increase knowledge, attitudes and practices of mothers in providing complementary foods to their children. Nisa's (2020) research also proves that there is an effect of nutrition education on the knowledge, attitudes and feeding behavior of mothers with undernourished toddlers. Increased information obtained by mothers from nutrition education and processing training Food affects the behavior of mothers in the selection and processing of nutritious food for their children. The increased knowledge and behavior of mothers is expected to improve children's eating patterns so that the nutritional status of children is always in a good position. The increased information obtained by mothers from nutrition education and food processing training affects the behavior of mothers in selecting and processing nutritious food for their children. The increased knowledge and behavior of mothers is expected to improve children's eating patterns so that the nutritional status of children is always in a good position.

IV. Conclusion

Based on the results of the research conducted, it was found that nutrition education and training in processing healthy foods made from local foods can increase mother's knowledge and have a real influence on mother's behavior in feeding her toddler.

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