



## The Effect of Education Using the Health Belief Model Approach on Mother's Behavior in Preventing Malnutrition for Toddlers Aged 1-3 Years

Naya Ernawati<sup>1</sup>, Intan Purnamasari<sup>1</sup>, Nurul Hidayah<sup>1</sup>, Erlina Suci Astuti<sup>1</sup>

<sup>1</sup>Politeknik Kesehatan Kemenkes Malang

\*Corresponding Author: Naya Ernawati

E-mail: [naia.erna@gmail.com](mailto:naia.erna@gmail.com)



### Article Info

#### Article history:

Received 17 January 2024

Received in revised form 13

March 2024

Accepted 20 March 2024

#### Keywords:

Health Belief Model

Behavior

Malnutrition Prevention

Toddler

### Abstract

Toddlers are the age group most often and prone to suffering from malnutrition or malnutrition. One of the causes of high malnutrition is the lack of public awareness in health care, especially mothers for their toddlers and monotonous counseling methods. One way to improve toddler health care can be done by providing education to mothers with various models, one of which is using the Health Belief Model approach. Education with the Health Belief Model approach provides a strong relevance between health education and behavior change. To find out the Effect of Education Using the Health Belief Model Approach on Mother's Behavior in Preventing Malnutrition in Toddlers Aged 1-3 Years at Posyandu Mawar, Kalipare Village, Malang Regency. This study used a pre-experimental design with a one group pretest and posttest design approach. The population of this study were mothers who had toddlers aged 1-3 years with malnutrition and at risk of 75 respondents who were then taken using a purposive sampling technique which obtained 42 respondents. The results of statistical tests using the Wilcoxon signed rank test obtained the value of Sig. (2-tailed)  $p$ -value = 0.00 ( $p < 0.05$ ) which means that there is an effect of education using the Health Belief Model approach on maternal behavior in preventing malnutrition in toddlers aged 1-3 years at Posyandu Mawar, Kalipare Village, Malang Regency. It is hoped that this research can be used to improve maternal behavior in preventing malnutrition in toddlers aged 1-3 years.

### Introduction

Nutritional status is very important during the first five years of a toddler's life, when the toddler's body and brain are developing rapidly. Toddlers are the age group that most often suffers from malnutrition or malnutrition (Carolin et al., 2020). If the nutritional needs of toddlers cannot be met properly, nutritional disorders can occur during this period and will have an impact in the future (Ramadani et al., 2019). Long-term nutritional disorders in toddlers can cause problems with children's growth and development, such as wasting, stunting and the development of mental disorders (Nugraheni et al., 2018).

Prevalence of East Java Health Profile Data in 2018, nutritional status of toddlers based on the BB/U index, 3.35% of toddlers were malnourished, 13.43% of toddlers were malnourished. Based on data from the August 2019 Weighing Month, the percentage of underweight (BB/U) toddlers in Indonesia, especially in East Java, was 9.8% (East Java Provincial Health Service, 2020). Problems and performance of nutrition programs in East Java Province, especially in Malang Regency, in 2017 were characterized by chronic nutritional problems with a percentage

of underweight toddler nutritional status of 8.6% (Ministry of Health of the Republic of Indonesia, 2018).

One of the causes of high levels of malnutrition is the lack of public awareness regarding health care, especially mothers, of their children under five (Mauludi et al., 2018). The two main factors that cause nutritional disorders in toddlers are internal factors and external factors. Internal causes include infectious diseases, birth history, exclusive breastfeeding and the type of food consumed in good quality and quantity. External causal factors are gender, socio-economic, education, knowledge, income, inadequate parenting patterns, poor environmental sanitation, low food security at residential level and behavior towards health services.

Efforts to improve toddler nutrition can be assisted by holding nutrition education activities. In accordance with the role of nurses as educators, they can provide health education using various models, one of which is the Health Belief Model approach. Providing education using the Health Belief Model approach carried out by nurses can create perceptions that can determine a person's health behavior towards an illness (Anggraeni et al., 2020). Education using the Health Belief Model approach provides strong relevance between health education and behavior change (Rachman et al., 2021).

The results of preliminary data study interviews on December 3 2022 with Posyandu Mawar cadres in Kalipare Village, Malang Regency, stated that there were still many cases of malnutrition and the behavior of mothers at Posyandu Mawar in general was not as expected. Based on interviews with 10 mothers with children aged 1-3 years, 4 mothers said they only gave them rice with simple side dishes such as tofu, tempeh and eggs because their children had difficulty eating and did not like eating vegetables. 3 mothers said they only gave them food such as bread and snacks because their children didn't like rice. Eat rice only once every 2 weeks. 3 mothers said they gave their children just rice with soup without vegetables and fish. In the question session, all mothers had heard about balanced nutrition, but only 3 mothers knew what balanced nutrition was, 2 out of 10 mothers could mention the benefits of balanced nutrition. All mothers said they had received general health information through posyandu, magazines, newspapers, social media, as well as family or neighbors.

## Methods

The research design carried out in this study was Pre Experimental with a one group Pretest-Posttest Design approach. This research was carried out at Posyandu Mawar, Kalipare Village, Malang Regency on 5 May-10 June 2023. The total population was 75 people and the sample taken was 42 respondents. Data collection was carried out by providing a questionnaire to fulfill one's nutritional status after being given education using the Health Belief Model approach. Measurements were carried out twice, namely before (Pretest) and after treatment (Posttest). Data analysis was carried out by data tabulation and hypothesis testing. The level of significance used is 0.05. The statistical test used is the Wilcoxon Test statistical analysis.

## Result and Discussion

### Analisis Univariat

Table 1. Characteristics of Mother Respondents

	Category	Frequency	Percentage %
Age	20-24 Year	10	23,8
	25-29 Year	18	42,9
	30-34 Year	9	21,4
	35-39 Year	5	11,9
<b>Total</b>		<b>42</b>	<b>100,0</b>
Work	Work	12	28,6

	Doesn't work	30	71,4
<b>Total</b>		<b>42</b>	<b>100,0</b>
Education	Elementary School/Equivalent	22	52,4
	Middle School/Equivalent	13	31,0
	High School/Equivalent	7	16,6
<b>Total</b>		<b>42</b>	<b>100,0</b>
Income	<3.000.000	30	71,4
	>3.000.000	12	28,6
<b>Total</b>		<b>42</b>	<b>100,0</b>
Number of children	1	21	50,0
	2	11	26,2
	3	4	9,5
	>3	6	14,3
<b>Total</b>		<b>42</b>	<b>100,0</b>
Have received previous health education	YES	40	100,0
	NO	0	0
Place	Public health center	13	31
	Integrated Healthcare Center	29	69
How many times	1-3	19	45,2
	4-6	21	50
	7-10	2	4,8
<b>Total</b>		<b>42</b>	<b>100,0</b>

The majority of respondents were of productive age, namely 21-40 years old, with the largest percentage aged 25-29 years (42.9%) the number of respondents being 18 people. Judging from the income, most of the respondents or 30 people (71.4%) had low income (below the minimum wage), in terms of education, almost half of the respondents had the last education, namely elementary school/equivalent (52.4%) as many as 22 people and in terms of employment. Most of the respondents were mothers who did not work as many as 30 people (71.4%). All respondents had also received health education before, with the largest percentage at Posyandu, 29 people (69%).

Table 2. Character of Respondents' Children

	Category	Frequency	Percentage %
Age	1 Year	14	33,3
	2 Year	17	40,5
	3 Year	11	26,2
<b>Total</b>		<b>42</b>	<b>100,0</b>
Jenis Kelamin	Woman	28	66,7
	Man	14	33,3
<b>Total</b>		<b>42</b>	<b>100,0</b>
Nutritional status	Good Nutrition	33	78,6

	Malnutrition	9	21,4
<b>Total</b>		<b>42</b>	<b>100,0</b>
Tall	<68,9 cm	3	7,1
Body/Length	68,9 – 79,2 cm	13	31
Body	80 – 92,9 cm	16	38,1
	87,4 – 101,7 cm	10	23,8
<b>Total</b>		<b>42</b>	<b>100,0</b>
Weight	<7 kg	4	9,5
	7 – 11,5 kg	13	31
	9 – 14,8 kg	15	35,7
	10,8-18,1 kg	10	23,8
<b>Total</b>		<b>42</b>	<b>100,0</b>

Based on the table above, the characteristics of children based on age show that there are more than 2 years old with 17 people (40.5%), the gender of the children is mostly girls, 28 people (66.7%), for the number of children there is no significant difference and for The nutritional status of 33 children (78.6%) was good and 9 children (21.4%) were malnourished. For the weight of toddlers with the highest number, namely 9-14.8 kg, there were 15 people (35.7%).

Table 3. Maternal Behavior Levels in Malnutrition Prevention According to Knowledge Domain

Knowledge Mother	Category	F	(%)	Mean	SD	Difference
<i>Pretest</i>	Good	19	45,2	7,95	0,5	0,9
	Enough	23	54,8			
	Less	-	-			
<i>Posttest</i>	Good	25	59,5	8,86	0,9	
	Enough	17	40,5			
	Less	-	-			
<b>Sum</b>		42	100			

Based on the table above, it shows the results of measuring maternal behavior according to the knowledge domain on the questionnaire sheet before and after being given education using the Health Belief Model approach to preventing malnutrition in toddlers aged 1-3 years. These data show that all respondents experienced an increase with the pretest assessment of 19 people (45.2%) as good and 23 people (54.8%) as fair. For the posttest assessment, 25 people (59.5%) had a good rating and 17 people (40.5%) had a fair rating. Meanwhile, the mean pretest result was 7.95 and posttest 8.86 with a difference of 0.9.

Table 4. Maternal Behavior Levels in Prevention of Appropriate Malnutrition With Attitude Domain

Topic	Domain Mother's attitude	Category	Frequency	Percentage %	Mean	Elementary school	Difference
<i>Percieve</i>	<i>Pretest</i>	Good	7	16,6	14,29	1	
		Enough	23	54,7			
<i>Susceptibility</i>	<i>Posttest</i>	Not Enough	12	28,7			
		Good	29	69			2,69
		Enough	12	28,6	16,98	3,2	
		Not Enough	1	2,4			

	<b>Amount</b>		<b>42</b>	<b>100</b>			
		Good	7	16,6			
	<b>Pretest</b>	Not Enough	22	52,4	13,38	1,1	
<i>Percieved Severity</i>		Enough	13	31			2,67
	<b>Posttest</b>	Good	25	59,5			
		Enough	15	35,7	16,05	3,5	
		Not Enough	2	4,8			
	<b>Amount</b>		<b>42</b>	<b>100</b>			
		Good	8	19			
	<b>Pretest</b>	Enough	21	50	14,7	0,8	
<i>Percieved Barrier</i>		Not Enough	13	31			1,32
	<b>Posttest</b>	Good	26	62			
		Enough	14	33,3	16,02	3,3	
		Not Enough	2	4,7			
	<b>Jumlah</b>		<b>42</b>	<b>100</b>			
		Good	8	19			
	<b>Pretest</b>	Enough	22	52,4	12,95	0,9	
<i>Percieved Benefit</i>		Not Enough	12	28,6			
	<b>Posttest</b>	Good	25	59,5			3,02
		Enough	16	38,1	16,02	3,4	
		Not Enough	1	2,4			
	<b>Amount</b>		<b>42</b>	<b>100</b>			
		Good	8	19			
	<b>Pretest</b>	Enough	22	52,4	12,76	0,8	
<i>Cues to Action</i>		Not Enough	12	28,6			3,26
	<b>Posttest</b>	Good	25	59,5			
		Enough	15	35,7	16,02	3,2	
		Not Enough	2	4,8			
	<b>Amount</b>		<b>42</b>	<b>100</b>			
		Good	10	23,8			
	<b>Pretest</b>	Enough	20	47,6	13,62	0,8	
<i>Self Efficacy</i>		Not Enough	12	28,6			1,98
	<b>Posttest</b>	Good	23	54,8			
		Enough	17	40,4	15,6	3,2	
		Not Enough	2	4,8			
	<b>Amount</b>		<b>42</b>	<b>100</b>			

The data shows that the attitude domain is divided into 6 topics, namely Percieved Susceptibility (Perception of Vulnerability), Percieved Severity (Perception of Seriousness), Percieved Barrier (Perception of Barriers), Percieved Benefit (Perception of Benefit), Cues to Action, and Self Efficacy. In the Percieved Susceptibility assessment, 23 people (54.7%) had a pretest score in the sufficient category. For the posttest assessment, 29 people (69%) were in the good category. Meanwhile, the mean pretest result was 14.29 and posttest 16.98 with a difference of 2.69.

Perceived Severity (Perceived Seriousness) had a pretest assessment of 22 people (52.4%) in the sufficient category. For the posttest assessment, 25 people (59.5%) were in the good category. Meanwhile, the mean pretest result was 13.38 and posttest 16.05 with a difference of 2.67.

Perceived Barrier (Perceived Barrier) has a pretest score of 21 people (50%) in the sufficient category. For the posttest assessment, 26 people (26%) were in the good category. Meanwhile, the mean pretest result was 14.7 and posttest 16.02 with a difference of 1.32.

Perceived Benefit (Perception of Benefit) has a pretest score of 22 people (52.4%) in the sufficient category. For the posttest assessment, 25 people (59.5%) were in the good category. Meanwhile, the mean pretest result was 12.95 and posttest 16.02 with a difference of 3.26.

Cues to Action had a pretest score of 22 people (52.4%) in the sufficient category. For the posttest assessment, 25 people (59.5%) were in the good category. Meanwhile, the mean pretest result was 12.76 and posttest 16.02 with a difference of 3.02.

Self Efficacy has a pretest score of 20 people (47.6%) in the sufficient category. For the posttest assessment, 23 people (54.8%) were in the good category. Meanwhile, the mean pretest result was 13.62 and posttest 15.6 with a difference of 1.98.

Table 5. Maternal Behavior Levels in Malnutrition Prevention According to Behavioral Domain

Behaviour Mother	Category	F	(%)	Mean	SD	Difference
<i>Pretest</i>	Good	-	-	24,64	1,9	4,05
	Enough	42	100			
	Less	-	-			
<i>Posttest</i>	Good	12	28,6	28,69	4,5	
	Enough	30	71,4			
	Less	-	-			
<b>Sum</b>		42	100			

The data shows that all respondents have increased with the number of pre-test assessments of 42 people (100%) in the sufficient category. For the posttest assessment, 12 people (28.6%) had a rating in the good category and 30 people (71.4%) had a rating in the sufficient category. While the mean pretest result was 24.64 and the posttest was 28.69 with a difference of 4.05.

Table 6. Window of maternal behavior in the prevention of malnutrition according to the total score

Mother's behavior	Category	F	(%)	Mean	SD	Difference
<i>Pretest</i>	Good	7	16,7	111	14	16
	Enough	25	59,5			
	Less	10	23,8			
<i>Posttest</i>	Good	30	71,4	127	13,3	
	Enough	12	28,6			
	Less	-	-			
<b>Sum</b>		42	100			

Based on the table above, it shows the results of measuring maternal behavior in the overall domain score on the questionnaire sheet before and after being given education using the Health Belief Model approach to preventing malnutrition in toddlers aged 1-3 years. These data show that after being given education twice using the Health Belief Model approach, all respondents experienced an improvement with the number of pre-test assessments being 10

people (23.8%) low, 25 people (59.5%) moderate, 7 people (16.7%) tall. For the post test assessment, 30 people (71.4%) had a high assessment and 12 people (28.6%) had a medium assessment. Meanwhile, the mean pretest result was 111 and posttest 127 with a difference of 16.

### Bivariate Analysis

Tabel 7. Hasil Uji *Wilcoxon Signed Rank Test*

Category	N	Min – Max	Mean + SD	<i>p-hairy</i>
<i>Pretest</i>	42	69-153	111 + 14	0,000
<i>Posttest</i>	42	87-167	127 + 13,3	

The results of measuring maternal behavior in preventing malnutrition in toddlers aged 1-3 years were found to have a  $p$ -value value of  $0.000 < 0.05$ . The conclusion from the Wilcoxon Test is that  $H_1$  is accepted, which means there is an influence of education using the Health Belief Model approach on maternal behavior in preventing malnutrition for toddlers aged 1-3 years at Posyandu Mawar, Kalipare Village, Malang Regency.

### Description of mother's behavior before being given education using the Health Belief Model approach

An overview before being given education using the Health Belief Model approach, the respondent's behavior was measured first (pretest) and obtained results in accordance with the knowledge domain, namely 19 people (45.2%) were good and 23 people (54.8%) were fair with a mean pretest score of 7.95.

Then for the results of the assessment of the mother's attitude which was divided into 6 topics according to the questionnaire sheet, the Perceived Susceptibility (Perception of Vulnerability) results had a pretest score of 7 people (16.6%) in the good category, 23 people (54.7%) in the fair category and 12 people (28.7%) in the poor category with a mean pretest score of 14.29. Perceived Severity: 7 people (16.6%) in the good category, 22 people (52.4%) in the sufficient category, 13 people (31%) in the poor category with a mean pretest score of 13.38. Perceived Barrier (Perceived Barrier) has a pretest score of 8 people (19%) in the good category, 21 people (50%) in the sufficient category, 13 people (31%) in the poor category with a mean pretest score of 14.7. Perceived Benefit has a pretest score of 8 people (19%) in the good category, 22 people (52.4%) in the sufficient category and 12 people (28.6%) in the poor category with a pretest mean of 12.95. Cues to Action had a pretest score of 8 people (19%) in the good category, 22 people (52.4%) in the sufficient category, and 12 people (28.6%) in the poor category with a mean pretest score of 12.76. Self Efficacy has a pretest score of 10 people (23.8%) in the good category, 20 people (47.6%) in the sufficient category and 12 people (28.6%) in the poor category with a mean pretest score of 13.62.

Furthermore, to assess the mother's behavior according to the questionnaire sheet, 42 people (100%) obtained pre-test assessment results or all respondents were in the sufficient category. Judging from the overall score of the questionnaire filled in by respondents, 7 people (16.7%) behaved well, 25 people (59.5%) behaved adequately and 10 people (23.8%) behave less. Furthermore, the minimum value is 69 and the maximum value is 153 with an average value of 111.

This research is also in line with research conducted by (Duren, 2018) showing that the majority of respondents before nutrition education was carried out, respondents with good knowledge were 31.6%. After providing nutrition education, respondents with good knowledge increased to 86.8%.

According to researchers, the average obtained before being given education using the Health Belief Model approach was still in the medium category. In accordance with the assessment of

the pretest results in the knowledge domain, the lowest total score was for the statement "Paying attention to the nutritional value of food is more important than the amount of food eaten." People think that giving large portions to toddlers can fulfill their nutritional status without looking at whether the food contains nutrients or not. In the attitude domain which is divided into 6 discussion topics, the lowest score is in the cues to action topic for the statement "my family does not support me in preparing nutritious food for my children". The respondents in this study, namely mothers with toddlers, mostly experienced economic constraints in terms of fulfilling nutritional intake (income below the minimum wage). Most are unable to provide food with a balanced nutritional intake for their families (Radwan et al., 2021). Next, in the behavioral domain, the lowest score is in the statement "I feed my toddler rice with soup and crackers without side dishes such as tempeh or eggs and vegetables as the staple food for my toddler." Mothers who were respondents in this study did not have sufficient knowledge about malnutrition resulting in disruption to their children's growth, so parents did not do anything useful in taking measures to prevent malnutrition in toddlers aged 1-3 years. This is in accordance with the mother's very low education, namely elementary school/equivalent education, so the knowledge she has is lower compared to junior high school and senior high school education (Simanjuntak et al., 2022).

This was obtained from the pretest assessment which shows that maternal behavior in preventing malnutrition still needs to be improved. This is done by providing educational material using the Health Belief Model approach to increase maternal behavior in preventing malnutrition in toddlers aged 1-3 years. It can also be influenced by quantitatively receiving counseling on improving the nutritional status of toddlers and the counseling methods obtained.

### **Description of mother's behavior after being given education using the Health Belief Model approach**

The illustration after being given education using the Health Belief Model approach, the respondent's behavior was measured again (posttest) and obtained results in accordance with the knowledge domain, namely 25 people (59.5%) were good and 17 people (40.5%) were fair with a mean pretest score of 8.86.

Then for the results of the assessment of the mother's attitude which was divided into 6 topics according to the questionnaire sheet, the Perceived Susceptibility (Perception of Vulnerability) results had a posttest score of 29 people (69%) in the good category, 12 people (28.6%) in the fair category and 1 person (2.4%) in the poor category with a mean posttest score of 16.98. Perceived Severity (Perception of Seriousness) has a posttest score of 25 people (59.5%) in the good category, 15 people (35.7%) in the sufficient category, and 2 people (4.8%) in the poor category with a mean posttest result of 16.05. Perceived Barriers (Perceived Barriers) for the posttest assessment were 26 people (26%) in the good category, 14 people (33.3%) in the sufficient category, and 2 people (4.7%) in the poor category with a mean posttest result of 16.02. Perceived Benefit (Perception of Benefit) for the posttest assessment 25 people (59.5%) in the good category, 16 people (38.1%) in the sufficient category and 1 person (2.4%) in the poor category with a mean posttest result of 16.02. Cues to Action for the posttest assessment was 25 people (59.5%) in the good category, 15 people (35.7%) in the sufficient category and 2 people (4.8%) in the poor category with a mean posttest result of 16.02. Self Efficacy for the posttest assessment was 23 people (54.8%) in the good category, 17 people (40.4%) in the sufficient category and 2 people (4.8%) in the poor category. Meanwhile, the mean posttest result was 15.6.

Furthermore, for the assessment of maternal behavior according to the questionnaire sheet, 12 people (28.6%) received posttest assessment results in the good category and 30 people (71.4%) had an assessment in the sufficient category. Meanwhile, the mean posttest result was 28.69. Judging from the overall score of the questionnaire sheet filled in by respondents, the

assessment of maternal behavior in preventing malnutrition in toddlers aged 1-3 years was as much data as the total score on the questionnaire sheet obtained, namely 30 people (71.4%) behaved well and 12 people (28.6%) behaved fairly. Furthermore, the minimum value is 87 and the maximum value is 167 with an average value of 127.

In line with research conducted by (Suirvi et al, 2022) regarding the effectiveness of education based on the health belief model in hypertension sufferers. The research results showed that the mean value of respondents' perceptions after the intervention increased to 50.00. In line with research conducted by (Littman, 2021) it shows that after the intervention the behavior of respondents in the good category increased to 100%.

In accordance with the assessment of the posttest results in the knowledge domain, the total score that experienced the greatest increase was for the statement "Toddlers should be given snacks such as biscuits or green bean porridge at least once a day." After being given intervention twice, the mother who was the respondent in this study thought that giving toddlers snacks could also help prevent malnutrition for toddlers if the snacks given had nutritional value (Nadimin et al., 2021). In the attitude domain which is divided into 6 discussion topics, the score that has increased is in the Perceived Susceptibility topic for the statement "There is a possibility that my child will be susceptible to disease if his nutritional needs are not met." When health education was carried out using the Health Belief Model approach, respondents explained the risky conditions for toddlers if their nutritional status was not met properly. The greater the perceived risk, the greater the likelihood of engaging in behavior to reduce the risk. This is what encourages a person to behave in preventing the occurrence of a disease. Furthermore, the behavioral domain that experienced a lot of improvement was the statement "I feed toddlers rice with soup and crackers without side dishes such as tempeh or eggs and vegetables as the staple food for toddlers." Mothers who were respondents in this study, after being given education using the Health Belief Model approach, thought that they would not give their toddlers food without thinking about whether the food had nutritional value or not. If toddlers are continuously given this food, it will result in nutritional problems and the child's growth and development.

It can be seen in this study that there was an increase in the average value of maternal behavior in preventing malnutrition for toddlers after being given education using the Health Belief Model approach. This shows that choosing a method of providing education is very important to improve community behavior, especially using the Health Belief Model approach which is quite influential in improving maternal behavior in preventing malnutrition in toddlers aged 1-3 years (Choirunissa & Indrayani, 2018).

### **Overview of the effect of education using the Health Belief Model approach on maternal behavior in the prevention of malnutrition in toddlers aged 1-3 years**

The results of data analysis that can be concluded from table 7 using the Wilcoxon signed rank test are significant, which means that there is an influence of education using the Health Belief Model approach on maternal behavior in preventing malnutrition for toddlers aged 1-3 years at Posyandu Mawar, Kalipare Village, Malang Regency. The results of the analysis specifications can be concluded from table 3 to table 5 in calculating the difference between the average pretest and posttest scores in each domain, namely the behavioral domain that experienced the greatest increase in maternal behavior in preventing malnutrition in toddlers aged 1-3 years.

This is in line with research conducted by (Suirvi et al., 2022) regarding the effectiveness of health education based on the health belief model in hypertension sufferers. The research results show that education based on the Health Belief Model is effective in improving the perception of hypertension sufferers and their behavior in taking preventive measures is also increasing.

According to researchers, an increase in maternal behavior in preventing malnutrition is in accordance with the tabulated data table of respondents listed in the attachment on page 128 after being given education using the Health Belief Model approach can occur because respondents are explained the reality of health problems with failures which are able to convince respondents to try in paying attention to conditions at risk of malnutrition in toddlers aged 1-3 years (Choirunissa & Indrayani, 2018). In accordance with the results of the increase in the difference in average values, namely the behavioral domain that experienced the greatest increase, which means that after being given education using the Health Belief Model approach, respondents began to pay attention to the nutritional value of food rather than the portion of food that would be given to toddlers because toddlers are a group that is vulnerable to malnutrition. provide snacks at least once a day to help fulfill nutritional status and pay attention to how to process food for toddlers so that its nutritional value is not lost. Apart from that, according to researchers, the characteristics of the majority of respondents are mothers who do not work and are in the productive age category so that mothers have a lot of time to take part in educational activities using the Health Belief Model approach carried out by researchers and are able to receive the material well. So that maternal behavior in preventing malnutrition in toddlers has increased after the posttest assessment was carried out (Oemar & Novita, 2015).

## Conclusion

Based on the results of research and discussion regarding the influence of education using the Health Belief Model approach on maternal behavior in preventing malnutrition in toddlers aged 1-3 years at Posyandu Mawar, Kalipare Village, Malang Regency, the results of the research can be concluded that maternal behavior in preventing malnutrition before it is given education using the Health Belief Model approach. Most respondents had a sufficient level of behavior in preventing malnutrition in toddlers with an average score of 111. Mothers' behavior in preventing malnutrition after being given education using the Health Belief Model approach almost all of them had an increase in good behavior in preventing nutrition. bad with an average score of 127. The results of the analysis using the Wilcoxon signed ranked test showed a significant influence between providing education using the Health Belief Model approach on maternal behavior in preventing malnutrition in toddlers aged 1-3 years at Posyandu Malang, Kalipare Village, Regency Poor.

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