



## The Effect of Nutrition Counseling Using "My Plate Media Content" on Nutritional Knowledge Levels of Mothers of Toddlers Participating in Nutrition Classes

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### Abstract

The level of knowledge or lifestyle can lead to a pattern of multiple nutritional problems. Indonesia currently has a triple burden of nutrition problems, namely stunting, wasting and underweight as well as micronutrient deficiencies such as anemia. Data from the EPPBGM results of the Madapangga Health Center in August 2022 there were 2058 toddler targets, from these data showed 227 people (11.03%) targets experiencing underweigh, 157 people (7.63%) stunting, and 233 people (11.32%) wasting. The purpose of this study was to determine the effect of nutrition counseling using media contents of my plate on the level of nutritional knowledge of mothers of toddlers participating in nutrition classes. The research method used is a quasi experiment design with a Non Equivalent Control Group Design. Activities were carried out in February-March 2023, for 3 weeks with 3 meetings in each group with 60 research subjects consisting of 30 people in the treatment group and 30 people in the control group. The analysis used in this study was the Independent t test on 60 respondents in two classes, to determine the effect before and after providing nutritional counseling. The intervention provided was in the form of providing counseling with the "My Plate Contents" media for the treatment group and providing counseling without the "My Plate Contents" media for the control group. Data collection used questionnaires to measure the level of knowledge. Based on the results of the study, the level of knowledge of mothers of toddlers increased after being given nutritional counseling using media contents of my plate obtained  $p < 0.05$ , namely  $0.026 < 0.05$ . Based on the Independent t Test test, it was concluded that there was an influence before and after counseling on the knowledge of mothers under five. So that the conclusion is that there is a significant effect of nutrition counseling using "Media Isi Piringku" on the level of nutritional knowledge of mothers participating in nutrition classes in the work area of the Madapangga Health Center, Bima Regency.

**Keywords:** My Plate Contents; Nutrition Counseling; Mothers of Toddlers

### INTRODUCTION

Improving the health status of the community is necessary to build a healthy and quality generation. Nutrition is one of the important factors in determining the level of health. Indonesia is one of the countries that has complex nutritional problems. One of the main factors in the complexity of nutrition problems in Indonesia is a healthy lifestyle.ith balanced nutrition. Nutrition has a major role in

improving health, reducing mortality rates, increasing children's growth, physical, mental, social, productivity and academic achievement. Factors that influence nutrition problems include the knowledge of mothers of toddlers about nutrition, (Ministry of Health, 2013).

A person's level of nutritional knowledge affects attitudes and behavior in food selection and will further affect the nutritional state of the individual

concerned, (Kemenkes RI, 2014). Knowledge is acquired through various means such as print media (newspapers, leaflets, posters), electronic media (television, radio, video), family, and other sources of information. A person combines their experiences and observations to form their knowledge and includes new thoughts they get from information sources because additional information will develop their understanding of knowledge.

In addition to the level of knowledge that is an obstacle in the implementation of balanced nutrition, it is also related to the effectiveness of counseling activities and promotion of balanced nutrition guidelines in the community which still experiences various obstacles in the field, including technical issues of using effective promotional media so that the information conveyed is expected to be understood and last for a long time to achieve the goal of changing people's behavior. Therefore, a new strategy is needed to implement balanced nutrition guidelines in the community. To introduce the balanced nutrition guidelines more widely, a 'fill my plate' campaign was organized by the Ministry of Health. One of the activities was for participants to bring breakfast using a container that corresponds to the portion of the one-meal guide 'my plate'. This activity was quite effective in promoting balanced nutrition guidelines in the community. Ministry of Health, (2013)

One of the main targets in nutrition counseling and education is the mothers of toddlers participating in nutrition classes. The mothers of nutrition class participants who live in Madapangga sub-district are vulnerable to malnutrition. Data from the EPPBGM results of the Madapangga Health Center in August 2022 there were 2058 targets under five years old, from these data showed 227 people (11.03%) targets were underweight, 157 people (7.63%) were stunted, and 233 people (11.32%) were wasted.

With the prevalence of stunted toddlers at 7.63%, the prevalence of wasted toddlers at 11.32% and the prevalence of underweight toddlers at 11.03% (Puskesmas Madapangga, 2022), so that special handling is needed as a whole as an effort to overcome these problems. Counseling is one of the effective ways to improve mothers' knowledge in caring for and feeding toddlers so that the prevalence of underweight, stunting and wasting decreases. In accordance with previous research conducted (Putri and Abdi, 2018), on the effect of providing nutritional counseling on increasing knowledge in the work area of the Pajeruk Health Center, Ampenan, Mataram city, there is a significant effect of providing nutritional counseling on increasing knowledge before and after treatment.

In line with several studies such as Jayanti, (2017) states that there is a relationship between balanced nutrition knowledge and nutritional status in adolescent girls. Fadila, et al (2019) showed a relationship between maternal behavior about balanced nutrition and the nutritional status of kindergarten children. Likewise, the results of research conducted by Anggraeni, concluded that there is a relationship between knowledge, maternal attitudes, and puskesmas infrastructure regarding balanced nutrition on the nutritional fulfillment behavior of toddlers. Anggraeni, (2020)

## **METHODS**

This study was conducted from March 2023 to April 2023. The research was conducted in the villages of Bolo, Dena, Ncandi, Tonda and Woro, Madapangga sub-district, Bima Regency, West Nusa Tenggara, which are the villages implementing the toddler nutrition class.

This research is Quasi Experimental with the research design is Non Equivalent Control Group (Pre test and Post test). The sample in this study were

mothers of toddlers who had participated in nutrition class activities in 2022. The sampling method used purposive sampling method with the inclusion criteria of high school education or equivalent, willing to participate in the activity until completion, the treatment group was taken from a nearby village and the control group from a distant village, domiciled in the research area, the exclusion criteria were not willing to continue the activity and the subject was sick or moved.

The number of samples was 60 people who were divided into 2 groups, namely the treatment group of 30 people and the control group of 30 people. In this research design, pretests were conducted in both groups to determine the initial state of the sample and then given intervention in the form of counseling. In the treatment group, counseling is provided using the contents of my plate media while the control group provides counseling without using the contents of my plate media.

The type of data collected is primary data, namely data on the characteristics of mothers of toddlers, data on the level of knowledge of mothers of toddlers, and secondary data, namely an overview of the health center where the research was conducted. Data collection techniques are primary data on the characteristics of mothers under five, the level of knowledge of mothers under five before and after intervention in the treatment group and in the control group. While secondary data related to the general description of the health center is obtained from the health center profile.

Data analysis, Data were first tested for data normality with the Shapiro-Wilk test which was then analyzed using the Independent t Test. The study was conducted after obtaining an ethics approval letter from the ethics commission of the Mataram Health Polytechnic in accordance with the review decision

letter Number: LB.01.03/6.087/2023 on January 3, 2023.

## RESULTS AND DISCUSSION

The age of the sampled mothers was categorized into 3 categories, namely <20 years, 20-35 years and >35 years. The youngest age of the sample was 19 years and the oldest age of the sample was 50 years. The age of the sample was different and varied

**Table 1: Distribution of Samples by Age**

No	Age	Treatment		Control	
		n	%	n	%
1	< 20 age	1	3,33	0	0
2	20 – 35 age	16	53,33	24	80
3	> 35 age	13	43,33	6	20
Total		30	100	30	100

Table 1 shows that the age of the sample in the treatment group was only 1 (3.23%) sample aged under 20 years, while most were in the age category 20-35 years there were 16 (53.33%) and age > 35 years as many as 13 (43.33%). While in the control group most of the age of mothers of toddlers were in the age category 20-35 years, there were 24 (80%), in the age category > 35 6 (20%) and in the age category < 20 years did not exist.

The level of knowledge of mothers participating in nutrition classes is grouped into 3 categories, namely good, sufficient and less. As in the table below:

**Table 2: Sample Distribution Based on Education Level**

No	Education	Treatment		Control	
		n	%	n	%
1	Elementary/Middle School	0	0	0	0
2	Senior High School	30	100	30	100
3	Bachelor	0	0	0	0
Total		30	100	30	100

Table 2 shows the distribution of education levels that all samples, both treatment and control, have the same level of education, namely high school or equivalent, namely 30 (100%) treatment groups and 30 (100%) control groups.

Sample occupations were grouped into 3 groups, namely employees, self-employed and housewives. However, in this study it was found that all respondents, both treatment and control, had jobs as housewives or housewives.

**Table 3. Distribution of Samples Based on Occupation**

No	Mother's Job	Perlakuan		Kontrol	
		n	%	n	%
1	Self-employed	0	0	0	0
2	Housewife	30	100	30	100
3	Employee	0	0	0	0
Total		30	100	30	100

Table 3 shows that the occupations of mothers in the treatment group were all 30 (100%) housewives, while in the control group 30 (100%) were also housewives.

**Table 4. Distribution of Knowledge Level of Toddler Mothers Based on Pre Test and Post Test Results in the Treatment Group and Control Group**

No	Knowledge	Treatment				Control			
		Pre-test		Post test		Pre-test		Post test	
		n	%	n	%	n	%	n	%
1	Not Enough <56	30	100	2	6,66	30	100	4	13,33
		0	0	6	17,77	0	0	3	10,00
2	Enough 56-75	0	0	17	56,66	0	0	22	73,33
		0	0	6	17,77	0	0	3	10,00
3	Good 76-100	0	0	11	36,66	0	0	4	13,33
		0	0	6	17,77	0	0	3	10,00
Total		30	100	30	100	30	100	30	100

Table 4 shows that the average results before nutrition counseling in the treatment group were in the range of less than 30 (100%). After the provision of nutrition counseling has increased, namely most of the knowledge is sufficient 17 (56.66%), 11 (36.66%)

good knowledge, and less knowledge to 2 (6.66%) only.

Likewise, in the control group before giving counseling, the results of the level of knowledge was less than 30 (100%). And after the provision of nutritional counseling has increased knowledge most of the level of knowledge is sufficient 22 (73.33%), the level of knowledge is good 4 (13.33%), and the level of knowledge is less remaining 4 (13.33%).

**Table 5: Knowledge Distribution of Control and Treatment Classes at the Beginning and End of the Study**

Variable	Control		Experiment		Signifikansi (p)	
	Average ± SD		Average ± SD		Pre test	Post test
	Pre test	Post test	Pre test	Post test		
Knowledge	5,77 ± 1,755	16,27 ± 2,677	6,00 ± 2,304	17,80 ± 2,511	0,661	0,026

Table 5 shows the results of the independent t test analysis that the significance of the t value <0.05, namely 0.026 <0.05 = Reject Ho or accept H1 = The final ability of the experimental class and the control class is not the same or there is a difference in the final ability between the experimental class and the control class. This means that there is a difference in the final ability (post test results) between the experimental class and the control class as a result or influence of the treatment given.

**Table 6. Distribution of Differences in Post Test Score of Knowledge Level of Toddler Mothers between Treatment Group and Control Group**

Variable	Average ± SD		Signifikansi (p)
	Control	Experiment	
Knowledge	16,27 ± 2,677	17,80 ± 2,511	0,026

Table 6 shows the results of the independent t test analysis that it is known that there is a difference in the difference in the post-test knowledge value of respondents in the treatment group and control group with a sig. (2-tailed) = 0.026 (<0.05) with an average

value for the treatment group of 17.80 and in the control group 16.27. This means that there is an effect of counseling on the level of knowledge

The results of the study of the age of mothers participating in nutrition classes who became samples were categorized into 3 categories, namely <20 years, 20-35 years and >35 years. From the results of the study of the age of mothers of toddlers that in the treatment group there was only 1 (3.33%) sample aged under 20 years while in the control group there was none. In the age category 20-35 years there were 16 (53.33%) samples in the treatment group while in the control group there were 24 (80%). In the age category above 35 years, there were 13 (43.33%) in the treatment group and 6 (20%) in the control group.

In this study, the age of the sample was mostly adult age. A person's age also affects a person's power of capture. Compared to adolescence, early adulthood allows parents to care more about their children's development so that they are more interested and better able to absorb information (Rahmawati, Nurmawati and Permata Sari, 2019). The older the age the more knowledge you have (Maria Corneles, 2015). According to (Putra and Podo, 2017) that the older the age, the more developed the power of capture and mindset, so that the knowledge they get is getting better.

The level of education greatly influences a person to understand and receive information about nutrition. From the results of this study, it was found by researchers that all samples both treatment and control had the same level of education, namely high school or equivalent 60 (100%). This means that all respondents have the same level of initial ability to receive counseling material. The level of education according to Lestari in Wirawan (2016: 3) is "an activity of a person in developing his abilities, attitudes, and forms of behavior, both for future life where through certain organizations or not organized".

According to Law No. 20 of 2003, education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state of the Republic of Indonesia. A person's level of education can affect the level of knowledge, namely the higher the education, the higher a person's knowledge because high knowledge makes it easier for someone to receive new information so that they will not be indifferent to health information, while the lower the education, the information will be limited.

The results of this study on the occupation of mothers participating in nutrition classes that in the treatment group all 30 (100%) were housewives, while in the control group also 30 (100%) as housewives.

According to (Rahmawati, Nurmawati and Permata Sari, 2019) explains that being a housewife is considered a condition of mothers who lack information and spend a lot of time only at home with limited access to information, But nowadays there are many media that can be easily accessed anywhere and anytime. As a housewife, she has a lot of free time to access information or participate in various associations that allow her to exchange information.

The level of knowledge of mothers participating in nutrition classes is about the mother's understanding of nutritional knowledge. The nutrition knowledge given to mothers participating in nutrition classes is the substances contained in food, the right portion of food according to their needs and feeding patterns.

A person's nutritional knowledge can be assessed based on the respondent's answers to the questions given according to the questionnaire filled in (Arimurti, 2012). The value of pre-test nutritional knowledge in the control group and treatment group was in the category of less than < 56. This is thought

to be due to the fact that respondents have never received nutrition education before.

Nutrition counseling is a method and effort to improve nutrition knowledge. Nutrition counseling conducted with the contents of my plate media has an effect in the form of increasing nutritional knowledge to be good with the average value of the treatment group with a pre-test value of 30 (100%) in the deficient category, and the post-test value increases with an average value of 2 (6.66%) in the deficient category, 17 (56.66%) in the sufficient category, 11 (36.66%) in the good category. Whereas in the control group, the average pre-test value of 30 (100%) in the insufficient category increased in the post-test results to 4 (13.33%) in the insufficient category, 22 (73.33%) in the sufficient category, 3 (13.33) in the good category. This shows that the respondent's knowledge has increased and the respondent understands the material given. According to (Notoatmodjo, 2011) that increasing knowledge is not only influenced by the level of education possessed both formal and non-formal, but also influenced by sources of information, experience, and counseling activities.

According to the results of research (Rinda and Astusi, 2018) on nutritional counseling on nutritional knowledge of mothers of underweight toddlers that nutritional counseling has a significant effect on maternal knowledge, this is because the counseling provided repeatedly will provide new information and knowledge for respondents so that it affects the level of knowledge. The results of this study are also in line with the results of research conducted (Rahayu, Iriyani and Lusianan, 2018), on nutrition counseling on knowledge and parenting of mothers of undernourished toddlers that nutrition counseling has a significant effect on maternal knowledge. but nowadays there are many media that can be easily accessed anywhere and anytime. As a housewife, she

has a lot of free time to access information or participate in various associations that allow her to exchange information.

The level of knowledge of mothers participating in nutrition classes is about the mother's understanding of nutritional knowledge. The nutrition knowledge given to mothers participating in nutrition classes is the substances contained in food, the right portion of food according to their needs and feeding patterns.

Knowledge is the result of knowing a person after hearing and seeing a particular object, where most human knowledge is obtained through the eyes and ears. Notoatmodjo, (2010)

Nutritional knowledge is what is known about food in relation to optimal health. Nutritional knowledge includes knowledge about the selection and consumption of daily well and provides all the nutrients needed for normal body function (Almatsier, 2004). Maternal knowledge about toddler nutrition is all the information possessed by the mother about the food substances needed for the body and the mother's ability to apply in daily life. Good nutritional knowledge encourages a person to be able to plan a good menu for family consumption (Sedioetama, 2008).

A person's nutritional knowledge can be assessed based on the respondent's answers to the questions given according to the questionnaire filled in (Arimurti, 2012). The value of pre-test nutritional knowledge in the control group and treatment group was in the category of less than  $< 56$ . This is thought to be due to the fact that respondents have never received nutrition education before.

Providing counseling using the contents of my plate media has a significant effect on the knowledge of mothers of toddlers in the treatment group. However, there was no significant effect on the knowledge of mothers in the control group. This shows that the use of the contents of my plate media

affects the increase in maternal knowledge. The use of media is a tool for health promotion media. According to (Kesi Juliana Putri, 2019) that knowledge is influenced by media assistance which makes it easier for respondents to remember the material provided. The results of this study are in line with research (Kesi Juliana Putri, 2019) on the effect of nutritional counseling on knowledge, attitudes and actions of mothers in fulfilling nutrition for stunting children that there is a significant effect of providing nutritional counseling on increasing knowledge in the treatment group (using media), and there is no significant effect on the control group (without media).

Supported by research conducted (Rafiqoh and Martini, 2017) on nutrition counseling using leaflet media on the level of maternal knowledge about proper breastfeeding that there is a significant effect of counseling on maternal knowledge in the intervention group. While there was no effect of pre-test and post-test values on maternal knowledge in the control group.

## CONCLUSIONS

The results of the analysis of the level of knowledge after being given nutrition counseling using the contents of my plate media on the nutritional knowledge of mothers participating in nutrition classes on is that there is a significant difference in the level of nutritional knowledge in the treatment group and the control group, where the treatment group has a greater influence than the control group.

Nutrition counseling using the contents of my plate media is more effective than nutrition counseling without using media.

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