

## EFFECT OF LEAFLETS AND BALANCED MENU VIDEOS ON KNOWLEDGE, ATTITUDES AND BEHAVIORS AMONG UNDERNOURISHED TODDLERS' MOTHERS

Maftuchah<sup>1</sup>, Faridha Setyaningsih<sup>1</sup>, Susi Nurhayati<sup>2</sup>

<sup>1</sup> Midwifery Department, Faculty of Health and Nursing, Universitas Karya Husada Semarang, Indonesia

<sup>2</sup> Nursing Department, Faculty Of Health and Nursing, Universitas Karya Husada Semarang, Indonesia

\* Corresponding author

E-mail: [maftuchah89@gmail.com](mailto:maftuchah89@gmail.com)

### ABSTRACT

**Background:** Toddlers are a vulnerable group in terms of nutrition and are at high risk for disease. Toddlers' nutritional health might be affected by a lack of nutrient intake. The nutritional status of children under the age of five is critical since it is an indicator of their health and nutritional status. Malnutrition is a serious condition, where food intake in children does not match the nutrition that should be needed. Malnutrition continues to increase in Sukodono where there are currently 54 undernourished toddlers. This is due to the mother's lack of knowledge. Counseling through leaflets and video screenings is one of the media for increasing mothers' knowledge. The study aimed to analyze the effectiveness of providing online education through video media and balanced menu leaflets on the knowledge, attitudes, and behavior of mothers with malnutrition under five years old

**Methods:** A quantitative research with a quasi-experimental approach. The populations of the study were 54 undernourished toddlers aged 1 to 5 years. A total of 32 undernourished toddlers mothers in Sukodono, Jepara, were included in this study and divided into 16 subjects using leaflets and 16 subjects using video and using Independent T-Test statistical analysis.

**Results:** There was an effect of balanced menu leaflet media on the knowledge, attitudes, and behavior of malnourished toddler mothers. There is an effect of balanced menu video media on the knowledge, attitudes, and behavior of malnourished toddler mothers. There is no difference between giving leaflets and balanced menu videos on the knowledge, attitudes, and behavior of malnourished toddler mothers in Sukodono Tahunan Jepara village p values > 0,05 (0.434, 0.067, and 0.131).

**Conclusion:** There is no difference between the provision of leaflets and balanced menu videos on the knowledge, attitudes, and behavior of undernourished toddlers' mothers in Sukodono Tahunan Jepara

**Keywords:** *attitudes, behavior, knowledge, balanced menu, undernourished toddlers'*

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## INTRODUCTION

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Toddlers are a nutritionally vulnerable group and are at high risk of disease. Lack of nutritional intake in toddlers can affect their nutritional status. The nutritional status of children under five is very important to note because it is an indicator for monitoring the health and nutritional status of the community. To better prepare future generations, the main thing to improve is the nutritional status of toddlers. In addition, toddlerhood is a vulnerable age because of the early age of one's growth and development<sup>[1][1]</sup>.

According to data from the Health Research and Development Agency of the Ministry of Health, the prevalence of malnutrition in toddlers in 2019 decreased by 1.5% from 17.7% to 16.29%, and the prevalence of underweight children decreased by 2.8% from 10.2 to 7.44% in 2019<sup>2</sup>.

According to Basic Health Research data for 2018 in Central Java Province, 19.6% of children under five were malnourished. This is not following the 2019 Minimum Service Standards (SPM) target, the prevalence of malnutrition in toddlers is 17%. Based on the Health Profile of Central Java Province in 2019, the percentage of under-fives with severe malnutrition (BB/U) was 1,216 cases, this number increased in 2020 to 1,845 cases<sup>3</sup>.

The malnutrition rate in Jepara Regency in 2020 was 59 cases. Whereas there were 635 cases of undernutrition in the Annual District in 2019, there were 671 cases in 2020, and the number of undernourished toddlers suffering from illness and requiring treatment at the Annual Health Center from January to April 2021 was 309 toddlers (12.72%) of the total visits of 2,430. In August 2020, data on malnutrition coverage based on body weight for age in Sukodono Village totaled 41 toddlers, while the number of undernourished in April 2021 was 54 toddlers<sup>4</sup>.

The impacts resulting from malnutrition in children include increasing the risk of death, inhibiting cognitive development, and affecting health status in adolescents and adults. Another consequence of toddler malnutrition is the development of physical and mental disorders. These abnormalities that occur in infants and children are usually difficult or irreversible and hinder further development<sup>5</sup>.

According to the United Nations Children's Fund (UNICEF) in 2013, the cause of malnutrition in toddlers is not only poverty and less nutritious food, but also because toddlers often get sick, there is a lack of health services, and it is difficult to access health services<sup>2</sup>. In addition, malnutrition in toddlers can be due to a lack of knowledge related to nutrition among mothers, families, communities, and even health workers. Lack of a mother's knowledge about nutrition can lead to nutritional disorders in toddlers. As a result, parental nutrition knowledge is critical to toddler development success<sup>6</sup>.

Various efforts were made by the Ministry of Health of the Republic of Indonesia in order to make the public aware of the nutritional problems that occur by increasing community nutrition education through the provision of communication information and education (CIE) materials and nutrition campaigns. In addition to education, related activities include nutrition promotion, nutrition counseling, advocacy, training, and nutrition consultation<sup>7</sup>.

The most important factor in increasing knowledge is the method of conveying information that is tailored to the needs of the target audience by using the right health promotion media. Health promotion media are all means or efforts to display the message or information that the communicator wants to convey, be it through print, visual, audio, or audio-visual media, so as to increase knowledge, and ultimately, it is hoped that they can change attitudes and behavior in a positive direction towards health. After the formation of this

good knowledge, the community becomes aware, willing, and able to carry out behaviors to prevent and improve malnutrition<sup>8</sup>.

The process of nutrition education is inseparable from the influence of the use of visual aids or other media that can support the ongoing educational activities. The choice of leaflets and videos as educational media is because these media are visual and audiovisual. The five senses that transmit the most knowledge to the brain are the eyes (approximately 75% to 87%), while 13% to 25%, human knowledge is obtained and channeled through the other five senses<sup>9</sup>.

According to a study from Herman's (2020), there is no effect of leaflets on knowledge, attitudes, and consumption patterns of vegetables and fruit in adolescents at Senior High School 10 Makassar<sup>1</sup>. Hamimah (2019) stated that there are differences in mothers knowledge about stunting before and after health counseling through the video ex-plainer media based on Sparkol Video-scribe, namely a significance value of  $p = 0.000$  ( $p$ -value  $< 0.05$ )<sup>10</sup>.

Another study by Nikmawati et al. (2010) stated that the average nutritional knowledge of mothers who received counseling was greater than that of mothers in the control group. Interventions containing a stimulus will change a person's behavior. The formation of these health behaviors starts at the cognitive stage, in which a person knows about the stimulus given in the form of material and creates new knowledge. The next process is an inner response in the form of an attitude. In the end, the stimulus will be fully realized and cause further responses, which will be shown in the form of action. Counseling about growth and feeding contains a stimulus that is expected to change behavior in toddlers in terms of providing a balanced menu<sup>11</sup>.

According to the village midwife, the results of weighing toddlers at the integrated health services in January, there were no integrated health services due to the

COVID-19 yellow zone, February-April 2021, when compared with the chart for the Towards Healthy Card based on weight for age (BB/U). In April 2021, 54 toddlers (13.7%) were found to be undernourished with a Z score of  $-3SD$  to  $< -2SD$ , out of a total of 394 toddlers, with details on the average malnourished toddler with a fixed name of 32 toddlers (59.2%) per month and the names of newly malnourished toddlers being an average of 22 toddlers (40.7%) per month out of a total of 54 malnourished toddlers. Health promotion efforts in the field of nutritional health in Sukodono village include nutritional counseling and health education in collaboration with the Annual Health Center. Regarding the method of health education that is usually carried out at Integrated Health Services, Toddler Class, and Pregnant Class, it is to use the lecture method for the audience. In addition, the village midwife also explained that there were 5 Posyandu activities in the village that only detected early mal-nutrition; if a toddler with malnutrition was found, a referral would be made to the health center so that the mother of a malnourished toddler could consult a nutritionist. According to the results of interviews with nutritionists at the Annual Health Center, mothers of children under the age of five who have malnutrition in the Annual Health Center area were given counseling about providing balanced menu food and giving PMT biscuits for undernourished toddlers, but balanced menu counseling was given without providing leaflets and videos, despite the fact that leaflets and videos will add memories for the mother.

Interviews with 5 mothers who had malnourished toddlers, all of whom had received nutrition counseling, but 3 mothers forgot it when they got home and didn't practice it because the health workers only gave it face-to-face without using the media in counseling.

The COVID-19 pandemic in Indonesia is part of the ongoing worldwide pandemic of the 2019 coronavirus disease (COVID-

19). A positive case of COVID-19 in Indonesia was first detected in March 2020. This has led to restrictions on community activities, including health promotion. The steps taken by the government to prevent malnutrition must be supported by the contribution of social media to educate the public about balanced nutrition during a pandemic. Mass media communication, in this case social media, is a fundamental component of many health promotion strategies designed to change health risk behaviors<sup>12</sup>.

The study aimed to analyze the effectiveness of providing online education through video media and balanced menu leaflets on the knowledge, attitudes, and behaviors of mothers with malnutrition under five years old in Sukodono village, Jepara.”

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## METHODS

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A quantitative research with pretest-posttest design with control design<sup>13</sup>. The population in this study were mothers of under five children aged 1-5 years in Sukodono Village, Tahunan District, Jepara Regency, Central Java in July 2021 as many as 54 mothers of under five children. A total of 32 toddlers who were experiencing malnutrition in Sukodono Village, Tahunan District, Jepara Regency in July 2021 were selected using purposive sampling technique. Respondents were divided into 2 groups, the intervention group (16 respondents) were given education using video and the control group (16 respondents) were given education using leaflets. Videos and leaflets containing about a balanced menu including understanding, benefits, understanding time, criteria for food consumed by toddlers, how to wash vegetables and fruit properly, how to cook properly, nutritional needs for aged 1-5 years, a list of examples of balanced menus, the impacts due to unbalanced nutrition with a duration of 30 minutes. This research has passed an ethical review issued by the Ethics Committee for health research STIKes

Karya Husada Semarang number 488/KH.KEPK/KT/VI/2020.

The instruments used to collect data include knowledge questionnaires about balanced menus, attitudes, and behaviors. The knowledge questionnaire consists of 15 multiple choice questions. The attitude questionnaire towards fulfilling a balanced menu consists of 12 questions, and the behavior questionnaire for fulfilling a balanced menu consists of 14 questions using answer questions.

In the IEC leaflet group, respondents first filled out a questionnaire (pretest) on knowledge, attitudes, and behavior regarding a balanced menu, followed by giving KIE with leaflet media for 30 minutes. After 14 days of IEC administration, a post test was carried out. Likewise, in the video IEC group, respondents first filled out a knowledge, attitude, and behavior questionnaire about a balanced menu, followed by 30 minutes of video media IEC interventions. After 14 days of IEC administration, a post test was carried out. The bivariate analysis used was the Independent T Test (p value <0.05)

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## RESULTS

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### Description of Respondent Characteristics

Based on table 1, it showed that mothers who have malnourished toddlers who are given IEC about a balanced menu using leaflets in Sukodono Village, Tahunan District, Jepara have the majority aged 21-35 years as many as 14 (87.5%), junior high school education as many as 6 (37.5%), the work of housewives was 15 (93.75%). In the intervention group, it can be seen that mothers who have malnourished toddlers who are given IEC about balanced menus using video in Sukodono Village, Tahunan District, Jepara have the majority aged 36-46 years as many as 10 (62.5%), high school education as many as 11 (68.75%), and the work of housewives was 14 (87.5%).

**Table 1.** Description of Respondents' Characteristics Based on Age, Occupation and Education of Malnourished Toddler Mothers in Sukodono Tahunan Village, Jepara

Characteristics	Intervention Group		Control Group	
	Frequency (n)	%	Frequency (n)	%
<b>Age (Years)</b>				
21 - 35	14	87,5	6	37,5
36 - 46	2	12,5	10	62,5
Total	16	100	16	100
<b>Education</b>				
Elementary School	3	18,75	2	12,5
Junior High School	6	37,5	2	12,5
Senior High School	5	31,25	11	68,75
D3	1	6,25	1	6,25
S1	1	6,25	-	-
Total	16	100	16	100
<b>Profession</b>				
Housewife	15	93,75	14	87,5
Village Apparatus	1	6,25	1	6,25
Self-employed	-	-	1	6,25
Total	16	100	16	100

**Comparison of mean knowledge, attitudes and behavior**

According to Table 2, the results of the statistical Paired T Test obtained the mean before and after the intervention on knowledge, attitudes, and behavior were negative, indicating that the average knowledge, attitudes, and behavior after the video IEC intervention had increased, an average of 6.125, 15.625, and 15.875 with a value of knowledge, attitude, and behavior of 0.000 0.05, the conclusion of Ha is accepted, indicating that there is an effect of a video about a subject on knowledge, attitudes, and behavior.

**Table 2.** Comparison of mean knowledge, attitudes and behavior score before and after the intervention in the control and experimental group

Variable[U2]	Control		P-value*	Experimental		P-value*
	Preintervention	Postintervention		Preintervention	Postintervention	
	Mean + SD	Mean+ SD		Mean + SD	Mean+ SD	
<b>Knowledge</b>	6,38 ± 0,88	12,06 ± 1,56	0,000	6,38 ± 1,08	12,05 ± 1,03	0,000
<b>Attitude</b>	22,69 ± 2,15	35,75 ± 3,19	0,000	20,19 ± 2,13	35,81 ± 2,76	0,000
<b>Behavior</b>	23,94 ± 1,69	37,81 ± 3,27	0,000	24,31 ± 1,30	40,19 ± 3,25	0,000

\*paired t-test

Based on table 2. it can be seen that mothers who have malnourished toddlers who are given education about a balanced menu using leaflets in Sukodono Village, Tahunan District, Jepara previously had knowledge with an average of 6.38, a standard deviation of 0.88, after being given an intervention, the average knowledge is 12 .06, std. deviation 1.569 with a p value of 0.000. The mother's attitude before the intervention had an average of 22.69, a standard deviation of 2.15, after being given the intervention the average attitude was 35.75, a std. deviation of 3.19 with a p value of 0.000. Before the intervention was given the average

behavior was 23.94, the standard deviation was 1.69, after the intervention was given the average behavior was 37.81, the std. deviation was 3.27 with a p value of 0.000.

Mothers with undernourished toddlers who were given education about a balanced menu using video in Sukodono Village, Tahunan District, Jepara previously had knowledge with an average of 6.38, standard deviation of 1.08, after being given intervention, the average knowledge was 12.50, std .deviation 1.03 with a p-value of 0.000. The mother's attitude before the intervention had an average of 20.19, a standard deviation of 2.13, after the intervention was given, the

average attitude was 35.81, a standard deviation of 2.76 with a p value of 0.000. Before the intervention was given, the average behavior was 24.31, the standard deviation was 1.30, after the intervention was given, the average behavior was 40.19, the standard deviation was 3.25 with a p-value of 0.000

**Table 3.** Comparison of mean knowledge, attitudes and behavior score of two groups

Variable	Mean	Std. Deviation	p-value*
Knowledge	-0,438	0,552	0,434
Attitude	-2,563	1,346	0,067
Behavior	-2,000	1,287	0,131

\*independent t-test

Based on table 3, it can be seen that the bivariate analysis using the Independent T Test correlation test obtained the mean values for knowledge, attitudes and negative behavior, meaning that the average knowledge, attitudes and behavior after the IEC leaflet and video intervention experienced an average increase of 0.438, 2,563 and 2,000. The p value of knowledge, attitudes and behavior is 0.434, 0.067 and 0.131 > 0.05, meaning that there is no significant difference in the effect of health education using leaflet media and videos about balanced menus on knowledge, attitudes and behavior in mothers who have toddlers with undernourished status in Sukodono Village, Tahunan District, Jepara.

## DISCUSSION

There was no more effective difference in the knowledge, attitudes, and behavior of mothers with under five children who were given leaflets and videos about balanced menus than there was in those who were given leaflets and videos about balanced menus in Sukodono Tahunan Village, Jepara. This shows that the two media are equally effective and can be used as media for providing counseling. The findings in the field during the research found that this activity is

important because providing information on a broad scale will increase respondents' awareness. Providing information in the form of video playback was able to increase the knowledge, attitudes, and behavior of respondents, which had a positive impact on the behaviors formed. Changes in attitude were influenced by knowledge and trust factors obtained from sensing results, one of which was obtained when given counseling. After receiving the KIE media leaflet and video balanced menu interventions, 19 children under five from the respondents who weighed their weight experienced an increase of 3 ounces (0,3 kg). From the difference in numbers at the mean, it can be said that the change is greater in video, in other words, video media is more effective in changing attitudes than leaflet media. Information about a balanced menu is more easily absorbed with video media because it is accompanied by interesting audio and visuals, so exposure practices to a balanced menu are easier to see because it can display every movement and the effects of exposure to the dangers of malnutrition in children, while the information leaflet media obtained is less in-depth because it is only in the form of pictures and writing. Seeing the results obtained, it is clear that with the help of print media (leaflets) and electronic media (videos), they can change knowledge and the attitudes/perceptions of respondents regarding a balanced menu. This indicates that there has been a positive impact on respondents so that they are willing and able to apply a balanced menu to their behavior and also be able to channel or transfer information to many people about a balanced diet so that the impact of undernutrition can be overcome and prevented, which in turn can improve the health of toddlers.<sup>14</sup>

This research is in line with the theory that knowledge is the result of knowing, which will occur after a person senses a certain object, such as through seeing, hearing, smelling, feeling, and also touching. However, most of the knowledge

itself is obtained through the eyes and ears. In other words, through hearing and seeing. One strategy for obtaining behavior change, according to WHO, is to provide information to increase knowledge to raise awareness, and in the end, people will behave according to this knowledge. Attitude is a person's closed response to a certain stimulus or object by involving opinion and emotional factors to produce thoughts of like-dislike, agree-disagree, good-not good, and so on. A person's attitude demonstrates a readiness or availability to act but does not demonstrate actual action; attitude is only one of the factors that contribute to behavior.<sup>15</sup>

The formation of a new behavioral domain, especially in adults, begins in the cognitive domain, in the sense that the subject knows in advance of stimulation in the form of material or objects outside of it, giving rise to new knowledge on the known subject. Finally, the stimulus, namely the known and fully realized object, will cause a further response, namely in the form of an action towards or in connection with the stimulation or object. However, in reality, the stimulation received by the subject can immediately lead to action.<sup>16</sup>

The efforts of the Puskesmas to anticipate the occurrence of malnutrition in toddlers in the nutrition and health services program, namely individual services in the context of healing and recovering children from undernourished conditions, and community services, namely in the context of preventing the emergence of undernutrition in the community. Programs that are already running are toddler nutrition counseling, giving PMT to undernourished toddlers by monitoring their weight every month, nutrition and health counseling by holding demonstrations, giving vitamin A and minerals, and nutritional counseling<sup>17</sup>. The program is running well, but during this pandemic it is more focused on face-to-face meetings with mothers of toddlers who need and have a risk of malnutrition, group counseling meetings cannot be held due to the

COVID-19 pandemic. The counseling that has been running only uses leaflets.<sup>18</sup>

A different statement from Azzahra, et al. (2015) regarding the effect of counseling on knowledge and attitudes in giving MP-ASI, it can be seen that there was no increase in attitudes in the control group. The results of the Wilcoxon sign rank test showed that there was no difference in attitude before and after being given the leaflet.<sup>11</sup>

Dakhi (2018) have a different opinion, the research stated that concerning the effect of providing nutrition education through the media of leaflets about vegetables and fruit on the knowledge, attitudes, and practices of female students at elementary school 105349 Paluh Kemiri in providing vegetables and fruit for families where there is an increase in sample attitudes about vegetables and fruit after being given nutrition education through leaflet media.<sup>17</sup>

Supported research from Anisha et al. (2017) stated that audio-visual media in health education is effectively used in increasing knowledge, attitudes, and actions regarding the prevention of gastritis compared to leaflet media, through audio-visual media influencing changes in knowledge, attitudes, and behavior of respondents so that those increased before and after the intervention. The knowledge they gain can assist them in understanding themselves and the need to make efforts to prevent gastritis. In addition, the change in attitude of the respondents after receiving counseling was due to the fact that the media used was attractive to the subjects, thus facilitating the process of receiving information about preventing gastritis.<sup>19</sup>

A different opinion from Rotua (2017) stated that differences in changes in knowledge about pornography between leaflets and videos with a p-value = 0.000 < 0.05 where the change in knowledge is greater in videos, meaning that video media is more effective in changing knowledge compared to media Video media leaflets are more effective in changing



knowledge than leaflets, because videos use sound effects and moving images that can display directed steps, making it easier to receive the information conveyed<sup>20</sup>.

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### CONCLUSION

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There is an effect of providing balanced menu videos on the knowledge, attitudes, and behavior of malnourished toddler mothers in Sukodono Tahunan Jepara village. There is an effect of giving balanced menu leaflets on the knowledge, attitudes, and behavior of malnourished toddler mothers in Sukodono Tahunan Jepara village. There was no significant difference in the knowledge, attitudes, and behavior of mothers with nutritional deficiencies who were given videos and leaflets about a balanced menu towards malnutrition in the village of Sukodono Tahunan, Jepara. Therefore, health workers are advised to provide a single approach, either using a video or a leaflet. This will prevent confusion among patients when both types of media are presented simultaneously.

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