

## Health Promotion Media Intervention Towards Balanced Nutrition Knowledge to Increase Immunity in Inspired Families in Uteunkot Village, Lhokseumawe City

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### Abstrak

Masalah gizi merupakan permasalahan kesehatan karena angka morbiditasnya yang sangat tinggi diseluruh dunia. termasuk indonesia yang memiliki masalah gizi kompleks yaitu stunting, wasting dan overweight. Data di Kota Lhokseumawe menunjukkan bahwa persentase gizi kurang pada balita 0-59 bulan adalah 5.2%, pendek atau sangat pendek atau sering dikenal dengan *stunting* memiliki persentase sebesar 3.9%, balita kurus atau sangat kurus memiliki persentase sebesar 3,4%. Sehingga perlu upaya meningkatkan imunitas tubuh melalui media promosi kesehatan. Tujuan penelitian ini untuk mengetahui Media Promosi Kesehatan Terhadap Pengetahuan Gizi Seimbang Untuk Meningkatkan Imunitas Tubuh Pada Keluarga Binaan terhadap 150 responden. Metode penelitian yang digunakan yaitu *quasi eksperimen* dengan menggunakan rancangan *one group pretest-posttest design*. Data dikumpulkan menggunakan lembar kuesioner. Hasil penelitian didapatkan karakteristik responden mayoritas kelompok Usia responden terbanyak kelompok usia >35 tahunsebanyak 59 orang (39,3%). Hasil penelitian menunjukkan peningkatan pengetahuan menjadi 96,7% dikategori baik setelah intervensi dilakukan. Penggunaan media audiovisual berpengaruh terhadap pengetahuan berdasarkan uji *Wilcoxon* dengan *p value* sebesar 0,000. Kesimpulan penelitian ini adalah terdapat pengaruh media audiovisual terhadap pengetahuan mengenai gizi seimbang untuk meningkat imunitas pada masyarakat desa uteunkot.

*Kata Kunci* : pengetahuan; edukasi; gizi seimbang; media audiovisual; masyarakat

### Abstract

Nutritional problems are a health problem because the morbidity rate is very high throughout the world, including Indonesia, which has complex nutritional problems, namely stunting, wasting, and overweight. Data in Lhokseumawe City shows that the percentage of malnutrition among toddlers aged 0-59 months is 5.2%; short or very short, often known as stunting, has a percentage of 3.9%; underweight or very thin toddlers have a percentage of 3.4%. So, it is necessary to increase body immunity through health promotion media. This research aims to determine Health Promotion Media on Knowledge of Balanced Nutrition to Increase Body Immunity in Assisted Families for 150 respondents. The research method used is quasi-experimental, using a one-group pretest-posttest design. Data was collected using a questionnaire sheet. The research results showed that the characteristics of most respondents in the age group were 59 (39.3%). The research results showed an increase in knowledge to 96.7% in the excellent category after the intervention. The use of audiovisual media influences knowledge based on the Wilcoxon test with a p-value of 0.000. This research concludes that there is an influence of audiovisual media on knowledge about balanced nutrition to increase immunity in the Uteunkot village community.

*Keywords*: knowledge; education; balanced nutrition; audio-visual media, public

## Introduction

Nutrition is an important concern in maintaining the immune system. Adequate and good nutrition is needed for cells to function optimally. One of the most important factors that can influence the body's immune system is nutrition. The reason is that good nutrition is the main determinant in the prevention and treatment of acute diseases (1). Based on data from the 2021 edition of UNICEF-WHO-WORLD BANK, it is stated that 148.2 million children aged 0-5 years in the world experience stunting, 38.9 million are overweight, and 45.4 million experience malnutrition. Based on data from the 2018 Ministry of Health National Report, the prevalence of malnutrition in Indonesia is 3.9%, undernutrition 13.8%, and overnutrition 3.1% (2).

Data in Aceh Province in 2020 shows that the percentage of malnutrition among toddlers aged 0-59 months is 8.8%; short or very short, often known as stunting, has a percentage of 10.9%; thin or very thin toddlers have a percentage of 5,7%. Data in Lhokseumawe City shows that the percentage of malnutrition among toddlers aged 0-59 months is 5.2%; short or very short or often known as stunting, has a percentage of 3.9%; thin or very thin toddlers have a percentage of 3.4% (3). Based on the Global Nutrition Report 2018, Indonesia is among 17 countries with complex nutritional problems: stunting, wasting, and overweight. The Double Burden of Nutrition Problems in Indonesia occurs in all life cycles, starting early, with 12% of children under the age of five experiencing wasting, while another 12% are overweight. Adolescent age shows that 11% of male and female adolescents aged 13-15 years are underweight, while 11% of other adolescents of the same age are overweight. The prevalence of overweight and obesity doubled between 2010 and 2013 in adult women (from 15% to 33%), while a quarter of pregnant women are underweight. Meanwhile, according to Riskesdas 2018, it was reported that 10.1% of toddlers were malnourished, and 7.6% of toddlers were overweight (4)

One of the interventions that can be used to overcome nutritional problems in families is using health promotion media. Excellent and appropriate health promotion media will support the delivery of messages that the community can understand and implement effectively. It is hoped that health promotion media related to nutrition can help increase family knowledge about balanced nutrition so that it can optimize improving nutritional status (5). Previous research conducted by Angelina (2019) explained that health interventions regarding nutrition in families provided through audiovisual media were effective in increasing maternal knowledge with the average results of family knowledge about balanced nutrition using animation media before intervention (78.00) after intervention (91.90) p-value 0.120 (6). This is in line with Ginting (2021), stating that nutrition counseling with audiovisual media effectively changes nutritional knowledge, as

evidenced by the significance value of p-value  $<0.05$  before and after intervention with audiovisual media (7)

Research conducted by Zara et al.(2021) also shows that health promotion can affect increased knowledge about balanced nutrition before and after education with the promotional press, namely that the majority of people before education were included in the less category, namely 41 (51.9%) and 38 respondents were sufficient (48.1%) after receiving counseling the good category increased by 69 people (87.3%) (8). Based on the explanation above, the researcher is interested in researching Health Promotion Media Interventions on Family Knowledge Regarding Balanced Nutrition to Increase Body Immunity in Fostered Families in Uteunkot Village, Muara Dua District, Lhokseumawe City.

## **Method**

This research was conducted in Uteunkot Village, Muara Dua District, Lhokseumawe City, from March 2024 to August 2024. The population in this study was the entire Uteunkot community, which had 150 people. Inclusion criteria were people who gave consent to be sampled. Exclusion criteria were people who were not present when the research was conducted. This type of research is an experiment with the One Group Pretest Posttest research design. The One Group Pretest-Posttest Design consists of one predetermined group. In this design, the test was carried out twice, namely before being given the pretest and after the treatment was called the posttest. In this research design, the experimental and control groups are in the same group/group. The two types of material are almost the same. The research pattern is the One Group Pretest-Posttest Design method. Data analysis classifies data based on variables and types of respondents, tabulates data based on variables and all respondents, presents data for each variable studied, performs calculations to answer the problem formulation, and performs calculations to test the hypotheses that have been proposed. The analytical method in this study consisted of univariate analysis, validity, and reliability tests.

## **Research result**

This study was conducted from March 2024 to July 2024 in Uteunkot Village, Lhokseumawe City, with a sample of 150 respondents. This study aims to determine the effect of audiovisual media on knowledge of Balanced Nutrition to Increase Body Immunity in Foster Families in Uteunkot Village, Lhokseumawe City.

## 1. Respondent Characteristics

Based on the research results, data was obtained regarding the description of the characteristics of respondents including age, last education, and occupation. The data will be shown specifically in the table below.

**Table 1 Characteristics of Respondents in Uteunkot Village**

<b>Characteristics</b>	<b>Frequency (n=150)</b>	<b>Percentage (%)</b>
<b>Age</b>		
<20 Year	34	22,7
20-35 Year	57	38,0
>35 Year	59	39,3
<b>Last education</b>		
Low education	80	53,3
higher education	70	46,7
<b>Education</b>		
Not working	59	39,3
Work	91	60,7
<b>Gender</b>		
Man	45	30,0
Woman	105	70,0

Source: Primary Data, 2024

Table 1 shows that from 150 total respondents, the most extensive age distribution is the age group >35 years, which is 59 people (39.3%), and the least is the age group <20 years, which is 34 people (22.7%). Based on the last education, most respondents were found to have low education, which is 80 people (53.3%). Based on occupation, the majority of respondents were found to be working which is 91 people (60.7%), and based on gender, namely: women 105 people (70.0%)

## 2. Overview of Respondents' Knowledge Level Before Being Given Intervention Through Audiovisual Media

### 2.1 Respondents' Knowledge Pre-Test Results

The results of this pre-test are the total scores obtained by respondents after answering statements covering the categories of good, sufficient, and lacking contained in the questionnaire before being given intervention through audiovisual media. The data will be explicitly shown in the table below.

**Table 2. Frequency Distribution of Respondents' Knowledge in Uteunkot Village, Muara Dua District at the Pre-Test**

Knowledge	Frequency (n)	Percentage (%)
Good	96	64,0
Enough	22	14,7
Not enough	32	21,3
<b>Total</b>	<b>150</b>	<b>100,0</b>

Source: Primary Data, 2024

Table 2. shows the distribution of pre-test knowledge based on age; the age group <20 years has good category knowledge of 28 people (82.4%). Respondents aged 20-35 years have sufficient knowledge of 6 people (10.5%), and respondents in the age group >35 years have poor knowledge of 28 people (47.5%).

**2.2 Results of Distribution of Pre-Test Respondents' Knowledge Based on Last Education**

The frequency distribution of respondents' pre-test knowledge based on their last education includes low and high education. The frequency distribution will be explicitly shown in the table below.

**Table 3. Frequency Distribution of Knowledge of Respondents of Mothers in Banda Sakti District During Pre-Test Based on Age**

Age	Pre- Test						Total	
	Good		Enough		Not enough		Frequency (n=150)	Percentage (%)
	n	%	n	%	n	%		
< 20 Years	28	82,4	5	14,7	1	2,9	34	100,0
20-35 Years	48	84,2	6	10,5	3	5,3	57	100,0
> 35 Years	20	33,9	11	18,6	28	47,5	59	100,0

Source: Primary Data, 2024

Table 3 shows the distribution of respondents' pre-test knowledge based on their last education. Respondents with low education have a level of knowledge in the category of less obtained by as many as 17 people (24.3%), and respondents with high education have a level of knowledge in the category of good obtained by as many as 55 people (68.8%).

**2.3 Results of Pre-Test Respondents' Knowledge Distribution Based on Occupation**

Frequency distribution of pre-test knowledge based on occupation includes unemployed and employed. The frequency distribution will be shown specifically in the table below.

**Table 4. Distribution of Mothers' Knowledge in Muara Dua District During Pre-Test Based on Occupation**

Work	Knowledge ( <i>Pre-test</i> )						Total	
	good		enough		not enough		frequency (n=150)	percentage (%)
	n	%	n	%	n	%		
Doesn't work	58	63,7	14	15,4	19	20,9	91	100,0
Work	38	64,4	8	13,6	13	22,0	59	100,0

Source: Primary Data, 2024

Table 3 shows the respondents' pre-test knowledge distribution based on their jobs. Respondents who are not working have a knowledge level in the category of less obtained by as many as 19 people (20.9%), and respondents who are working have a knowledge level in the category of less obtained by as many as 13 people (22.0%).

### 3. Description of Mother's Knowledge After Being Given Intervention Through Audio Visual Media

Based on table 4.7, after being given an intervention using audiovisual media, most respondents answered correctly to the statements "One effort to prevent contracting infectious diseases is to increase immunity by consuming nutritious food," "Balanced nutritional food includes staple foods, side dishes, fruits, and vegetables," Malnutrition cannot cause the immune system to become susceptible to infection and disease, namely 150 people answered correctly (100%) and most respondents answered incorrectly to the statement.

#### 3.1 Community Knowledge Post-Test Results

The results of this post-test are the total scores obtained by respondents after answering the questions in the questionnaire and receiving intervention via audiovisual media.

**Tabel 5. Frequency Distribution of Respondents' Knowledge in Uteunkot Village, Muara Dua District at the Post-Test**

Category	Frequency(n)	Percentage (%)
Good	145	96,7
Enough	4	2,7
Less	1	7,0
<b>Total</b>	<b>150</b>	<b>100,0</b>

Source: Primary Data, 2024

Based on table 4 shows that the highest level of knowledge among mothers in Uteunkot Village, Muara Dua District, after being given intervention was in a suitable category, totaling 145 people (96.7%), and the lowest level of knowledge among mothers was in the sufficient category, totaling 4 (2.7%) and the poor category, totaling 1 (7.0%)

### 3.2 Results of Post-Test Respondents' Knowledge Distribution Based on Age

The results of this pre-test are the total scores obtained by respondents after answering questions covering the categories of good, sufficient, and lacking contained in the questionnaire before being given intervention through audiovisual media. The data will be shown specifically in the table below.

**Table 6. Frequency Distribution of Respondents' Knowledge in Uteukot Village, Muara Dua District During Post-Test Based on Age**

Age	Post- Test						Total	
	Good		Enough		Not enough		Frequency (n=150)	Percentage (%)
	n	%	n	%	n	%		
< 20 Tahun	34	100.0%	0	0.0%	0	0.0%	34	100,0
20-35 Tahun	56	98.2%	1	1.8%	0	0.0%	57	100,0
> 35 Tahun	55	93.2%	3	5.1%	1	1.7%	59	100,0

Source: Primary Data, 2024

Table 6. shows the distribution of respondents' post-test knowledge based on age, all of which are in the good category, the largest in the 20-35 year age category, namely 56 people (98.2%), then in the age group >35 years, namely 55 people (33.9%), and finally by the age group <20 years, namely 34 people (100.0%).

### 3.3 Results of Distribution of Pre-Test Respondents' Knowledge Based on Last Education

The frequency distribution of post-test respondents' knowledge based on their last education includes low and high education. The frequency distribution will be shown specifically in the table below.

**Table 7. Frequency Distribution of Respondents' Knowledge in Uteunkot Village, Muara Dua District During the Post-Test Based on Last Education**

Education	Pengetahuan ( <i>Post-test</i> )						Total	
	good		enough		not enough		Frequency (n=150)	Percentage (%)
	n	%	n	%	n	%		
Low education	65	92.9	4	5.7%	1	1.4%	70	100,0
Higher education	80	100,0	0	0,0	0	0,0	80	100,0

Source: Primary Data, 2024

Table 7. shows the distribution of respondents' post-test knowledge based on their last education. Respondents with low education have a good level of knowledge, totaling 65 people (92.9%), and respondents with high education have a good level of knowledge, totaling 80 people (100.0%).

### 3.4 Results of Pre-Test Respondents' Knowledge Distribution Based on Occupation

The frequency distribution of post-test respondents' knowledge based on Occupation includes unemployed and employed. The frequency distribution will be shown specifically in the table below.

**Table 8. Dua District During the Post-Test Based on Last Education**

Work	Pengetahuan ( <i>Post-test</i> )						Total	
	good		enough		Not enough		Frequency (n=150)	Persentase (%)
	n	%	n	%	n	%		
Doesn't work	88	96	3	3.3	0	0.0	91	100,0
Work	57	96,6	1	1,7	1	1,7	59	100,0

Source: Primary Data, 2024

Table 8 shows the distribution of respondents' post-test knowledge based on their jobs. 88 people who are not working have a good level of knowledge (96.7%), and 57 people who are working have a good level of knowledge (96.6%).



**The Influence of Audiovisual Media on Community Knowledge Regarding Balanced Nutrition in Uteunkot Village, Muara District Lhokseumawe**

The bivariate analysis in this study used a statistical test, the Wilcoxon test, to measure the level of knowledge before and after the intervention, using ordinal variables.

**Table 9. Wilcoxon Test of Community Knowledge in Uteunkot Village Before and After Intervention**

Knowledge	Category level						Total		P value
	Good		Enough		Not enough		Frequency (n=150)	Percentage (%)	
	n	%	n	%	n	%			
<i>Pretest</i>	96	50,4	22	20,8	32	28	150	100,0	0,000
<i>Posttest</i>	145	96,7	4	0,0	1	0,7	150	100,0	

Source: Primary Data, 2024

Table 3 shows that before the intervention was given, it was known that out of 150 respondents, only 96 people (50.4%) had a good knowledge category. After being given intervention through educational video media, the number of people (96.7%) who had good knowledge increased to 145. The results of the analysis above show that audiovisual media influences community knowledge about balanced nutrition in Uteunkot village after an intervention in the form of

audiovisual media. This is known based on the probability value or p-value of 0.001. Where this probability value is smaller than the significance level of 0.05, which means that H0 is rejected so that Ha is accepted and proves that there is an influence of audiovisual media on community knowledge about balanced nutrition in Uteunkot village, Muara Dua sub-district.

**Discussion**

Based on table 1, it shows that the highest age distribution of respondents is the group >35 years old totaling 59 people (52%), the lowest age distribution of respondents is the age group <20 years old totaling 34 people (22.7%). Sufficient age will affect the level of maturity and strength of a person will be more and the strength of a person is more mature in thinking and working. In terms of public trust, someone who is more mature is trusted than someone who is not yet mature. This is because increasing age will also increase experience and maturity of the soul. So the increasing age is possible, the more experience will increase the level of knowledge (9).

At the level of respondent education, the results showed that out of 150 respondents studied, almost 80 people (53.3%) were people with high education levels and 65 people with low education (This is in line with research (Pradita & Rahayuningsih, 2021) which found that the highest level of respondent education was high school (70.3%). it is explained that the higher a person's education level, the better the knowledge they have. In accordance with what was explained by Wati (2018), a

highly educated society is easier to receive broad insights about nutrition. The low level of maternal education also causes various limitations in dealing with balanced nutrition problems to increase body immunity in foster families (10) (11)

Education means guidance given by one person to another person about something so that they can understand. Education is also the process of guiding humans from darkness, ignorance, towards the enlightenment of knowledge (12). It is undeniable that the higher a person's education, the easier it is for them to receive information and ultimately the more knowledge they have. Conversely, if a person's level of education is low, it will hinder the development of a person's attitude towards acceptance, information and newly introduced values (12). In this study, the number of respondents was 150 people. There was a large difference between respondents with low and high education, where respondents with low education numbered 70 people (46.7%) and respondents with high education numbered 80 people (53.3%).(13)

In this study, it was found that out of 150 respondents, most of the respondents were unemployed, namely 58 people (63.7%), with a total of 34 people. In line with the study (13) where the study found that there were more working mothers (59.3), according to the researcher, the group that worked more had broader insights and views, besides that it was easy to socialize with new people. Meanwhile, the group that did not work spent more time at home and got less information about health. In contrast to the study with work factors, based on the results of the identification It was found that most respondents were housewives and the second largest number had private jobs (14).

In this study, it was found that out of 66 respondents, most of the respondents were mothers who worked in the private sector, namely (51.5%), with a total of 34 people. Parental education is one of the important factors in child development, because with good education, parents can receive all information from outside, especially about how to raise children well. Formal and informal education are expected to increase maternal nutritional knowledge. Parental education is one of the important factors in child development, because with good education, parents can receive all information from outside, especially about how to raise children well. Formal and informal education are expected to increase maternal nutritional knowledge

The results of measuring the level of respondents' knowledge before being given intervention in the form of showing audiovisual media related to balanced nutrition to increase immunity showed that out of 150 total samples, 96 samples had good knowledge (50.4%), 22 samples had sufficient knowledge (20.8%), and 32 samples were in the less (21.3%). The results of

the pre-test show that the majority of respondents had a good level of knowledge before being given intervention in the form of education through audiovisual media.

In line with what was studied who studied the influence of audiovisual media on the knowledge of mothers with stunted children where most participants showed their knowledge score at a good level before being given intervention, which was 29.4% Click or tap here to enter text Research regarding the level of knowledge of mothers about nutrition in children found that the level of knowledge of mothers before being given intervention was mostly in the good category, which was 31% . This study is not in line with that conducted by Rini (2019) on the influence of audiovisual media on the level of knowledge of mothers about nutrition in children where before being given intervention 80% of them had poor knowledge ((15)).

Based on the results of field research, when a pre-test was conducted using a questionnaire, half of the mothers had good knowledge about balanced nutrition, many of the community had received information about nutrition from various media or through direct counseling by health center cadres.

The results of the post-test of community knowledge about balanced nutrition to increase immunity in Uteunkot Village, Muara Dua District, Lhokseumawe City after being given an intervention using audiovisual media showed an increase in community knowledge about balanced nutrition to increase immunity. This is based on table 4.2 and table 4.7 questions on the questionnaire during the pre-test and post-test at Based on table 4.8 which shows that the level of public knowledge about balanced nutrition to increase immunity after the intervention, the highest percentage was in the good category of 145 respondents (96.7%). This shows that public knowledge has increased after being shown audiovisual media.

Based on the research that has been conducted by providing education through video media about balanced nutrition education to increase immunity, in this study there was a significant increase with the results of univariate analysis showing that the average attitude before being given balanced nutrition education was 28.51 and after being given balanced nutrition education was 32.05 based on these results it was found that the average attitude value after education was greater than before being given education with an average increase difference of 3.54.

Based on the results of the study, it shows that almost all people have good knowledge about balanced nutrition after the Health promotion media was displayed. This increase is the result of the interest of mothers to pay attention to the contents of the video when it is displayed. There is an increase in knowledge before the Health promotion media is displayed and after the Health

promotion media is displayed, where there is a significant influence on increasing public knowledge. Through Health promotion using audiovisual media, the public can easily get information about balanced nutrition

The results of this study are in line with research conducted by Zara (2023) which shows that there is a significant increase in the level of knowledge in the community to be good after being shown audiovisual media which is in the good category of 21.3%<sup>18</sup>. Based on the results of the study, it is known that the level of knowledge of the respondents has increased after being given education in the form of videos or posters. This study is also in line with research conducted by Anggraini (2020), after being given a health education intervention through audiovisual media, almost all respondents were in the good category, namely 40 out of 42 (95.2%) (16) (17).

Another study conducted by Arsyati (2019) showed that before being given nutrition education with audiovisual media, 50% of respondents had good knowledge about balanced nutrition in preventing stunting and 50% of respondents had poor knowledge, then after given nutrition education, there was an increase in knowledge from the poor to good category for 78.6% of respondents (18).

Health promotion media should follow the development of the times. Currently, audio-visual media of the video type are widely used to increase the level of public knowledge. The advantages of video include being able to convey objects or events as they are in their original state. The audio-visual method can also present theoretical material into practice. Therefore, information conveyed through video can be understood easily and comprehensively and provides a motivational effect in the learning process (18)

According to Wahyuni et al. In 2023, there is a significant relationship between nutritional knowledge in an effort to increase immunity and the habit of eating food sources of protein and vitamin A during the COVID-19 pandemic among Airlangga University students, with a p-value <0.05<sup>20</sup>. However, this study showed a negative blood relationship. This study is in line with the study carried out by Bakti in Gelsetzer, which explained that there was a significant relationship between nutritional knowledge and food consumption patterns of teenagers with a p-value of 0.032 (p<0.05), but with a negative correlation direction with the correlation coefficient value - 0.2141 (19)

Another study conducted by Arsyati (2019) showed that before being given nutrition education with audiovisual media, 50% of respondents had good knowledge about balanced nutrition in preventing stunting and 50% of respondents had poor knowledge, then after given nutrition

education, there was an increase in knowledge from the poor to good category for 78.6% of respondents (18)

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### **Conclusions and Suggestions**

Based on the research results and discussions presented in previous chapter, it can be concluded: The majority of respondents were in the age group >35 years namely 59 people (39.3%) and the least was the age group <20 years, namely 34 people (22.7%). Based on education Lastly, the majority of respondents were found to be highly educated viz as many as 80 people (53.3%). Based on occupation, the majority of respondents 70 people (46.7%) were found to be working. There is an influence of audiovisual media on public knowledge regarding balanced nutrition. It is hoped that the community can maintain and improve knowledge about balanced nutrition to increase immunity. future researchers, it is hoped that this research can be a source benchmarks, references, and comparison materials for further researchers

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