

# Comparative Study: Audiovisual Method And Teleducation Method On Increasing Knowledge And Attitude Of Pregnant Women As Stunting Prevention Effort

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## ABSTRACT

**Background:** Stunting is caused by inadequate nutrition in the first 1000 days of life calculated from pregnancy to 2 years of age. Exclusive breastfeeding that is not fulfilled has a long-term health effect on infants related to growth and development. Efforts made to prevent this incident can be done during pregnancy, namely providing health education to pregnant women regarding the importance of exclusive breastfeeding. Alternative method is needed, using audiovisual and teleducation. The study to determine the effectiveness of the audiovisual method compared to the teleducation method on the knowledge and attitudes of pregnant women in exclusive breastfeeding as prevention of stunting.

**Methods:** The design is Static Group Pretest-Posttest Design, there are two groups that are given different treatment in the same clump. The study was conducted on 60 pregnant women and analyzed using descriptive statistics and different t-test.

**Results:** The average value of the pre-test and post-test of both methods increased, but the average value of the audiovisual method was 80.66 compared to 76.77.

**Conclusion:** The audiovisual method is more effective in providing education to pregnant women as an effort to prevent stunting. The audiovisual method and the efficient teleducation method have significant differences, this is obtained from the results of the t-test ( $t\text{-count} > t\text{-table}$  3,166 > 2.64

**Keywords:** Audiovisual, Teleducation, Methods, Knowledge, Attitude, Pregnant Women, Stunting.

## INTRODUCTION

The World Health Organization (WHO) defines stunting as a condition of toddlers who have a length or height that is less than their age. One of the health problems that is a serious problem on a global scale is stunting. This problem is caused by inadequate fulfillment of nutrition in the First 1000 Days of Life so that it has a bad impact on long-term health. According to data from Joint Child Malnutrition Estimates in 2017. Around 150.8 million or 22.2% of children under five in the world are stunted. More than half of them came from Asia as much as 55% with the highest proportion coming from South Asia at 58.7% followed by Southeast Asia at 14.9<sup>1)</sup>. Indonesia is included in the third country with the highest prevalence in the South-East Asia Regional (SEAR) region with the average prevalence rate was 36.4% in 2005-2017<sup>2,3)</sup>.

In 2021, based on the results of the Indonesian Nutritional Status Study, the national stunting rate decreased by 1.6% per year from 27.67% in 2019 to 24.4% in 2021. Although it experienced a significant decline, it did not mean the problem This has been completed, because the prevalence of stunting in Indonesia still exceeds the target of the RPJMN in 2024 by 14%. Malang Regency is one of the areas with a fairly high proportion of stunting events in 2019, which is 16.1%. The highest prevalence is in the Pujon area of 32.7% and will increase in 2020 by 41.27%. According to data calculated in 2020, there are 1262 of 3717 infants and toddlers experiencing stunting in Pujon District, with the highest prevalence being in Wiyurejo Village as many as 130 children in 2021. It can be concluded that 3 out of 10 infants and toddlers in Pujon District have the potential to experience stunting<sup>4)</sup>.

Stunting is caused by lack of nutrition in the First 1000 Days of Life. Impaired nutritional fulfillment will have an impact on brain development significantly up to 80% because in the first 1000 days of life there is a growth and development process that has a huge impact on the baby's life (window of opportunity <sup>5</sup>). Stunting is an event that can occur from pregnancy until the baby is 2 years old). Babies born with stunting in Indonesia reach 23% which is marked by a body length that is not up to 48 cm and a weight that is not up to 2.5 kg. In overcoming stunting, BKKBN optimizes services through posyandu cadres to carry out health promotion related to stunting prevention <sup>6</sup>. Prevention stunting can be done by fulfilling the baby's nutrition. Conducting Early Initiation of Breastfeeding shortly after birth, exclusive breastfeeding and appropriate complementary feeding according to age can help to meet the nutrition needed by the baby <sup>7</sup>.

The most effective prevention in dealing with stunting is by intervening with adequate nutritional intake in 1000 days of life by increasing the coverage of exclusive breastfeeding <sup>8</sup>. Breast milk is the nutrient with the most appropriate nutritional content for optimal growth of infants in the first 6 months, which includes hormones, antibodies, immunity and antioxidants. Breast milk has a full contribution to growth and development and endurance. The lack of knowledge of mothers about health and nutrition in 1000 days of life makes 60% of children aged 0-6 months not exclusively breastfed, this is very strongly associated with the risk of stunting in children <sup>9</sup>.

Several studies have shown that exclusive breastfeeding for the first 6 months is an effort that is able to reduce stunting rates and can increase the survival of babies with low birth weight (LBW). Children who are stunted will have the opportunity to catch up with stunted growth if they are given adequate exclusive breastfeeding for the first 6 months <sup>10</sup>.

Health promotion delivery media can be provided by two methods, namely the audiovisual method and the teleeducation method. The audiovisual method is a method that uses a combination of the senses of sight and the senses of hearing such as films or videos <sup>11</sup>. The use of audio and visual media in health promotion can make each

individual's understanding different from what is conveyed. The audio method in delivery can make everyone's imagination or depiction different and the visual method can make the interpretation of the written language different in the audience's understanding.

Elyas (2018) defines teleeducation as a learning activity or distance education through various technologies, devices, and electronic circuits, such as the internet, audio, video, and teleconferencing. Learning can be delivered 'synchronously' (at the same time) or 'asynchronously' (at different times). In this way, the number of learners who can participate can be much greater than in the conventional way of learning in the classroom. There are several benefits that can be obtained from the socialization process through teleeducation, including flexibility in choosing the time and place to access learning. In addition, many costs can be saved from teleeducation, such as transportation costs to the place of activity. Basically, the method of delivering material in teleeducation can be done in one direction or two directions, so that the information conveyed can be better understood by the recipient.

In this study, researchers compared the effectiveness of the audiovisual method compared to teleeducation on the knowledge and attitudes of pregnant women in exclusive breastfeeding.

## METHOD

The design of this research is the Static Group Pretest-Posttest Design, namely in this design there are two groups that are given different treatment in the same clump. The research subjects in this study were 60 pregnant women who were divided into an audiovisual group of 30 pregnant women and a teleeducation group of 30 pregnant women. The data analysis used descriptive statistics to determine the audiovisual and teleeducation methods and the different test formula t-test to analyze the comparison of the effectiveness of the audiovisual method compared to the teleeducation method.

## RESULT

### 1. Descriptive Teleeducational Group and Audiovisual Group

**Table 1: Descriptive Statistics of Teleeducational Methods and Audiovisual Methods**

	N	Range	Minimum	Maximum	Sum	Mean	Std Deviasi
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	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std error	Statistic
Pre Teleeducation	30	64	28	82	1780	56.00	3.479	19.053
Post Teleeducation	30	76	16	92	2348	68.27	3.787	20.743
Valid N	30							
Pre Audiovisual	30	84	16	100	1488	49.60	4.209	23.053
Post Audiovisual	30	56	44	100	2244	74.80	2.820	15.443
Valid N	30							

The results of the descriptive statistics of the teleeducation method group of 30 respondents from the sample had the lowest pre-test score of 48, the highest score of 82, and the total value of the pre-test was 1780. While the post-test score had the lowest score of 16, the highest score of 92, and the total score of post-test 2348.

The results of descriptive statistics for the audiovisual group of 30 respondents from the sample had the lowest pre-test score of 16, the highest score of 100, and the total score of the pre-test was 1488. Meanwhile, the post-test score had the lowest score of 44, the highest score of 100, and the total of post-test scores 2244.

## 2. Normality Test Results

**Table 2: Normality Test of the Teleeducational Method and Audiovisual Method**

	N	Skewness	
	Statistic	Statistic	Std. Error
Pre Teleeducation	30	.176	.424
Post Teleeducation	30	-.576	.424
Valid N	30		
Pre Audiovisual	30	.726	.424
Post Audiovisual	30	-.237	.424
Valid N	30		

From the results of the normality test, it can be seen that the teleeducation method group has a skewness value of 0.176 and the post-test -0.575. So that the pre-test and post-test of the teleeducation group have a skewness close to zero so that each data has a tendency to be normally distributed.

From the results of the normality test in the audiovisual method group, it showed that the pre-

test value had a skewness value of 0.726 and the post-test had a skewness value of -0.237. So that the pre-test and post-test of the effective efficient group have skewness close to zero so that each data has a tendency to be normally distributed.

## 3. Results of the T-Paired Difference Test

**Table 3: Paired Sample Statistics**

	Mean	N	Std Deviation	Std. Error Mean
Pair 1 delta teleeducation	12.2667	30	13.36731	2.44053
delta audiovisual	24.2000	301	18.87765	3.08142

The t-paired difference test on the comparison of the teleeducation method and the audiovisual method uses = 5% two tailed, with reference  $H_0$

is rejected if  $t\text{-count} > t\text{-table}$ , or the p-value in the sig. (2-tailed) column  $<$  level of significant ( $\alpha$ ).

**Table 4: Paired Sample Test**

	Paired Differences					T	Df	Sig (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 delta teleeducation delta audiovisual	-1.29333E1	22.37445	4.08500	-21.8809	4.57858	-3.166	29	0.04

The data used is the delta of the teleeducation method and the delta of the audiovisual method with 30 samples, it can be concluded that  $H_0$  is rejected so that  $H_a$  is accepted because of sig.(2-tailed)  $0.04 < 0.05$  level of significant ( $\alpha$ ). Or t-count (absolute value +/-)  $3.166 > t$ -table 2.04. So the conclusion is that  $H_a$  is accepted, so it is suspected that there are differences in the teleeducation method and the audiovisual method.

## DISCUSSION

### AUDIOVISUAL METHOD

The results showed that the provision of audiovisual methods in the intervention group had a high effectiveness. This is indicated by an increase in the average score on the level of knowledge of pregnant women about the importance of exclusive breastfeeding as an effort to prevent stunting. Knowledge is the result of knowing someone by using the sensing process of an event<sup>14)</sup>. A person's knowledge is obtained from experience derived from various sources of information, such as social media, internet, books and so on<sup>15)</sup>. Knowledge of pregnant women can be increased by providing education about health related to the health of the mother, pregnancy and fetus. One of the health conditions that need to be considered during pregnancy is the fulfillment of nutrition in the first 1000 days of life. This will have an impact on optimal child development, if they do not get appropriate nutrition, the child will be more susceptible to stunting.

Delivery of education during the COVID-19 pandemic can be done using the audiovisual method (educational video) to avoid the spread of the virus to pregnant women. audiovisual has a significant difference (p-value 0.002) compared to using the flipchart method. The same study was conducted by Mardhiah (2020) that audiovisual media was more effective in increasing knowledge and attitudes about balanced nutrition for children under five compared to counseling. Another study conducted by Hakim 18. with the results of his

research showed significant results on the knowledge of fishermen about premarital sex before and after the provision of audiovisual media with a p-value of 0.001.

The results of the study that the provision of audiovisual methods in the intervention group had a high effectiveness in influencing the attitudes of pregnant women about the importance of exclusive breastfeeding as an effort to prevent stunting. Attitude is a form of feeling, both favorable and unfavorable on something. Attitude is a positive or negative assessment of something<sup>19)</sup>. The formation of attitudes is influenced by several factors such as age, education, health status, environmental factors and information received. The results of this study are in accordance with the research conducted by Sudarmi (2021) that health promotion related to the prevention of complications of pregnancy and childbirth using the audiovisual method has a significant difference in attitude (p-value 0.002) compared to using the flipchart method.

Another study conducted showed that audiovisual media provided an increase in attitudes with a p-value of 0.000 towards attitudes and actions related to disease prevention. In addition, research conducted shows differences in the attitudes of primiparous mothers in lactation management before and after health education using the audiovisual method with a p-value of 0.000<sup>20,21)</sup>. The delivery of audiovisual methods to be more effective is also strengthened by the background of the respondents. This is supported by Tendean's research (2014) which states that there can be changes in the psychological and psychological aspects of pregnant women so that the attitude reflected will be better with increasing age of the mother and a supportive environment health. memory behavior is an individual's ability that is influenced by knowledge to manage information<sup>22)</sup>. Memory uses a core element of cognitive development. In the learning process, remembering and forgetting are a continuous process. Hormones

have a major influence on maternal cognition. The decrease in the hormone estrogen in the mother affects behavior, intelligence and neuronal development. The brain will choose positive memories which will be processed into intermediate memory.

The effectiveness of the audiovisual method has been proven to increase knowledge and attitudes of pregnant women regarding exclusive breastfeeding as an effort to prevent stunting. However, to see the implementation of mother's knowledge, it can be known after delivery until the mother's baby is 6 months old. It aims to evaluate exclusive breastfeeding for 6 full months and infant growth for 2 years (First 1000 Days of Life) of pregnant women in this study.

Knowledge is the result of knowing someone about something through his five senses. This will be different for each person depending on how they perceive it <sup>24)</sup>. In this study, it was found that the level of knowledge of pregnant women before the intervention was in the sufficient and less categories. This is in line with previous research which said that in the Pujon sub-district the mother's level of knowledge before being given treatment was in the sufficient category <sup>25)</sup>. The level of knowledge was influenced by various factors, such as a low level of education <sup>26)</sup>.

### **TELEEDUCATION METHOD**

The success of breastfeeding is influenced by several factors, one of which is the mother's knowledge about lactation. Pregnant women with knowledge about breastfeeding will affect exclusive breastfeeding, which is stated whether or not the breastfeeding pattern is good. Mothers with a good level of knowledge are 1.9 times more likely to give exclusive breastfeeding compared to mothers with less knowledge. Another study showed that more frequent counseling for pregnant women related to exclusive breastfeeding with various methods increased the awareness of pregnant women to give exclusive breastfeeding <sup>27)</sup>.

The results showed the difference in the average increase in the level of knowledge of pregnant women between the intervention group and the control group after treatment in the form of teleeducation. The post-test results of the intervention group experienced a further increase in average compared to the control group. This shows that the treatment given to the intervention group affects the level of knowledge of pregnant women about exclusive breastfeeding as an effort to prevent stunting. The results of this study are in line with previous research by Sitorus (2021)

which states that health promotion affects the knowledge of pregnant women about exclusive breastfeeding in stunting prevention as evidenced by an increase in the proportion of respondents in the intervention group who are included in the good knowledge category by 20% <sup>28)</sup>.

The health promotion in question is the process of providing information to pregnant women about exclusive breastfeeding for infants aged 0-6 months to maximize their growth and development so that they do not experience stunting during toddlerhood <sup>29)</sup>. The health promotion carried out in this study was teleeducation through WhatsApp video calls. Teleeducation is any type of distance education that uses electronic circuits to deliver learning, interaction, and guidance <sup>12)</sup>. Teleeducation is a very important change during the COVID-19 pandemic when face-to-face meetings tend to be difficult. The existence of teleeducation allows the provision of effective information by minimizing the possibility of being exposed to COVID-19 <sup>30)</sup>. For pregnant women, teleeducation provides convenience for pregnant women who have limited access to health facilities. Teleeducation also provides a wider space for health workers to be able to contact patients more easily without worrying about the risk of COVID-19 transmission as in face-to-face consultations.

One of the communication media that is currently loved by the community is WhatsApp (WA) social media. WhatsApp can be used as a communication tool in the teaching and learning process. One of the advantages of WhatsApp is that it has a video call feature <sup>31)</sup>. Other studies have shown that WhatsApp provides better video call results and is easier to use. Another study conducted by Dewantara (2021) showed that there was effectiveness and participant response to the material taught by WhatsApp video calls. In addition, a study in the city of Surabaya conducted by making video calls to pregnant women was proven to have an effect on increasing the insight of pregnant women.

The media used in delivering material on stunting and exclusive breastfeeding in this study was poster media sent via WhatsApp to respondents in image format. Researchers assess this media to be effective because it does not require additional applications to open images. In addition, posters in the form of images are easier to read, save, and disseminate on the WhatsApp application. The success of health promotion is supported by media that help facilitate the delivery of messages or materials. Posters are visual media used to convey messages or materials through images, colors, and

writing. Previous research stated that the reader's interest in reading material content increased when using poster media <sup>33</sup>). Research by Suhertusi (2015) found that providing education with print media was effective in increasing the knowledge of pregnant women which was in line with the results of this study, namely there was an increase in the average level of knowledge after being given health promotion through poster media.

The selection of counseling methods and media used in this study was adjusted to the research respondents who were dominated by pregnant women under the age of 30 who were included in the category of young adults, so they used gadgets and social media more in their daily lives. The educational background of pregnant women in this study were mostly high school graduates. There is a tendency that the higher the education of pregnant women, the easier it is to review the health information about exclusive breastfeeding that is conveyed <sup>29</sup>).

### **EFFECTIVENESS OF AUDIOVISUAL METHODS VS TELEEDUCATIONAL METHODS**

From the results of statistical tests that compare the teleeducation method and the audiovisual method, it can be concluded that there is a difference between the teleeducation method and the audiovisual method. The provision of education using the audiovisual method compared to the teleeducation method proved that the audiovisual method was more effective than the teleeducation method. Attitude is a person's closed reaction to something. Attitudes can only be interpreted beforehand from closed behavior, so they cannot be seen directly <sup>34</sup>). The attitude of pregnant women in readiness to provide exclusive breastfeeding is strongly influenced by the education provided both from the delivery and the media used. Previous studies found that application-based electronic media was more effective in improving the attitudes of pregnant women towards exclusive breastfeeding compared to face-to-face education. Another study stated that the prevention of stunting during pregnancy can be done through promotive and preventive efforts that focus on increasing the positive attitude of pregnant women towards stunting prevention using several methods and educational media <sup>35</sup>).

The results of the study that the provision of audiovisual methods in the intervention group had a high effectiveness in influencing the attitudes of pregnant women about the importance of exclusive breastfeeding as an effort to prevent stunting. Attitude is a form of feeling, both favorable and

unfavorable on something. Attitude is a positive or negative assessment of something <sup>19</sup>). The formation of attitudes is influenced by several factors such as age, education, health status, environmental factors and information received. The delivery of audiovisual methods to be more effective is also strengthened by the background of the respondents. This is supported by Tendean's research (2014) which states that there can be changes in the psychological and psychological aspects of pregnant women so that the attitude reflected will be better with increasing maternal age and a supportive environment for health behavior. Memory or memory is the ability of individuals who are influenced by knowledge to manage information. Memory uses a core element of cognitive development. In the learning process, remembering and forgetting are a continuous process. Hormones have a major influence on maternal cognition. The decrease in the hormone estrogen in the mother affects behavior, intelligence and neuronal development. The brain will choose positive memories which will be processed into intermediate memory <sup>23</sup>).

The results showed a difference in the average increase in attitudes of pregnant women between the intervention group and the control group after treatment in the form of teleeducation. There was a decrease in the average post-test results in the control group, while in the intervention group there was an increase. This shows that the treatment given to the intervention group affects the attitudes of pregnant women regarding exclusive breastfeeding as an effort to prevent stunting. The attitude of pregnant women in this study was categorized as a positive attitude. Attitude is a statement of a person's readiness to act which is closely related to the experience they have. If the experience of a thing or situation is considered pleasant, then the readiness to act on it tends to be positive. If someone responds positively to something, it will produce a good behavior <sup>34</sup>).

The results of this study are in line with previous studies by Sitorus (2021) and Merdhika (2014) which state that health promotion affects the attitudes of pregnant women about exclusive breastfeeding in preventing stunting. Research at the Posyandu Cempaka II Puskesmas Pembantu Kwala Bekala Medan also said that intervention in the form of counseling can affect the improvement of mothers' attitudes about exclusive breastfeeding as evidenced by an average increase in the attitude score of pregnant women and meeting the criteria for a positive attitude <sup>36</sup>). A study on increasing mother's knowledge and attitudes pregnant women with media-based counseling stated that there were

differences in the attitudes of respondents before and after counseling.

Another study conducted by providing e-booklet media stated that there was a difference in the average value of attitudes before and after health promotion was carried out. This is because the use of e-booklets as an educational medium for pregnant women makes it easier for mothers to understand the information conveyed because they can see directly the pictures and writings which are an explanation of the content of the information to be provided. This social media-based education also has the advantage that the materials shared via Whatsapp can be read directly and repeated according to the wishes of the respondents<sup>37</sup>.

## CONCLUSION

The audiovisual method is more effective in providing education to pregnant women as an effort to prevent stunting. The audiovisual method and the efficient teleeducation method have significant differences, this is obtained from the results of the t-test ( $t\text{-count} > t\text{-table } 3,166 > 2.64$

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