THE EFFECT OF NUTRITION EDUCATION USING ANIMATED VIDEO MEDIA ON KNOWLEDGE AND ATTITUDE OF BALANCED NUTRITION MESSAGES IN CLASS V STUDENTS IN PUBLIC ELEMENTARY SCHOOL KRAMAT JEGU II SIDOARJO DISTRICT

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Abstract. Nutrition knowledge plays an important role in determining the degree of public health. various nutrition and health problems can occur due to lack of knowledge about balanced nutrition. The right media is needed as a tool to facilitate education, one of which is animated video. Research purpose is determine the effect of animated videos as a media for nutrition education on knowledge and attitudes before and after education on balanced nutrition messages for fifth grade students at Public Elementary School Kramat Jegu II. This research is pre-experiment with a one group pretest-posttest design. The sample of this study was 48 students. Data collection was carried out by filling out questionnaires and providing education. Data analysis using Wilcoxon Signed Ranks. The results showed that most respondents did not have sufficient knowledge before education. After education, all respondents were in the good category. Wilcoxon Signed Ranks test shows that there is a significant difference in the knowledge and attitude of respondents before and after education using animated video media (P value = 0.000). There is an effect of education through animated video media on knowledge and attitudes after being given education using animated video media.

Keywords: Nutrition Education, Animated Video Media, Balanced Nutrion

1 INTRODUCTION

Nutrition knowledge plays an important role in determining the health status of the community (Nana & Zema, 2018) (Selviyanti et al., 2019). Various nutrition and health problems can occur due to lack of knowledge about balanced nutrition One of the problems that arise as a result of a lack of nutritional knowledge is an imbalance in food intake (Kabir et al., 2018) (Zaki & Sari, 2019) (Reber et al., 2019). Excess or lack of food intake can simultaneously lead to a double burden of nutritional problems, namely malnutrition and obesity in the community. This can occur in various age groups, including school-age children (Fitriyanti et al., 2021)

The 2018 Sidoarjo District Riskesdas results showed that the prevalence of short children in Sidoarjo at the age of 5-12 years was 10.79% (2.39% very short and 8.40% short), the prevalence of thin (according to IMT / U) in children aged 5-12 years was 6.64% (1.43% very thin and 5.21% thin), and obese children were 16.26% (12.47% fat and 9.93% obese)(Riskesdas Jatim, 2018)

In preventing nutritional problems that occur, there are several efforts that can be made, one of which is to increase knowledge about balanced nutrition (Simanjuntak et al., 2022). The Indonesian government has a policy that is useful for strengthening Human Resources (HR) by improving health regarding nutrition in social life through the implementation of balanced nutrition as stated in the Minister of Health Regulation No. 41 of 2014 regarding Balanced Nutrition guidelines (Affandi, 2019). Some student's knowledge level is still relatively low about nutrition because there are still mistakes in applying balanced nutrition in their lives (Liu et al., 2018).

Improving knowledge about balanced nutrition can be done by providing nutrition education (Tam et al., 2019). Nutrition education is a way to make a person or group of people understand the importance of nutrition (Schlenker et al., 2023) (Bush et al., 2020). The delivery of nutrition messages as part of nutrition education is very important in improving the nutritional status of the community (Diddana et al., 2018) (Douglas et al., 2019). In carrying out nutrition education, media is needed as a tool to facilitate the delivery of counseling (Fitriani Dwiana et al., 2019)

Health counseling media is one element of the learning process that will support other elements (Sahu, 2020) (Blake et al., 2020). The actual counseling media does not only function as a complement, namely helping to provide information for reminders. However, media also has the power to attract attention (Yunita, 2023). The selection of the right media in conducting education must also be considered to increase motivation in receiving messages, one of which is through animated video media (Amrullah et al., 2021).

Animated video media is media that contains a set of images that are processed to produce movement and are equipped with audio so that they seem alive and store learning messages (Mufidah et al., 2020). Animation can increase a person's understanding if used consistently(Amini et al., 2018) (Baglama et al., 2018).

From the results of preliminary studies conducted at Public Elementary School Kramat Jegu II on November 3, 2022 regarding the level of knowledge about balanced nutrition of 30 class V students, the results showed 25 people (83%) with a lack of knowledge and 5 people (17%) with a sufficient level of knowledge. This study aims to determine the effect of animated videos as a nutrition education media on knowledge and attitudes about balanced nutrition messages of grade V students at SDN Kramat Jegu II. So it is hoped that educational institutions can develop extension programs to convey health messages with animated video media in learning activities.

2 RESEARCH METHODS

This research is a pre-experimental study using a one-group pretest postest design, and was conducted from November 2022 to March 2023 at Public Elementary School Kramat Jegu II, Sidoarjo Regency. Students enrolled in grade five at Public Elementary School Kramat Jegu II constituted the research population for this particular research project. The sample selection of each student was done using the direct random

sampling method. The total number of students was 93. As a direct consequence of this, 48 students were used as the sample.

Completion of the questionnaire served as the means of data collection for this study. The gender and age of the respondents were included in their characteristic statistics. Respondents in this study completed the questionnaire before and after the test to gather information on their knowledge and attitude. After completing the ten-minute pre-test, the participants received seven minutes of nutrition education through the use of animated video media. After the education was given to the respondents on a different day, they were then given a ten-minute post-test.

Univariate analysis was used in the data analysis process. To determine the demographics of respondents, bivariate analysis was conducted. Respondent demographics included gender and age, which were presented in a frequency distribution table. Bivariate analysis with Wilcoxon signed test was used to support the hypothesis that there is relationship between knowledge and perception of balanced nutrition messages before and after teaching. This hypothesis was tested to see if there was a change in either variable as a result of the teaching.

3 RESULT

The results of this study include the characteristics of respondents according to age, the characteristics of respondents according to gender, the level of knowledge of respondents before and after being given education, the level of attitude of respondents before and after being given education.

Table 1. Gender Frequency Distribution of Grade 5 Students at Public Elementary School Kramat Jegu II in 2023

Gender	n	Percentage (%)
Man	24	50
Woman	24	50
Total	**48**	**100**

Source: Primary Data, 2023

Based on table 1, it can be seen that male and female respondents have the same number, namely 24 students (50%) each.

Table 2. Age Frequency Distribution of Grade 5 Students at Public Elementary School Kramat Jegu II in 2023

Age	n	Percentage (%)
10	15	31.3
11	31	64.6
12	2	4.2
Total	**48**	**100**

Source: Primary Data, 2023

Based on table, it can be seen that the age group of respondents mostly consisted of those aged 11 years, with 31 respondents representing 64.6% of the total respondents.

Table 3. The Effect of Animated Video Media on Knowledge About Balanced Nutrition Messages of Grade 5 Students at Public Elementary School Kramat Jegu II

Attitude Score	**n**	**Minimum**	**Maximum**	**Average**	**p-value**
Before	48	20	70	56,04	0.000
After	48	70	100	88,96	

*Wilcoxon Signed Rank Test

Based on table, Before receiving education in the form of animated video media, the average score for understanding of a healthy and balanced diet was 56.04, with a standard deviation of 10.86. After receiving education, participants' understanding of a healthy and balanced diet reached an average of 88.96 with a standard deviation of 7.21. Findings from the Wilcoxon Signed Rank Test showed a p value of 0.000 (0.05), indicating that there was a statistically significant difference between the two scores.

Table 4. The Effect of Animated Video Media on Attitude About Balanced Nutrition Messages of Grade 5 Students at Public Elementary School Kramat Jegu II

Attitude Score	**n**	**Minimum**	**Maximum**	**Average**	**p-value**
Before	48	40	80	67,71	0.000
After	48	80	100	95,63	

*Wilcoxon Signed Rank Test

Based on table, the standard deviation for balanced nutrition attitudes before getting education through animated video media is 7.50, while the average score is 67.71.

While the average score for a balanced nutritional attitude after obtaining knowledge through animated video media is 95.63 with a standard deviation of 7.11. Based on the results of the Wilcoxon Signed Rank Teist test which obtained a value of p = 0.000 (0.05), a statistically significant difference was found in the average score of balanced nutrition attitude after receiving an intervention in the form of video animation media. This difference was found after respondents received education.

4 DISCUSSION

The results of data analysis based on the characteristics of respondents showed that the number of male respondents was 24 students (50%) and females were 24 students (50%). While the most age is 11 years old with 31 students (64.6%). According to Piaget's theory, children aged 7-12 years have used logical thinking on the knowledge they have and already have cognitive development or memory(Juwantara, 2019). Grade 5 elementary school children have entered the high grade of elementary school and have reached high objectivity. The way children think at the age of 10-12 years includes children who can already recognize something based on real images or reality made in pictures.

Measurement of children's knowledge about balanced nutrition messages in this study was carried out using a questionnaire that has been submitted and will then be analyzed using SPSS (Statistical Program for Social Scieince). According to Suwandono, a person's nutritional knowledge can be assessed based on the respondent's answers to the questions given according to the questionnaire submitted (Sulviani et al., 2022)

This study used Pre-test and Post-test. Pre-test was conducted to determine the basic knowledge of respondents regarding balanced nutrition messages before education. Post-test was conducted to determine knowledge based on respondent’s understanding after being given education.

Based on the results of knowledge analysis during the pre-test conducted on respondents, the score results are seen from the number of questions that can be answered correctly from several aspects of nutrition that are questioned in the questionnaire. This study was conducted by providing nutrition education through animated video media to grade V students at Public Elementary School Kramat Jegu II. Knowledge before being given education there was 1 respondent who had the lowest score of 20 and there were 8 respondents who had the highest score of 70 with an average of 56.04. After being given education, there was 1 respondent who had the lowest score of 70 and 9 respondents who got the highest score of 100 with an average of 88.96.

In line with Yudiarti's research (2020), the average value of knowledge before and after providing education is obtained after providing education of 71.5 from a maximum value of 100 points. This shows that the value after the provision of education increases when compared to the value before education because during the educational presentation the respondents pay enough attention by directly asking the extension agent

if they do not understand the animation video provided. Another influencing factor is that the media used is video so that it attracts students' attention to focus on seeing and understanding the material presented(Fauzi et al., 2022)

Based on research that has been conducted by providing nutrition education through animated video media to grade V students at Public Elementary School Kramat Jegu II, the attitude before being given education is 1 respondent who has the lowest score of 40 and there are 4 respondents who have the highest score of 80 with an average of 67.71, after being given education there are 6 respondents who have the lowest score of 80 and 33 respondents who get the highest score of 100 with an average of 95.63.

Students' attitudes that are good after being given education can become good behavior if they meet several conditions of behavioral determinants, among others, support from the surrounding community is needed, in this case parents play a big role in continuing to monitor their children so that they can carry out the contents of the balanced nutrition message that has been explained. Increased understanding of the attitude of balanced nutrition messages is due to the use of animated media that involves the senses of sight and hearing where videos can attract students' attention to focus on understanding the material presented during animated video playback. In addition, the statements provided in the attitude questionnaire are positive statements so that they can be easily understood by respondents.

This study is also in line with Adin's research (2022) showing that there are differences in knowledge before and after providing nutrition education (SARI et al., 2022). This is due to the factor of using educational media, namely through animated video media where the educational process takes place using the senses of sight and hearing (Febriani et al., 2019). The use of animated video media as learning media has several advantages, among others, being able to increase students' attractiveness and skills towards the material presented, students can answer the questionnaires given correctly because the animated video has a coherent flow of material so that students' memory skills increase when filling out questionnaires. The animated video also uses vocabulary that is easy to understand for school-age children so that every delivery of material is easy to understand.

5 CONCLUSION

Based on the results of research on the effect of nutrition education with animated video media on knowledge and attitudes of balanced nutrition messages of fifth grade students of Public Elementary School Kramat Jegu II, it was concluded that there was an increase in knowledge of 32.92 with an average score of 90. Attitudes increased by 27.9 with an average score of 95.63. Based on the increase in the score, there is an effect of balanced nutrition message education with animated video media on knowledge and attitudes of balanced nutrition messages in fifth grade students of Public Elementary School Kramat Jegu II Sidoarjo District ($p = 0.000$).

For the future, educational institutions can develop extension programs to deliver health messages, especially about balanced nutrition using animated media in learning activities and extracurricular activities.

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