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THE INFLUENCE OF POSTER AND ANIMATED VIDEO MEDIA ON FRUIT AND VEGETABLE CONSUMPTION ON CHILDREN'S KNOWLEDGE AT SDN KARAWANG KULON II

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Abstrak

Knowledge and attitude are some of the factors contributing to low consumption of fruits and vegetables in children. Knowledge and attitude also influence children's eating habits. Therefore, the aim of this study is to analyze the influence of a dietary intervention using posters and animated videos on the knowledge of elementary school children. The research plan employs a quasi-experimental design by providing nutrition education interventions to three groups of students in Karawang Regency, West Java in May 2023. There are 30 elementary school students. Questionnaire data were analyzed using the Wilcoxon rank test for abnormal data and paired t-test for normal data to measure the extent of data differences. After the intervention, students' knowledge regarding the animated video media significantly increased (p-value = 0.032), making animated video media one of the effective ways to improve the nutritional knowledge of elementary school students and change attitudes for the better.

Keyword : Fruits and Vegetables; Media, Nutritional Knowledge

Introduction

In Indonesia, the consumption of fruits and vegetables is still relatively low and below standard. According to data from the 2018 Basic Health Research (Riskesdas), 95.5% of the Indonesian population above 10 years old consume less than 5 servings of fruits and vegetables per day per week on average. When measured by age group, the younger population is the least likely to consume fruits and vegetables (98.4%). The low consumption of fruits and vegetables in West Java exceeds the national average, with nearly 100% [1].

According to the World Health Organization (WHO) (Ministry of Health of the Republic of Indonesia, 2014), WHO recommends consuming 400 grams of fruits and vegetables per day, including 250 grams of fruits and vegetables, totaling 150 grams each day. The balanced diet guidelines from Regulation No. 41/2014 state consuming 3-4 servings of vegetables and 2-3 servings of fruits per day. Sufficient intake of fruits and vegetables is defined as consuming a minimum of 5 servings combined of fruits and vegetables each day [1].

However, Indonesian children aged 5 to 12 years old consume an average of 34 grams of vegetables and processed foods per day. Leafy vegetables are the most commonly consumed type, at 33.9 grams compared to other vegetables (such as bean sprouts, cabbage, and broccoli). Meanwhile, the consumption of fruits and their processed products per person is 26 grams per day, with bananas being the most consumed fruit at 10 grams compared to other fruits [2]. Furthermore, Indonesian children only consume half of the recommended fiber intake, and urban children have lower fiber

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intake compared to rural children. This situation is unnecessary, considering the abundance of fruits and vegetables in Indonesia and their usually affordable prices. However, due to poor dietary habits, one might end up not consuming enough fruits and vegetables.

A study conducted by Mohammad stated that elementary school children in the city of Bogor have insufficient intake of fruits and vegetables. Students from SDN Papandayan (urban area) consumed vegetables and fruits ≥100 grams per day and 60-120 grams per day, while students from SDN Cibanteng (rural area) consumed 50-100 grams per day and <60 grams per day, indicating low consumption of fruits and vegetables in both schools [3].

In daily life, it is crucial to consume fruits and vegetables as they play a role in regulation, contain essential nutrients such as vitamins and minerals, are rich in water, provide ample nutrition, antioxidants, and can prevent obesity and various other degenerative diseases. These include coronary heart disease, diabetes, hypertension, and cancer. Some diseases can arise due to a deficiency in vitamin A, including hemeralopia, xeroderma, intestinal membrane bleeding, and corneal damage.

The knowledge of school-aged children needs to be enhanced, thus requiring nutritional education. Nutritional education is necessary to improve the nutritional knowledge of school children, cultivate positive attitudes towards nutritious food, and develop healthy eating behaviors. By gaining a better understanding of nutrition, more children will consider the types and quality of food they choose to consume. In reality, this level of awareness emerges in developed countries [4].

One of the factors influencing children's consumption of fruits and vegetables is knowledge. Research studies by Dhaneswara (2016) and Mohammad and Madanijah (2015) found that knowledge is related to one's attitude towards consuming fruits and vegetables. In a study conducted by Amalia et al. (2012), it was stated that 4th and 5th grade elementary school students have low nutritional knowledge. Therefore, nutritional education should be provided to school-aged students to enhance their knowledge about the consumption of fruits and vegetables [5].

During their school-age years, children begin to detach from parental supervision, thus becoming selective eaters (picky eaters) [6] and only consuming a few foods they like, resulting in them rarely eating fruits and vegetables. During this school period, children require adequate and balanced nutrition to think, learn, and engage in activities [7].

Therefore, nutritional education is necessary to increase fruit and vegetable consumption, considering the low intake of fruits and vegetables among elementary school-age groups, especially in urban areas. This study aims to analyze fruit and vegetable nutritional education using posters and animated videos to enhance the knowledge of school-aged children at SDN Karawang Kulon II in 2023.

Method

This study utilized a quasi-experimental design with a pre-post intervention method. Researchers could examine whether there were any changes by administering a post-test questionnaire to respondents after the intervention involving the provision of poster and animated video media. The study was conducted in May at Karawang Kulon II Elementary School, Karawang Regency, West Java.

The subjects of this study are 30 fourth-grade students. The intervention consisted of nutritional education presented and disseminated in the form of posters and animated videos, including: 1) the importance of consuming fruits and vegetables; 2) types of fruits and vegetables; 3) recommended daily intake of fruits and vegetables; 4) Nutritional content, vitamins, and benefits of fruits and vegetables; 5) Consequences of not consuming fruits and vegetables; 6) Tips for consuming fruits and vegetables for children.

The instrument used in this study is a questionnaire that has been tested for validity and reliability. Data were collected through a questionnaire containing respondent characteristics (age, gender, height, weight, and nutritional status), a questionnaire on knowledge about fruits and vegetables, and responses. The primary data for measuring weight and height are used to determine nutritional status. A calibrated weighing scale, accurate to 0.1 kg, is used to measure weight. A microtoise meter, with a precision of 0.1 cm, is used to measure height, calibrated before use. Nutritional status analysis based on the Body Mass Index (BMI) for age is divided into five categories: severely underweight, underweight, normal, overweight, and obesity:

Table 1. The classification of Body Mass Index (BMI) according to the Ministry of Health of the Republic of Indonesia 2010 for children aged 5-18 years is as follows:

Score Z-skor	Classification
< - 3 SD	Severely Underweight
-3 SD and <-2 SD	Underweight
-2 SD and 1 SD	Normal
> 1 SD and 2 SD	Overweight
> 2 SD	Obesity

The media used in this study are posters and animated video media. Below are the designs of the poster and animated video media used in this research.

Figure 1.Poster

Figure 2. Animated Video

According to Nursalam (2016), respondents' level of knowledge is classified into three categories: good, sufficient, and poor. They are as follows: Good knowledge: 76%-100%, Sufficient knowledge: 56%-75%, Poor knowledge: < 56% [8].

Meanwhile, the data generated from the research are processed using SPSS software version 26. Univariate and bivariate analyses are the data analysis methods used in this study. Descriptive

statistical tests are used for univariate analysis, and paired sample t-tests are used for bivariate analysis. If the data are abnormal, then the Wilcoxon test is conducted.

Result

1. The characteristics of the respondents include gender, age, and nutritional status as indicated by BMI-for-age (BMI/U) before and after the intervention in each group.

   The results of the univariate analysis can be seen in the table below.

Table 2. Respondent Characteristics

Variabel	n	%
Gender:		
Man	20	66,7
Woman	10	33,3
Age:		
9 years	3	10,0
10 years	25	83,3
11 years	2	6,7
Nutritional Status:		
Malnutrition	19	63,3
Normal Nutrition	8	26,7
More Nutrition	3	10,0

Source: Primary Data, 2023

The results of the descriptive analysis indicate that 66.7% of respondents are male, while 33.3% are female. In terms of age, the majority of respondents are 10 years old, accounting for 83.3%. The study also shows that nutritional status based on Body Mass Index for age (BMI/U) indicates that 19 respondents (63.3%) are undernourished, while 3 respondents (10%) are overweight

The Respondent Knowledge Regarding Fruits and Vegetables

The analysis results presented in Table 3 indicate that there was an increase in respondents' knowledge scores in both the pre-test and post-test. Prior to receiving nutritional education, respondents categorized as having good knowledge accounted for 6 respondents (40%) and those with sufficient knowledge accounted for 9 respondents (60%) in the poster media group. After exposure to nutritional education, their knowledge in the poster media group increased, with 8 respondents (53.3%) categorized as having good knowledge and 7 respondents (46.7%) categorized as having sufficient knowledge.

The results for the animated video media show that prior to receiving nutritional education, respondents categorized as having good knowledge accounted for 9 respondents (60%), while those with sufficient knowledge accounted for 6 respondents (40%). After receiving nutritional education, respondents' knowledge in the animated video media group increased, with 10 respondents (66.7%) categorized as having good knowledge and 5 respondents (33.3%) categorized as having sufficient knowledge.

Table 3. Distribution of Respondents' Knowledge Before and After Nutritional Education

Variabel	n	%
***Pre- Test* Media Poster**		
Not Enough	0	0
Enough	9	60
Good	6	40
***Post- Test* Media Poster**		
Not Enough	0	0
Enough	7	46,7
Good	8	53,3
***Pre- Test* Media Video Animasi**		
Not Enough	0	0
Enough	6	40
Good	9	60
***Post- Test* Media Video Animasi**		
Not Enough	0	0
Enough	5	33,3
Good	10	66,7

Source: Primary Data, 2023

2. The Influence of Nutritional Education Using Poster and Animated Video Media on the Improvement of Respondents' Knowledge

The results of the change in knowledge can be seen in Table 4. The Shapiro-Wilk test results indicate that the poster media has a normal distribution, therefore paired t-test was used for this media, while the animated video media does not have a normal distribution, hence the Wilcoxon test was used.

Table 4. The Effect of Education on Students' Knowledge

Pengetahuan	*Pre-Test*		*Post- Test*		*p- Value*
	Min-Max	***Mean± SD***	***Min-Max***	***Mean± SD***	
Poster	17-20	18,33± 0,97	17-20	18,60 ± 0,98	0,413[a]
Video Animasi	16-20	17,73 ± 1,22	16-20	18,73 ± 1,16	0,032[b]

Source: Primary Data, 2023
[a]Uji Paired T-test, [b]Uji Wilcoxon
**signifikansi pada p<0,05*

Tabel 4 menunjukkan bahwa rata-rata atau Table 4 shows that the mean of the group using posters was 18.22 with a standard deviation of 0.97, and after the poster intervention, it increased to 18.60 with a standard deviation of 0.98. The paired t-test statistical analysis yielded a p-value of (0.413) or $p < 0.05$, indicating no difference in student data before and after poster exposure.

In the group using animated video media, the mean knowledge of students before the animated video media was 17.73 with a standard deviation of 1.22. After the animated video media intervention, it increased to 18.73 with a standard deviation of 1.16. The Wilcoxon test statistical analysis of knowledge yielded a p-value of (0.032) or $p < 0.05$, indicating a difference in student knowledge before and after the animated video intervention.

Discussion

1. Sample Characteristics

According to Jayanti and Novananda (2017), age can influence nutritional information, as it correlates with the development of cognitive and emotional maturity, leading to an increased understanding as age progresses [9]. In this regard, ten-year-old students, as in this study, align with the findings of Arimurti, who stated that school-aged children between 6-12 years old have a greater tendency to succeed in school [10].

At this stage the child will grow and develop psychologically or cognitively. They learn new environments and are more likely to be influenced by people in their surroundings, such as peers. Because of the neighborhood, eating habits can also be a problem [11].

2. Increased Knowledge Students of SDN Karawang Kulon II Using Poster Media and Animated Videos About The Importance of Fruit and Vegetables

Knowledge is the result of information received and created after identifying a particular object. Good knowledge is based on a good understanding of the material studied. By the end of the study, respondents who had good knowledge tended to have a positive attitude, whereas respondents with a negative attitude could be caused by wrong knowledge or interpretation [12].

When asked about the nutritional content of fruits and vegetables, the post-test results explained that respondents still did not understand the importance of fruit and vegetable consumption as a source of vitamins and minerals. When asked about the amount of fruit and vegetables recommended to be eaten per day, most respondents mistakenly answered that the recommended amount of fruits is 150 grams a day, which PUGS recommends for fruit consumption.

3. The Effectiveness of Using Poster and Animated Video Media as Media of Dissemination in Improving Knowledge.

Research results show that video media improves students' knowledge more than poster media Education with visual audio media is a type of learning that combines several media namely audio (voice) and visual media. (vision) [14]. Animated video media is suitable for elementary school children's learning because animated media can be played easily, so students are happy and interested in the learning process [15].

To ensure that the respondents do not get bored during the intervention, the animated video provided is about three minutes long and accompanied by music. The animated videos used and studied by respondents cover the nutritional content of vegetables and fruits, the portions of fruits and vegetables needed, the benefits and how to eat the right fruit and vegetable.

With video media animation can enhance attention, imagination, and concentration on the given material. It shows that this type of media has the ability to enhance one's knowledge.

The advantages of video media are easy to understand because it involves all aspects, more interesting because there are sounds and images, face-to-face, controllable presentation and a wider and repeatable range [16].

The results of this study are in line with previous research that stated that the provision of nutrition education through animated video has a significant good value demonstrated by ($p<0,001$) in improving the level of knowledge of respondents [17][18][19].

Conclusion

Based on the results of the research conducted, it can be concluded that nutritional education regarding the importance of fruit and vegetable consumption through the provision of posters and animated videos has a significant impact, particularly on animated video media. However, there was no significant effect observed on the improvement of students' knowledge regarding fruit and vegetable consumption in elementary school through the use of posters.

Thus, interventions are needed to determine whether both media have an impact or not. In this study, animated video media emerged as an effective way to improve nutritional knowledge among elementary school children.

In relation to the suggestions for further research, it is hoped that future researchers can continue studying nutritional education through various media formats. Additionally, efforts should be made to engage respondents effectively to enhance students' knowledge about fruit and vegetable consumption.

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