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Nutrition Education for Adolescents Using Animation Videos to Increase Knowledge, Attitudes and Breakfast Behavior

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ABSTRACT

Breakfast is beneficial for adolescents in order to maintain endurance and increase concentration in learning. About 44.60% of adolescents in Indonesia almost never have breakfast and 21.33% of them reason that there is no time for breakfast. Many factors influence knowledge about nutrition, attitudes and behavior at breakfast among adolescents, including educational factors. These factors are important to note because getting used to breakfast is one of the general messages of balanced nutrition. The purpose of this study was to analyze the effect of nutrition education using animated video media on nutritional knowledge, attitudes and breakfast behavior. This research was a quasi-experimental study with a pretest-posttest with control group design. The research was conducted in two junior high schools in Tulungagung District, East Java Province, Indonesia. This research took place in September 2022. Respondents were selected using a purposive sampling technique. The dependent variables in this study were knowledge about nutrition, breakfast attitudes and behavior; while the independent variable was nutrition education using animated videos. Data was collected using a form of knowledge about nutrition, attitudes and breakfast behavior. The collected data were analyzed using the T-test. The results showed that there were differences in the level of knowledge about nutrition, attitudes and breakfast behavior between before and after the intervention with p values of 0.001 respectively; 0.026 and 0.011. Furthermore, it can be concluded that nutrition education using animated video media is effective in increasing knowledge about nutrition, attitudes and breakfast behavior in adolescents. It is hoped that educators and health workers can use animated videos as learning media.
Keywords: adolescents; animated videos; nutrition; nutritional knowledge; attitude; breakfast behavior

INTRODUCTION

Background

Adolescence is also called puberty. This cycle can be defined by the appearance of secondary sexual characteristics [(1)]. Adolescents are very vulnerable to nutritional problems, because at this age they experience many hormonal changes that can affect physical changes. Rapid physical changes and developments make adolescents need higher food intake. Adolescence is divided into several classifications, namely early adolescence, namely 10-13 years, middle adolescence, namely 14-16 years, and late adolescence, namely 17-19 years [(2)].

Irregular eating habits and lack of balanced consumption of nutritious food are problems that often occur among adolescents. A study conducted by Unicef [(3)] found that there were changes in physical activity and eating habits of adolescents. Teenagers in Indonesia rarely participate in physical activities at school. In addition, the eating habits of teenagers who eat fatty foods and processed foods have doubled. These changes also bring lifestyle changes in adolescents. Riskesdas data [(4)] shows that 96.8% of teenagers in Indonesia consume less vegetables and fruit. In addition, the level of consumption of fatty foods, high cholesterol, seasonings, preservatives and carbonated drinks is still high at 91.49%. This will certainly increase the risk of nutritional problems in adolescents.

In Indonesia, East Java is a province with a prevalence of obesity above the national average in adolescents aged 13-18 years [(4)]. The city of Surabaya is one of the cities in East Java which has a prevalence of very thin (1.0%), thin (5.5%), obese (7.7%) and obese (2.2%) in women aged 16-18 years who are seen based on body mass index according to age. Currently, the prevalence of chronic energy deficiency (CED) among women of reproductive age aged 15-19 years in East Java is 44% for pregnant women and 52.5% for non-pregnant women.[(5)]

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A preliminary study conducted on junior high school youth in Tulungagung, East Java showed that out of 46 respondents in three different schools, 47.8% of adolescents had a level of knowledge about nutrition in the less category, 43.5% of adolescents had a moderate level of knowledge, 8.7% of teenagers have a good level of knowledge and 33.3% of teenagers never eat breakfast. This shows the lack of knowledge and awareness of adolescents regarding balanced nutrition and the importance of breakfast to maintain body immunity.

Indirectly, nutritional problems in adolescents are caused by a lack of understanding of balanced nutrition. Therefore, education about nutrition is very important as a way to increase one's knowledge about nutrition, to form positive attitudes and good eating habits.

Based on previous research conducted by Debora et al [(6)] there was an increase in the knowledge and attitudes of adolescents who were given education using audio-visual media. Animation media is very effectively used by educators because it can attract students' attention in learning and generate student motivation and interest. Audio visual media (animation) is considered appropriate when used as an educational aid for adolescents. Based on the description that has been mentioned above, the researcher is interested in knowing more deeply whether there is an influence of nutrition education with animated videos on the level of nutritional knowledge, attitudes and behavior of adolescent breakfasts.

Purpose

The purpose of this study was to analyze the effect of nutrition education using animated videos on nutrition knowledge, attitudes, and breakfast behavior in adolescents

METHODS

Research Design and Sampling Design

This research is a quasi-experimental study with a pretest-posttest with control group design. The population in this study were students aged 13-15 years in two junior high schools in Tulungagung Regency, East Java, Indonesia, namely SMPN 1 Kauman which then served as the experimental group and SMPN 1 Tulungagung which then served as the control group. The sample size was 64 students, from both schools, consisting of 32 students each, based on inclusion and exclusion criteria. The inclusion criteria were adolescents aged 13-15 years, active status as students and permanently domiciled in the Tulungagung Regency area. Meanwhile, the exclusion criteria were adolescents who were sick, adolescents who refused/did not participate in the research series until it was completed. The selection of respondents was carried out using a purposive sampling technique.

Intervention, Measurement and Analysis

The experimental group was given nutrition education through animated videos and the control group was given education using the lecture method. In the pre- and post-intervention phases, knowledge about nutrition, attitudes and breakfast behavior were measured. The data that has been collected was analyzed using the t test.

RESULTS

Table 1 shows that at the pretest stage there was a difference in the level of knowledge between the two groups (p=0.000). Whereas at the posttest stage there was no difference in the level of knowledge between the two groups (p=0.125). In addition, there was a difference in the average score between before and after the intervention in both the video animation group and the control group. The results of the statistical test analysis in the two groups showed significant differences (p=0.001) and (p=0.003).

Table 2 shows that at the pretest stage there was no difference in breakfast attitudes between the two groups (p=0.424). At the posttest stage there was also no difference in breakfast attitudes between the two groups (p=0.594). In addition, there was a difference in the average score between before and after the intervention in both the video animation group and the control group. The results of the statistical test analysis in the two groups showed significant differences (p=0.026) and (p=0.009).

Table 3 shows that at the pretest stage there was no difference in breakfast behavior between the two groups (p=0.174). However, at the posttest stage, there were differences in breakfast behavior between the two groups (p=0.015). In addition, there was a difference in the average score between before and after the intervention in both the video animation group and the control group. The results of the statistical test analysis in the video

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animation group showed a significant difference (p=0.011) and in the control group there was no significant difference (p=0.225).

Table 1. Changes in the level of knowledge about nutrition after being given education through animated videos

Nutrition knowledge	Animation video	*Control*	p
Pretest			0.000*
Mean ± (SD)	68.59 ± 11.23	78.44 ± 6.27	
Median	70	80	
Range	35-85	65-90	
Posttest			0.125*
Mean ± (SD)	81.09 ± 8.86	84.38 ± 8.07	
Median	80	85	
Range	60-95	65-95	
Difference of pretest and posttest	0.001**	0.003**	
Average increase	12.5	5.9	

Note: *: independent samples t-test, ** paired samples t-test

Table 2. Changes in attitude regarding breakfast after being given education through animated videos

Breakfast attitude	Animation video	Control	p
Pretest			0.424*
Mean ± (SD)	63.50 ± 5.87	64.66 ± 5.62	
Median	64	65	
Range	49-70	50-74	
Posttest			0.594*
Mean ± (SD)	65.84 ± 4.22	67.12 ± 6.69	
Median	66	65	
Range	56-72	51-78	
Difference of pretest and posttest	0.026**	0.009**	
Average increase	2.4	2.5	

Note: *: independent samples t-test, ** paired samples t-test

Table 3. Changes in breakfast behavior after being given education through animated videos

Breakfast behavior	Animation video	Control	p
Pretest			0.174*
Mean ± (SD)	75.44 ± 8.90	72.69 ± 6.98	
Median	77.5	71	
Range	47-90	63-90	
Posttest			0.015*
Mean ± (SD)	78.53 ± 8.10	73.97 ± 6.39	
Median	80	74	
Range	45-90	57-87	
Difference of pretest and posttest	0.011**	0.225**	
Average increase	3	1	

Note: *: independent samples t-test, ** paired samples t-test

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DISCUSSION

Health education is an effort to apply the concept of education in the health sector. The main principle of health education is learning. In learning activities there are three main issues, namely input, process and output. To form a good output, it takes a good delivery method as well. One of them is using the media. Educational media is a means to display messages and information so that it is expected to be able to provide attitudes and behavior in a positive direction. Individual knowledge of an object includes positive aspects and negative aspects. A person's attitude is influenced by these two aspects. The better the positive aspects of an object are understood, the more positive attitudes will be produced. A person's level of knowledge will influence behavior and attitudes when choosing the food he eats, thus affecting the nutritional status of the individual [(7)].

In this study, there was an increase in knowledge about nutrition, attitudes and breakfast behavior in adolescents after being given nutrition education using animated videos. This shows that the use of animated videos for nutrition education, especially for adolescents, is still effective in increasing nutritional knowledge, attitudes and behavior of adolescents. These results are in line with research by Sekti & Fayasari [(8)] on junior high school youth in East Jakarta which showed that the use of media in nutrition education can increase knowledge, consumption patterns of vegetables and fruit in adolescents. With animated video media, students are motivated to learn and are able to improve their understanding of the material. In addition, Rike & Adhila (2019) also developed audiovisual media as a means to increase consumption patterns of vegetables and fruit in adolescents and the results showed a significant increase in knowledge, consumption of fruits and vegetables after the intervention. In this study, the use of animated video media gave the impression of fun learning and was able to create a more relaxed and unsaturated classroom atmosphere. Nutrition education delivered using creative media is effective in increasing knowledge, attitudes and behavior in children, because the material presented is in line with the conditions of children and adolescents who are still playing [(9)].

In theory, a person with high nutritional knowledge has good attitudes and behavior in dealing with nutritional and health problems. The results of attitude formation are supported by three interrelated components, namely perception, emotion and behavioral tendencies [(10)]. Meanwhile, behavior is the result of the relationship between stimulus and response, which divides into three domains, namely cognitive, affective and psychomotor [(11)]. The results of the research on the respondents showed that before the intervention, there were still many teenagers who had poor breakfast attitudes and behaviors. This is evidenced by the large number of students who skip breakfast and only have breakfast during recess at school. The majority of students skipped breakfast because they were afraid of being late and not having breakfast prepared by their parents, but after being given an intervention in the form of nutrition education through animated videos, they showed a change in attitude and behavior for a better breakfast.

Animated video media can be used to assist educators and students in increasing nutritional knowledge, stimulating creativity, and student enthusiasm for learning. Using animated videos as educational media indirectly increases students' interest in learning so that students don't feel bored.

CONCLUSION

Based on the results of the study, it can be concluded that animated video media is an effective medium for increasing nutritional knowledge, forming attitudes and breakfast behavior for junior high school adolescents in Tulungagung. For this reason, it is hoped that this media can be used as a solution to reduce the lack of knowledge about nutrition among adolescents and to form more positive breakfast attitudes and behaviors.

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