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## The Effect of Nutrition Education With Video on Knowledge and Attitudes as An Effort To Prevent Obesity in Young Women at Senior High School 2 Bae Kudus

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### ABSTRACT

**Background:** Obesity is a problem quite disturbing among teenagers. The prevalence of obesity continues to increase. One of the efforts to prevent obesity is nutrition education using interactive videos.

**Objective:** To determine the effect of nutrition education with video on knowledge and attitudes as an effort to prevent obesity in adolescent girls at senior High School 2 Bae Kudus.

**Methods:** this research is quasi-experimental with pre-test-post-test control group design. Sampling was done by proportional randomized sampling technique to obtain 23 control samples and 23 intervention samples. The data collected are respondent characteristics data, and knowledge and attitude questionnaires with pre test posttest results. The independent variable is nutrition education with video media, the dependent variable is knowledge and attitude. Knowledge and attitude variables were taken by filling out a questionnaire on the google form link. The knowledge variable consists of 10 questions and the attitude variable consists of 10 statements.

**Results:** The mean knowledge score of the two group increased. In the control group it increased from 69.57 to 82.17 while in the intervention group it increased from 63.48 to 90.87. The mean attitude score of the two group increased. In the control group it increased from 3.14 to 3.82 while in the intervention group it increased from 3.15 to 3.92.

**Conclusion:** there is an effect of nutrition education with videos on knowledge and attitudes.

**KEYWORDS:** knowledge, attitude, video, youth.

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### INTRODUCTION

Adolescence is a time of change from youth to adulthood that is separated by fundamental changes, especially biological, mental, and social changes. Teenagers at this time are experiencing adolescence and extraordinary physical changes. (Mini et al., 2019). Meanwhile, teenagers who are obese throughout their teenage lives will be at risk of experiencing serious diseases such as heart disease, stroke, diabetes, asthma and certain types of cancer. (Suryaputra, 2012) (1)

According to the World Health Organization (2020) Obesity is the accumulation of excessive fat which is harmful to health. The rough population measure of obesity is the body mass index (BMI). According to the Ministry of Health, BMI is classified as obese  $IMT > 25 \text{ kg/m}^2$ . (WHO) states that obesity is in the top five dangers of death worldwide, where basically 2.8 million adults die every year. Moreover, obesity is also considered a cause of non-infectious diseases (2).

Basic Health Research in 2018 shows that the proportion of national central obesity in adolescents aged 15-18 years has grown since 2007 by 18.8%, in 2013 by 26.6%, and in 2018 it was 31.0% (RISKESDAS, 2018). Based on information from the Provincial Health Profile Central Java in 2017, it was stated that obese individuals aged 15 years and over experienced a very large increase, namely 848,938 individuals (7.62%) in 2016 to 2,830,756 individuals (19.47%) consisting of 1,210,498 men (17.98%) and 1,620,258 women (20.75%). The percentage of obesity is 6.04%. The incidence of obesity in women is greater than in men. (Risksedas Central Java, 2017) The prevalence of obesity in Kudus district aged 15 years and over in 2017 was 2,330 people (2.42%), while in 2018 it increased to 1,546 people (2.97%). According to data from the Dersalam Community Health Center, Bae District in 2017, 256 young women were obese (3.34%) (Kudus District Health Profile 2017).

The factors causing obesity in adolescent girls are multifactorial. Increased consumption of fast food, low activity, heredity, socioeconomic status, mental health, diet programs, and age are supporting changes in energy balance that cause obesity (4). Another factor that causes nutritional problems in adolescent girls is a lack of nutritional information (5).

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According to Suryaputra (2012), the level of nutritional knowledge of adolescents is one of the factors that can influence the occurrence of obesity in adolescents. Lack of nutritional knowledge in most obese teenagers makes subjects less ready to choose a nutritious food menu. Most incidents of over- or under-nutrition problems can be avoided if teenagers have adequate information about maintaining and managing food. (6). Efforts are made to provide nutrition education during adolescence through attractive media so that the delivery of the material can be understood effectively and prevents teenage boredom(7).

Video is a general media that can reveal things and events as they really are (Primavera dan Suwarna, 2014) (6). The benefits of video can provide a real representation and indirectly increase memory maintenance in the mind because this media is interesting and easier to remember (Sadiman,2010).

According to previous research, it shows that there is a significant difference in knowledge between the pre and post test in the video group, from 14.6 to 18.5. And there is a significant difference in attitudes towards the level of attitude between the pre-post test in the video group, from 36.45 to 39.65 (6).

The results of a preliminary study at SMA Negeri 2 Bae Kudus obtained data from 49 respondents in class X and 10 people (83.3%). Apart from that, 6 students (26.1%) had less supportive attitudes regarding obesity, while 17 young women (73.9%) had less supportive attitudes towards obesity.

Based on this, the author is interested in conducting research to determine the effect of providing nutritional education using video media on knowledge and attitudes as an effort to prevent obesity in young women at SMA Negeri 2 Bae Kudus. The reason for conducting this research was to determine the effect of nutrition education using video media on knowledge and attitudes as an effort to prevent obesity in young women at SMA Negeri 2 Bae Kudus.

### METHOD

The type of research includes Quasi Experimental with a pretest-posttest control group design research design. The independent variable is nutrition education using video media, while the dependent variable is knowledge and attitude. The location of this research is SMA Negeri 2 Bae Kudus with the research implementation time being July 2021. The population in this research is 241 young women from class X and XI.

There were 222 people from SMA Negeri 2 Bae Kudus and a sample of 46 people taken using proportional random sampling. Data collection was carried out by filling out a questionnaire via Google Form to obtain data on respondents' characteristics, knowledge and attitudes. Data analysis includes univariate analysis to explain the characteristics of variables and bivariate analysis using the Independent t test. The research has been registered with the ethics commission with research ethics number No.376/EA/KEPK/2021.

#### Hasil Table 1. Respondent Characteristics

Variabel	Control		Intervension	
	n	%	n	%
<b>Kelas</b>				
10 Sciences Studies			6	26.1
10 Social Studies			17	73.9
11 Sciences Studies	7	30.4		
11 Social Studies	16	69.6		
<b>Pekerjaan ayah</b>				
Laborer	9	39.1	14	60.9
Trader	1	4.3	1	4.3
Pastor			1	4.3
Retired			1	4.3
Civil Servant	2	8.7		
police	1	4.3		
Driver	1	4.3	1	4.3
No Work	1	4.3		
TNI	1	4.3		
Self-employed	7	30.4	5	21.7
<b>Pekerjaan ibu</b>				
Laborer			5	21.7
House Wife	20	87.0	13	56.5
Trader	2	8.7		
Civil Servant	1	4.3		
Self-employed			5	21.7

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Based on this table, of the 46 samples seen in the control group, there were 7 people from the science class (30.4%) and 16 people from the social studies class (69.6%). Apart from that, most of the father's work in each group is as a laborer (>35%) and the mother's work is as a housewife (>50%).

**Table 2. Knowledge scores before and after Nutrition Education**

Knowledge	Control			Intervension		
	(n)	(%)	Mean±SD	(n)	(%)	Mean±SD
<b>Before</b>			69,57 ± 13,30			63,48 ± 13,68
Less	5	21,7		6	26,1	
Enough	8	34,8		13	56,5	
Good	10	43,5		4	17,4	
<b>After</b>			82,17 ± 8,50			90,87 ± 8,48
Enough	4	17,4		1	4,3	
Good	19	82,6		22	95,7	

Based on the table above, it can be seen that in the control group, before the nutrition education was carried out, 5 people (21.7%) had less knowledge, 8 people (34.8%), 10 people (43.5%) had enough knowledge and after the nutrition education was carried out the knowledge was sufficient. 4 people (17.4%), good 19 people (82.6%). Meanwhile, in the intervention group, before the nutrition education was carried out, 6 people (26.1%) lacked nutritional knowledge, 13 people (56.5%) had sufficient knowledge, 4 people (17.4%) were good and after Nutrition education was sufficient for 1 person (4.3%), good for 22 people (95.7%).

**Table 3. Attitude scores before and after Nutrition Education**

Attitude	Control			Intervension		
	(n)	(%)	Mean±SD	(n)	(%)	Mean±SD
<b>Before</b>			3,14 ± 0,23			3,15 ± 0,45
Not Support	10	43,5		10	43,5	
Support	13	56,5		13	56,5	
<b>After</b>			3,82 ± 0,95			3,92 ± 0,85
Support	23	100		23	100	

Based on the table above, it can be seen that in the control group before the nutrition education was carried out the attitude was less supportive of 10 people (43.5%), 13 people (56.5%) were supportive and after the nutrition education was carried out the supportive attitude was 23 people (100%). Meanwhile, in the intervention group, before the nutrition education was carried out, 10 people (43.5%) had less supportive attitudes, 13 people (56.5%) supported it. And after carrying out nutrition education, the supportive attitude became 23 people (100%).

**Table 4. The Effect of Providing Nutrition Education with Videos on Knowledge**

Variable	Control	Intervension
	Mean±SD	Mean±SD
Pengetahuan		
Sebelum	69,57 ± 13,30	63,48 ± 13,68
Sesudah	82,17 ± 8,50	90,87 ± 8,48
Selisih	12,6 ± 4,8	27,39 ± 5,2

\*Independent t test

Based on the table above, it shows that the average knowledge score of both groups has increased. In the intervention group it increased from 63.48 to 90.87, a difference of 27.39, while in the control group it increased from 69.57 to 82.17, a difference of 12.6.

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**Table 5. The Effect of Providing Nutrition Education with Videos on Attitude**

Variabel	Kontrol	Intervensi
	Mean±SD	Mean±SD
Attitude		
Before	3,14 ± 0,23	3,15 ± 0,45
After	3.82 ± 0,95	3,92 ± 0,85
Difference	0,68 ± 0,72	0,77 ± 0,4

\*Independent t test

Based on the table above, it shows that the average attitude scores of the two groups have increased. In the intervention group it increased from 3.15 to 3.92, a difference of 0.77, while in the control group it increased from 3.14 to 3.82, a difference of 0.68.

## DISCUSSION

The results of the research based on the characteristics of the respondents showed that of the 46 control group samples there were 7 people from the science class (30.4%) and 16 people from the social studies class (69.6%). In the intervention group there were 6 people from the science class (26.1%) and 17 people from the social studies class (73.9%). Judging from the father's occupation in the control group there were 9 workers (39.1%), 1 traders (4.3%), 2 civil servants (8.7%), 1 police (4.3%), 1 driver (4.3%), 1 unemployed (4.3%), 1 TNI (4.3%), and 7 self-employed (30.4%). In the intervention group there were 14 workers (60.9%), 1 trader (4.3%), 1 pastor (4.3%), 1 retired (4.3%), 1 driver (4.3%), 5 self-employed (21.7%). Judging from the occupation of mothers in the control group, there were 20 housewives (87%), 2 traders (8.7%), 1 civil servant (4.3%). On The intervention group contained 5 workers (21.7%), 13 mothers household (56.5%), and 5 self-employed (21.7%). So most of the father's work in each group is as a laborer (>35%) and the mother's work is as a housewife (>50%).

It is hoped that nutrition education for teenagers will be done through attractive media so that the delivery of the material can be understood effectively and avoid boredom among teenagers. (7) Most knowledge is obtained from education, personal and other people's experiences, mass media and the environment. (8). Through interactive video media, it is hoped that it can increase the knowledge of female students at SMA Negeri 2 Bae Kudus. Health education media are all means of conveying information that the communicator wants to convey, whether through print, electronic media (TV, radio, computer and so on in order to increase knowledge and change behavior (9).

ideo is a general media that can reveal articles and events as they really are. (Primavera and Suwarna, 2014). (6) Through sight and hearing to create conditions that can empower students to acquire information, abilities or attitudes. (10) The benefits of video can provide perception

which is real and can indirectly improve memory maintenance in the brain because this media is interesting and easier to remembe. (Sadiman, 2010) (11).

The research results in table 2 show that in the control group before nutrition education was carried out, 5 people (21.7%) had less knowledge (8).

people (34.8%), good 10 people (43.5%) and after nutrition education had sufficient knowledge 4 people (17.4%), good 19 people (82.6%). Meanwhile, in the intervention group, before nutrition education was carried out, 6 people (26.1%) had less knowledge than 13

people (56.5%), good 4 people (17.4%) and after nutrition education had sufficient knowledge 1 person (4.3%), good 22 people (95.7%). According to Suryaputra (2012), the level of nutritional knowledge in adolescents is one of the factors that can influence the occurrence of obesity in adolescents. The lack of nutritional knowledge in the majority of obese teenagers makes subjects less ready to choose a nutritious food menu. Problems with over- or under-nutrition can be avoided if teenagers have sufficient knowledge about maintaining and managing their diet.(6).

Attitudes are emotions or effects directed by someone towards other people, objects or events as the target object of the attitude. (12). In this study, the results obtained were that in the control group, before the nutrition education was carried out, the attitude was less supportive of 10 people (43.5%), 13 people (56.5%) were supportive and after the nutrition education was carried out the supportive attitude was 23 people (100%). Meanwhile, in the intervention group, before the nutrition education was carried out, 10 people (43.5%) had less supportive attitudes, 13 people (56.5%) supported it. And after carrying out nutrition education, the supportive attitude became 23 people (100%). Nutritional attitudes are an individual's tendency to agree or contradict a proposed statement. Nutritional attitudes are closely related to nutritional knowledge. People who have good food knowledge will more often have good food attitudes. Attitudes will play a role in changing poor nutritional practices or behavior. However, a person's consumption behavior is often influenced by many more factors (13).

The results of this study showed that the average knowledge score of both groups had increased. In the intervention

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group it increased from 63.48 to 90.87, a difference of 27.39, while in the control group it increased from 69.57 to 82.17, a difference of 12.6. Based on the results of the average knowledge of the two groups, it was found that there was an influence of providing nutrition education with videos on knowledge about obesity with a large influence value of 1.02 (>0). This research is in line with research (14) where the average results show an increase in knowledge in each group, before counseling 13.05 and after counseling with videos 17.83 (14).

The results of the study showed that the average attitude scores of both groups had increased. In the intervention group it increased from 3.15 to 3.92, a difference of 0.77, while in the control group it increased from 3.14 to 3.82, a difference of 0.68. Based on the results of the average attitudes of the two groups, it was found that there was an influence of providing nutrition education with videos on attitudes regarding obesity with a large influence value of 0.11 (>0). This research is in line with research (6) in the video group, the average pre attitude was 36.45 and post was 39.65. There is an influence of education through videos and leaflets on increasing the attitude of overweight teenagers. Other research: According to (15), there was a significant difference in attitude between the pre and post test in the video group, 28.9 to 32.2.

### **CONCLUSION**

Based on the results of this research, it can be concluded that there is an influence of nutrition education with videos on knowledge with an influence value of 1.02 (>0) and attitude 0.11 (>0).

### **SUGGESTION**

It is hoped that female students will further improve their knowledge and attitudes, especially about types of obesity, examples of high-fat foods, examples of what's on my plate so that students can adopt healthier lifestyles as an effort to prevent and reduce the incidence of obesity in young women. Schools need to provide nutritional education regarding the definition of obesity, types of obesity, factors that cause obesity, the impact of obesity, and ways to prevent obesity, in order to prevent and reduce the impact of obesity. Obesity video media can be used as educational media that can increase students' knowledge and attitudes.

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