

The Effect of Nutrition Education Through Instagram The Four Pillars Of Balanced Nutrition Towards Nutritional Knowledge Of Adolescent Boys at Senior High School In Pontianak Kota District

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Abstract: Low nutritional knowledge will lead to wrong eating habits so that it can cause nutritional problems in adolescents. Prevention of these nutritional problems requires nutrition education activities with the theme of the four pillars of balanced nutrition through media that can increase adolescent nutrition knowledge. Currently, Instagram is a popular social media among teenagers that can be used as a medium for nutrition education. Based on this, this study was conducted to determine the effect of nutrition education through Instagram with the theme of the four pillars of balanced nutrition on the nutritional knowledge of young men in Pontianak Kota Districts Public High School; This type of research is a pre-experimental research design with one group pre test – post test. The subjects of the study were male youths of SMA Negeri in Pontianak Kota sub-district, namely SMA N 4 and SMA N 8 Pontianak City. A total of 35 samples were selected by snowball sampling technique. Data collection techniques through a rolling process from one respondent to another to meet the needs of researchers. The data were analyzed using the Wilcoxon Test to see the difference in nutritional knowledge before and after being given nutrition education; In present study, we obtained a p value (p-value) of 0.000, which means that there is a difference before and after being given nutritional intervention in the form of nutrition education on the nutritional knowledge of high school boys in Pontianak Kota District; Conclusions: Nutrition education through Instagram with the theme of the Four Pillars of Balanced Nutrition can increase adolescent nutrition knowledge.

Keywords: *Balanced Nutrition, Instagram, Nutrition Education, Nutrition Knowledge.*

1. Introduction

Adolescence is a period of movement or transition from childhood to adulthood which is marked by fundamental changes, namely biological, psychological, and social changes. In this case, the development, maturity, and lifestyle of each teenager is not the same because it depends on personal and environmental problems. Adolescence is also a time when one begins to feel responsible for one's health. However, most teenagers

nowadays think that they are healthy even though they are actually experiencing problems with nutritional status (Ramadhani *et al.*, 2014)

Based on the results of the Basic Health Research (RISKESDAS) in 2018, nationally it was known that there were problems with the nutritional status of adolescents, especially in West Kalimantan Province. The prevalence of nutritional status BMI according to age is severely thinness in West Kalimantan by 1.5% where this figure is higher than the national prevalence rate of 1.4%, then the prevalence of nutritional status BMI according to age obesity in West Kalimantan is 3.4% where this is still below the national prevalence rate of 4.0%. The prevalence of nutritional status BMI according to age severely thinness in Pontianak City is 1.26% and obesity nutritional status is 4.71% which is higher than the national rate of 4.0% (RISKESDAS West Kalimantan, 2018).

One of the causes of nutritional problems and changes in eating habits in adolescents is low nutritional knowledge and is seen in wrong eating habits. Low knowledge and practice of adolescent nutrition is reflected in deviant behavior in food choices (Permaesih, 2003). Currently, according to research conducted by Lukmanto *et al.*, (2013), there are significant differences in nutritional knowledge between men and women. In addition to this, there are differences between the nutritional needs of male and female adolescents (Kemenkes RI, 2017), but knowledge of the importance of nutrients in adolescents is currently still lacking. As research conducted by Mayang Sari & Rafiony, (2020) on high school youth aged 16 to 17 years in Pontianak City, there are 78.2% of adolescents who have a poor level of knowledge regarding the Guidelines for Balanced Nutrition. So that nutritional knowledge can affect the nutritional status of adolescents (Damayanti, 2016).

Prevention of these nutritional problems requires the dissemination of Balanced Nutrition Guidelines which can be used as a guide for eating, physical activity, living clean and monitoring body weight regularly to maintain a normal weight. In the Guidelines for Balanced Nutrition, the government recommends that food consumption must pay attention to the principles of 4 pillars, namely a variety of foods, clean living behavior, physical activity and monitoring body weight regularly to maintain a normal weight (KEMENKES, 2014).

One way to increase one's nutritional knowledge is by providing nutrition education. The results of Yurni & Sinaga's research (2017), show that nutrition education can increase a person's knowledge of balanced nutrition. Likewise with research conducted by Nuryanto (2018), that nutrition education can increase knowledge and attitudes about nutrition.

Several studies in Indonesia have used social media to provide nutrition education. One of them is using Instagram and Whatsapp application media such as research conducted by Zaki & Sari, (2019). In this study, there was an increase in knowledge about energy and protein in chronic energy in adolescent girls after being given education through WhatsApp and Instagram media.

Instagram is a photo-sharing social networking application that allows users to take pictures and edit them with a selection of digital filters that are rarely found on other social media. Instagram is also starting to offer video sharing and Instagram Stories (Tankovska, 2021). Currently, the use of Instagram social media in Indonesia has reached

87.800,000 users and 12.8% of Instagram users are teenagers aged 13 to 17 years. The data was obtained from the NapoleonCat.com website in April 2021. According to 10 social media, Instagram occupies the 4th position as the most frequently used social media in Indonesia, which is 79% (Jayani, 2020).

Social media can affect health through several ways such as emotional, instrumental, informational and self-assessment support (Li et al., 2013). According to research conducted by Masitah et al., (2018) also showed differences in adolescent nutrition knowledge before and after being given an intervention in the form of nutrition education through social media (Instagram and Facebook). This shows that the intervention through social media has been well received by teenagers in Indonesia. Based on this, this study was conducted to determine the effect of nutrition education through Instagram with the theme of the four pillars of balanced nutrition on the nutritional knowledge of adolescent boys in SMA Negeri Pontianak Kota.

2. Materials and Methods

2.1 Material

The research instrument consisted of a 24-hour memory form and a picture book about food; The Nutrition Knowledge Questionnaire was used to determine nutritional knowledge in adolescents and Instagram social media with the theme of the four pillars of balanced nutrition was used to conduct nutrition education interventions in this study.

2.2 Method

This type of research is a pre-experimental research design with one group pre-test-post-test. Respondents were given a questionnaire about nutrition to measure their initial nutritional knowledge (pre-test) before being given an intervention in the form of nutrition education with the theme of the Four Pillars of Balanced Nutrition through Instagram social media, then measured again (post-test) after the intervention was given. The research sample involved 35 male students of Senior Public High School in Pontianak which is SMA N 4 and SMA N 8 Pontianak. The sample size was determined using the formula below.

$$n = \frac{Z^2_{1-\alpha/2} \times P \times (1 - P)}{d^2}$$

$$n = \frac{1,962 \times 0,1 (1 - 0,1)}{(0,1)^2}$$

$$n = 35$$

Description:

n : sample size

P : estimated proportion (in previous studies using an estimated proportion of 10% = 0.1 (Lemshow et al., 1991))

$Z^2_{1-\alpha/2}$: Statistics Z (Z= 1.96)

d^2 : Absolute precision (10% = 0.1)

3. Results

3.1 Sample Characteristics

3.1.1 respondent's age characteristics

The results of the research that has been done obtained data on the characteristics of respondents based on age. The results of the univariate analysis in this study are presented in table 1.

Table 1. Frequency Distribution of Respondents Age

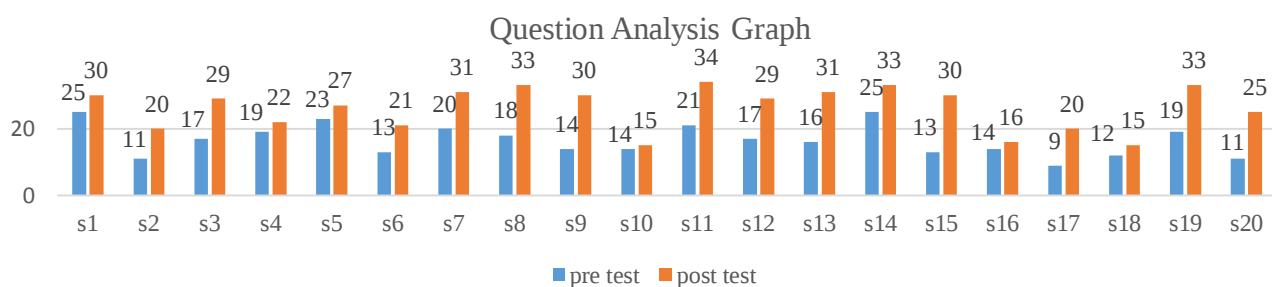
Umur	n	(%)
16 Years Old	11	31,4
17 Years Old	24	68,6
Total	35	100,0

From table 3 above, it is known that the results of the study show that the age frequency distribution of respondents is mostly 17 years old, namely as many as 24 people (68.6%).

3.1.2 question analysis

The results of the research that have been carried out are known that there are several questionnaire questions that are still difficult for students to do, it can be seen from the results of the pretest and posttest which of these questions there are still many students who have not been able to answer the questions correctly. These questions are presented in Figure 1.

Figure 1. Frequency Distribution of Respondents Age



From the graph, it is known that there are still some questions that are difficult for students to answer during the posttest, namely questions number 10, 16, 17, and question number 18. When compared to the previous pretest, only a few people who experienced an increase were able to answer the questions.

3.1.3 percentage of respondents nutrition knowledge before and after intervention

The results of the research that have been carried out can be seen from the comparison score of the respondents' nutritional knowledge from table 2.

Table 2. Percentage of Nutrition Knowledge Before and After Intervention

Category	Before and After Intervention	
	n	%
Decrease	0	0
Increase	35	100
Still	0	0
Total	35	100

From table 2 above, it is known that there is no respondent whose knowledge value remains and also decreases. Of the 35 samples, all of them experienced an increase in knowledge about nutrition.

3.2 Respondents Knowledge Normality Test

To find out whether the pretest and posttest data are normally distributed, it is necessary to do a normality test.

Table 3. Respondents Knowledge Normality Test

Knowledge	Saphiro-Wilk		
	Statistic	df	Sig.
Prior to Nutrition Education (Pre-Test)	0,947	35	0,094
After Nutrition Education (Post-Test)	0,910	35	0,007

Based on the Saphiro-Wilk normality test, it is known that the nutritional knowledge data of respondents before and after the intervention is not normally distributed because the results of the sig are below 0.05. The Wilcoxon test will then be carried out.

3.3 The Effect of Nutrition Education Through Instagram Social Media on Nutrition Knowledge Before and After Interventions

Table 4. Wilcoxon Test Results of Adolescent Nutrition Knowledge Before and After Interventions

	Knowledge		Delta
	Before	After	Δ
Median	9	15	6
Minimal	7	13	6
Maximal	13	17	4
Standar Deviation	1,4005	1,098	0,30
<i>p-Value</i>	0,000		

The level of nutritional knowledge of the respondents before and after being given nutrition education. Table 4 data shows that the nutritional knowledge of adolescents has increased after being given nutrition education. This can be seen from the median knowledge of respondents before being given an intervention in the form of nutrition education was 9, and after being given an intervention it increased to 15. Based on data processing carried out using the Wilcoxon test, a p value (p-value) of 0.000 was obtained,

which means that there was a difference before and after the nutrition intervention was given in the form of nutrition education on the nutritional knowledge of high school boys in Pontianak Kota District.

4. Discussion

Nutrition education or what is commonly known as nutrition education is an educational approach with the aim of increasing adolescent knowledge and attitudes towards nutrition. The higher a person's nutritional knowledge, it will affect attitudes and food consumption behavior. Education can be done through several media and methods. Education carried out with the help of the media will make it easier and clearer for educational participants in receiving and understanding the message conveyed, besides that it can also help educators in conveying the material. Providing education to teenagers must be through an attractive media so that boredom does not occur and the material is acceptable (Safitri et.al., 2016).

Nutrition education or nutrition education is a method and effort to increase knowledge of nutrition and eating behavior so as to create optimal nutritional status (Perdana et al., 2017). Education will be more effective if using media than conventionally because of its ability to present complex and complicated events to be more systematic and simple, increasing attractiveness, attention and systematic learning (Eliana & Solikhah, 2013).

The results of this study indicate that nutrition education using Instagram social media with the theme of the Four Pillars of Balanced Nutrition can increase the nutritional knowledge of young men in the city of Pontianak. It can be seen from the median value of nutritional knowledge before the intervention (pretest) was 9 and after the intervention (posttest) it became 15 with a difference of 6. The results of statistical tests using the Wilcoxon test obtained $p\text{-value} = 0.000$ which indicates that there are differences in adolescent nutritional knowledge sons before and after the intervention in the form of nutrition education using Instagram social media with the theme of the Four Pillars of Balanced Nutrition.

The results of the study showed that there was an increase in adolescent nutrition knowledge before and after the intervention. This can be seen from the post-test questions answered by students, most of them can answer the questions given, but there are still some questions that most students cannot answer. The questions consist of questions number 10, 16, 17, and question number 18. For question number 10 regarding the 4th pillar of the Four Pillars of Balanced Nutrition, question number 16 concerns the minimum time for physical activity that is recommended for individuals who have certain problems. Question number 17 discusses the threshold for the category of normal nutritional status for adolescents BMI according to age, and question number 18 also discusses the category of adolescent nutritional status. Of the four questions mentioned, there are still many students who have not been able to answer the questions correctly, it is possible that the material provided is less than optimal or from students who do not explore the material given. This can be input for further researchers in order to increase the knowledge of adolescents about questions that have not been answered correctly.

The results of this study are in line with research by Masitah et al., (2018) that there is an effect of the use of social media Instagram and Facebook on adolescent nutrition knowledge, supported by the posttest average value of adolescent nutrition knowledge in the nutrition education group with social media (Instagram and Facebook) was (18.75) higher than the control group (17.62). Research conducted by Utami et al., (2015) also shows that there is an influence of the Instagram-assisted project based learning model on the creative thinking skills of class X students of SMA Negeri 8 Surakarta, supported by the results of the average test scores of students in the experimental class (82,72) higher than the control class (77,12).

This research is also supported by previous research conducted by Rusdi et al., (2021) that there is an increase in nutritional knowledge after being given nutrition education through Instagram social media. It can be concluded that Instagram social media with the theme of the Four Pillars of Balanced Nutrition can influence changes in the knowledge of young men in Pontianak Kota District.

5. Conclusions

Based on the results of research conducted, it can be concluded several things as follows: There is an effect of nutrition education through Instagram social media in increasing knowledge about balanced nutrition in young men of SMAN 4 and SMAN 8 Pontianak with $p\text{-value} = 0.05$. There is a difference in knowledge of balanced nutrition before and after being given nutrition education to young men of SMAN 4 and SMAN 8 Pontianak through social media Instagram.

Conflict of Interest

There is no conflict of interest in this article

Author Contribution

All authors contribute equally to this paper

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