



The Effectiveness of Nutrition Education Using Instagram on Body Image Perception and Eating Patterns of Adolescents with Overweight Incidence at SMPN 4 Samarinda

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ABSTRACT

Background: Adolescents overweight are influenced by physical activity and social media, affecting body image perception and health, potentially leading to low self-esteem, depression, disrupted physical activity, and eating patterns. This study aims to determine the effectiveness of nutrition education using Instagram on body image perception and eating patterns of adolescents with overweight incidents at SMP Negeri 4 Samarinda.

Research Methods: Quantitative quasi-experimental research with the One-Group Pretest-Posttest research design. The research subjects were 16 students who were taken using a purposive sampling technique with the Lemeshow formula in February-March 2023 at SMPN 4 Samarinda. Body image perception uses the BSQ-34 questionnaire. Dietary patterns were obtained using the SQ-FFQ. Data were analyzed using the Wilcoxon test.

Research Result: The results of this study indicate that there is effectiveness of nutrition education using Instagram on body image perception and the pattern of adolescents with overweight incidents at SMPN 4 Samarinda is indicated by a p-value (<0.05). However, there is no effectiveness of nutrition education using Instagram on eating patterns (fat intake) indicated by a p-value (> 0.05).

Conclusion: There is a significant relationship between nutrition education using Instagram on body image perception and eating patterns of adolescents and the incidence of overweight at SMPN 4 Samarinda. There is no significant relationship between diet (fat intake) and the incidence of adolescent overweight at SMPN 4 Samarinda.

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1. INTRODUCTION

Nutritional issues in several countries remain unresolved due to various contributing factors. One example of many unresolved nutritional problems is the issue of overweight. The problem of overweight in Indonesia is still relatively high (Mulyana, 2020). Overweight is a health problem that affects various age groups, including children and adolescents. In 2016, over 340 million children and adolescents aged 5-19 years were affected by overweight. During the same year, the prevalence of overweight escalated significantly to more than 18%. (World Health Statistic, 2017). Based on the findings of the 2018 Indonesian Basic Health Research survey data, approximately 16.0% of adolescents aged 13-15 years and 13.5% of adolescents aged 16-18 years are categorized as overweight. In the case of overweight adolescents aged 13-15 years, East Kalimantan was ranked fourth highest in 2018. The Samarinda region held the eighth position with the highest incidences of overweight cases, accounting for around 10.42% of cases (Agency, 2018).

According to Burrowes, the definition of body image is a combination of body perception, where a person has an accurate understanding of their body size, shape, and weight, along with body satisfaction (Dwinanda, 2016). Eating pattern refers to the quantity and composition of food types consumed by a group of people or individuals at a specific time, including food types, eating frequency, and portion sizes (Tusakinnah, et al., 2018).

Nutrition education will enhance children's knowledge about nutrition, and help influence children's attitudes and habits in choosing healthy foods and snacks. In school-age children, health-focused nutrition education will be more effective. Keeping up with the times, education can be carried out on social media. Adolescents use the internet, particularly social media, to interact with their online environment. The social environment around them can be a source of advantageous social relationships like social support (Nuryanto, 2014).

The realm of digital communication is undergoing swift expansion, and a noteworthy facet of this digital communication surge in Indonesia is Instagram. Instagram brings forth a range of advantages as a social media platform, encompassing the pursuit of current information, commercial endeavors, interpersonal interaction, self-expression, and leisure (Nursalam, 2017). The study's objective was to assess the efficiency of nutrition education via Instagram in influencing the body image perception and eating pattern of overweight adolescents at SMP Negeri 4 Samarinda. This research is anticipated to assist students in enhancing unfavorable eating patterns and reshaping their perceptions regarding body dissatisfaction.

2. METHODS

This type of research is a Quasi Quantitative Experiment with a One-group pretest-posttest design. The sample in this study were grade 7 & grade 8 students of SMP Negeri 4 Samarinda. Sampling for each class was carried out by purposive sampling. The inclusion criteria were students who were willing to be respondents, students who used Instagram social media and students with nutritional status classified as overweight and obese. Exclusion criteria were students who were sick, students who were not present during the study & students who did not use Instagram. The independent variable is nutrition education using Instagram, the dependent variable is body image perception and eating patterns.

Instagram usage data also uses the assistance of an adaptation intensity questionnaire to access Instagram by (Rahma, 2018). Body image perception was measured using an adapted questionnaire from the Indonesian version of the Body Shape Questionnaire – 34 (BSQ-34) by (Sitepu, 2020). Eating patterns were measured using a semi-quantitative food frequency questionnaire (SQ-FFQ). Measurements were made before and after the respondents were

given nutrition education using Instagram. Data analysis used the Wilcoxon test with IBM SPSS Statistics 20 Software.

This study has obtained research ethics approval from the Health Research Ethics Committee of Poltekkes Kemenkes East Kalimantan with certificate number DP.04.03/7.1/7823/2023.

3. RESULTS AND DISCUSSION

Table 1. Characteristics of Student Respondents at SMP Negeri 4 Samarinda

Characteristics	n	%
Gender		
Male	4	25%
Female	12	75%
Age		
13 Years	10	62,5%
14 Years	5	31,25%
15 Years	1	6,25%
Grade Level		
Grade 7	5	31,25%
Grade 8	11	68,75%
Nutritional Status		
Overweight	11	68,75%
Obesity	5	31,25%
<i>Body Image Perception</i>		
<i>Pre-Test</i>		
Positif	4	25%
Negatif	12	75%
<i>Post-Test</i>		
Positif	8	50%
Negatif	8	50%
Total Sampling	16	100%

The study was conducted on 4 male respondents and 12 female respondents with an age range of 13-15 years who were taken at the 7th and 8th grade levels. The results showed that 11 respondents were overweight and 5 respondents were obese. During the pre-test, there were 4 respondents (25%) with positive body image perceptions and 12 respondents (75%) with negative body image perceptions. Meanwhile, during the post-test, there were 8 respondents (50%) with positive body image perceptions and 8 respondents (50%) with negative body image perceptions.

Table 2. Average Intake of Students at SMP Negeri 4 Samarinda

Eating Pattern	AKG	Pre-Test		Post-Test	
		Average Intake	%	Average Intake	%
Male					
Energy (kkal)	2400	2760,1	115%	2457,5	102,3%
Protein (gr)	70	82	117,1%	76,8	109,7%
Fat (gr)	80	92	115%	106,5	133,1%
Carbohydrates (gr)	350	368,4	105,2%	329,9	94,2%
Female					
Energy (kkal)	2050	2405,5	117,3%	2198	107,2%
Protein (gr)	65	87,5	134,6%	77,1	118,6%
Fat (gr)	70	85,4	122%	84,4	120,5%

Eating Pattern	AKG	Pre-Test		Post-Test	
		Average Intake	%	Average Intake	%
Carbohydrates (gr)	300	333,3	111,1%	290,8	96,9%

The average energy and carbohydrate intake of 12 female respondents during the pre-test was included in the normal category (90 - 119%), but protein and fat intake were included in the category above the requirement (> 120%). Meanwhile, at the time of the post-test, there was a change in that the average energy, protein and carbohydrate intake of the respondents was included in the normal category (90 – 119%). However, the average fat intake is still in the category above the requirement (> 120%).

Table 3. Results of Body Image Perception & Eating Pattern Analysis and Eating Patterns

Body Image Perception	Average	p-value
<i>Pre-Test</i>		
Positif	95,9	
Negatif		0.046
<i>Post-Test</i>		
Positif	82,5	
Negatif		
Eating Pattern	Average	p-value
Energy		
<i>Pre-Test</i>	2494,1	0.014
<i>Post-Test</i>	2262,9	
Protein		
<i>Pre-Test</i>	97,5	0.014
<i>Post-Test</i>	77	
Fat		
<i>Pre-Test</i>	87,1	0.655
<i>Post-Test</i>	89,9	
Carbohydrates		
<i>Pre-Test</i>	342,1	0.020
<i>Post-Test</i>	300,6	

Table 3 shows the results of the study using the Wilcoxon test which stated that there was an effectiveness between nutrition education using Instagram on the body image perception of adolescents and the incidence of overweight at SMPN 4 Samarinda (p-value = 0.046). The results of this study are in line with [Ravi Masitah's research \(2018\)](#) which shows that there is an influence of nutrition education with social media on body image perception (p-value = 0.008). However, this research is inversely proportional to [Maria Yori's research \(2020\)](#) which concluded that there is no relationship between media exposure and the body image of female adolescents (p-value = 0.138).

Body Image is something that includes a person's attitudes, feelings, and beliefs about his appearance ([Behdarvandi, 2017](#)). The effectiveness of nutrition education using Instagram on body image perception and the incidence of overweight at SMPN 4 Samarinda can be due to the fact that respondents who have a negative body image are judged to feel dissatisfied with their body shape and weight, so they think of forming an ideal body. To get the desired body shape, respondents tend to change their diet.

According to [Ansari \(2010\)](#), gender also influences a person's body image perception. According to [Hernandez \(2017\)](#), women are more sensitive to body image than men. The results of research conducted by [Kantanista \(2015\)](#) on adolescents 14-16 years in Poland

showed that female adolescents had more negative body image perceptions than male adolescents (Kantanista, 2015).

Based on the results of interviews with respondents during the pre-test, most of the respondents stated that there were no specific parts of their body that needed to be repaired, but the respondents wanted to improve their overall body shape. This is because the respondent wants his body shape to be thinner. Then, the respondent revealed that if there were other people who said the respondent was attractive, the respondent did not believe this because the respondent felt that in reality he was unattractive and fat, even according to the respondent, other people he did not know looked at him as if he was mocking.

Table 3 shows the results of the study using the Wilcoxon test which stated that there was effectiveness between nutrition education using Instagram on the diet of adolescents with the incidence of overweight at SMPN 4 Samarinda (p-value of energy intake $0.014 < \alpha = 0.05$), (p-value of protein intake $0.014 < \alpha = 0.05$) and (p-value of carbohydrate intake $0.020 < \alpha = 0.05$). The results of this study are in line with Noviyanti Dewi's research (2021) which shows that there is a significant influence between Instagram exposure on fast food consumption patterns in adolescents based on urban and rural school areas. Another study conducted by Niki Purbo Waseso showed that there were differences in knowledge (p-value = 0.000) and attitudes (p-value = 0.000) about a balanced nutritional diet between before and after being given health education through Instagram social media.

However, the results of the study using the Wilcoxon test for eating patterns of fat intake stated that there was no effectiveness between nutrition education using Instagram on adolescent diets (fat intake) and the incidence of overweight at SMPN 4 Samarinda (p-value $0.655 < \alpha = 0.05$). The results of this study are in line with Tri Addya Karini's research (2022) which shows that there is no relationship between the duration of social media use and eating behavior, this is indicated by a p-value = $0.624 > 0.05$. There is no effectiveness between nutrition education using Instagram on adolescent eating patterns (fat intake) and the incidence of overweight at SMPN 4 Samarinda because, from the recall data, male respondents still eat a lot of foods that are high in fat, such as fried foods, sweets, fast food, etc.

According to Arisman (2009), unhealthy eating patterns will have a negative impact on the body. The relationship between eating patterns seen from the consumption of energy, protein, fat and carbohydrates intake and the incidence of overweight shows that the better a student's diet, the more likely they are to have normal nutritional status. There is a relationship between diet and nutritional status in this study.

Based on data from the Republic of Indonesia Ministry of Health (2018), it is known that Indonesians aged over 10 years like to eat fatty foods, fried foods, salty foods, sweet foods and behaviors that do not like consuming vegetables and fruit. Teenagers at this time consume a lot of advertised foods and these foods contain high salt, sugar, fat, calories. One of the modern foods consumed by teenagers is fast food or fast food. Fast food has a higher energy density than traditional food in general, causing excessive energy intake (Arisman, 2009).

Education can use media more effectively than conventional methods because of its ability to present complex and complicated events in a more systematic and simple way, increasing the attractiveness, attention and systematics of learning (Solikhah, 2012). Nutrition education with social media has all kinds of conveniences in accessing it, not limited to space and time so that material can be delivered and studied again anytime and anywhere (Ravi Masitah, 2018).

In the opinion of Li J (2013) social media can affect health in several ways such as emotional support, instrumental, information and self-assessment (Li J, 2013). Instagram is a social media that can be used in the process of nutrition education (Utami R, 2015). The results of this study are supported by Nurrizka's research (2016) which shows that the positive influence of social media on lifestyle changes for SMA 04 Pontianak students is as a source of information, communication media, educational and entertainment media, ease of transaction and doing business (Nurrizka, 2016). In addition, social media functions as a promotional medium and a source of currently developing health information (Park, 2011). Therefore, social media can be used as an educational medium that has a positive impact on health, especially in forming positive perceptions of adolescent body image.

Adolescence can be a period of development with great potential both physically and mentally, so through social media it allows youth to form positive perceptions of body image and learn more broadly by deepening communication and information networks from various parties (Ravi Masitah, 2018).

As with the results of the research that the researchers have done, it appears that nutrition education using social media (instagram) has an effect on changes in body image perception of respondents during the pre-test and post-test.

The results should summarize (scientific) findings rather than providing data in great detail. Please highlight differences between your results or findings and the previous publications by other researchers. Result written in 12 pt Times New Roman and single-spaced. Authors can use subheadings, pictures, figures and tables to describe the result of research.

The discussion should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

4. CONCLUSION

This study involved 16 respondents, with 4 respondents (25%) being male and 12 respondents (75%) being female. Based on nutritional status, 11 respondents (68.75%) were overweight and 5 respondents (31.25%) were obese. The average intake of the 4 male respondents was 2760.1 kcal of energy, 82 grams of protein, 92 grams of fat and 368.4 grams of carbohydrates. The average intake of 12 female respondents was 2405.5 kcal of energy, 87.5 grams of protein, 85.4 grams of fat and 333.3 grams of carbohydrates.

The results of the Wilcoxon signed rank test, pre-test & post-test showed that there was effectiveness between nutrition education using Instagram on body image perception and eating patterns of adolescents with overweight incidence at SMPN 4 Samarinda (p-value body image perception $0.046 < 0.05$), (p-value of energy intake $0.014 < 0.05$), (p-value of protein intake $0.014 < 0.05$) and (p-value of carbohydrate intake $0.020 < 0.05$). However, based on the results of the Wilcoxon signed rank test, pre-test & post-test of dietary fat intake showed that there was no effectiveness between nutrition education using Instagram on diet and the incidence of overweight at SMPN 4 Samarinda (p-value $0.655 > 0.05$).

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