

Effect of Balanced Nutrition Education using the Emodemo Method on Knowledge and Attitude of Obesity Adolescents at SMAN 1 Krian Sidoarjo

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ARTICLE INFO

Article History:

Received August, 15st, 2023

Accepted August, 29st, 2023

Published online August, 31st, 2023

Keywords:

Balanced Nutrition;

Emodemo;

Knowledge;

Attitude;

ABSTRACT

Obesity is a condition of excessive accumulation of body fat tissue which will cause disease. Obesity can be defined as a result of overeating. This study aims to determine the effect of balanced nutrition education using the emodemo method on the knowledge and attitudes. This research is a quantitative pre-experimental with the type of pre-test and post-test One Group Design, data collection using questionnaires. The sample of this research is 34 respondents using Proportional Random Sampling technique. Statistical tests used the Wilcoxon Signed Runk Test to determine the effect before and after being given counseling using the emodemo method module game assembling donut rings on the level of knowledge and attitudes about balanced nutrition. The level of knowledge of obese adolescents by 8.8% increased to 85.3%. While the attitude level of obese adolescents was 82.4% increasing to 88.2%. There is an effect of balanced nutrition education using the emodemo method on the knowledge and attitudes of obese adolescents. Schools can provide healthy canteens that provide balanced nutritious meals for adolescents.

INTRODUCTION

Obesity is a condition where excess body fat accumulates in such a way that it poses health risks.¹ Obesity can reduce life expectancy and increase health problems.² Until today, obesity remains a global health issue declared by the WHO as a global epidemic.³ Obesity occurs due to an imbalance between energy intake and expenditure, resulting in an excess of energy that is subsequently stored in the form of fat tissue.⁴ Obesity is divided into two types: primary obesity and secondary obesity. Primary obesity is influenced by diet, while secondary obesity is caused by conditions such as endocrine system disorders.⁵

Obesity is caused by genetic factors; if one parent is obese, 40-50% of their children will be at risk of obesity, while if both parents are obese, 80% of their children will be at risk of obesity.⁶ Dietary intake, high carbohydrate intake, and protein intake are risk factors for obesity.⁷ Physical activity, individuals leading a sedentary lifestyle or engaging in insufficient physical activity, as well as consuming high-energy and fatty foods, are susceptible to obesity.⁸ Obesity can trigger physical discrimination in peer environments. This can lead to depression, decreased self-confidence, and a lower quality of life compared to adolescents with normal weight.⁹ Obesity also poses risk factors for other serious diseases, such as diabetes, cancer, primary hypertension, and heart disease.¹⁰

According to the Basic Health Research of the Ministry of Health, the obesity percentage in 2007 among adolescents aged ≥ 15 was 18.8%, in 2013 there was an increase to 26.6%, and in 2018 it increased again to 31%. From this data, East Java is one of the areas where obesity still frequently occurs, ranking twenty-second in Indonesia with a prevalence rate of 30.38%. Meanwhile, in Sidoarjo Regency, it ranks second highest in East Java with an obesity prevalence of 40-45%.¹¹ Therefore, Sidoarjo Regency cannot escape from the occurrence of obesity. Unhealthy accumulation of body fat tissue is called obesity.¹²

The solution to overcoming obesity is to provide appropriate and effective nutrition education, one of which is through the method of balanced nutrition using Emodemo. The Emodemo method aims to provide adolescents with accurate nutritional knowledge to achieve optimal adolescent health.¹³ Emodemo is a behavior change communication strategy that uses the integration of Behavior Change Communication (BCC), which is an interactive process between individuals, groups, or communities in developing communication strategies to achieve positive behavioral changes.¹⁴

Emodemo aims to convey messages to subjects and to change behavior for the better. Emodemo develops innovative and attractive counseling methodologies with two-way counseling explanations.¹⁵ In the Emodemo method, all senses are used, namely sight, smell, touch, hearing, and direct experimentation to ensure that the intended message is understood by the target audience, because the more senses used, the greater the intended message that can be captured by the target audience.¹⁶

MATERIALS AND METHODS

This research is a quantitative study of pre-experimental type with pre-test and post-test One Group Design. The study was conducted from December 2022 to February 2023 at SMA Negeri 1 Krian with a population of all tenth-grade students who experienced obesity, totaling 51 students, and a sample of 34 respondent students drawn using proportional random sampling technique. Data collection technique utilized questionnaires. Statistical analysis employed the Wilcoxon Signed Rank Test to determine the effect before and after providing balanced nutrition education in the form of the Emodemo module game of assembling donut rings on the knowledge and attitudes of obese teenagers.

RESULTS

Respondent Characteristics

Respondent characteristics include age and gender. Based on the research results, the characteristics of respondents can be outlined as follows:

Table 1 Respondent Characteristics

Characteristics	Number	Percentage (%)
Age:		
14 years	1	2.9
15 years	10	29.4
16 years	20	58.8
17 years	3	8.9
Jenis Kelamin :		
Laki laki	10	29.4
Perempuan	24	70.6
Total	34	100

Source: Primary Data 2023

Based on Table 1, the data shows that the majority of obese students are 16 years old, with 20 students (58.8%), and the majority of obese students are female, with 24 students (70.6%).

Frequency Distribution of Knowledge and Attitudes about Balanced Nutrition with the Emodemo Method

Table 2 Frequency Distribution of Knowledge and Attitudes about Balanced Nutrition with the Emodemo Method

Variable	Before		After	
	n	%	n	%
Knowledge				
Good	3	8.8	29	85.3
Moderate	20	58.8	3	8.8
Poor	11	32.4	2	5.9
Attitude				
Baik	28	82.4	30	88.2
Cukup	6	17.6	4	11.8
Kurang	0	0	0	0
Total	34	100	34	100

Source: Primary Data 2023

Based on Table 2, the frequency distribution of the knowledge variable before receiving balanced nutrition education shows that the highest value is in the sufficient category at 58.8%. After receiving nutrition education, the highest value shifts to the good category at 85.3%.

The frequency distribution of obese adolescents attitudes before receiving balanced nutrition education shows that the highest value is in the good category at 82.4%. After receiving nutrition education, the good category increases to 88.2%.

The Influence of Nutrition Education with the Emodemo Method on Knowledge and Attitudes

Tabel 3 Pengaruh Edukasi Gizi dengan Metode Emodemo terhadap Pengetahuan dan Sikap

Variable	n	Minimum	Maximum	Average
Knowledge value				
Before	34	53	93	65.76
After	34	53	100	91.56
Attitude value				
Before	34	60	100	90.29
After	34	70	100	96.47

Source: Primary Data 2023

According to Table 3, the average knowledge value after receiving balanced nutrition education shows an increase of 25.8%, from 65.76 to 91.56. The attitude variable after receiving balanced nutrition education shows an increase of 6.18%, from 90.29 to 96.4.

DISCUSSION

Age and Gender Characteristics

The participants involved in this study were adolescent students aged 14 to 17 years old. This age range is a period where adolescents have acquired fundamental knowledge to determine their success, enabling them to communicate and collaborate effectively in improving their knowledge and attitudes.¹⁷ Gender can influence how individuals perceive information and behave in society according to their gender identity.¹⁸

Knowledge

Knowledge is the result of human perception or the understanding someone gains after perceiving a particular object.¹⁹ Knowledge is a crucial domain in shaping an individual's actions.²⁰ It is influenced by educational level, mass media, socioeconomic status, environment, age, and experience.²¹

Based on the research results, it can be concluded that the average knowledge score of the 34 students before receiving balanced nutrition education through the Emodemo method was 65.76, which increased to an average score of 91.56 after the education. Respondents with low nutritional knowledge tend to prefer consuming high-fat and low-nutrient foods. According to interview results, respondents often consume junk food and fried foods. Therefore, there is a

need for education to enhance individuals' knowledge. Increasing knowledge of health and nutrition programs in schools can be implemented as an effort to apply global health interventions in a simple and effective manner and to acquire broader education.²²

Attitudes

Attitude refers to how individuals perceive or evaluate aspects related to health, illness, and health risk factors.²³ Attitudes are influenced by experience, culture, and individual emotional factors.²⁴

Based on the research results, it can be concluded that the average attitude score of the 34 students before receiving balanced nutrition education through the Emodemo method was 90.29, which increased to an average score of 96.47 after the education. The average student attitude score before education was low due to the lack of knowledge, which can influence habits and form student's attitudes that may still lack understanding of the importance of balanced nutrition application.²⁵

CONCLUSION

Based on age characteristics, the majority of respondents were 16 years old, accounting for 20 adolescents (58.8%). Based on gender characteristics, the majority were female adolescents, with 24 adolescents (70.6%). The average knowledge score of students before receiving balanced nutrition education was 65.76, which increased to 91.56 after the education. The average attitude score of students before receiving balanced nutrition education was 90.29, which increased to 96.47 after the education. There was a positive influence on the level of knowledge and attitudes before and after receiving balanced nutrition education.

SUGGESTION

Schools can provide balanced and healthy food options in their cafeterias and collaborate with local health centers to conduct regular nutrition education sessions to enhance students' knowledge at school.

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