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Research Article
**BALANCED NUTRITION
 EDUCATION ON KNOWLEDGE
 AND ATTITUDES OF
 ADOLESCENTS IN THE TIME OF
 COVID-19**



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Conflict of interest statement: The researcher stated that this research aims to develop nursing knowledge and this research is free from conflict of interest, both individuals and organizations.

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Abstrak

Background: Adolescence is a condition where there is a transition from childhood to adulthood. These changes result in physical changes and psychological changes specifically. Increasing the knowledge and attitudes of adolescents about balanced nutritional needs so that they are able to live a healthy life with appropriate food consumption patterns that meet the criteria for balanced nutrition and minimize the occurrence of nutritional issues in adolescents.

Objectives: The purpose of this study is to find whether there is a significant difference between balanced nutrition education on knowledge and attitudes of adolescents before and after intervention adolescents.

Methods: This study used a pre-experimental design method. The form of experimental design used by OneGroup is pretest – post test design. Sampling using total sampling technique sample. The researcher first gave question as pre-test data and then given intervention in the form of education using video media, counselling and intervention leaflets for 3 meetings then carried out the post-test again. The population is the 8th grade students of SMP Advent Bandar Lampung. The statistical test used is the parametric test (Dependent paired T-t)

Results: The result of the analysis showed that there was a significant relationship between the level of knowledge and attitudes before and after the intervention was given with a sig value of 0.000 ($p < 0.05$).

Conclusion: There is a relationship between the effect of balanced nutrition education on knowledge and attitudes. Through video media, counselling, and leaflets can be recommended as effective communication media because they can contain a lot of information about educational materials.

Keywords: education, balanced nutrition, knowledge, youth attitude

Introduction

Adolescent are a group that is vulnerable to nutritional problem (1). This is because in adolescence there is rapid growth accompanied by physiological and mental changes, so that in adolescence, proper nutrition is needed including the amount of food, type of food and frequency of eating. Nutritional needs in adolescents are closely related to the growth period, if nutritional intake is met, growth will be optimal (2). If the intake pattern is bad, it will have an impact on growth and development that is not optimal, and more susceptible to chronic diseases in adulthood (3). Adolescents

are residents in the age range of 10-18 years. When a person enters adolescence, the child will experience puberty. In this phase, adolescents will experience physical growth accompanied by mental, cognitive and psychological development (4). Adolescents need energy/calories, calcium, protein, iron, zinc, and vitamins to physical activities such as school activities and daily activities. Body size during adolescence can be used as an indicator for nutritional status, with excess nutrition manifesting as overweight or as malnutrition without changes in body size (5). Young women and men in Indonesia are currently facing a nutritional crisis. One in four adolescents is stunted, one in seven is overweight or obese, and almost a quarter of young woman are anaemic. The collection of 9 articles included in this issue presents a golden opportunity to advance our understanding of adolescent nutrition issues and strengthen evidence-based approaches to improving adolescent nutrition in Indonesia (6).

Balanced nutritional behavior includes knowledge, attitudes and practices regarding food intake that contains the nutrients needed by the body by balancing the consumption of a variety of foods, clean and healthy living habits, physical activity and regular weight monitoring (7). It is important for adolescents to adopt balanced nutritional behavior, in order to achieve and maintain normal nutritional status. If the nutritional needs of adolescents are not met, it will cause malnutrition which affect the health and productivity of adolescents (8). Currently, Indonesia is faced with three burdens of nutritional problems (triple burden), namely nutritional deficiencies (stunting and wasting), excess nutrition (obesity) and micronutrient deficiencies such as anaemic (9). Various causes of nutritional problems can be prevented and overcome through the implementation of balanced nutrition. The 2018 Riskesdas result for residents aged 15-19 years still show that around 96.45% consume less vegetables and fruit. Then it was found that 43.8% of teenagers consumed fatty foods more than 1 a day. About 42.7% of the population and around 49.6% of adolescents have less physical activity (10). According to Basic Health Research data for 2018, there was an increase in the proportion of overweight in 2018, which was 13.6%, while cases of obesity increased to 21.8% in 2018, which was previously only 14.8% in 2013 (10). The 2018 Basic Health Research (Riskesdas) data shows that 25.7% of adolescents aged 13-15 years and 26.9% of adolescents aged 16-18 years have short and very short nutritional status. In addition, there were 8.7% of adolescents aged 13-15 years and 8.1% adolescents aged 16-18 years who were thin and very thin. While in prevalence of overweight and obesity is 11.3% in adolescents aged 13-15 years and 13.5% in adolescents aged 16-18 years. This data represents the nutritional condition of adolescents in Indonesia which must be improved (11). Community nutritional status is an indicator of successful development in Indonesia. Nutritional status caused by several factors, one of the indirect causes is a lack of knowledge (12). Errors in choosing food and lack of knowledge about nutrition can affect the nutritional status of female students (13). Knowledge of Balanced Nutrition is very important for us in preparing a healthy lifestyle in the "double burden of nutritional problems", namely deficiency and excess nutrition that occur together. Deficiency and excess nutrition adversely affect human health and quality of life. Malnutrition is closely related to slow body growth (especially in children), low body resistance so that you get sick easily, lack of intelligence (intelligence), and low productivity (14). As for good attitude, it turns out that the behavior that is owned will not necessarily be good, there are many factors that influence a child's good behavior without being based on a good attitude. One of them is that children imitate the habits of their parents and peers, which can influence the behavior and attitudes of children in choosing food (15). Children with adequate nutritional intake will have a positive impact on their nutritional status. Good nutrition will make children more confident and motivated at work compared to malnourished children (16). Attitude is a positive or negative feeling as a person's response to an object, person and environment, as a result of the knowledge and experience that has been obtained. However, attitude is not an action or behavior, a change from attitude to behavior requires other supporting factors. This is the reasons why the balanced nutrition attitude variable has no relationship with a person's nutritional status (17).

Nutritional problems that occur especially in adolescence, one of which can be caused by a lack of knowledge and delivery of information about nutrition resulting in the application or practice of balanced nutrition intake not optimally conveyed. Health education is felt to be very necessary, especially activities related to the importance of balanced nutrition that needs to be carried out. Balanced nutrition is a daily food composition that contains nutrients in the type and amount according to the needs of the body, taking into account the principles of food diversity, physical activity, clean and healthy lifestyle and regular monitoring of body weight in order to maintain normal body weight to prevent nutritional problems.

Covid-19 caused many changes in daily life, maintaining a healthy balanced nutritional diet is very important in promoting a good immune system. During the new normal covid-19 period (19). Boosting the immune system which is the body's defense force against bacteria, viruses, and disease-causing organism that we may touch, consume and breath every day. Improving body resistance is one of the keys to not contracting the covid-19 virus, therefore the implementation of balanced nutrition is very important for the immune system (19). Teenagers with abnormal nutritional status have a frequency of poorly eating one type food, the frequency and amount of food for adolescents is not sufficient or in accordance with the recommendations for balanced nutrition guidelines. For young women, to have a thin physical shape causes bad eating habits and irregular eating (20). Age is one of the factors that can influence eating patterns to be diversified. This is in accordance with previous studies where adolescents aged 15-18 years still cannot control their eating patterns and more likely to be interested in ready to eat foods such as instant noodles, soft drinks, and snacks (21). Adolescents have a habit of not consuming healthy food, which is caused by the habits of teenagers who often consume fast food, soft drinks and snack outside the home (22).

Consuming balanced nutrition during the Covid-19 pandemic can boost the immune system and reduce the risk of chronic diseases and infectious diseases. Based on the description above, this research was conducted to find out whether there was an effect of balanced nutrition education on the knowledge and attitudes of adolescents during the new normal covid-19 period.

Methods

The experimental design chosen was the pre-experimental design. There is no control class in this design. The form of the experimental design used was the OneGroup pretest – posttest design. The researcher only involved one experimental group which was first given questions as pretest data then given interventions in the form of balanced nutrition education using video media for 5 minutes, followed by providing counseling for 20 minutes and distribution and explanation of leaflets for 5 minutes to respondents. The intervention was given for 3 meetings (2 weeks). After the intervention was given, a post-test was carried out again with the same knowledge and attitude questionnaire. The population studied was the 8th grade students of SMP Advent Bandar Lampung, male and female. Sampling using total sampling technique. Samples taken were 31 students. This research was carried out after obtaining approval from the Adventist University of Indonesia, Health Research Ethics Committee No. 303/KEPKFIK.UNAI/EC/IV/23. The research instrument used in this study was a questionnaire owned by Veronica (2017) which had validity and reliability test with a Cronbach alpha value of 0.962 (Normal) which was distributed directly. Univariate analysis was carried out describing the characteristics of each student studied. The statistical test used is the parametrics test (Dependent paired T-test). The results of the normality test have a significance value of 0.53 greater than 0.05 so it can be concluded that the data tested is otherwise normally distributed.

Result

Table 1. Demographic Frequency Distribution of Respondents (n=31)

Variable	Categories	Frequency	Percentage
Gender	Male	16	51.6
	Female	15	48.4
Age	13	3	9.7
	14	24	77.4
	15	4	12.9
Maternal Employment	Employee	23	74.2
	Merchant	5	16.1
	Farmer	2	6.5
	Government Employee	1	3.3
Maternal Education	Elementary School	1	3.2
	Middle School	3	9.7
	High School	7	22.6
	College	20	64.6

Based on the table.1 it is known that the majority of respondents were male, namely 16 respondents (51.6%), the majority were 14 years old, 24 respondents (77.44%) and the most the respondents' parents worked as private employees, 23 people (74.2%). Most of the respondents' mother education was Higher Education as many as 20 people (64.6%).

Table 2. Differences in Knowledge and Attitudes Before and After Given the Intervention

Variable	N	Means	Std. Deviation	Sig. (2-tailed)
Knowledge Pre-Post	31	-22.58387	12.00892	.000
Attitude Pre-Post	31	-8.968	4.355	.000

Table 2 shows the result that there is a significant relationship to the level of knowledge before and after the intervention is given with a sig value of 0.00 ($p < 0.05$). The shows the results that there is a significant relationship between attitudes before and after being given an intervention with a sig value of 0.00 ($p < 0.05$).

Discussion

The result of this study show there were male respondents (51.6%) and female respondents (48.4%). Most of the respondents' mother education was Higher Education (PT) as many as 20 people (64.6%). Good nutritional knowledge from parents is closely related to providing a balanced menu of choices so that the good nutrition needed can be fulfilled (18). Growth and nutritional status of children is influenced by the role of parents, especially mothers in fulfilling nutrition for children. There for, sufficient knowledge is needed for mothers, especially in terms of selecting food ingredients to fulfill nutrition for their children, so that children's nutritional needs can be fulfilled perfectly. Our youth have a burden of nutritional problems, apart from anaemia in young women (6). Then chronic lack of energy, as well as obesity, increasing the problem of overweight or obesity in adolescents are also currently at an alarming point (6).

Nutritional problems can arise because they are caused by ignorance or lack of information about adequate nutrition. Knowledge is needed so that someone can care about nutritional problems. Knowledge of balanced nutrition is very important for every individual because it can affect individual nutritional status (23). A person's nutritional knowledge can affect attitudes and behavior in choosing food and will later affect the individual's nutritional state (24). This study showed that there was a significant relationship between the level of knowledge before and after the intervention was given with a sig value of 0.00 ($p < 0.05$). knowledge of balanced nutrition is one of the factors that can affect the nutritional status of adolescents, nutritional status can also be influenced by eating habits someone (25). A person's tendency to have a healthy life motivation can be influenced by sufficient level of knowledge, attitudes and skills. If a person can accept healthy living behavior based on knowledge, awareness and positive attitude, then the individual can have a healthy life (12). In determining food selection and meal times are influenced by age, personal tastes, habits, culture and socio-economic. Diet is an important factor that can affect a person's nutritional status (26). In addition, the surrounding environment can also influence adolescent eating patterns to become unhealthy (27).

Physical activity can affect nutritional status. The level of physical activity can contribute to the incidence of excess weight, especially in the habit of sitting continuously, watching television, using computers, etc. (28). The lower the use of time to do activities, the greater the change of obesity, the more activities you do, the more calories are released in the body so that the body becomes ideal or even thinner. However, if there is a less activity, the body will tend to store excess calories, resulting in excess weight (29). Physical activity in adolescents tend to be light during the covid-19 pandemic, so there is a relationship between physical activity and nutritional status (29). Unhealthy lifestyle in adolescents such as food intake that is high in fat and cholesterol and high in calories, if not balanced with physical activity will cause nutritional problems (30). The result of this study showed that there was a significant relationship between attitude before and after the intervention was given with a sig value of 0.00 ($p < 0.05$). Based on the result of other studies, there is an influence or relationship between eating habits and the nutritional status of a teenager (31). Some one who is knowledgeable about good nutrition will develop good nutrition (32). Attitude directs behavior directly knowledge and attitudes will influence

behavior regarding balanced nutrition (33). This shows that the level of knowledge affects the reception of information thereby increasing the person's knowledge and attitude.

Conclusion

Parents and teaching staff should work together to provide integrated education related to nutritional status information to adolescents by building health communications and carrying out promotional efforts to build students' awareness to pay attention to balanced nutritional needs as teenagers.

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Conflict of Interest Declaration

Declaration no potential conflict of interest relevant to this article was reported.

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