



Nutrition Education and Strengthening Healthy Living Characters of Junior High School Students at Malang City

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Article Info

Article history:

Received: September 14, 2022

Revised: December 03, 2022

Accepted: December 17, 2022

Keywords:

adolescence;
education;
health;
parents;
school health unit.

Abstract

Adolescence is a period of rapid growth that a healthy lifestyle must support. School as an environment where teenagers spend most of their time has a School Health Unit (UKS), an essential part of health services at school. UKS can be used as a health education for adolescents at school. However, in reality, UKS needs to be actively used and involved. This community service healthily provided interactive education and achieved optimal growth for students through using lectures, focus group discussion, roleplay, and student projects. At the end of the activity, it was reported that there was a significant improvement in students' knowledge. This activity has also involved the role of parents and schools with UKS as part of the sustainability guarantor of healthy lifestyles for students. The provision of diverse education strategies can effectively influence students' health knowledge.

To cite this article: Nugroho, F. A., Kusumastuty, I., Cempaka, A. R., & Handayani, D. (2022). Nutrition education and strengthening healthy living characters of junior high school students at Malang city. *Smart Society : Community Service and Empowerment Journal*, 2(2), 55-62.

INTRODUCTION

Adolescence becomes a period of transition from childhood to adulthood when a person gets the opportunity to pursue growth. The high growth rate causes adolescents to have special nutritional needs (Muchtar et al., 2022; Vos et al., 2016; Zahra & Muhlisin, 2020). Balanced nutrition and a healthy lifestyle are crucial to maintaining health and improving adolescents' cognitive abilities and productivity (Pritasari et al., 2017; Sanggelorang & Amisi, 2020). Basic health research has also reported that many adolescents needed to meet healthy habits, such as not washing their hands properly (>50%), consuming less fruit and vegetables (>90%), and not doing regular physical activity (>50%). In addition, young women who wish to form an ideal body still pay less attention to diet and do not control the physical activity they do. Managing diet and physical activity is important to support a person's nutritional status (Ratnasari et al., 2019). Those facts were why adolescents became a priority target group for introducing and habituating nutrition and health practices.

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Unit Kesehatan Sekolah (UKS), or The School Health Unit, aims to improve health. Health enables adolescents' optimal growth and development to form complete human beings. UKS was formed as a forum for coordinating various health-related activities in schools (Aliyas et al., 2019; Isdarini et al., 2016). Furthermore, based on UKS observations, the school has provided UKS infrastructure. However, UKS equipment was still minimal, and there were no structured health activities at UKS. This condition means that UKS management needs to run better. During the early survey at the school, it was also seen that implementing promotion and prevention that the Puskesmas should drive through UKS was still not optimal due to limited resources. The Indonesian Ministry of Health has also recognized this.

UKS is expected to be an entry point for improving school student health. Education for forming healthy lifestyle habits is essential, such as regular breakfast, reading nutritional facts, understanding portion and balanced nutrition, hygiene sanitation, and first aid for a wound. Some of the services engaged in the health sector include the services carried out by Sumarwati et al. (2022), which aim to improve and enable adolescents to make decisions consciously choosing a healthy lifestyle. Nugraha et al. (2014), nutrition education to the general public. Machfudloh et al. (2021), education on general guidelines for balanced nutrition for pregnant women. Sulistiawati & Septiani (2022), balanced nutrition education for teenagers during a pandemic. Solikhah & Dyastuti (2022), education on anemia prevention for young girls. Apriningsih & Sufyan (2021) and Riana et al., (2018) nutrition behavior health education. This community service was the first model that used various education strategies combined with more than one health education topic to shape students' healthy knowledge. Apart from that, this community service also activated UKS as a supporting mechanism for forming student habits.

METHOD

This community service targets all students of one of the junior high schools in Malang City, a fostered school of the Faculty of Health Sciences, Brawijaya University, that was carried out in July – October 2022. Activities were performed in various methods, including lectures, discussions, Focus Group Discussions (FGD), roleplays, and student project presentations. The topics that have been given were UKS management, balanced nutrition guidelines, nutrition for adolescents, hygiene and sanitation, measurement of nutritional status, and the importance of physical activity. In the beginning, all students have given a pre-test followed by a post-test at the end of the program. Then the result from the pre-test and post-test were analyzed with paired T-tests. This test aimed to know the effect of education on student knowledge. All activities are presented in figure 1.

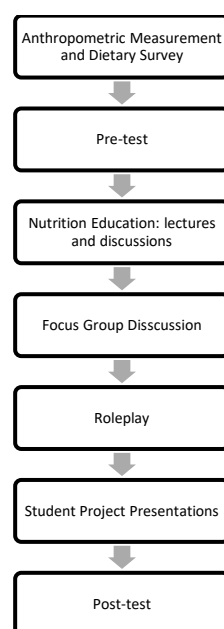


Figure 1. Stages of Community service activities

RESULTS AND DISCUSSION

Sixty students from all grade levels were involved in the activities. In the early stages, coordination was carried out with the school, including socializing activities, requesting initial student data, and at the same time, conducting an initial survey of the condition of the UKS. The school hopes this community service program can be the initial stage for better UKS management. According to the Ministry of Health of the Republic of Indonesia (2018), UKS aimed to improve the ability to live healthily and the health status of students and to create a healthy environment to support the optimal growth and development of adolescents. UKS's main activities are carried out through three UKS pillars (*Bahasa: Trias UKS*), which consist of health education, health services, and school environment development (Habibie, 2016; Nurhayu et al., 2018).

In the next stage, health education was carried out to form healthy habits for adolescents. Activities included anthropometry measurement that continued with lectures and discussions about regular breakfasts, reading nutritional facts, understanding portion and balanced nutrition, hygiene sanitation, first aid for a wound, and ended with a pre-test. On a different day, the activity continued with an FGD regarding adolescent eating patterns and physical activity. Then a roleplay was carried out at the next stage. In the roleplay, students are invited to learn about 'the contents of my plate' (*Bahasa: 'isi piringku'*). The contents of my plate are the programs designed by the ministry of health to understand how to eat with healthy composition easily.

Students were given a group project related to healthy food and hygiene sanitation. This project was presented at the end of the activity and given an assessment and reward. At the end of the activity, students were also given a post-test to assess their progress. Then the pre-test and post-test results were analyzed to know the effect of education on student knowledge progress. In general, the implementation of this activity was enthusiastically welcomed by students, teachers, and parents.

Most students have normal nutritional status (55.35%), have the habit of eating three main meals a day (66.07%) and are accustomed to breakfast (60.71%), regularly taking vitamins and health supplements (89.29%), and were not worried about their current weight (80.36%) (Table 1).

Table 1. Respondent Characteristics

Respondent Characteristics		n	(%)
Grade	7	13	23.21
	8	23	41.07
	9	20	35.71
Nutrition Status	Poor	7	12.50
	Normal	31	55.35
	Over	18	32.15
Main Meal Frequency	2 times	19	33.93
	3 times	37	66.07
Skipping breakfast \geq 3 times in 1 week	Yes	22	39.29
	No	34	60.71
Worries about weight	Yes	11	19.64
	No	45	80.36
On a diet or trying to maintain weight	Yes	5	8.93
	No	51	91.07
Physically Active	Yes	29	51.79
	No	37	66.07
Doing sedentary activities >2 hours/day (watching TV, playing gadgets)	Yes	15	26.79
	No	41	73.21
Watching TV while Eating	Yes	2	3.57
	No	54	96.43
Take vitamins or health supplements regularly	Yes	50	89.29
	No	6	10.71
Smoking	Yes	0	0.00
	No	56	100.00

The exciting findings were that although students admit to having a lack of physical activity (66.07%), most of the students did not have a sedentary lifestyle > two hours a day (73.21%) and did not eat while watching television (96.43%) which both were indicators of a sedentary lifestyle.

A systematic review of adolescent behavior shows that peer relationships and parental guidance styles relate to how adolescents make decisions and behave in their daily lives (Iyagba, 2014). This may be related to how the characteristics of youth in our community service were formed. It also shows parents' importance as role models for their children's health.

When the community service activities started, a survey was conducted regarding students' food choices in the last week (Table 2). The data obtained showed that students' eating choices were quite diverse, but it should be noted that there was a tendency for students to have sweet drinks and drinks.

Table 2. Dietary Overview

Foods or Beverages Consumed Last Week		n
Beverage	Mineral water	56
	Juice	23
	Soda	5
	Fruit flavored drink	29
	Sport drink	8
	Coffee or tea	39
Carbohydrate food	Bread	51
	Cereal	5
	Biscuit	20
	Mie/pasta/rice	56
Vegetables	Broccoli	40
	Carrot	35
	Corn	7
	Green vegetables (spinach, kale, etc.)	35
	Legumes	4
	Tomato	2
Fruits	Appel	15
	Banana	26
	Grape	11
	Melon	5
	Orange	8
	Pear	3
Milk and Dairy Products	Milk-free/low fat	5
	Fresh milk	17
	Flavored milk (example: mocha, strawberry)	18
	Cheese	5
	Ice cream	45
	Yogurt	5
Protein Food	Beef	56
	Chicken meat	56
	Dried beans (e.g., kidney beans, peanuts, etc.)	12
	Mung bean	5
	Egg	30
	Fish	25
	Peanut butter	5
	Sausage	33
	Tofu	50
	Tempe	50
Fat and Sugar	Cake	51
	Candy	56
	Chips	51

Foods or Beverages Consumed Last Week	n
French fries	12
Cookies	8
Donuts	18
Fruit flavored drink	29

The teenagers did not solely determine the habit of choosing sweet foods/drinks, but there was a role for families accustomed to providing sweet foods or drinks in their daily lives (Divert et al., 2017). Foods/drinks with sugar content can potentially contain high total calories. Glucose, fructose, or sucrose are food's most consumed sugars. A study showed that a high-sucrose, high-fructose diet could reduce insulin sensitivity while increasing the risk of type 2 DM (Lean & Te Morenga, 2016). This finding is important because healthy habits among students have formed so they could be optimized in the future.



(a)



(b)



(c)



(d)



(e)

Information:

(a) Lectures and discussions with students

(b) Roleplay

(c) FGD

(d) Physical activity and games with the theme of health and nutrition

(e) Presentation of student projects and involvement of parents and teachers in nutrition education

Figure 2. Implementation of Community Service Activities

The implementation of education in this community service runs with various methods accompanied by the provision of projects on implementing a healthy lifestyle in schools, as shown in Figure 2 and Figure 3. In addition to playing educational videos, demonstrations were held on wound care practices and how to read nutrition labels and determine nutritional status. Efforts to provide education with a psychological approach and mobilize various adolescent senses positively impact knowledge and decision-making processes (Shakir & Sharma, 2017).



(a)



(b)



(c)

Information:

(a) Group photo with students

(b) Final day

(c) Documentation of signing a joint commitment to implementing a healthy lifestyle in school

Figure 3. Final Documentation of Community Service Activities

The education provided with many methods is then measured for its success by looking at the results of students' different knowledge value tests at the beginning and the end of the activity. Based on the result, there was an increase in knowledge of 1.68 points, and statistical results showed a significant difference in knowledge between before and after education ($P < 0.05$) (Table 3).

Table 3. Knowledge Score

	Average Score		P value (paired t-test)
	Before Education	After Education	
Knowledge Score	5.98	7.66	0.000

This increase in student's knowledge is the essential capital to make behavior change. Programs that combine the promotion of healthy lifestyles, including diet and physical activity, in school-based adolescent obesity prevention have proven to have good results.

Other studies have also reported that interventions, including nutrition, physical activity, knowledge, and health attitudes, can potentially reduce risk factors associated with obesity in adolescents (Salam et al., 2016). In the end, this health promotion activity can be carried out continuously by activating UKS by the school so that the commitments that have been built can continue to run well.

CONCLUSION

The role of schools in healthy living habits for students needs to be increased by using UKS. Providing education through sharing methods by mobilizing many senses in adolescents can effectively increase knowledge.

ACKNOWLEDGMENT

The authors would like to thank the Research and Community Service Agency (BPPM) of the Faculty of Health Sciences through the Serving Lecturer Grant. Thank you to the Faculty of Health Sciences student team, who have joined as enumerators in this activity. We also express our gratitude to all teachers, parents, and students of SMPIT As Salam Malang for their active role and support during the implementation of this community service.

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