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Research Paper

Anticipate Stunting by Assisting Teenage Girls with Focus Group Discussion Method at Islamic Boarding Schools, Yogyakarta, Indonesia

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Abstract

Nutritional problems experienced by adolescents include anaemia, malnutrition, and obesity. Teenage girls who live in Al Fadhilah Islamic boarding schools have poor eating patterns, both in quality and quantity. This community service activity was carried out to anticipate stunting incidents through mentoring teenage girls at Islamic boarding schools. Activities include filling out the knowledge questionnaires related to stunting, the measurements of anthropometric, blood pressure, and haemoglobin levels, and the focus group discussion with the theme of the link between stunting and nutritional status, including hypertension and anaemia, as a form of assistance to participants in community service activities. A focus group discussion was held one time, only at the time of initial data collection. The activity results reported that most teenage girls had normal nutritional status based on anthropometry, were not stunted, did not have hypertension, and did not have anaemia. Community service activities in the form of accompanying teenage girls at Islamic boarding schools have not been able to improve the nutritional status of teenage girls significantly because the assistance efforts have not been carried out optimally, which is only done once at the beginning of the activity in the form of a focus group discussion so that it has not been able to change the behaviour of teenage girls.

Keywords *Anaemia Status, Hypertension Status, Nutritional Status, Stunting, Teenage Girls*

INTRODUCTION

Some of the nutritional problems experienced by school-age children include stunting, wasting, iron deficiency anaemia, iodine deficiency and vitamin A. These nutritional problems can result in reduced cognitive development and learning abilities with deteriorating nutritional status. Teenage school children living in dormitories may be at higher risk of malnutrition than children living in non-dormitories (Intiful et al., 2013).

Islamic boarding schools are an institution that provides very strategic education to educate the nation's life, but the health problems of young students are a different problem. The results of research at the Shuffah Hizbullah Islamic Boarding School and Madrasah Al-Fatah show that the average nutritional intake of adolescents at Islamic boarding schools is still low, namely only fulfilling 70.2% of the Recommended Dietary Allowance (RDA) for energy and 63.4% of the RDA for protein (Abdullah et al., 2022). Islamic boarding schools should help students meet nutritional intake every day by improving the quality of nutrition in accordance with balanced nutrition (Diana et al., 2021).

This community service activity aimed to provide services for assessing the nutritional status of teenage girls, including body mass index, blood pressure, and anaemia status. Anthropometric checks, blood pressure and haemoglobin levels were free for activity participants. The results of the nutritional assessment became the basis for implementing the intervention in the form of a focus group discussion among teenage girls.

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LITERATURE REVIEW

Individuals were aged 10-14 are categorized as early adolescents (Gupta et al., 2014). Puberty spurt occurs during the first three years of puberty, during which height increases rapidly due to the synergistic effects of sex and growth hormones. Adipose tissue storage also increases. Girls store more adipose tissue than boys. Adipose tissue accumulation is more likely to occur in the chest and hips in girls and more centrally in boys. Adolescence is the fastest developmental stage (More, 2014).

Adolescence is a time of physical, cognitive, social, and emotional changes. Adolescents need adequate nutrition to maintain optimal physical and cognitive growth and development (Prentice et al., 2013; World Health Organization, 2014). If the nutritional needs of adolescents are not fulfilled for a long time, then these adolescents will experience stunting.

Stunting is an important predictor of long-term chronic malnutrition, reflecting linear growth failure due to persistent malnutrition and disease early in life (Black et al., 2013). Stunted is a high/low body length z-score according to age (TB/A) (Rachmi et al., 2016). The First 8000 Days of Life (HPK) period is the right period for giving interventions to tackle stunting and improve the quality of growth for the next generation (Bundy et al., 2017). The 8000 HPK period ends in adolescence. Teenage girls can experience nutritional problems, a risk factor for stunting in the next generation (Widaryanti et al., 2021). Their diet can influence the nutritional status of teenage girls, so it is necessary to improve the quality of their diet to become balanced nutrition to obtain optimal nutritional status (Atasasih & Mulyani, 2022). Nutritional problems experienced by adolescents include anaemia, malnutrition, and obesity (World Health Organization, 2014).

RESEARCH METHOD

Community service activities are carried out at Al Fadhilah Islamic Boarding School, located in Maguwoharjo, Depok, Sleman. The activity was conducted on Sunday (September 4, 2022) at 13.00 – 15.00 WIB for pre-test and FGD data collection. Participants during the pre-test were 41 teenage girls. A UNRIYO Undergraduate Nutrition Study Program team carries out community service activities. The activity implementation team consisted of three lecturers and two students. Initial data collection activities (pre-test) were carried out in sequence, starting with the opening and delivery of objectives and a rundown of activities, filling in attendance, filling out pre-test questionnaires, anthropometric measurements, measuring blood pressure, measuring Hb levels, and Focus Group Discussion (FGD) with the theme of the link between stunting and nutritional status, including hypertension and anaemia, as a form of assistance to participants in community service activities. The FGD was carried out in groups; there were four groups with ±10 participants each. Each FGD group was guided by a facilitator who was the implementing member of the community service activity.

Focus group discussion is frequently used as a qualitative approach to gain an in-depth understanding of social issues. The method aims to obtain data from a purposely selected group of individuals rather than from a statistically representative sample of a broader population (Nyumba et al., 2018). Final data collection (post-test) was conducted on Sunday (October 2, 2022) at 13.00 - 15.00 WIB. Participants during the post-test were 37 teenage girls. The final data collection activity (post-test) was carried out to evaluate knowledge and nutritional status changes based on anthropometry, blood pressure, and haemoglobin levels.

The data obtained through this community service activity includes data on the characteristics of activity participants, including age, weight, height, nutritional status data based on the BMI/U index, blood pressure data, and haemoglobin level data. The data were analyzed statistically using the Paired t-test to see differences in nutritional status, hypertension status, and

anaemia status before and after the activity.

FINDINGS AND DISCUSSION

Al Fadhilah Islamic boarding school is located in the District of Sleman, Special Region of Yogyakarta. Based on the results of interviews with teenage girls at Al Fadhilah Islamic boarding school, teenage girls have poor eating patterns, both in quality and quantity. The observations showed that teenage girls consumed rice and vegetables more often without side dishes. This community service activity was carried out to anticipate stunting incidents through mentoring teenage girls at Islamic boarding schools. Participants in community service activities during the pre-test were 41 people, but during the post-test, only 37 people participated. As many as 4 participants did not participate in the community service post-test.

1. Characteristics of Teenage Girls

The characteristics of teenage girls as participants in community service activities are shown in Table 1.

Table 1. Distribution of Respondents Based on Characteristics

Variable	Unit	Mean
Age	year	15,2
Height	Cm	149,6
Weight	Kg	48,1

According to Bosch et al. (2008), women are stunted if their height is <145 cm and not stunted if their height is ≥145 cm. The distribution of stunted events in teenage girls was obtained in this community service activity, as shown in Figure 1.

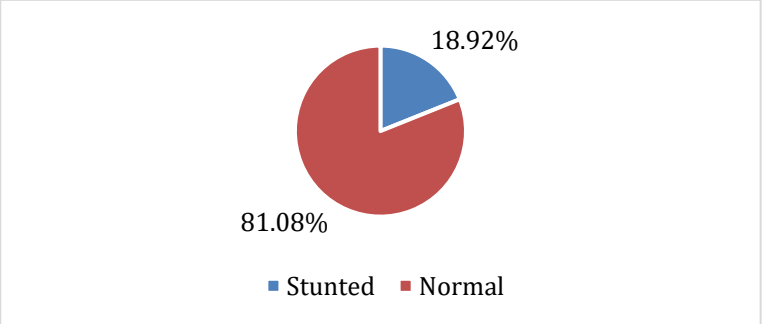

Figure 1. Frequency Distribution of Respondents based on Stunted Events

2. Nutritional Status of Teenage Girls

The nutritional status of teenage girls in this activity was determined based on the Body Mass Index indicator based on age (BMI/U). Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 2 of 2020 concerning Child Anthropometric Standards, it is stated that the BMI/U index is used to determine the categories of poor nutrition, undernutrition, good nutrition, risk of overnutrition, overnutrition, and obesity. The BMI/U indicator determines the nutritional status of children aged 5–18, describing the categories shown in Table 2.

Table 2. Nutritional status categories based on BMI/A indicator

Indicator	Category of Nutritional Status	Cut off (Z-Score)
IMT/U	Severely thinness	<-3 SD
	Thinness	-3 SD sd <-2 SD
	Normal	-2 SD sd +1 SD
	Overweight	>+1 SD sd +2 SD
	Obese	>+2 SD

The results of the nutritional status assessment based on the anthropometric indicators of BMI/U in female adolescents are shown in Figure 2. Most of the female adolescents had normal nutritional status (72.97%). The results of the analysis showed that there was no change in the nutritional status of teenage girls at the beginning and end of the activity.

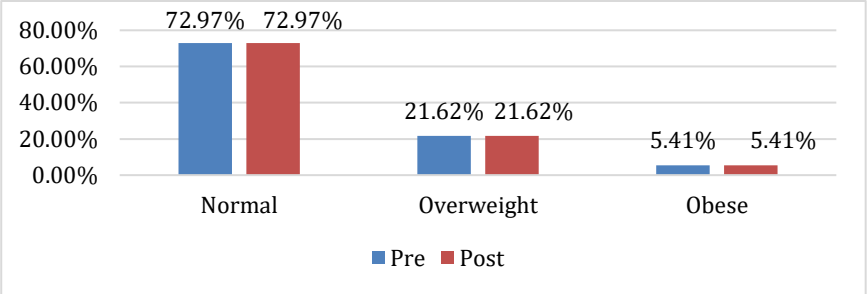

Figure 2. Frequency Distribution of Teenage girls Based on Nutritional Status with BMI/U Anthropometric Indicators

3. Hypertension Status of Teenage Girls

Hypertension is diagnosed when a person's systolic blood pressure in the office or clinic is ≥140 mm Hg and/or diastolic blood pressure is ≥90 mm Hg after a repeat examination (Unger et al., 2020). The nutritional status of teenage girls based on clinical blood pressure indicators is shown in Figure 3.

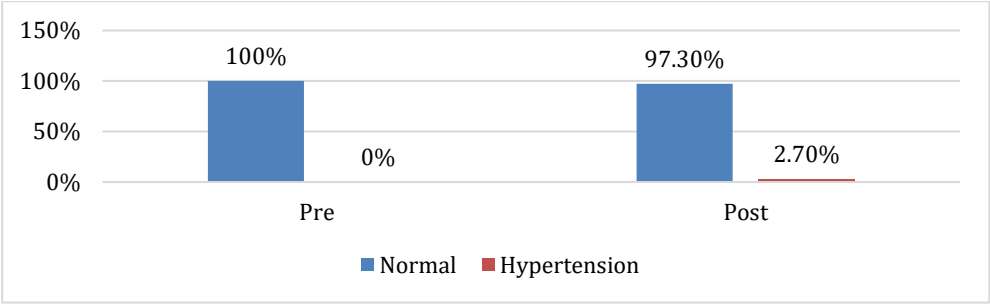

Figure 3. Frequency Distribution of Young Girls Based on Clinical Blood Pressure Indicators

4. Anemia Status of Teenage Girls

Adolescents with haemoglobin levels <12.5 g/dL are classified as anaemic (Engidaw et al., 2018). The distribution of the frequency of teenage girls based on anaemia status is shown in Figure 4.

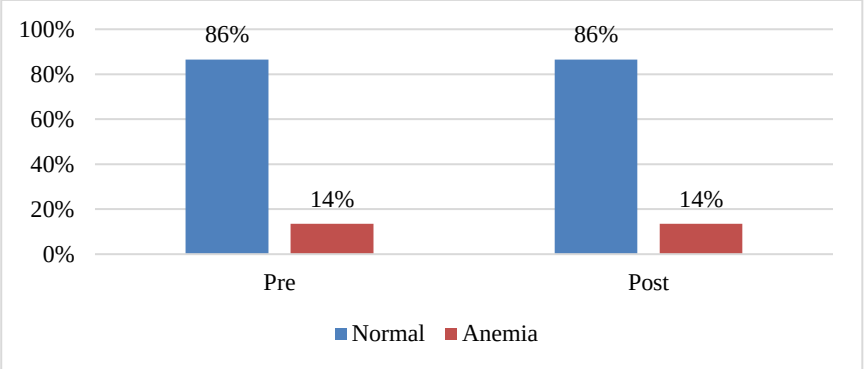

Figure 4. Frequency Distribution of Teenage girls Based on Anemia Status

Most of the teenage girls did not experience anaemia (86%). In Table 3, there was no difference in the haemoglobin level of female adolescents at the beginning and end of the activity, indicated by a p-value = 0.714 (p-value ≥0.05).

Table 3. Paired T-Test Test Results for Teenage girls's Hemoglobin Levels

Variable	Mean ± SD		p-value
	Pre	Post	
Hemoglobin	15,05 ± 2,44	15,21 ± 2,38	0,714

5. Knowledge of Teenage Girls

Changes in knowledge of teenage girls in this activity were measured using an assessment of the pre-test and post-test questionnaires. The results of the Paired T-Test are shown in Table 4.

Table 4. Results of the Paired T-Test Knowledge of Teenage girls

Variable	Mean ± SD		p-value
	Pre	Post	
Score	62,97 ± 15,25	68,11 ± 16,30	0,139

In Table 4, it is reported that there is no difference in the knowledge scores of teenage girls related to stunting, indicated by a p-value = 0.139 (p-value ≥0.05).

Stunting in adulthood can lead to reduced work capacity, social skills, behavioural problems, and metabolic diseases (McGuire, 2015; Akseer et al., 2017; Rengma et al., 2016). More importantly, stunted female adolescents may give birth to stunted low-birth-weight babies later in life (Prentice et al., 2013; Kwon & Kim, 2017).

This community service activity is carried out with the target of teenage girls in Islamic boarding schools. Several factors influence the occurrence of stunting in teenage girls, including adolescents from families with more than five people, those using inadequate sources of drinking water, whose mothers have low education, classified as food insecure households, exposure to polluted environments, and poor hygiene, skipping eaten in the past two weeks, and poor diet diversity scores (Mekonnen et al., 2013; Zelellw et al., 2014; Wolde et al., 2015; Prendergast et al., 2014).

The results of community service activities reported that 18.92% of teenage girls were stunted. Most teenage girls have normal nutritional status based on BMI/U indicators, 72.97%. The results of the analysis showed that there was no change in the nutritional

status of teenage girls at the beginning and end of the activity.

Most of the teenage girls had normal blood pressure, and there was no change in the category of teenage girls' blood pressure at the start and end of the activity. Only one person (2.7%) experienced a change in blood pressure status from normal at the initial activity condition to hypertension at the end of the activity.

Most of the teenage girls did not experience anaemia (86%). The average pre-test score was 62.97 and rose to 68.11 for the post-test. There was no difference in the haemoglobin level of female adolescents at the beginning and end of the activity and no difference in teenage girls' knowledge scores related to stunting.

Anaemia is a nutritional disorder caused mainly by iron deficiency, especially in underprivileged teenage girls. Adolescent anaemia can be affected by increased iron requirements, inadequate iron intake, accelerated physical growth, menstruation, and high iron requirements for forming haemoglobin. Adolescent girls are at higher risk of developing anaemia due to physical growth, reproductive maturation, and cognitive changes requiring large amounts of macronutrients and micronutrients such as iron (Engidaw et al., 2018). Some teenage girls in Islamic boarding schools have irregular eating habits, low iron food intake, and nutritional intake that will inhibit iron absorption so that they can experience anaemia.

The community service activities in the form of mentoring teenage girls at Al Fadhilah Islamic boarding schools have not been able to significantly improve the nutritional status of teenage girls. This may be because mentoring efforts have not been carried out optimally. The intervention effort was only made once at the beginning of the activity in the form of FGD, so it has not been able to change the behaviour of teenage girls. Ideally, intervention efforts should be given regularly during monitoring to change teenage girls' behaviour. This is a limitation of these community service activities.

CONCLUSIONS

Community service activities in the form of mentoring teenage girls at Islamic boarding schools have not been able to improve the nutritional status of teenage girls significantly. This may be because mentoring efforts have not been carried out optimally, which is only done once at the beginning of the activity in the form of FGD, so it has not been able to change the behaviour of teenage girls. Therefore, continuous monitoring efforts are needed to achieve even better results related to improving the nutritional status of these teenage girls.

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