

Community Service Report

Nutrition Education on Obesity Prevention for Students at Insan Cendekia Syech Yusuf High School

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ABSTRACT

The WHO reports that the global prevalence of adolescent obesity has exceeded 20%. This condition emphasizes the importance of promotional interventions through nutrition education in Islamic schools that are prone to unbalanced diets and limited physical activity. This community service activity was carried out at Insan Cendekia Syekh Yusuf High School on September 19, 2025, involving 49 students in grades XI and XII. The activity methods included a pre-test, interactive nutrition education, provision of healthy food, and a post-test. The results of the paired t-test showed a significant effect of nutrition education on increasing student knowledge, with the average score increasing from 17.47 to 24.82 ($p < 0.001$). These findings reinforce the importance of nutrition education in Islamic schools as a preventive strategy. Thus, this community service activity proved to be effective in improving adolescents' understanding of obesity and is recommended to be implemented continuously with the support of schools to shape healthy living behaviors.

1. Introduction

Obesity is one of the major nutritional problems with a continuously increasing prevalence worldwide and has a serious impact on public health. The WHO (2024) reports that the global prevalence of adolescent obesity has exceeded 20%, while Riskesdas (2018) shows an increase in the prevalence of adolescent obesity in Indonesia from 14.8% in 2013 to 21.8% in 2018. In fact, global projections estimate that by 2050, more than 360 million children and adolescents worldwide will be obese if this trend is not controlled, which will place a heavy burden on the global health system (Global Burden of Disease, 2025; World Obesity Federation, 2025). Adolescent obesity is known to

increase the risk of non-communicable diseases such as type 2 diabetes mellitus, hypertension, and cardiovascular disease in adulthood (Poniasih, 2025).

Various factors contribute to the increasing prevalence of obesity among adolescents. Consumption of fast food, sweetened beverages, and high-energy diets are the main factors (Fatmala et al., 2022; Rafiony et al., 2015). Low physical activity due to a sedentary lifestyle and intense academic activities also exacerbate the risk of obesity (Zhang et al., 2024). Sleep quality (Liu et al., 2024), psychological conditions such as academic stress (Baygi et al., 2023), and socioeconomic factors such as parental education and employment also influence adolescents' nutritional status (Blume et al., 2024).

High school adolescents are considered a strategic target group because they are in a transitional phase towards adulthood, where the habits formed will tend to remain until adulthood. Islamic schools and Islamic boarding schools have specific characteristics in the form of intense academic and religious activities, which can limit students' physical activity. In addition, food choices in school canteens or dormitories are often unbalanced, dominated by foods high in fat and sugar and low in fiber (Damayati et al., 2024). These conditions make students in Islamic schools prone to obesity.

Nutrition education efforts in schools have also been proven effective in improving nutrition literacy and healthy eating behaviors among adolescents. Hassan et al. (2024) stated that school-based nutrition education programs are an important strategy for reducing the risk of obesity. Sidiartha and Juliantini (2022) added that health promotion among adolescents plays a crucial role in the early prevention of obesity. Therefore, this community service activity was carried out at Insan Cendekia Syekh Yusuf High School as a form of promotive-preventive intervention aimed at increasing adolescents' understanding of obesity and encouraging the formation of healthy lifestyles. In addition to education, the use of functional local foods also has the potential to support obesity prevention efforts. Damayati et al. (2023) showed that sea grape powder (*Caulerpa racemosa*) has high antioxidant capacity and is well accepted sensorially, making it a viable alternative for healthy foods in obesity control strategies.

2. Method

The research method is discussed clearly and in detail consisting of 400-800 words, namely: The type of research and the approach used, Place and time of research, Consideration of subject selection and research situation, Sources of literacy and information, Population and sample and sampling method, Research procedures, including informed consent, Instrument used, Data processing/analysis, Processing, analysis, and presentation of data, Statement of having obtained a health code of ethics permit through the research ethics commission (optional).

3. Results & Discussion

The characteristics of the respondents show that most of the students are aged 16–18 years and are in grades XI and XII. Most of the parents' highest level of education is high school (61.2%), while the majority of the parents' occupations are civil servants (63.3%) and entrepreneurs. These factors of parental education and occupation are thought to influence students' consumption patterns and

nutritional literacy, which is consistent with the findings of Blume et al. (2024) that family socioeconomic status correlates with food choices and obesity risk in adolescents.

The measurement results showed that the average student knowledge score on the pre-test was 17.47 (SD 5.654), increasing to 24.82 (SD 4.433) on the post-test. Analysis using a paired t-test yielded $p < 0.001$, confirming the significant effect of nutrition education on increasing student knowledge. These results are consistent with the report by Sidiartha & Juliantini (2022) that adolescent health promotion effectively reduces the risk of obesity, and are in line with Hassan et al. (2024), who emphasize the success of school-based education programs, especially when accompanied by hands-on practice.

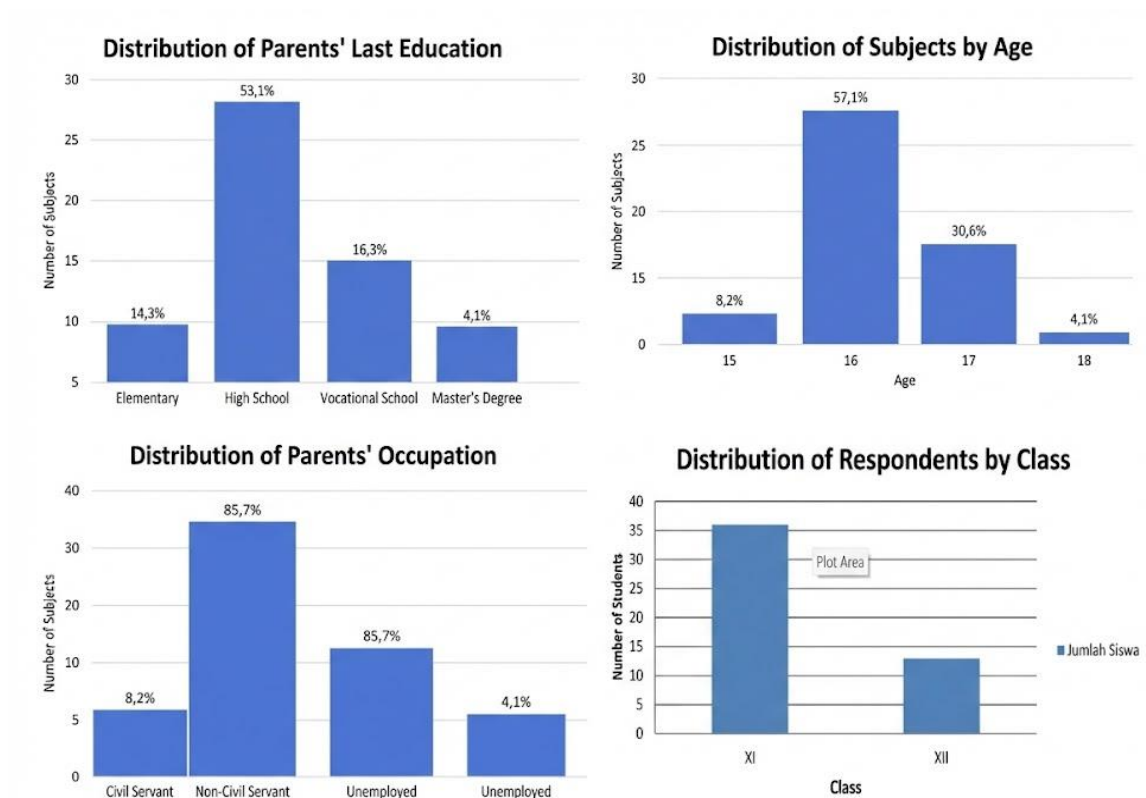
This study also supports the findings of Damayati et al. (2024) at Madrasah Tsanawiyah, which showed an increase in students' nutritional literacy even though the relationship between diet and obesity was not significant. This confirms that nutrition education in Islamic schools is of high urgency as a promotive-preventive strategy in preventing adolescent obesity.

In addition to education, adolescent obesity is influenced by various lifestyle factors. High-energy diets, consumption of fast food, and sweetened beverages have been shown to increase the risk of obesity (Fatmala et al., 2022; Rafiony et al., 2015). Low physical activity due to busy academic schedules also plays a role (Zhang et al., 2024), as do poor sleep quality (Liu et al., 2024) and academic stress (Baygi et al., 2023). If not addressed promptly, adolescent obesity has the potential to continue into adulthood and increase susceptibility to non-communicable diseases, including type 2 diabetes mellitus, hypertension, and cardiovascular disorders (Poniasih, 2025).

This activity not only increases students' knowledge, but also introduces the concept of healthy foods recommended for obesity prevention. The recommendations include consuming fruits and vegetables as sources of fiber, low-fat proteins such as fish, nuts, and soy products, as well as complex carbohydrates with a low glycemic index. The WHO (2024) and World Obesity Federation (2025) emphasize the importance of consuming high-fiber foods and limiting added sugars, while Rafiony et al. (2015) and Fatmala et al. (2022) stress the need to reduce fast food and sweetened beverages. The results of a study by Damayati et al. (2023) further reinforce these recommendations, showing that sea grape powder has antioxidant activity that has the potential to support metabolic health and be a functional food option in obesity prevention. Through direct exposure to healthy foods, students not only gain theoretical information but also practical experience in choosing nutritious foods.

Overall, the results of this community service project confirm that nutrition education combined with the practice of providing examples of healthy foods can significantly improve the knowledge of Islamic school students. Similar interventions are recommended to be implemented continuously in Islamic schools and Islamic boarding schools to support the formation of healthy lifestyles and reduce the trend of adolescent obesity in Indonesia.

Figure 1. *Distribution of respondents based on parents' occupation, parents' highest level of education, grade, and age*



4. Conclusion

The community service activity in the form of nutrition education at Insan Cendekia Syekh Yusuf High School proved to be effective in increasing students' knowledge about obesity, as shown by an increase in the average score from 17.47 on the pre-test to 24.82 on the post-test with a significant paired t-test result ($p < 0.001$). This intervention is in line with previous findings that nutrition education in schools can improve nutrition literacy and play a role in preventing adolescent obesity (Sidiartha & Juliantini, 2022; Hassan et al., 2024; Damayati et al., 2024). Considering that obesity is also influenced by high-energy diets, fast food consumption, lack of physical activity, sleep quality, and psychological factors, nutrition education programs should be implemented continuously with the habit of consuming healthy foods such as fruits, vegetables, low-fat proteins, and complex carbohydrates as recommended by the WHO (2024) to reduce the trend of obesity among adolescents in Indonesia.

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