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Education On Vegetable And Fruit Consumption For Early Childhood In Ranah Singkuang Village

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Abstract

Children's consumption of vegetables and fruits remains low and often does not meet nutritional recommendations, potentially leading to long-term health problems, including increased risks of chronic diseases such as heart disease and diabetes. Insufficient vegetable intake may also negatively affect eye health and contribute to anemia, resulting in symptoms such as weakness, fatigue, and poor concentration in children. This community service aimed to improve knowledge and awareness regarding fruit and vegetable consumption among early childhood children in Ranah Singkuang Village. The activities were carried out from January to September 2024 at PAUD Ranah Singkuang Village and included educational sessions for children and PAUD teachers focusing on the variety and benefits of fruits and vegetables. The results demonstrated improved knowledge among teachers and young children, as well as positive behavioral changes among parents in providing healthier meals, especially those containing fruits and vegetables. Approximately 95% of students were observed bringing lunches that included fruit and vegetable components following the intervention. Based on these findings, it is recommended that similar educational activities continue to be implemented regularly and that PAUD teachers integrate play- based nutrition learning into daily classroom activities to promote sustainable healthy eating habits among young children.

A. Introduction

Early childhood is a highly sensitive stage in which children are greatly influenced by their surrounding environment, and this period progresses rapidly. During this phase, optimal nutritional intake in both quality and quantity is crucial to support growth and development. Consumption of vegetables and fruits is an essential component of balanced nutrition and should be encouraged in every meal. This applies not only to adults but is particularly important beginning at a young age. However, vegetable and fruit consumption among Indonesians remains relatively low (Dejesetya, 2016).

Data from the study noted two early childhood education units in Ranah Singkuang Village with a total of 71 students. Findings from the 2018 Basic Health Research (Riskesdas) demonstrated that the proportion of inadequate fruit and vegetable consumption in the population over five years old remains high. Nationally, the prevalence of consuming less than five servings of fruits and vegetables per day increased from 93.5% in 2013 to 95.5% in 2018. Additionally, the 2014 Indonesian Individual Food Consumption Survey reported that among children aged 5–12 years, vegetable consumption reached only 34.0% and fruit consumption 7.3% (Kemenkes, 2018).

Low fruit and vegetable intake in children can lead to various health problems later in life. The World Health Organization (WHO, 2020) recommends consuming at least 400 g/day of fruits and vegetables to prevent chronic diseases; however, most children still fall short of these recommendations. The Food and Agriculture Organization (FAO, 2020) similarly reports that inadequate fruit and vegetable intake contributes to micronutrient deficiencies and higher risk of noncommunicable diseases. UNICEF (2021) additionally identifies insufficient fruit and vegetable intake during childhood as a major contributor to poor dietary quality and suboptimal growth.

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It is associated with an increased risk of chronic diseases such as heart disease and diabetes. Insufficient vegetable intake also negatively affects eye health and can contribute to anemia, with symptoms including fatigue, lethargy, lack of concentration, and decreased motivation (Ichan, Wibowo & Siqid, 2015). Constipation and obesity are also commonly linked to low consumption of fruits and vegetables. Moreover, adequate intake plays an important role in children's mental and physical development (Witradharma & Jumiyati, 2019).

Cultivating fruit and vegetable consumption habits from an early age is therefore crucial, as dietary patterns formed in childhood are likely to persist into adulthood (Wardhani & Budiono, 2018). Nutrition education from a young age is essential to build children's understanding and positive attitudes toward nutritious foods, enabling them to adopt healthy eating habits without feeling forced. The most effective education is given to children aged two to six years. Early childhood education (PAUD) serves as a strategic setting because children in this age group are highly receptive to learning, making it a critical period to introduce nutrition concepts and promote healthy behavior (Permanasari et al, 2013).

Structured nutrition learning in PAUD enables teachers to incorporate lessons into daily activities and play-based methods, which support cognitive, affective, and behavioral development. These experiences help children gain familiarity with vegetables and fruits, increasing the likelihood of lifelong healthy eating habits. The difference in adolescent behavior after education in a study at a junior high school in Pekanbaru shows the importance of vegetable and fruit education from an early age (Fitriani, Marlina & Roziana, 2019).

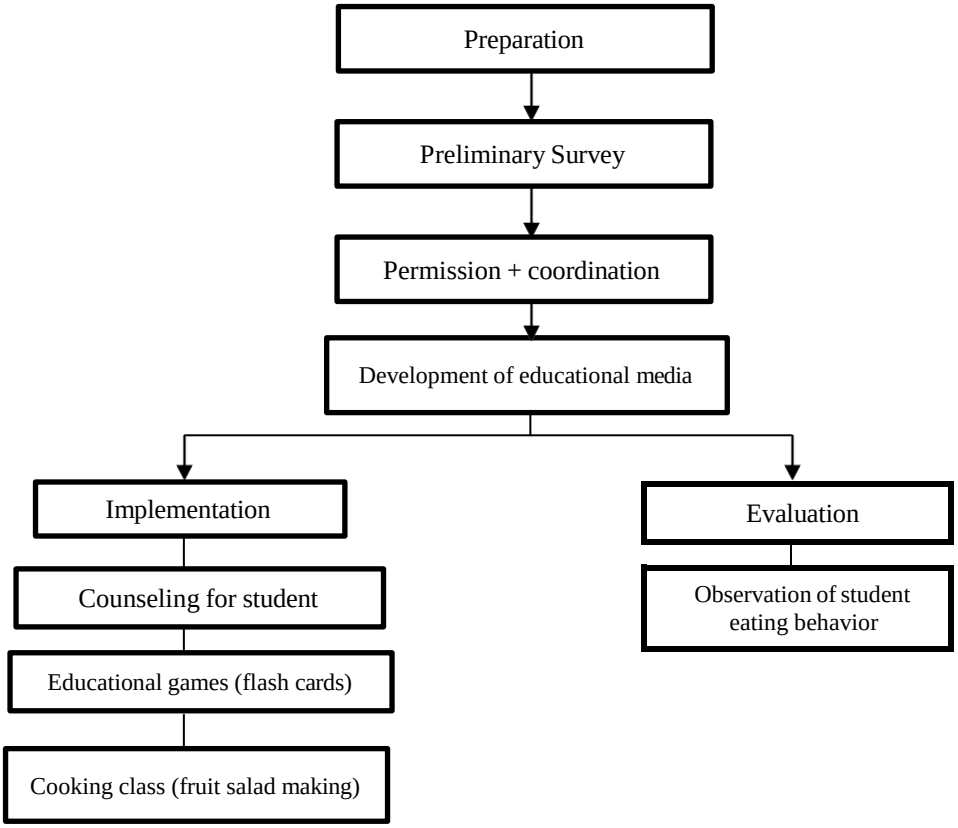
The role of nutrition education in schools is important, as demonstrated by learning plans implemented through activities introducing plant types such as fruits and vegetables and their benefits (Rahmiyah, Budiastutik & Sutrisno, 2016). Prelip et al. (2012) conducted a nutrition intervention involving teachers and parents that resulted in positive changes in knowledge, attitudes, and beliefs toward vegetable consumption. Teachers have a critical role in education (Soraya et al., 2017). Beyond teaching content, they are responsible for modeling healthy behavior and motivating students in alignment with the comprehensive school health model, which positions schools as a supportive environment for children's nutritional needs (Mulyono et al., 2017). Teachers significantly influence students' attitudes toward fruit and vegetable consumption (Prelip et al., 2012).

Considering these issues, we aim to provide education on fruit and vegetable consumption to early childhood students in Ranah Singkuang Village to achieve improvement before and after the intervention. We also aim to empower PAUD teachers to promote and introduce innovative approaches for offering varied vegetables and fruits to children

B. Methods

This community service program was conducted from January to September 2024 at PAUD Ranah Singkuang Village. A total of 71 participants were involved, consisting of 45 early childhood students, 16 teachers, and 10 parents. The goal of the program was to improve knowledge and awareness regarding the variety and benefits of fruits and vegetables.

The activity comprised four main stages. First, during the preparation stage, coordination was carried out with the school, and educational materials were developed, including leaflets, modules, animated videos, and learning cards. Second, the intervention stage involved delivering presentations and educational sessions on fruit and vegetable types and their benefits for children's health. The materials were presented using interactive educational media. Third, the mentoring stage facilitated teacher assistance in applying nutrition education in classroom activities, particularly through the implementation of the provided media. Lastly, the evaluation stage was conducted through observation to identify behavioral changes and understanding among students and teachers, as well as to collect feedback for program improvement. These structured stages supported program implementation and helped strengthen teachers' capacity to promote fruit and vegetable consumption among young children.



C. Results and Discussion

Result

Community service activities began with a preliminary survey in Ranah Singkuang Village to assess the conditions of PAUD institutions and conduct coordination with teachers. Permission was obtained from the principal of PAUD Al-Mulk prior to implementation.

The intervention included counseling for teachers and parents on the importance of fruit and vegetable consumption in early childhood. The instructional delivery employed lecture and discussion methods supported by educational media such as PowerPoint slides, animated videos, leaflets, learning modules, and flash cards.

1) Increased Healthy Lunch Provision

   Observational findings showed a substantial change in children's lunch provisions after the intervention. Before counseling, only a few students brought fruits or vegetables. After the intervention, approximately 95% of students brought lunch containing various types of fruits and vegetables, indicating increased awareness among teachers and parents.

2) Classroom Learning Activities

   Following teacher training, teachers delivered educational sessions to students using animated videos and flash cards to introduce fruit and vegetable types. Students actively participated in games, demonstrating improved recognition skills.

3) Cooking Class Activity

   A cooking class was conducted in which students prepared simple fruit salads with teacher assistance. Students showed high enthusiasm, and most reported positive taste experiences (e.g., "sweet," "colorful"). Participation also supported development of fine motor skills.

Figures 1–7 illustrate counseling activities, learning media, and student engagement.

Figure 1.
Nutrition Counseling

Figure 2.
Power Point Material Percentage

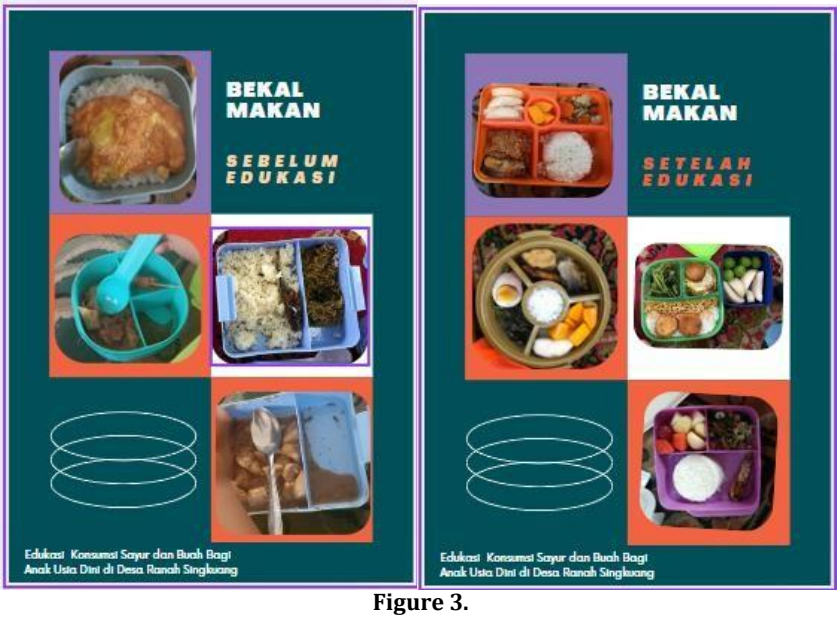


Figure 3.
Provisions Before and After Being Given Materials

Figure 4.
Animated Videos (https://youtu.be/d1gkyPm_j4A)

Figure 5.
Media Flash Card

Figure 6.
Delivery of Materials Through Game

Figure 7.
Fruit Processing

Discussion

The observed behavior change, in which 95% of students began bringing fruits and vegetables to school, aligns with global health recommendations. WHO (2020) emphasizes that increasing fruit and vegetable intake in early childhood is essential to reduce the long-term risk of noncommunicable diseases. FAO (2020) also highlights the importance of integrating fruit and vegetable education as part of school-based nutrition initiatives to increase dietary diversity. Additionally, UNICEF (2021) stresses that school environments and parental involvement are among the most effective pathways to improve children's nutrition habits, strengthening the relevance of teacher-parent collaboration observed in this study.

This finding aligns with evidence showing that nutrition education can significantly influence dietary behavior in children (Permanasari, Luciasari & Aditianti, 2013). Parents play a key role in shaping children's eating habits through food availability at home, modeling, and reinforcement. Similarly, teachers contribute to a supportive school environment and function as role models for healthy behavior (Mulyono et al., 2017).

The intervention utilized animated videos and flash cards to introduce fruit and vegetable types. These interactive activities are consistent with the learning-through-play approach, which emphasizes enjoyment, repetition, and sensory stimulation to improve learning outcomes (Rahmiyah, Budiastutik & Sutrisno, 2016). Flash cards serve as effective visual media that enhance memory retention and increase children's engagement in classroom-based nutrition learning (Fadillah, 2020).

The cooking-class activity further strengthened children's willingness to consume fruits and vegetables. Practical involvement in food preparation is known to increase familiarity with food ingredients and reduce neophobia, ultimately improving acceptance and dietary diversity (Maharani et al., 2019). This is also supported by findings that hands-on cooking activities in early

childhood settings improve nutrition knowledge, fine motor skills, and positive eating attitudes (Jatmikowati, 2023).

The use of multiple educational media PowerPoint presentations, leaflets, learning cards, and animated videos may also have enhanced comprehension and message retention. Instructional media that stimulate visual and auditory senses are known to improve learning outcomes and children's understanding of nutrition concepts (Parnabhakti, 2020). These media support a multisensory learning environment, which increases children's interest in fruits and vegetables, consistent with previous findings that educational visuals are effective in basic nutrition education (Witradharma & Jumiyati, 2019).

Overall, the findings demonstrate that combining teacher-parent–based education, interactive learning media, and hands-on food preparation can effectively improve fruit and vegetable intake among early childhood students. This aligns with behavior-change theory, which suggests that children adopt new dietary behaviors more readily when supported by influential figures (parents/teachers) and engaging learning methods. Thus, the integration of structured nutrition education in PAUD has the potential to support long-term improvements in children's dietary patterns.

This activity was limited by the short observation period and small sample size, focusing only on one PAUD institution. In addition, quantitative evaluation was limited to simple observation without detailed pre- and post-test data. Future activities should include longer follow-up and broader data collection to measure the sustainability of behavior change.

D. Conclusion

The results of this community service activity show that knowledge of teachers and early childhood students regarding fruit and vegetable consumption increased, with approximately 95% of students demonstrating improved understanding as reflected by changes in their eating behavior. This was indicated by the greater number of students bringing lunches that contained fruits and vegetables following the intervention. Behavioral improvements were also supported by increased parental involvement, as parents became more proactive in preparing healthier meals for their children. In addition, PAUD teachers demonstrated increased capacity to deliver nutrition education through play-based approaches, such as using flash cards and cooking activities. To ensure program sustainability, it is recommended that nutrition education be integrated into the PAUD learning curriculum so that healthy eating habits can continue to be reinforced consistently.

F. Author Contribution Statement

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