



A Child Education Model in an Effort to Improve the Culture of Healthy Snacks and Breakfast Based on Parents and Children at SDN 04 Kampung Olo, Padang City

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ABSTRACT

Unhealthy breakfast and snack habits are still common among school-aged children and can lead to decreased concentration, weakened immunity, and poor digestion. This education-based program aims to increase students' and parents' knowledge and awareness regarding nutritious breakfasts and the selection of safe and healthy snacks. This activity was carried out at SDN 04 Kampung Olo, Padang, involving students, parents, and teachers. Activities included interactive nutrition education, guided breakfast sessions, demonstrations on identifying healthy snacks, and knowledge assessments using ore-post-tests. The results showed an increase in knowledge with the average student score increasing from 31.7 to 32.6 and the parent score from 29.6 to 30.4. Positive behavioral changes were also observed, including more consistent breakfast consumption, a better understanding of the criteria for healthy snacks, increased hand washing practices before eating, and an increase in parents' ability to prepare balanced meals and support healthy eating habits at home. These results indicate that school- and family-based nutrition education can effectively strengthen knowledge and encourage healthier dietary behaviors. Ongoing collaboration between schools, families, and health professionals is recommended to encourage long-term healthy eating habits and improve the well-being of school-aged children.

Keywords: education, healthy snacks, school children

INTRODUCTION

Children aged 7–15 years are classified by the World Health Organization (WHO) as school-age children. During this growth period, nutritional needs increase, yet children tend to select foods based on appearance and personal preference, often purchasing snacks without considering their nutritional content (Fauziah et al., 2023). The quality of school snacks has therefore become an important concern for parents, children, and school administrators, as healthy food plays a crucial role in supporting growth, development, and overall health.

According to Sundari (2021), more than 90% of mothers provide snacks to their children based on preference, availability, and low cost rather than nutritional value, and approximately 75% of children choose unhealthy snacks when given various options. The consumption of unhealthy snacks can negatively affect academic performance. Children who skip breakfast often experience a lack of energy due to the absence of essential

nutrients, which leads to difficulty concentrating, particularly during learning activities. Many school-age children neglect breakfast and prefer to purchase snacks at school, while the abundance of fast food vendors around school environments poses an additional health concern (Santi & Candra, 2022).

Information obtained from the school indicates that students frequently consume snacks that do not meet health standards and often experience stomach discomfort during learning sessions. Breakfast is essential for maintaining stamina, supporting children's growth and development, and ensuring optimal participation in school activities (Nurlinawati et al., 2019). However, many students remain unaware of how to choose healthy snacks, which may have adverse effects on their health. Therefore, educational outreach on healthy snacking is necessary.

METHOD

This Community Service Program was implemented in collaboration between the Faculty of Nursing, Andalas University, and SDN 04 Kampung Olo, Padang. This activity used a one-group pretest-post-test method with a participatory approach. Its implementation consisted of several structured stages: (1) initial coordination and outreach with school stakeholders; (2) preparation of educational materials on healthy breakfasts, safe snacks, and balanced nutrition; (3) implementation of a pretest to assess basic knowledge of students and parents; (4) delivery of health education through interactive sessions for students and parents; (5) focused discussions with teachers and school stakeholders to strengthen program implementation; (6) reinforcement of healthy behaviors such as bringing nutritious lunches and choosing safe snacks; (7) implementation of a post-test to evaluate increased knowledge.



Figure 1. Documentation the community service program was carried out by a team from the Faculty of Nursing, Universitas Andalas, consisting of lecturers and student

The implementation of the community service program at SDN 04 Kampung Olo, Padang City, was supported by collaboration between the Faculty of Nursing, Universitas Andalas, and the school, which facilitated smooth program execution.

RESULTS AND DISCUSSION

The nutrition education program implemented as a community service activity at SDN 04 Kampung Olo, Gunung Pangilun, Padang, contributed to improving the knowledge and selected health-related behaviors of elementary school children and their parents regarding nutritious food consumption and the selection of safe snacks. The intervention was delivered through PowerPoint-based presentations and educational leaflets, using interactive lectures and guided discussions to actively engage participants and strengthen their understanding of basic nutrition concepts. Data were collected using pre- and post-test instruments administered to both students and parents to assess changes in knowledge before and after the intervention. The pre-post-intervention questionnaire results indicated changes in participants' knowledge and attitudes across several key indicators.

Quantitatively, this improvement was reflected in the mean questionnaire scores. Among students, the pre-test score of 31.75 increased to 32.69 in the post-test. Meanwhile, among parents, the pre-test score of 29.6 increased to 30.46. Although the numerical increase appears relatively small, these values indicate a consistent improvement in general understanding, particularly on critical indicators such as selecting healthy menus, identifying safe snacks, and recognizing the family's role in fulfilling children's nutritional needs.

Table 1. Pre-test and post-test mean knowledge scores on nutritious breakfast and healthy snack selection among children and parents

	Pre test (mean)	Post test (mean)	Mean Difference
Children	31.7	32.6	+ 0.9
Parents	29.6	30.4	+ 0.8

Breakfast Habits and Children's Nutrition Knowledge

In the student group, an improvement was observed in knowledge regarding the importance of breakfast and balanced nutrition following the educational intervention. Knowledge was assessed using pre- and post-test questionnaires administered immediately before and after the activity. Before the intervention, 52.9% of students reported eating breakfast every day, compared with 61.8% in the immediate post-intervention assessment. The mean knowledge score of students increased from 31.7 to 32.6. Students also reported healthier breakfast choices, with more participants selecting balanced meals consisting of rice and side dishes or combinations such as milk and fruit. These findings indicate an immediate improvement in students' awareness of nutritious breakfast practices and healthier food choices. However, because the evaluation was conducted immediately after the intervention, these results should be interpreted as short-term changes in knowledge and self-reported practices rather than evidence of sustained behavioral change. Previous studies have demonstrated that regular breakfast consumption supports students' concentration and academic performance while reducing the likelihood of purchasing unhealthy snacks during school hours (Hamri & Suriani, 2024).

These findings align with Nisa & Arifin (2021), who reported that breakfast habits affect the learning concentration of elementary school students, although the effect may be mediated by factors such as learning methods and student motivation. Furthermore, Rahmatia et al. (2024) found that 56.9% of adolescent girls at SMP N 2 Jambi had good breakfast habits, which correlated with better nutritional status. Conversely, Tihonksky et al. (2025) showed that although 80% of fifth-grade students at SD Tunas Bangsa Denpasar regularly consumed breakfast, no significant relationship was found between breakfast habits and nutritional status, indicating that daily overall intake not breakfast alone determines nutritional status.

A similar outcome was reported by Picauly et al. (2019) in Kupang, where 94% of students previously not accustomed to eating breakfast demonstrated increased knowledge and skills in choosing nutritious breakfast options following an educational intervention. This reinforces that structured nutrition education effectively improves children's understanding of the importance of breakfast.

Understanding of Safe Snacks

Improvements were also observed in children's understanding of safe snacks. All student respondents (100%) in the post-test were able to correctly identify the characteristics of safe snacks and comprehend the dangers of additives such as harmful preservatives and artificial coloring. The educational activity influenced their consumption behavior, indicated by an increase in the number of children who refrained from purchasing unsafe snacks. These results are consistent with Sunarto et al. (2024), who reported that nutrition education significantly increased students knowledge about healthy snacks, although changes in actual snacking behavior may not occur immediately.

Aprillia & Dieny (2015) further support these findings by showing that the frequency of bringing lunch boxes is strongly correlated with snack preferences in elementary school children. About 69.9% of children who brought lunch 1–3 times per week tended to choose healthier snacks, as access to unhealthy food became more limited. The availability of healthy snacks at home and school also influences children's choices, as unhealthy options high in sodium, fat, and sugar are more widely available outside the home. Therefore, ensuring the availability of healthy snacks in children's environments remains essential.

Similar findings were reported by Damayanti et al. (2019) in SDN Kebonsari Tuban. Prior to the intervention, students consumed various unhealthy snacks such as chips, flavored ice, and processed street foods. After receiving education about healthy snacks and harmful food additives, interest in unhealthy snacks decreased, although some students continued consuming them due to environmental availability.

The Role of Parents in Nutrition Education

Improvements in clean and healthy living behaviors (PHBS) were also observed during the immediate post-intervention assessment. The evaluation, conducted immediately after the educational activities using pre- and post-test questionnaires, showed that the mean knowledge score of students increased from 31.7 to 32.6, whereas the mean knowledge score of parents increased from 29.6 to 30.4. In addition, the proportion of students who reported consistently washing their hands before eating increased from 82.4% to 88.2%, indicating an immediate improvement in awareness of proper hygiene practices that are essential for preventing gastrointestinal infections transmitted through contaminated hands. However, little or no improvement was observed in other behaviors, such as bringing meals from home and choosing snacks based on their nutritional value rather than taste. These findings suggest that the educational intervention was effective in improving participants' knowledge and raising awareness in the short

term. Nevertheless, because the evaluation was conducted immediately after the intervention, the findings should be interpreted as evidence of short-term improvements in knowledge and self-reported practices rather than sustained behavioral change. Continuous nutrition education, reinforcement of healthy behaviors, and active involvement of schools and families are therefore needed to support long-term behavioral change. Among parents, the nutrition education intervention produced significant effects. Knowledge of balanced nutrition increased from 36.7% to 70%. The proportion of parents ensuring their children had breakfast rose from 43.3% to 50%. Awareness of safe snack selection also increased from 63.3% to 80%, indicating greater concern for food safety in the school environment. The commitment to providing nutritious and varied meals was reflected in post-test results, where all parents reported consistently providing diverse foods.

These findings are consistent with Logo et al. (2025), who reported that parental nutrition knowledge significantly influences children's snack consumption behavior, although not necessarily their nutritional status. Khavilah et al. (2017) also found that although 100% of parents demonstrated good roles in promoting healthy snacks, only 52.8% of children exhibited positive snack-selection behavior. Sustaining the effectiveness of such programs requires cross-sector collaboration between schools, health centers, and parents to monitor school snacks and regularly evaluate children's eating behavior. Sanjaya & Pitriani (2024) also emphasize the importance of coordinated involvement among schools and surrounding stakeholders to ensure snack safety, including ongoing education and PJAS (School Children's Snack Food) monitoring.



Figure 2. Documentation of the plaque handover to the school principal was carried out by the community service team from the Faculty of Nursing, Universitas Andalas.

The image represents a form of collaboration between the university and the school, which supported the smooth implementation of the program and facilitated effective coordination of the activities. The initial results following the educational session indicated an improvement in students' understanding of the importance of breakfast and healthy snack choices. Students were able to identify examples of nutritious foods, explain the risks associated with consuming unhygienic snacks, and recognize the importance of eating breakfast before going to school. These findings suggest an early positive response to the nutrition education intervention in enhancing children's awareness of healthy eating behaviors.

From the parents' perspective, the program also generated positive impacts. Several parents reported that they often struggled to prepare breakfast due to limited time or reliance on ready-to-eat menus. After receiving the education, they gained a better understanding of the crucial role breakfast plays in supporting children's concentration at school. They also received practical and affordable menu examples that can be prepared before their children go to school.

Increasing knowledge is not the only objective of this activity. More importantly, it aims to cultivate new habits within families and schools. "We hope that this educational program not only enhances knowledge but also encourages long-term behavioral changes. When children and parents work together to maintain healthy eating patterns, the culture of having a nutritious breakfast and consuming healthy snacks can become a lifelong habit."



Figure 3. Documentation of the counseling session conducted by the community service team from the Faculty of Nursing, Universitas Andalas.

The image illustrates the implementation of nutrition education activities delivered to students and parents, focusing on the importance of balanced nutrition, healthy breakfast practices, and the selection of safe snacks. The session was conducted through interactive counseling to enhance participant engagement and understanding of healthy eating behaviors. With increasing public awareness of balanced nutrition and early childhood health, such educational initiatives are expected to contribute to the development of a smart, healthy, and productive generation. This process begins with simple but essential practices, including consuming a nutritious breakfast, choosing healthy snacks, and strengthening family support in shaping children's eating habits.

Implications and Program Strengthening Strategies

Overall, nutrition education involving both children and parents simultaneously proved more effective than single-target interventions. Moving forward, strengthening educational methods through visual media—such as comics, posters, and educational videos—may enhance student engagement and understanding in a more enjoyable and applicable manner. Research by Fauziah et al. (2020) and Aimah et al. (2015) shows that visual tools such as videos, PowerPoint materials, and leaflets effectively increased parental knowledge from 13.3% to 53.3%. Strengthening collaboration with local snack

vendors around schools is also necessary to ensure the availability of healthier and safer snack options for students.

Evidence from various studies suggests that continuous, multi-stakeholder nutrition education can generate broader and more sustainable impacts. Similar programs should be expanded to other schools by involving local governments, health agencies, and communities to create supportive environments for healthy eating habits among school-aged children.

CONCLUSION

The community service activity conducted at SDN 04 Kampung Olo, Padang City, involved elementary school students and their parents as participants and aimed to enhance knowledge regarding nutritious breakfast practices and the selection of safe snacks. The health education intervention, delivered through PowerPoint presentations, educational leaflets, interactive lectures, and guided discussions, effectively facilitated participant engagement and improved understanding of basic nutrition concepts. The results of the pre- and post-intervention assessments indicated an improvement in participants' knowledge following the educational activity. Overall, the program demonstrates that school- and family-based nutrition education can effectively increase awareness of healthy breakfast habits and safe snack choices. These findings underscore the importance of sustained health promotion efforts within school settings through continuous collaboration between schools, parents, and health professionals to support long-term improvements in children's nutritional behavior.

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