

## Snakes and Ladders Game Education in Choosing Healthy Snacks for Elementary School Students

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### Abstract

Snacks for school children whose health is not guaranteed can cause food poisoning. The minimum level of knowledge of elementary school children about the dangers of the snacks they consume. One of the efforts to prevent health problems due to food in school children is educational activities about food sanitation and hygiene. The purpose of this community service is to provide education on the game of snakes and ladders in choosing healthy snacks for elementary school students so that it is hoped that children's knowledge will increase and behave healthily in choosing snacks. The target of implementing the intervention was grade IV students. The method of implementing the intervention is by observing and educating students with the snakes and ladders game method with the theme of healthy snacks. Primary data was obtained through observation and question and answer before education was carried out through the game of snakes and ladders. The secondary data includes a description of the school and the number of students. Stages or educational procedures for Snakes and Ladders game: stage 1 (opening), stage 2 (a division of groups), and Stage 3 (game atmosphere), namely game rules such as Snakes and Ladders games in general. This community service activity was carried out for class IV students, totaling 25 students. The activity was carried out on 29 August -16 September 2022. The results of observations on student behavior in choosing snacks showed that many chose brightly colored snacks, snacks that were sold openly, and used newspaper wrappers. The intervention method for community service activities uses the Snakes and Ladders game method with the theme of healthy snacks. Here students are invited to play while learning. It is better for school children to get used to having breakfast before school and bringing supplies and getting used to washing hands using soap and running water, especially before eating and after eating.

**Keywords:** Education, Snakes and Ladders Games, Healthy Snacks

### INTRODUCTION

Efforts to improve nutrition to improve the nutritional quality of individuals and communities, among others, through improving food consumption patterns; improvement of nutrition-conscious behavior, physical activity, and health; as well as increasing access and quality of nutrition services in accordance with advances in science and technology (Iswarawanti, 2010). Organizing food aims to increase public knowledge and awareness about safe, quality and nutritious food for public consumption (Fitriani et al., 2021).

Food availability and safety is currently a global concern because hundreds of millions of people are reported to suffer from food poisoning (Khairuna Hamida, 2012). One group of people who often experience problems due to poisoning are school children. Snacks for school children are at risk of biological or chemical contaminants which are detrimental to health (Nurbiyati et al., 2014). The BPOM survey in 2007 proved that 45% of school children's snacks were dangerous snacks (Subakti & Kusnaeni, 2016). On January 17 2020, there was a case of food poisoning that happened to 20 students at SDN 3 Waruduwur, Mundu sub-district, Cirebon district, after consuming lipstick candy that they bought from peddlers around the school (Puskesmas Lurah, 2022).

Consumption of children's snack foods is expected to contribute energy and other nutrients that are useful for children's growth (Sulistiawati et al., 2017). School-children do not understand how to choose healthy snacks (Utami & Waladani, 2017). Children buy snacks according to their own preferences without thinking about the ingredients contained in them

(Dhyani Swamilaksita et al., 2021). School -children usually have more activities outside the home and often forget mealtimes so they buy snacks at school (Rakhmawati & Hadi, 2015). Snacking habits are influenced by the type of food, personal characteristics (knowledge, perceptions, and emotions), and environmental factors. The problem of students' unhealthy snacking habits must be addressed in order to avoid various kinds of disease risks (Anggitasari et al., 2014).

Snacks for school children whose health is not guaranteed can potentially cause poisoning, indigestion, and if it lasts a long time will lead to poor nutritional status (Utami & Waladani, 2017). The low level of knowledge of elementary school-age children and their lack of awareness of the dangers of the snacks they eat make them target markets for school snack vendors (Intan et al., 2020). Health education plays a role in changing one's health behavior as a result of learning experiences (Zulaekah, 2012). Therefore, socialization needs to be held to provide additional knowledge for teachers and students regarding the importance of choosing snacks.

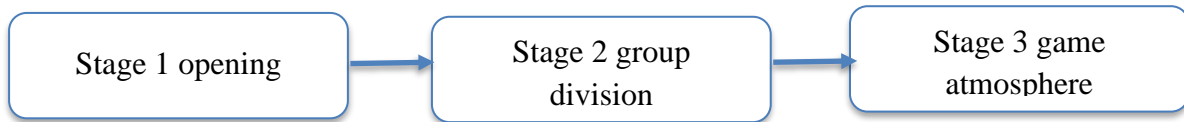
Based on the results of the 2021 Community Health Center Performance Assessment (PKP) data obtained for supervision of TPM (Food Processing Sites), namely 71% of the target of 66.34% (Puskesmas Lurah, 2022). If the PKP results are linked to the incidence of poisoning in 2020, monitoring of TPM (Food Processing Sites) must be further improved. To overcome the emergence of disease or health problems due to food/food, efforts are needed to control it both from food factors, people, places, and food sanitation hygiene (Andriyani, 2019). One of the efforts to prevent or overcome the emergence of disease or health problems due to food in school children, counseling or education activities regarding food sanitation hygiene must be increased. So in this community service activity, education on snakes and ladders games is carried out in choosing healthy snacks for elementary school students.

## **METHOD**

The target implementation of the intervention was fourth-grade students at SDN 3 Marikangen Plumbon in the working area of the UPTD Puskesmas Lurah, Plumbon District, Cirebon Regency. The method of implementing the intervention is by observing and educating students with the snakes and ladders game method with the theme of healthy snacks. Here students are invited to play while learning.

Primary data was obtained through observation and question and answer before education was carried out through a game of snakes and ladders with the theme of choosing healthy snacks. Observations and direct questions and answers were carried out to collect data on the types of snacks students chose. Secondary data is data obtained by interviewing school principals, and teaching staff. The secondary data includes a description of the school and the number of students.

Stages or educational procedures for Snakes and Ladders game: stage 1 (opening) includes: an introduction, conveying aims and objectives, counseling/materials, and conveying the rules of the game. Stage 2 (group division) includes the number of students 25 people, one group consisting of 5 people and each group gives a representative of 1 person who will come forward and play snakes and ladders. Stage 3 (game atmosphere), namely game rules such as snakes and ladders game in general, the difference is that in the HSP game, the questions given are about nutrition and food health. Includes the steps, namely: the player rolls the dice, the player who rolls the dice is asked questions according to the selected image, the player and his group must answer the question correctly, and the winner is the group that finishes first and finishes the game.



**Figure 1.** Stages or educational procedures for snakes and ladders game  
**RESULTS**

**Table 1.** Community Health Center Performance Assessment Year 2021

No.	Type Activity	Target	Scope	Problem
1.	Scope Access to sanitation proper	58.28%	90.81%	Achieved
2	Amount villages implementing STBM	40%	100%	Achieved
3	Supervision of Clean Water Facilities	85 %	20.53%	Not Reached
4	TFU Supervision	56 %	84.18%	Achieved
5.	Scope Supervision Place Processing Food (TPP)	66.34%	71 %	Achieved

Source: PKP Puskesmas results village chief Year 2021

Based on the coverage of TPP supervision, it has reached the target of 71% of the target of 66.43%. However, with cases of poisoning in school children occurring in 2020, TPP supervision needs to be increased to prevent cases of poisoning in school children. One of the efforts to prevent cases of poisoning in school children is to increase the knowledge of school children about healthy snacks so that cases of poisoning do not occur again. One of TPP's supervisory activities is the supervision of school children's snacks. Lack of supervision of school children's snacks can be one of the causes of poisoning cases.

One of TPP's supervisory activities is the supervision of school children's snacks. Lack of supervision of school children's snacks can be one of the causes of poisoning cases. To identify existing problems clearly and in detail, the author uses the 5W (What, Where, When, Who, Why) + 1H (How) method. By sorting it out like this, it can clearly identify the problems encountered, so that in overcoming them it will be easier and clear on the target.

**Table 2.** Formulation problem Poisoning School Children's Snacks

Question	Answer
What (What)	Happening case poisoning in children's school
when	January year 2020
Where	Waruduwur Elementary School Subdistrict Back off Cirebon district
Why (Why)	<ol style="list-style-type: none"> <li>1. Lack of knowledge of student</li> <li>2. Supervision snacks child's school is not enough maximum.</li> <li>3. Lack of knowledge of the trader</li> <li>4. Lack of Education/counseling about snacks healthy.</li> <li>5. Lack of Cross-Program and Cross-Sector collaboration</li> <li>6. There are no snack posters yet Healthy</li> <li>7. Influence friends/ads</li> </ol>
Who (Who)	Student School (20 students)

Question	Answer
How (How)	<ol style="list-style-type: none"> <li>1. Give Education/counseling about snacks healthy.</li> <li>2. Increase Supervision to snack child school</li> <li>3. Do coaching to peddler food.</li> <li>4. Increase cooperation cross-program and cross-sector.</li> <li>5. Putting up posters about snacks healthy.</li> </ol>

**Table 3.** Explanation of the Fishbone Diagram Problem Poisoning in School Children

No.	Problem	Reason Problem	Solving Problem
1.	Happening case poisoning child school	<ol style="list-style-type: none"> <li>1. Humans : <ul style="list-style-type: none"> <li>• Lack of knowledge of student</li> <li>• Lack of knowledge of trader</li> <li>• Student No bring stock breakfast</li> </ul> </li> <li>2. Method: <ul style="list-style-type: none"> <li>• Lack of Education/counseling</li> <li>• Lack of Cross-Program and Cross-Sector Cooperation</li> </ul> </li> <li>3. Environment: <ul style="list-style-type: none"> <li>• Influence Friend</li> <li>• Influence advertisement</li> </ul> </li> <li>4. Means: <ul style="list-style-type: none"> <li>• There are no snack posters yet Healthy</li> <li>• Nothing yet canteen Healthy</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Stage Education / Counseling</li> <li>2. Improving Cross-Program and Cross-Sector Collaboration</li> <li>3. Work The same with parents _ and students For stage canteen healthy.</li> <li>4. Increase coaching to peddler food</li> </ol>

This community service activity was carried out for class IV students, totaling 25 students. The activity was carried out on 29 August 2022 – 16 September 2022. From the results of observations on student behavior in choosing snacks, it turned out that many chose brightly colored snacks, snacks that were sold openly, and used newspaper wrappers.

From the results of these observations, the method of implementing interventions for community service activities uses the Snakes and Ladders game method with the theme of healthy snacks. Here students are invited to play while learning. Because this method is easy to apply and easy to understand.





Figure 1. Stage 1 Game Education



Figure 2. Stage 2 Game Education



Figure 3. Stage 3 Game Atmosphere



Figure 4. Stage 4 Game Atmosphere

## DISCUSSION

Food besides containing nutritional value is also a medium for the growth of microbes or germs. Another possibility is that the entry or presence of hazardous materials such as chemicals, pesticide residues (Yunus & Pinontoan, 2015). One group of people who often experience problems due to food poisoning are school children. Snacks for school children are at risk of biological or chemical contaminants which are detrimental to health, both in the short and long term (Nurbiyati et al., 2014).

There is no healthy canteen at this community service location. The children buy snacks at the vendors around the school. Street food is food that can be found on the side of the road which is sold in various shapes, colors, tastes and sizes so that it attracts people's interest and attention to buy it. Snacks play an important role in providing energy and other nutrients for school-age children. Consumption of children's snack foods is expected to contribute energy and other substances that are useful for children's growth (Sulistiawati et al., 2017).

Before the snakes and ladders game was carried out, the researchers conducted a question and answer session about healthy snacks and the results of the question and answer showed that most of the students did not know about the dangers of consuming unhealthy snacks. The next step is a game of snakes and ladders, where students are invited to play while learning about healthy snacks. The characteristics of healthy snacks include snacks that do not have flashy colors, excessive sweet-sour-savory, packaged in safe plastic packaging (*Polyethylene* (PE) and *the polypropyls* (PP) which is clear/not cloudy) and has permission from BPOM. It is also necessary to pay attention to the composition of the ingredients. Cleanliness of material processing also needs attention (Rakhmawati & Hadi, 2015).

Street food poses a risk to health because the handling is often unhygienic which allows the snack food to be contaminated with toxic microbes as well as the use of Food Additives (BTP)

that are not permitted (Febry, 2010). Snack food contains many risks, dust and flies that settle on uncovered food can cause disease, especially in the digestive system. This often causes people who consume it to develop various diseases such as dysentery, typhus or other stomach ailments (Fitriani et al., 2021).

Elementary-aged children begin to learn important aspects of the socialization process in association with peer groups, so elementary-age children are very easily influenced by peer environment (Utami & Waladani, 2017). By inviting children to play snakes and ladders with the theme of choosing healthy snacks, it is hoped that children's knowledge and insight about choosing snacks and where to buy snacks can increase. Because in this way children are invited to play while learning about food and drink that are good for health and food and drink that can be harmful to health.

Research shows an improvement in students' knowledge after health promotion interventions (Herawati Cucu, 2019). There was an increase in the knowledge of health education participants between before and after being given health education (Herawati et al., 2022). The mean of knowledge about healthy snack selection among the students before education with ular tangga is 6.34, increasing to 7.18 after education with ular tangga game (Thaha et al., 2022).

Through educational games on snakes and ladders with the theme of healthy snacks, students know the characteristics of unhealthy snacks and the dangers of unhealthy snacks. So that students are expected to be able to live a healthy life, one of which is by choosing the healthy snacks they eat. By increasing students' knowledge about healthy snacks and the dangers of unhealthy foods, it is hoped that cases of poisoning in school children will not happen again. It is hoped that health workers can improve good health education to the community (Herawati et al., 2022). Health education about the benefits of eating healthy snacks, as well as the serious effects of eating unhealthy snacks, can help students to eat healthy snacks (Bastami et al., 2019).

### **CONCLUSIONS AND SUGGESTIONS**

Based on the results of the community service activities and the discussions that have been described, it can be concluded: Supervision of school children's snacks and counseling about healthy snacks is not maximized, students' knowledge about healthy snacks is still lacking, and most grade 4 students cannot choose healthy snacks. This can be seen from the snacks they choose, not paying attention to expiration dates, choosing foods and drinks that are brightly colored, where the snacks are open (not protected from dust, flies, etc.).

Suggestions for school children should get used to having breakfast before school and bringing supplies so they can meet their energy needs so they can reduce the frequency of snacks, and make it a habit to wash their hands using soap and running water, especially before eating and after eating. Suggestions for the school to cooperate with parents to hold a healthy canteen for students.

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