

## The Influence of Prilension Stickers (Principles of Balanced and Safe Nutrition) on Students' Ability to Identify School Children's Snacks

Dewi Erowati<sup>1</sup>, Yolahumaroh<sup>2</sup>, Yessi Marlina<sup>2</sup>  
Poltekkes Kemenkes Jakarta II, Jakarta, Indonesia<sup>1</sup>  
Poltekkes Kemenkes Riau, Kota Pekanbaru, Indonesia<sup>2</sup>  
dewi.erowati@poltekkesjkt2.ac.id

### Article Info

#### Article history

Received date: 2024-03-13

Revised date: 2025-06-24

Accepted date: 2025-06-30



### Abstract

**Introduction :** Providing nutritional education about healthy foods during childhood not only prevents several causes of major disease and death, but can also reduce health costs and improve the quality of human life. Therefore, elementary school children need to receive education regarding school children's snacks. Researchers have developed nutrition education media in the form of Prilension Stickers (Principles of Balanced and Safe Nutrition) which contain short messages regarding the grouping of healthy snacks according to the principles of balanced nutrition. The objectives of the research is analyze the effect of education on students' ability to identify school children's snacks with the principles of balanced and safe nutrition. **Method :** This research method is a quasi-experimental pre-post test which analyzes students' ability to identify school children's snacks before and after being given education using Prilension Stickers. The research data consisted of 61 respondents who were students at SDN 2 Pekanbaru City, with a sampling technique using simple random sampling. The data analysis uses SPSS, The Wilcoxon Signed Rank test to evaluate paired samples (scores before and after education). **Results :** The test Wilcoxon signed rank results show that there is an effect of nutrition education on school children's snacks with Prilension Stickers on students' ability to identify school children's snacks with the principles of balanced and safe nutrition (Sig. < 0.005). **Conclusion :** It is important to provide nutritional education to increase knowledge in order to change school children's snacking habits and improve children's nutritional status.

#### Keywords:

School Children; Snack; Balanced and Safe Nutrition

### INTRODUCTION

Elementary school student are children aged 6 to 12 years old. During this period, nutritional balance needs to be fulfilled so that children can grow and develop optimally [1]. According to Basic Health Research in 2018 nutrition status of children aged 5-12 years old based on Body Mass Index are 9,3% underweight; 20,6% overweight; and 23,6% stunting [2].

The results of monitoring by the BPOM (food and drug regulatory agency) show a range of between 40% - 44% school children's snacks do not meet food safety requirements due to the use of dangerous ingredients that are prohibited for use in food such as formaldehyde, borax, rhodamine B dye and methanyl yellow [3]. BPOM (food and drug

regulatory agency) states that 45% of processed food products in elementary school environments are contaminated with dangerous substances ranging from physical, chemical and microbiological factors [4]. Providing nutritional education about healthy foods during childhood not only prevents several causes of major disease and death, but can also reduce health costs and improve the quality of human life. The behavior of school children begins with an inner drive that is an effort to fulfill their needs. The eating behavior of school children that often becomes a problem is the habit of eating at vendors (carts) around the school and the habit of eating fast food. The role of snacks in contributing energy or energy and protein is very significant, considering that school children

do not get enough protein intake and often buy snacks, it is better if the snacks sold around the school are high-protein foods.[5] Snacking might increase energy intake and promote weight gain. First, snacking might increase energy intake beyond the needs for energy expenditure if there is no compensation for additional energy from snacks in subsequent meals. Second, if snack foods derive a substantial amount of energy from fat, and because fat at 9 kcal/g is more energy-dense than carbohydrates or proteins (4 kcal/g), the unregulated consumption of snack foods could increase energy intake beyond the needs for energy expenditure and promote weight gain [6].

Therefore, elementary school children need to receive education regarding school children's snacks. Researchers have developed nutrition education media in the form of Prilension Stickers (Principles of Balanced and Safe Nutrition) which contain short messages regarding the grouping of healthy snacks according to the principles of balanced nutrition accompanied by attractive pictures.

The research was carried out at SDN 2 Pekanbaru because the results of preliminary observations showed that there were a lot of traders selling in the area around the school in locations that were at risk of contamination because they were close to water disposal (sewers). The objective of the research is to provide nutrition education for school children's snacks with Prilension Stickers (Principles of Balanced and Safe Nutrition). Then analyze the influence of education on students' ability to identify school children's snacks with the principles of balanced and safe nutrition.

## METHODS

This research method is a quasi-experimental pre-posttest which analyzes students' ability to identify school children's snacks before and after being given education using Prilension Stickers (Principles of Balanced and Safe Nutrition). The research data consisted of 61

respondents who were students at SDN 2 Pekanbaru City, with a sampling technique using simple random sampling. The data analysis uses SPSS, The Wilcoxon Signed Rank test to evaluate paired samples (scores before and after education) [7]. Prilension Stickers (Principles of Balanced and Safe Nutrition) is used as a nutrition labeling on food choices in this research is for school children's snacks.

## RESULTS AND DISCUSSION

Based on research, the following results were obtained:

Table 1. Characteristics of Respondents

Variabel	Amount (n)	Percentage (%)
Sex		
Boy	31	50,8
Girl	30	49,2
Bringing food from home		
Yes	24	39,3
No	37	60,7
Daily Pocket Money		
<10.000 IDR	46	75,4
10.000-15.000 IDR	11	18,0
>15.000 IDR	4	6,6
Snacks most frequently consumed		
Ayam Geprek	15	24,6
Siomay	8	13,1
Sosis dan Bakso Bakar	28	45,9
Mie Pedas	10	16,4
Nutrition Status		
Underweight	41	67,2
Normal	13	21,3
Overweight	7	11,5

Based on table 1, the following data is obtained the total number of respondents was 61 children with an average age of 11 years, 50.8% of students are male; 60.7% of elementary school students do not bring foods from home, 75.4% of their daily pocket money

is <10,000 IDR with the overall average pocket money being 10,459 IDR; the snacks most frequently consumed by 45.9% were grilled sausages and meatballs; 67.2% of children are underweight with an overall average BMI of 17.58. Researchers analyzed students' ability to identify school children's snacks with the principles of balanced and safe nutrition before and after being given education. The results showed an increase in scores from 1.72 before education to 3.66 after education. Identification of school children's snacks was carried out on 4 samples as follows:



Figure 1. Prilension Stickers and School Children's Snack

Based on research data, the results of the normality test showed that the data was not normal (Sig. <0.005), so the Wilcoxon signed rank test was carried out to evaluate paired samples (scores before and after intervention). The test results show that there is an effect of nutrition education on school children's snacks with Prilension Stickers (Principles of Balanced and Safe Nutrition) on students' ability to identify school children's snacks with the principles of balanced and safe nutrition (Sig. < 0.005). This is in line with the results of the literature review, namely that nutrition education has an influence on school children's knowledge and attitudes in choosing healthy snacks. Nutrition education is needed so that children are more careful in choosing school snacks [8,9]. The school environment also plays a role in determining the eating practices carried out by a person. A good environment will support a person in carrying out good practices. Conversely, when environmental

conditions do not support a person in making changes to their practices, the decision to make changes to their practices will also be hampered [10].

According to the Decree of the Minister of Health of the Republic of Indonesia Number 942/Menkes/SK/VII/2003, snack foods are foods and drinks that are processed by food craftsmen at the point of sale and/or served as ready-to-eat food for sale to the public other than those served by catering services, restaurants, and hotels [11]. The impact of street food for student such as :

1. An introduction to various types of street food that can foster the habit of diversifying food since childhood,
2. street food does not meet health requirements (including in this case: how to process street food, use of coloring agents that are not food coloring, how to serve, etc.), can at any time threaten children's health
3. Can result in reduced appetite at home. Potential Nutritional Value of Street Food Some street foods contain and contribute quite high energy and protein as part of the daily diet. In addition to contributing energy and protein, street food also contributes other nutrients such as fat, carbohydrates, calcium, phosphorus, iodine, iron and others.
4. Street Food Habits in School Children Street food has become an inseparable part of people's lives, both in urban and rural areas. Consumption of street food in society is estimated to continue to increase considering the limited time for family members to prepare their own food.

The previous studies, describes street food sold by street vendors or in English is called street food according to the Food and Agriculture Organization (FAO), is defined as food and drinks prepared and sold by street vendors on the streets and in other public places that are eaten directly and consumed without further

preparation or processing. Unhealthy snacks contain substances that are dangerous for the body to consume such as snacks with preservatives, coloring, and artificial sweeteners [12].

To reduce school children's exposure to unhealthy and unsafe snacks, it is necessary to promote food safety to schools, teachers, parents, students, and traders. Schools and the government need to reactivate UKS (School Health Efforts). Communication materials on food safety that have been carried out by the POM Agency and the Ministry of Health can be increased in their use as a tool for providing food safety education in schools. Efforts need to be made to provide snacks or lunches that are carried out in the school environment. This is done to prevent children from buying snacks carelessly. Coordination by the school, the parent-teacher association under the consultation of the school doctor or the local Primary Health Care to be able to serve snacks during break times that can be adjusted in terms of portion and nutritional value. This effort will certainly be cheaper than children buying snacks outside of school where there is no guarantee of nutrition and cleanliness. [13] Based on previous research results, wrong eating behavior in school-age children will have an impact on the disproportion of nutrient intake, both excess and deficiency of macro and micro nutrients. In this study, the eating behaviors studied were breakfast habits, snack consumption, and frequency of main meal consumption. Nutrient deficiencies that arise due to wrong eating behavior will have an impact on the nutritional status of children. [14] Balanced nutrition is the key to optimal growth and development [15].

The studies show that the impact of nutrition labeling on food choices and diet quality is substantial, as evidenced by numerous studies exploring various front-of-package (FOP) labeling systems across different contexts. Research consistently shows that interpretive FOP labels, such as Traffic Light and Nutri-Score

systems, play a crucial role in guiding consumers towards healthier food choices by enhancing their understanding of nutritional content. [16] Other research's findings suggest a positive impact of menu labeling in increasing consumer awareness that did not translate into a lower number of calories purchased [17].

Regional regulation on school snacks is important to be formulated because students on elementary school mostly buy snacks in school. Snacks bought and consumed are snacks outside the school fence [18]. Parents, teachers, school management, hawkers, and the community must have a high awareness of the importance of providing and consuming healthy snacks for schoolchildren [19]. Students are expected to be able to identify the signs of unhealthy snacks and understand the harmful effects of consuming them [20].

## CONCLUSION

There is an influence of nutrition education on school children's snacks with Prilension Stickers (Principles of Balanced and Safe Nutrition) on students' ability to identify school children's snacks with the principles of balanced and safe nutrition. Therefore, it is important to provide nutritional education to increase knowledge in order to change school children's snacking habits and improve children's nutritional status. For further research, it is hoped that innovations in snack nutrition education for school children will be made simpler and more interesting so that they are easier to understand.

## AKNOWLEDGMENT

I would like to express my special thanks of gratitude to all students and teacher at SDN 2 Pekanbaru who participated on this research and also Poltekkes Kemenkes Riau for the opportunity to my self development.

## DAFTAR PUSTAKA

- [1] Malappiang, F., Jayadi, Y. I., & Radia, U., "Promosi Jajanan Sehat Pada Sdn Samata", *Jurnal Imagine*, vol. 1, no. 2, pp.

- 56–63, 2021  
<https://doi.org/10.35886/imagine.v1i2.164>
- [2] Kementerian Kesehatan Republik Indonesia, *Riset Kesehatan Dasar 2018*, Jakarta: Kemenkes RI, 2018.
- [3] Sajiman, Nurhamidi, & Mahpolah, “Kajian Berbahaya Formalin, Boraks, Rhodamin B dan Metahlyn Yellow pada Pangan Jajanan Anak Sekolah di Banjarbaru”, *Jurnal Skala Kesehatan*, vol. 6, no. 1, pp. 1–5, 2015.
- [4] Riyanto, A., & Abdillah, A. D, “Faktor yang Memengaruhi Kandungan E. coli Makanan Jajanan SD di Wilayah Cimahi Selatan”, *Majalah Kedokteran Bandung*, vol. 44, no. 2, pp. 77–82, 2012.  
<https://doi.org/10.15395/mkb.v44n2.127>
- [5] Arti, N. A., & Suprianto, S, “Korelasi Faktor Pemicu Kebiasaan Jajan Anak SD Al Khairiyah di Kecamatan Sunggal Kabupaten Deli Serdang”, *Jurnal Indah Sains dan Klinis*, vol. 1, no. 1, pp. 6–11, 2020.
- [6] Dahlan S, *Mendiagnosis dan Menata Laksana 13 Penyakit Statistik: Disertai Aplikasi Program Stata*, Jakarta: Sagung Seto, 2010.
- [7] Keast, D. R., Nicklas, T. A., & O’Neil, C. E., “Snacking is associated with reduced risk of overweight and reduced abdominal obesity in adolescents: National Health and Nutrition Examination Survey (NHANES) 1999–2004”. *The American journal of clinical nutrition*, vol. 92, no. 2, pp. 428–435, 2010.
- [8] Amira, K. A., & Setyaningtyas, S. W, “Pengaruh Edukasi Gizi Terhadap Pengetahuan dan Sikap Anak Sekolah Dasar dalam Pemilihan Jajanan Sehat: Literature Review”. *Media Gizi Indonesia (National Nutrition Journal)*, vol. 16, no. 2, pp. 130–138, 2021.
- [9] Kartini, T. D., Manjilala, M., & Yuniawati, S. E, “Pengaruh Penyuluhan Terhadap Pengetahuan Dan Praktik Gizi Seimbang Pada Anak Sekolah Dasar”, *Media Gizi Pangan*, vol. 26, no. 2, pp. 201, 2019.  
<https://doi.org/10.32382/mgp.v26i2.1231>
- [10] Amalia, F., Nugraheni, S. A., & Kartini, A, “Pengaruh edukasi gizi terhadap pengetahuan dan praktik calon ibu dalam pencegahan kurang energi kronik ibu hamil (Studi pada Pengantin Baru Wanita di Wilayah Kerja Puskesmas Duren, Bandungan, Semarang)”, *Jurnal kesehatan masyarakat*, vol. 6, no. 5, pp. 370–377, 2018.
- [11] Depkes RI, *Peremenkes RI Nomor 1096/MENKES/PER/VI/2011 tentang Higiene Sanitasi Jasabogara*. Jakarta: Depkes RI, 2011.
- [12] Matondang, R. J. A., & Yuliaty, M, “Unhealthy Snacking Habits are Prevalent Among Elementary School Students”, *Business Economic, Communication, and Social Sciences Journal (BECOSS)*, vol. 6, no. 1, pp.13–21, 2024.
- [13] Febry, F, “Kebiasaan jajan pada anak”, *Jurnal Ilmu Kesehatan Masyarakat*, vol. 1, no. 2, 2010.
- [14] Nuryani, N., & Rahmawati, R, “Kebiasaan jajan berhubungan dengan status gizi siswa anak sekolah di Kabupaten Gorontalo”, *Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition)*, vol. 6, no. 2, pp. 114–122, 2018.
- [15] Erowati, D., Humaroh, Y., & Marlina, Y. *Diari Gizi Remaja Putri*, Ponorogo: Uwais Inspirasi Indonesia, 2022.
- [16] Garcia, J, Impact of Nutrition Labeling on Food Choices and Diet Quality in France. *Global Journal of Health Sciences*, vol. 9, no. 3, pp. 32–44, 2024.
- [17] Tandon PS, Zhou C, Chan NL, Lozano P, Couch SC, Glanz K, Krieger J, Saelens BE, “The impact of menu labeling on fast-food purchases for children and parents”, *Am J Prev Med*, 2011, Oct;41(4):434–8.

- doi: 10.1016/j.amepre.2011.06.033.  
PMID: 21961472; PMCID:  
PMC3185295.
- [18] Sutarih, A., Sutrisno, E., & Rahayu, “D. Food Safety and its Regulation on School Snacks for Society's Health in Cirebon”, *PROCEEDING 17th ADRI-UMMU 2018*, 86. 2018.
- [19] El Haque, I. T., Putra, S., Suparno, S., & Noor, A., “Ensuring the health and safety of indonesian school children: Legal protections in snack consumption”, *Qubahan Academic Journal*, vol. 3, no. 4, pp. 62-69, 2023.
- [20] Chabibah, I. F. A., & Desiyanti, I. W., “Nutrition and Fun: It's Time for Children to “Talk to Friends”(Wisely How to Choose Snacks Properly)”, In *3rd International Conference on Education for All (ICEDUALL 2023)* (pp. 321-328). Atlantis Press, 2024.