

# Teacher Perception and Experience of Nutrition Education in Primary School: A Qualitative Research Using Focus Group Discussion

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## ABSTRACT

**Background:** Malnutrition remains a significant global health issue to affect school-aged children worldwide. Method: This study explores teachers' perceptions and experiences in delivering nutrition education in Indonesian primary schools through Focus Group Discussion (FGD). About 19 teachers from two schools in Banyumas Regency participated in the study.

**Results:** The results revealed that many teachers still adhere to the outdated "4 Healthy 5 Perfect" concept and have limited understanding of balanced nutrition and food labels. The primary barriers include an excessive curriculum, insufficient nutrition literacy, and environmental factors restricting eating habit adopting in students.

**Conclusion:** Strategic interventions are necessary, such as specialized teacher's training program, interactive learning approaches, and school policies to optimizing the effectiveness of nutrition education and fostering sustained healthier dietary practices among children.

**Keywords:** Focus Group Discussion, Teachers, Perceptions, Nutrition Education, Primary School

## INTRODUCTION

Malnutrition continues to be a major public health issue impacting children globally. Based on the latest joint estimates from

UNICEF-WHO and World Bank, around 149.2 million children are affected by stunting, while 45.4 million suffer from wasting due to insufficient nutrition[1]. Although these figures primarily focus on younger children, malnutrition continues to impact school-aged Children. Study by Saifert et al [2] showed that 34.7% of school children were underweight, 3.3% were overweight and 3.3% were obese. Research conducted by Purnamasari et al[3] on school children aged 6-12 years, as many as 29.2% were overweight in urban areas, while in rural areas it was 15.1%, while cases of wasted in urban were 8.3% and in rural areas were 6.1%. Analysis by morales et al.[4] showed that malnutrition is not only linked to weakened immunity but also prone to frequent infection which result in illness and school absenteeism among children[5].

Elementary schools play a vital role in nutrition education and changing behavior in children. It helps children understand the importance of healthy eating habits and how long-term health impact[6]. Research showed that integrating nutrition education into school curricula will affect to increasing awareness and promotes healthier eating habits among students[7]. Furthermore, a supportive school environment where healthy foods are served in schools and nutrition awareness programs contributes to better behavioral changes[8].

Teachers have a crucial part in integrating nutrition education into the classroom environment. They function not only act as learning facilitators but also serve as influential role models for exemplify healthy eating habits for their students[9]. Empirical studies highlight that interactive and experiential teaching strategies yield superior outcomes in enhancing students' nutritional literacy[10]. However, to perform this role optimally, teachers require support from institutional and communities[11]. Implementing nutrition education poses various challenges for teachers. Teachers frequently face barriers in delivering nutrition education, such as constrained instructional time, insufficient teaching materials and and limited knowledge among teachers about proper nutrition[7]. Therefore, the current descriptive study focussed exclusively on teachers and explored their perspectives and experiences with nutrition education in depth. Findings from this study can provide insights into strengthening nutrition education in primary school in Indonesia.

## MATERIALS & METHODS

This study used a qualitative research approach (focus group discussion) to deeply explore teacher's perceptions and experience working in nutrition education at primary schools. The research applied social constructivism, which emphasizes exploring a perceptive and diverse viewpoints rather than simplifying them into narrow categories[12].

Purposive sampling was used to identify teachers who have been teaching nutrition education in primary schools. Teachers were recruited from two schools of Banyumas Regency, Indonesia. The inclusion criteria were a minimum of 2 years of work experience and willingness to participate in the research. Total participants were 19 subjects.

The Focus Group Discussion was conducted at an elementary school in Banyumas Regency. This FGD led by a moderator and assisted by a note-taker. The moderator discussed on teachers' perceptions, experience and barrier in implementing nutrition education in class. The FGD session ran for one hour. The interview protocols can be seen in Table 1.

**Table 1 Interview Protocols**

Do you know about the balanced nutrition?
Do you know the principles of food safety?
Is nutrition content taught in school lesson?
How do students respond about the nutrition lessons?
Are there barriers in applying nutrition content at the classroom?

Each transcript was carefully read twice to become immersed in participants' experiences. After this, all transcripts were read again, while taking notes to identify key concepts. The first analysis step was horizontalization, where all statements and each was given a descriptive code. Next, statements that irrelevant or non essential were removed, leaving only essential elements. The remaining key elements were clustered into categories and was given an thematic label. In the final step, the researcher rechecked the transcripts to verify that themes and key statements were

consistent with participants language and meaning.

This research has received approval from the Ethics Commission of the Faculty of Health Sciences, Jenderal Soedirman University, Purwokerto with number: 1843/EC/KEPK/V/2025.

## RESULT

### Teachers' perception

It was found that none of the teachers realized that the nutrition concept in Indonesia had changes from "4 Health 5 Perfect" to the balanced nutrition. Here are statements from participants:

*"This is the first time I've heard a concept has changed from 4 Healthy 5 Perfect to balanced nutrition" (Teacher AB,30)*

*"I know the term balanced nutrition but I don't know what it actually means." (Teacher ER,53)*

The participants also didn't a clear understanding of food safety. Most of them generally unfamiliar reading food packaging label properly. The following are statements from the participants:

*"Not, I mostly just checked the expiration date." (Teacher IL, 39 years old)*

*"Yes, I do read the labels often, but I don't really understand what they mean. For example, if it says citrate or something, we're not sure what that is. So, we just look at it generally." (Teacher SD, 53)*

### **Teacher's Experience of Nutrition Education**

Some teachers reported that they integration nutrition-related material in their classroom lessons. This content is primarily found in domain of Natural Science and Physical Health Education. However, the lessons provided remains limited on basic knowledge of nutrients or the outdated concept of 4 Healthy 5 Perfect. Below are statements of participants:

*"Yes, in grade 5, there is a lesson on the human digestive system in the Natural Science curriculum, along with nutrition—foods that students essential dietary recommendations consume to stay healthy. At the very least, emphasizing at minimum the classical concept of '4 Healthy 5 Perfect' which involves carbohydrates, protein sourced from plant or animal, vitamins, fats, and minerals." (Teacher AB, 30 years old)*

*"The subject is inserted into physical health education lessons, but limited to the outdated '4 Healthy 5 Perfect' concept." (Teacher MR, 59 years old)*

### **Barrier of Nutrition Education**

Teachers assert that the heavy and dense curriculum load acts as barrier to integrating nutrition education into their classes.

Additionally, they recognize their lack of literacy in nutrition science. Below are statements from participants:

*"First, we acknowledge that our nutrition literacy is still limited. Second, the overwhelming curriculum requirement in elementary school are too extensive, leaving time constraints. As a result, teachers must prioritization of mandated completing the required curriculum, leaving little room for supplementary material. Ideally, contextual learning through outdoor practical activities would make learning more engaging and comprehension. However, the reality is that time allocations due to extensive curriculum obligations make such activities infeasible. Numerous subjects necessitate, and each has a comprehensive amount of content to cover." (Elementary School Teacher, 53 years old)*

*"We recognize that our literacy in nutrition is very lacking." (Teacher TN, 46 years old).* Students' responses to the nutrition education provided have been inadequate behavioral modifications. Despite some teachers efforts to introduced nutrition education in class, students exhibited a persistent reluctance to adopt healthier eating habits. This phenomenon is largely influenced by their family environment. Below are statements from participants:

*"Students understand the material, yet their eating habits remain unchanged." (Teacher AB, 30 years old)*

*"In my class, I regularly advise my students to reduce their intake of ultra-processed foods (UPF), given their deficient protein content and are unhealthy for the body. Nonetheless, students respond by saying they frequently eat fried foods because their parents sell them." (Teacher SM, 42 years old)*

*"The available snacks are inherently restrictive, so children eat what is readily accessible. Their environmental condition already influences their eating habits." (Teacher ER, 53 years old)*

## **DISCUSSION**

### **Teachers' perception**

Teachers' perceptions were similar to those most of people in Indonesia, recognizing only 4 Healthy 5 Perfect as nutrition concept [13]. Even though, Indonesia's nutrition concept has evolved over time along with science and changing societal needs. At first, Indonesia adopted the 4 Healthy 5 Percept concept, introduced by Prof Poerwo Soedarmo in 1955. This concept emphasized eating staple foods, side dishes, vegetables and milk as the perfecting element. Although it was easy to remember and relevant at the time, the approach did not consider portions, personal energy needs, physical activity or sanitation and food hygiene [14]. To address those limitation, the Nutrition Pyramid was introduced in 1995 and updated more comprehensively into the Balance Nutrition Guidelines in 2014 by the Indonesian Ministry of Health. Balanced Nutrition focused on four pillars: diverse food consumption, maintaining hygiene, physical activity and monitoring ideal healthy weight. It also contains 10 main messages of balanced nutrition: (1) be grateful for enjoy diverse foods, (2) eat lots of vegetables and enough fruits, (3) Consume protein-rich foods, (4) Consume staple foods, (5) Limit sweet, salty, and fatty foods in your diets, (6) Eat adequately and regularly, (7) drink enough and safe water, (8) Stay in regular physical activity, (9) Read food labels, (10) wash your hands with soap and running clean water [15]. The concept of balanced nutrition should be understood and implemented by people because it provides a more comprehensive guide to health eating and living. However, socialization in the community is still lacking so that the community does not understand the concept of balanced nutrition properly[13].

Teachers also didn't a clear understanding of food labelling. Teachers also A nutrition label is information show on the packaging of food or beverage products, indicating the amount of nutrients like energy, protein, fat, carbohydrate, sugar, and sodium in food or

drinks. The primary purpose is to help consumers make healthier food choices based on their nutritional needs[16]. According to the Codex Alimentarius, nutrition labels are key an important role in giving reliable and clear understand information, helping consumers to choose foods that fit their nutritional requirements. This requirement is reinforced by National Agency of Drug and Food Control Regulation Indonesia with regulation No. 22/2019, requires the inclusion of nutritional information on processed food labels, as part of efforts to raise consumer awareness about food nutrients [17].

Nutritional label illiteracy can negatively impact on dietary patterns and public health. Christoph et al.[18] determined that individuals who rarely refer to nutritional label information tend to consume foods rich in sugar, saturated fat, and calories, thereby increasing the risk of obesity and non-communicable diseases. Furthermore, Miller et al.[19] showed that inadequate nutritional literacy and numeracy impair consumers' ability to interpret labels, complicating their capacity to distinguish between nutritious and unhealthy foods. Consequently, improving public comprehension of nutritional labeling through educational interventions is crucial step for fostering healthier dietary behaviors and preventing long-term health risks.

### **Teacher's Experience of Nutrition Education**

The statements of Teacher MR and Teacher AB indicate that most teachers still use the "4 Healthy 5 Perfect" framework to explain nutrition concept. This phenomenon is supported by Nurhaerah[20], which reveal that teachers' limited knowledge of balanced nutrition principles affects the efficacy of nutrition education in classroom, particularly in reinforcing healthy eating behaviors among children. Research by Putri & Syafiq[21], balanced nutrition education plays a vital role in augmenting students' awareness of the importance of healthy eating practices.

Comprehensive nutrition education not only covers knowledge to mere nutrient comprehension but also address between healthy eating supports, physical activity and students' cognitive development. Additionally, nutrition education modules advocate that nutrition education should be tailored toward fostering behavioral changes, rather than merely disseminating information[22]. Within the context of science education, nutrition-related materials must not be limited to the human digestive system but also include holistic understanding the overall impact of nutrition on health. To optimize the effectiveness of nutrition education in schools, teachers may consider more interactive approached, including discussions on healthy eating habits, experiential learning in choosing nutritious foods, and integration of nutrition topics with physical education[23]. Through these approaches, students will not only acquire the theoretical aspects of nutrition but also effectively to apply them in their daily habit.

### **Barrier of Nutrition Education**

Findings from the FGD reveal that teachers encounter substantial difficulties in integrating nutrition education into elementary-level curricula. The excessive curricular is one of the main obstacles, thereby constraining opportunities for developing additional materials, including nutrition literacy. Additionally, teachers acknowledge their lack of literacy in nutrition science, which hampers their ability deliver in-depth lessons to student. According to research conducted by Dewantari et al.[24] showed critical role of nutrition literacy in foundational education, as it contributes to students' comprehension of balanced eating habits and overall nutritional adequacy. However, the study further highlights that, without adequate support from institutional and well-formulated educational policies, improving students' nutrition literacy remain difficult to achieve. To mitigate these challenges, it is imperative for educational institutions and

governmental bodies to provide specialized training programs that equip teachers with nutrition literacy and effective teaching strategies.

Focus Group Discussion indicate that although students receive nutrition education in class, their implementation of dietary healthy eating habits remains inconsistent. This suggests that theoretical understanding does not necessarily precipitate immediate behavioral change. The main factors influencing this issue is students' social and family environment. Research by Goenawan et al.[25], asserts that nutrition education positively impacts students' knowledge, but behavioral shifts in eating habits remain contingent upon family habits and accessibility to healthy food. This study underscores that nutrition education interventions necessity of integrating parental and communities to reinforce students consistently adopt healthy eating habits. Research conducted by Alston et al.[26] states that school policies providing access to healthy food can support dietary transformations. The study suggests for environmental-based interventions, such as offering health-conscious food alternatives in school cafeterias, should be implemented to supporting classroom nutrition education.

### **CONCLUSION**

Many teachers are still unaware regarding the transition from the "4 Healthy 5 Perfect" concept to "Balanced Nutrition," thereby nutrition education in schools still being based on outdated nutrition principles. A lack of understanding regarding food labels also challenges in promoting healthy dietary behaviors, as most teachers only rudimentary knowledge such as expiration dates without deeper understanding of nutrient content.

Teachers' limited nutrition literacy and the overload curriculum represents significant impediments to the effective integrating nutrition education into learning. Moreover, despite formal dissemination of nutrition lessons, students have not showed

significant changes in their dietary practices, which is influenced by family eating habits and environmental determinants. Therefore, strategic intervention is necessary to enhance teachers' nutrition literacy through professional development initiatives and the dissemination of the "Balanced Nutrition" concept. Additionally, more interactive and hands-on learning approaches must be employed to ensure students not only acquire theoretical concepts but also effectively integrate these principles in their daily habits. Additionally, Institutional collaboration between schools and governments is essential to establish policies and environments that mechanisms that facilitate nutritious food accessibility, such as providing nutritious meals selections in school cafeterias and parental education. A holistic and integrative nutrition education approach is vital to nutrition education, ultimately improving the long-term public health outcome and well-being of the younger generation.

#### **Declaration by Authors**

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#### **REFERENCES**

1. World Health Organization. Malnutrition in Children [Internet]. 2023. Available from: <https://www.who.int/data/nutrition/nlis/info/malnutrition-in-children>
2. Seifert MA. Teacher Perceptions of Nutrition Education in Early Childhood. California State University; 2020.
3. Purnamasari DU, Kusnandar K, Nurcahyo PJ. Differences in Visual Acuity, Nutritional Status and Motor Function in New Elementary Students in Rural and Urban Area. *Media Gizi Indones*. 2020; 15:194.
4. Morales F, Montserrat-de la Paz S, Leon MJ, Rivero-Pino F. Effects of malnutrition on the immune system and infection and the role of nutritional strategies regarding improvements in children's health status: A literature review. *Nutrients*. MDPI; 2023; 16:1.
5. Qureshi JA, Bhatti T, Shah S. Effects of Malnutrition on Students' Attendance and Annual Exam Score at Primary School Level in District Tharparkar, Sindh. *Orient Res J Soc Sci*. 2020; 5:1–10.
6. Mukhamedzhanov E, Tsitsurin V, Zhakiyanova Z, Akhmetova B, Tarjibayeva S. The Effect of Nutrition Education on Nutritional Behavior, Academic and Sports Achievement and Attitudes. *Int J Educ Math Sci Technol*. 2023; 11:358–74.
7. Zulu XW. Challenges faced by teachers in implementing National School Nutrition Program in the Harry Gwala District. *Educ Res Rev*. 2024; 19:124–30.
8. Meshkovska B, Gebremariam MK, Atukunda P, Iversen PO, Wandel M, Lien N. Barriers and facilitators to implementation of nutrition-related actions in school settings in low- and middle-income countries (LMICs): a qualitative systematic review using the Consolidated Framework for Implementation Research (CFIR). *Implement Sci Commun* [Internet]. 2023; 4:73. Available from: <https://doi.org/10.1186/s43058-023-00454-y>
9. Esdaile EK, Wharton L, Vidgen H, Gallegos D. Teacher perspectives on the socio-ecological barriers and enablers to food and nutrition education in primary schools: a scoping review. *Public Health Nutr* [Internet]. 2024/09/26. Cambridge University Press; 2024;27: e175. Available from: <https://www.cambridge.org/core/product/E408328F4D183F9F8898799F7A0500DD>
10. Mohammadi S, Koo HC. Editorial: School-based nutrition and physical activity interventions among children and adolescents. *Front Public Heal* [Internet]. 2025; Volume 13. Available from: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1585511>
11. Mesch A, Engels M, Raghoebar S, Winkens LHH, Gulikers J, Wesselink R, et al.

- Determinants, behaviour change techniques and pedagogical approaches used in secondary school-based food and nutrition programmes: a qualitative study of the SWITCH project. BMC Public Health [Internet]. 2025; 25:1131. Available from: <https://doi.org/10.1186/s12889-025-22155-y>
12. Aydin G, Margerison C, Worsley A, Booth A. Australian Teachers' Perceptions and Experiences of Food and Nutrition Education in Primary Schools: A Qualitative Study. *Aust J Teach Educ*. 2022; 47:61–75.
  13. Purnamasari DU, Briawan D, Kustiyah L, Hermadi I. Nutrition Behaviors of Mothers and Preschool Teachers and Their Supporting and Inhibiting Factors: Qualitative Research. *Malaysian J Med Heal Sci. Bogor*; 2023; 19:29–30.
  14. Almatsier S, Susirah, Moesijanti. *Prinsip Dasar Ilmu Gizi*. Jakarta: Gramedia; 2010.
  15. Directorate General of Nutrition Development and KIA. *Balance Nutrition Guide*. Jakarta: Health Ministry of Indonesia; 2014.
  16. Codex Alimentarius Commission. *Guidelines on Nutrition Labelling (CAC/GL 2-1985, Revised 2015)*. 2015.
  17. BPOM RI. *Regulation About concerning Nutritional Value Information on Processed Food Labels*. Indonesia: Jakarta: Food and Drug Supervisory Agency of the Republic of Indonesia; 2019.
  18. Christoph, M. J., Larson, N., Laska, M. N., & Neumark-Sztainer D. Nutrition Facts Use in Relation to Eating Behaviors and Health Indicators. *J Nutr Educ Behav*. 2018; 50:267–73.
  19. Miller, L. M. S., Cassady, D. L., Beckett, L. A., Applegate, E. A., & Wilson MD. Misunderstanding of Nutritional Labels Among Adults: The Role of Literacy and Numeracy. *Am J Health Behav*. 2017; 41:367–74.
  20. Nurhaerah. The Role of Teachers in Improving Balanced Nutritional Intake in Early Childhood at RA DDI Benteng, Patampanua District, Pinrang Regency. Alauddin State Islamic University; 2023.
  21. Putri MP, Syafiq A. Challenges in Supporting School Nutrition Education Programs in Indonesia. *J Heal Sains*. 2021; 2:494–500.
  22. Baliwati YF, Rusyda AL, Dwiriani CM, Amanah S, Dina RA. Balanced Nutritional Integration Opportunity in Learning Process at SD Plus Rahmat Kediri. 2025; 11:177–86.
  23. Bitu YS, Setiawi AP, Bili FG, Iriyani SA, Patty NS, Pgpaud PS, et al. Interactive Learning Increases Student Engagement and Understanding. 2024; 5:193–8.
  24. Dewantari NA, Syafiq A, Fikawati S. Lead to Nutritional Literacy: Component of Nutrition Knowledge in the Nutrition Education Program for Elementary School Students. *Media Kesehat Masy Indones*. 2020; 16:375–86.
  25. Goenawan H, Veronica F, Sylviana N, Nurhayati T. Improving Knowledge Regarding Balanced Nutrition in Elementary School Students in Jatinangor. *J Chem Inf Model* [Internet]. 2019; 53:1689–99. Available from: <https://jurnal.unpad.ac.id/pkm/article/download/19975/9533>
  26. Alston L, Crooks N, Strugnell C, Orellana L, Allender S, Rennie C, et al. Associations between school food environments, body mass index and dietary intakes among regional school students in Victoria, Australia: a cross-sectional study. *Int J Environ Res Public Health*. MDPI; 2019; 16:2916.
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