



Factors Influencing Adolescent Eating Behaviours in an Urban Secondary School in Vientiane Capital, Lao PDR: A Qualitative Formative Study

Khangneun OUDOMPHONE¹

Graduate School, National University of Laos, Vientiane Capital, Lao PDR.

¹Correspondence:

Khangneun OUDOMPHONE
Graduate School, National
University of Laos, Vientiane
Capital, Lao PDR.

Tel: +856-20-22423235;

E-mail:

Khangneun.oudomphone@gmail.com

Abstract

Adolescents in urban Lao PDR are increasingly exposed to convenient, inexpensive, and heavily promoted foods and beverages, but evidence to guide context-specific nutrition education remains limited. This qualitative formative study explored adolescents' dietary practices, the factors influencing healthy eating, and appropriate approaches for a school-based nutrition education programme. The study was conducted at Sathit Secondary School in Xaythany District, Vientiane Capital. Data were collected through four focus group discussions with 32 participants; 16 in-depth interviews with adolescents, teachers, parents, and a village authority representative; and observation of the school food environment. The thematic analysis revealed six major themes: eating patterns, nutrition knowledge, barriers to healthy eating, enablers of healthy eating, family and peer influences, and the school food environment. The interpretation used relevant Social and Behaviour Change theories to identify key barriers and enabling factors influencing students' dietary behaviours. At home, adolescents commonly consumed eggs, vegetables, sticky rice, soups, and meat or fish, while instant noodles, fried foods, packaged snacks, highly seasoned dishes, and sugar-sweetened beverages were common at school. Basic nutrition knowledge did not consistently translate into healthy choices. Taste, convenience, breakfast skipping due to poor time management, limited cooking and label-reading skills, peer norms, social media, family routines, body-image concerns, food marketing, and product visibility shaped behaviour. Enabling factors included familiar nutritious foods, supportive families, school water and hygiene facilities, teacher willingness, and student interest in practical and digital learning. Nutrition education should therefore combine interactive learning, cooking and label-reading practice, healthier canteen-choice exercises, positive digital communication, family engagement, teacher support and school food-environment improvements.

Keywords: adolescent nutrition; dietary behaviour; healthy eating; nutrition education; school food environment; Lao PDR; Vientiane Capital.

Article Info:

Submitted: August 28, 2026

Revised: September 07, 2026

Accepted: September 16, 2026

1. Introduction

Adolescence is a period of rapid physical, cognitive, and psychosocial development during which dietary habits become increasingly independent and may persist into adulthood. Nutrient requirements rise to support pubertal growth, yet adolescents also become more exposed to peer norms, commercial food marketing, digital media, and food environments that favor convenient products. Poor dietary patterns during this period can contribute to micronutrient deficiencies, undernutrition, overweight, and later noncommunicable disease risk (World Health Organization, 2018; UNICEF, 2019). Food environments are changing rapidly in Lao PDR. Traditional healthy diets coexist with the increasing availability of unhealthy snacks, fast foods, and processed foods that are high in salt, sugar, and fat. National evidence on diet quality indicates a high consumption of processed

meats, sweets, instant noodles, and soft drinks among the population, particularly among adolescents (UNICEF, 2023; Ministry of Health, 2015). These patterns occur alongside persistent undernutrition and economic constraints that limit many households' ability to afford nutritious diets (World Food Programme, 2017; Lao Statistics Bureau, 2025). Schools are well placed to influence adolescent nutrition because they reach students repeatedly and shape both learning and daily food access. Nutrition-related content is integrated across subjects in Lao schools, but there is no standardized minimum allocation of teaching time, and delivery is often theoretical (UNICEF, 2023). Classroom knowledge may therefore be insufficient when adolescents face powerful social and environmental influences or lack the practical capability to interpret labels, prepare food, and make healthier purchases.

International frameworks support a whole-school approach that connects curriculum, school policies, food provision, physical and social environments, family engagement, and health services (World Health Organization & UNESCO, 2021; Association of Southeast Asian Nations, 2024). However, interventions should be grounded in local formative evidence. In Lao PDR, national nutrition data mainly come from the Lao Social Indicator Survey (LSIS), which focuses on children under five, leaving limited national evidence on adolescent nutrition. Although studies such as the 2015 Global School-based Student Health Survey (GSHS) and other research among Lao adolescents have examined dietary patterns and factors influencing food choices (Ministry of Health, 2015; Kounnavong et al., 2025), they largely describe behaviours and determinants. Less is known about how adolescents, parents, teachers, and community stakeholders influence daily food decisions and how adolescents navigate their food environments when forming eating habits. Furthermore, evidence is not specific to which educational approaches they consider acceptable and feasible. This study therefore aimed to (1) explore foods consumed by adolescents and assess how participants perceived the healthiness of those practices; (2) identify individual, interpersonal, school and community factors influencing dietary choices, especially unhealthy food consumption; and (3) identify appropriate content, delivery methods, and communication channels for a school-based nutrition education programme.

2. Materials and Methods

Data were collected using focus group discussion guides, semi-structured in-depth interview guides, and a school food environment observation. The focus group guide explored adolescents' eating patterns, nutrition knowledge, barriers and enablers to healthy eating, perceptions of unhealthy foods and beverages, practical food-choice skills, and preferred nutrition education approaches. Separate interview guides were used for adolescents, teachers, parents or caregivers, and a village authority representative to explore individual, family, school, and community influences on dietary practices. Data were documented through field notes and supplemented by audio recordings. Unstructured observations were conducted by walking around the school premises to assess the availability of food and beverages in the school canteen, students' purchasing behaviours, food marketing practices, access to drinking water, handwashing facilities, and sanitation conditions. Observations were conducted without engaging in discussions or interviews with food vendors, students, or other individuals, as the primary objective was to directly observe the school environment and related activities. Using several data sources supported triangulation and provided a more comprehensive understanding of the

factors influencing adolescents' eating behaviours. The research instruments are summarized in Table 1.

2.1 Study design and setting

This was a qualitative descriptive, formative study using thematic analysis, aim for describe adolescents' eating behaviours in sufficient depth to inform a school-based nutrition education programme rather than to generate theory. The study was conducted at Sathit Secondary School in Xaythany District, Vientiane Capital. The school was selected purposively because of its mix of lower- and upper-secondary students; its location in a food-rich urban environment; its accessibility; and its history of participation in educational research. The school was not selected to be representative of schools in Vientiane Capital; findings should be interpreted with this single-site selection in mind. At the time of the study, the school enrolled 1,923 students and employed 41 teachers. Its facilities included a privately operated canteen, sex-separated latrines, handwashing facilities, filtered drinking water, and a small learning garden.

2.2 Participants and sampling

Participants were adolescents aged 10 to 19 years and stakeholders influencing their food choices (teachers, parents/caregivers, a village authority representative). Four focus group discussions (FGDs) were conducted with adolescents, separated by school level and sex: Two with lower secondary students aged 10 to 13 years and two with upper secondary students aged 14 to 19 years. Each was split by sex (32 adolescents in total, 8 per group) to support comfortable discussion and comparison of perspectives. Participants were recruited purposively on the day of data collection. A teacher identified an initial pool of students by grade and sex, and the researcher confirmed eligibility based on grade and willingness to participate. Selection did not consider academic performance, nutritional status, or dietary behaviour. Participation was voluntary, and the teacher's role was limited to logistics and initial screening. Sixteen IDIs were conducted: 8 adolescents (4 female, 4 male, not FGD participants), 3 teachers, 4 parents of FGD participants, and 1 village authority representative. Participant groups and methods are summarized in Table 2.

2.3 Data collection

Data collection took place over five working days. Day 1: school coordination visit, teacher interviews, and school environment observation. Day 2: all four FGDs, conducted on school premises from 08:30 to 16:00, with lower-secondary activities in the morning and upper-secondary activities in the afternoon; each group lasted approximately 60 minutes. Day 3: the eight adolescent IDIs, face-to-face at school. Days 4–5: parent interviews (telephone or face-to-face) and the village authority interview, conducted at the village office. FGDs used open-ended questions on daily eating patterns, understanding of balanced diets, food-choice skills,

barriers, and enablers. As well as preferred nutrition-education approaches. All sessions were audio-recorded with permission and supported by field notes.

2.4 Data analysis and theoretical interpretation

The principal researcher, a medical doctor with experience in public health and nutrition promotion and fluent in Lao and English, had no prior relationship with the school, participants, or village authorities. This outsider position was expected to reduce social-desirability bias but may have limited rapport, and this was considered during question design and interpretation. The single-coder approach was conducted manually by the principal researcher; deductive codes were developed from the study objectives (eating patterns, nutrition knowledge, barriers/enablers, family and peer influences, school food environment, and communication channels), while inductive codes captured emerging themes. The codebook was refined iteratively, earlier transcripts were re-checked for consistency, and coding decisions were reviewed with the thesis supervisor. Themes were compared across adolescents, teachers, parents, and village authorities and triangulated with observation data. Data-collection guides were developed in English, reviewed by the supervisor and thesis committee, and translated into Lao by the principal researcher. FGDs and interviews were conducted and transcribed in Lao, then translated into English by the same researcher for analysis. No back-translation or independent bilingual review was undertaken, which is noted as a limitation. Cultural and linguistic nuances, including Lao food names, were retained where direct translation might lose meaning, and all quotations were checked against the original transcripts.

The interpretation of themes was guided by theoretical frameworks. The Social Ecological Model guided assessment of influences at individual, interpersonal, organizational, community, and policy levels (McLeroy et al., 1988). Social Cognitive Theory informed interpretation of role modelling, skills, reinforcement, and self-efficacy (Bandura, 1986). The Health Belief Model supported consideration of perceived risk, benefits, barriers and cues to action (Rosenstock et al., 1988), while the Theory of Planned Behavior informed interpretation of attitudes, social norms and perceived behavioral control (Ajzen, 1991).

2.5 Ethical considerations

Formal approval from an independent research ethics committee/IRB was not obtained; the study was conducted as part of an academic thesis and was treated by the university as falling under academic supervisory review. We report this transparently, recognizing that independent ethics-committee review is normally expected for research involving minors on a topic of eating behaviour and body image that can be sensitive. The study instruments were reviewed by the supervisor and relevant university advisers. An official request and study concept

were submitted to the school one month before fieldwork, and school management approved the study and assigned a teacher to facilitate logistics. Parental/guardian consent was obtained verbally for participants under 18, and adolescent assent was obtained separately from each adolescent before participation. Adolescents were informed, in Lao, of the study's purpose, voluntary nature, right to decline any question or withdraw without penalty, and that participation was independent of the assisting teacher. Permission was obtained before recording. At the start of each FGD, participants agreed to keep the discussion confidential. No identifying information was retained in transcripts, field notes, or analysis files; recordings and transcripts were stored securely and accessed only by the researcher. Findings are reported in aggregate, and quotations use anonymous labels only.

3. Results

3.1 Foods and beverages consumed

At home, adolescents commonly ate familiar foods that were accessible and easy to prepare. Eggs were repeatedly mentioned across groups because they were inexpensive, versatile, and could be boiled or fried by adolescents themselves. As one female participant explained, *"Eggs are always available at my home, and I can cook them myself by frying or boiling"* (Female student, lower secondary, FGD). Sticky rice, vegetables, soups, chili-based dishes, pork, beef, fish, and other local foods were also common. Some households had gardens that supplied vegetables and herbs. As one female participant shared *"Normally we do not buy vegetables or herbs, as my mother collects them from our garden"* (Female student, IDI). Although adolescents often perceived that requested foods were affordable, parents emphasized that rising prices affected household decisions. Mothers were usually responsible for cooking, but food decisions reflected the wider household. Fathers' preferences frequently influenced which dishes were prepared, and older siblings sometimes cooked when parents left early for work. As students became older, they exercised greater purchasing autonomy. Some preferred the money to buy food at school because home-packed food was viewed as less fashionable when friends purchased meals or snacks.

At school and nearby, students purchased instant noodles, fried snacks, packaged chips, confectionery, meatballs, nuggets, highly seasoned salads and sweetened drinks. Healthier options, including fruit, vegetables, fresh milk, water, freshly cooked meals and noodle dishes, were also available. However, unhealthy products were highly visible, convenient, and socially popular. Health benefits were seldom described as the leading reason for purchase.

3.2 Knowledge-behavior and skills gap

Students demonstrated awareness of healthy eating and the potential health risks associated with unhealthy foods and beverages. However, this knowledge did not

consistently translate into healthier dietary practices, as food choices were often driven by taste preferences, enjoyment, convenience, and social influences. For example, students could identify unhealthy foods and drinks and recognize their potential health consequences, yet continued to consume them because they matched their taste preferences and social experiences. As one female participant explained: *“I like spicy, sour, and sweet food. Even though I worry that it may put me at risk of diabetes in the future, I don’t know what I should eat that is healthy but still matches my taste preferences”* (Female student, upper secondary, IDI). Similarly, another female participant described choosing foods and drinks based on enjoyment and social interaction: *“I like eating Lao-style spicy salad that I can share and enjoy with friends, followed by a cold soft drink that makes me feel refreshed”* (Female student, upper secondary, FGD). In addition, students did not always consume foods they perceived as healthy when these foods did not align with their taste preferences. One male participant acknowledged that the meals prepared by his parents were beneficial for his health, but he often avoided eating them because he found them unappealing: *“I appreciate that my parents prepare food for me, and I believe it is good for me. But I often get bored with the taste, especially local dishes that do not match my preferences. I just eat a little to make them happy”* (Male student, upper secondary, IDI).

These findings show that, although adolescents understood the benefits of healthy foods and the risks of unhealthy choices, their food decisions were often driven more by taste, enjoyment, social interaction, and food satisfaction than by health concerns.

3.3 Individual routines, appearance and digital influences

Time management influenced eating patterns. Late sleep and phone use were linked to waking late and skipping breakfast, after which students depended on readily available school foods. Social media also exposed adolescents to attractive food trends, influencers, and branded products. At the same time, students viewed short videos and social platforms as appealing channels for credible nutrition content.

Body image influenced both motivation and risk perceptions related to dietary choices. Some female participants expressed concerns about weight gain, while some male participants associated certain foods with strength and muscle development. Appearance, skin health, self-confidence, and physical fitness were often more immediate and meaningful motivators than the prevention of future health problems. Participants therefore recommended positive, non-stigmatizing nutrition messages that link healthy eating to outcomes valued by adolescents, while avoiding the promotion of unrealistic or potentially harmful body ideals.

3.4 Family and peer influences

Families created important enabling conditions by purchasing food, preparing meals, modelling eating practices and teaching basic cooking. However, adolescents sometimes rejected nutritious household dishes because the taste, presentation or seasoning did not match their preferences. Although mothers were generally described as the primary individuals responsible for preparing meals, food decisions within the household were also influenced by other family members. Participants explained that fathers often shaped what foods were served through their preferences and beliefs about healthy eating. For example, one female participant stated: *“We always eat local food like fish with vegetables because my father says it is good for health and good for the brain”* (Female student, lower secondary, FGD). In some households, siblings also took responsibility for meal preparation when parents were unavailable. As one female participant explained: *“My brother, who is now 15 years old, prepares food for me when my parents go to work”* (Female student, lower secondary, FGD). These findings highlight the important role of fathers’ influence on household menus and siblings’ role in food preparation, indicating that engagement should extend beyond mothers.

Peers strongly shaped purchases, sharing and perceptions of what was fashionable. Students often selected foods that friends bought and were reluctant to carry meals from home when peers did not do. Peer influence could therefore reinforce unhealthy norms, but students also welcomed group work, competitions and student-created media. Some participants cautioned that same-age peers might not be respected as primary instructors; they preferred knowledgeable adults to lead while students participated actively.

3.5 School food environment

Observation confirmed a mixed but imbalanced food environment. The canteen sold freshly prepared meals and drinks alongside instant noodles, fried foods, packaged snacks and sugary beverages. Posters, branded refrigerators, and prominent product placement increased the visibility of less healthy items. Students and adults raised concerns about hygiene and highly seasoned foods. Nearby shops, delivery services and peer-to-peer sales widened access beyond the canteen.

The school also had important assets: filtered drinking water, handwashing and sanitation facilities, sports space, a small garden and teachers willing to support health activities. Teachers reported that nutrition was covered across subjects but with limited practical application, inconsistent terminology and few dedicated materials. School management and vendors were therefore considered necessary partners in any intervention.

3.6 Preferred programme design

Adolescents recommended several strategies that they believed would help them eat more healthily, such as

practical guidance on healthy foods that aligned with their taste preferences, engaging nutrition education activities that were visual, practical, competitive and enjoyable: games, quizzes, question-and-answer sessions with small prizes, movement activities, group discussion, photographs, short videos and technology. Priority skills included preparing simple affordable foods, modifying popular spicy foods into healthier versions, reading labels using familiar products, planning breakfast and practicing healthier canteen choices. In response to these participant-identified needs and recommendations, the researchers developed a multi-component nutrition education programme that should connect schools, families, and digital communication platforms. Adult facilitators, teachers, health workers, or trained facilitators should provide technical credibility, while adolescents should work in teams, present, compete, and create media. Home cooking assignments and photo or video sharing could involve families. Dialogue with management and vendors should address hygiene, cooking oil, marketing, and the availability, visibility, and affordability of healthier choices. The recommendations for programme design are summarized in Table 3.

4. Discussion

This study aimed to inform school-based nutrition programmes for healthier adolescent eating. Four key findings emerged: (1) knowledge alone does not change behaviour; (2) food choices are influenced by social and environmental factors; (3) adolescents need skills and motivation to eat healthily; and (4) interactive, multi-component programmes are more effective than information-only approaches.

Knowledge Is Necessary but Insufficient for Behaviour Change

A key finding of this study was that adolescents had basic nutrition knowledge but did not consistently apply it in their daily food choices. Students could identify healthy foods such as fruits, vegetables, fish, and foods lower in salt, and many recognized that sugary drinks and instant noodles were unhealthy. However, unhealthy foods and beverages remained common in their diets. This finding is consistent with studies showing that nutrition knowledge alone does not necessarily lead to healthy eating behaviours. Similar patterns have been observed among adolescents in Lao PDR and other settings, where good nutrition knowledge coexists with poor dietary practices (Ivanovitch et al., 2020; Keolangsy, 2017). The findings support Contento et al.'s (1992) argument that nutrition education increases awareness but may have limited impact on behaviour without practical skills and supportive environments. Behavioural theories help explain this gap. The Health Belief Model suggests that adolescents may not perceive the long-term risks of unhealthy diets, while the Theory of Planned Behaviour highlights the influence of social factors and perceived control on food choices.

Although students generally knew what they should eat, social and environmental influences often limited healthier choices. These findings suggest that nutrition education programmes should go beyond information provision and strengthen motivation, self-efficacy, and opportunities to apply knowledge in daily life.

Food Choice Is Socially and Environmentally Embedded

The study demonstrates that adolescent food choices are strongly influenced by social and environmental factors. Taste preferences, convenience, food availability, peer influence, family routines, and social media exposure frequently shaped students' eating decisions. These findings are consistent with evidence from Lao PDR and elsewhere showing that adolescents often select foods based on accessibility, affordability, taste, and social acceptance rather than nutritional value (UNICEF, 2023; Kounnavong et al., 2025). The findings are well explained by the Social Ecological Model, which emphasizes that health behaviours are influenced not only by individual factors but also by interpersonal, organizational, community, and policy environments (McLeroy et al., 1988). Family emerged as a particularly important influence, with mothers commonly responsible for food preparation and fathers often influencing food purchasing decisions. Through role modelling and household food provision, parents play a critical role in shaping adolescents' dietary behaviours. Social Cognitive Theory further explains how adolescents learn eating habits through observation and imitation of parents and other influential individuals (Bandura, 1986). Students also identified social media as an important source of nutrition information but simultaneously described its role in promoting unhealthy foods. This finding aligns with evidence that digital marketing can influence adolescents' food preferences, perceived norms, and consumption patterns (Murphy et al., 2020; Bragg et al., 2021; Manzoor et al., 2020; Rocka et al., 2022). Together, these findings suggest that effective nutrition interventions should not focus solely on individual behaviour but should also engage families, peers, schools, and digital environments. Such an approach is consistent with both the WHO-UNESCO Health Promoting Schools framework and the ASEAN School Nutrition Package, which emphasize creating supportive environments for healthy choices (WHO & UNESCO, 2021; ASEAN, 2024).

Adolescent-Relevant Practical Skills and Motivations Are Needed

Another important finding is that students lacked practical nutrition-related skills despite having basic nutrition knowledge. Many reported difficulties interpreting food labels, comparing packaged foods, choosing healthier snacks, and preparing healthy meals independently. These findings suggest that nutrition literacy involves more than factual knowledge; it also requires the skills and confidence necessary to apply

information in everyday situations. Previous research has similarly shown that experiential approaches, including cooking activities, food preparation practice, and label-reading exercises, can improve nutrition-related skills and increase confidence in making healthier choices (Moore et al., 2018; McAleese & Rankin, 2007). Social Cognitive Theory provides a useful explanation for these effects. Practical activities allow students to observe healthy behaviours, practise skills, and gain mastery experiences that strengthen self-efficacy (Bandura, 1986). Likewise, the Theory of Planned Behaviour suggests that practical learning activities can increase perceived behavioural control by helping students feel capable of adopting healthier eating practices (Ajzen, 1991). The findings therefore indicate that nutrition education programmes should include skill-building components rather than relying exclusively on classroom lectures. Activities such as food label interpretation, healthy snack preparation, cooking demonstrations, and guided food-choice exercises may help adolescents apply nutrition knowledge more effectively in daily life.

Interactive and Multi-Component Approaches Are Most Appropriate

A final key finding was that adolescents preferred interactive learning over traditional lectures. Students were interested in games, cooking demonstrations, peer education, group discussions, posters, and social media-based learning, suggesting that nutrition education is more engaging when practical and participatory. This aligns with school-based interventions that improved nutrition knowledge, attitudes, and some dietary behaviours through interactive approaches (Wang et al., 2015; Raut et al., 2024). A systematic review by Medeiros et al. (2022) also reported positive dietary outcomes, including increased fruit and vegetable intake. While effects vary, evidence supports combining information with participatory activities. The findings also suggest that nutrition education should be part of a broader, multi-component programme. As barriers to healthy eating occur at multiple levels, interventions should combine classroom education, practical skills development, peer engagement, family involvement, social media communication, teacher support, and improvements to the school food environment. This is consistent with the study's conceptual framework and with the ASEAN School Nutrition Package and WHO-UNESCO Health Promoting Schools framework, which advocate whole-school approaches integrating education, supportive environments, policies, and community engagement (ASEAN, 2024; WHO & UNESCO, 2021).

4.1 Recommendation for nutrition education programme design

The formative findings support a multicomponent package with six connected elements: (1) interactive

education on food groups, sugary drinks, salt, ultra-processed foods and immediate benefits of healthy eating; (2) practical skills in label reading, breakfast planning, snack preparation and safe cooking; (3) canteen-choice exercises using real or simulated products; (4) positive peer and digital communication under adult guidance; (5) family activities involving parents and siblings; and (6) school-environment action with management and vendors. Implementation could use extracurricular or Friday afternoon periods, with simple facilitator guides, visual materials, and locally available foods.

Monitoring should assess both implementation and early behavioral outcomes. Feasibility indicators may include attendance, session completion, facilitator confidence, family participation and vendor engagement. Preliminary outcomes may include nutrition knowledge, label-reading ability, cooking self-efficacy, breakfast frequency, sugary-drink intake, fruit and vegetable consumption, healthier snack selection and observed canteen practices. Co-design and pilot testing with students and school stakeholders should precede scale-up.

4.2 Strengths and limitations

A strength of the study was triangulation across FGDs, individual interviews and direct observation, with perspectives from adolescents, parents, teachers and a community representative. Stratification of FGDs by sex and school level supported comparison, and theory-informed analysis linked contextual findings to programme mechanisms.

Several limitations should be considered. The study involved one urban school and a relatively small purposive sample; findings are not statistically generalizable to all adolescents in Vientiane Capital or Lao PDR. Dietary intake and nutritional status were not measured quantitatively. Self-reported practices may have been affected by recall and social-desirability bias, particularly for unhealthy foods, family relationships, and body image. Observation was limited in duration and may not represent variation across seasons or school days. Finally, the study generated intervention recommendations but did not test effectiveness, feasibility, or scalability.

5. Conclusion

Adolescents in this urban Lao school consumed familiar nutritious foods alongside widely available instant noodles, fried products, packaged snacks, and sugar-sweetened beverages. Their choices reflected a clear gap between basic nutrition knowledge and the practical, social and environmental conditions required to act on that knowledge. Taste, convenience, routines, skills, family practices, peer norms, digital marketing and the school food environment all mattered.

Nutrition education should therefore move beyond classroom information. A culturally appropriate programme should be student-centred but adult-facilitated, use familiar local foods, build practical capability, engage

families, harness positive peer and digital influence, and improve the environment in which choices are made. Pilot testing across diverse schools is required to determine feasibility, acceptability, and preliminary effects before broader implementation.

6. Conflict of Interest

The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in this manuscript.

7. References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Association of Southeast Asian Nations. (2024). *Minimum standards and guidelines for the ASEAN school nutrition package*. ASEAN Secretariat.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bragg, M., Lutfeali, S., Greene, T., Osterman, J., & Dalton, M. (2021). *How food marketing on Instagram shapes adolescents' food preferences: Online randomized trial*. *Journal of Medical Internet Research*, 23(10), e28689. <https://doi.org/10.2196/28689>
- Contento, I. R., Manning, A. D., & Shannon, B. (1992). Research perspective on school-based nutrition education. *Journal of Nutrition Education*, 24(5), 247-260. [https://doi.org/10.1016/S0022-3182\(12\)81240-4](https://doi.org/10.1016/S0022-3182(12)81240-4)
- Ivanovitch, K., Keolangsy, S., & Homkham, N. (2020). *Overweight and obesity coexist with thinness among Lao's urban area adolescents*. *Journal of Obesity*, 2020, Article 5610834. <https://doi.org/10.1155/2020/5610834>
- Keolangsy, S. (2017). *Nutritional status of adolescents attending secondary school in Sisattanak District, Vientiane, Lao PDR* (Master's independent study). Thammasat University, Thailand.
- Kounnavong, T., Sato, M., Turner, C., Ferguson, E., Xayavong, H., Vonglokharn, M., Cox, S. E., Okumura, J., & Moji, K. (2025). Drivers of food acquisition practices among adolescents in suburban food environments of Lao People's Democratic Republic. *Global Health Action*, 18(1), Article 2451475. <https://doi.org/10.1080/16549716.2025.2451475>
- Lao Statistics Bureau. (2025). *Lao Social Indicator Survey III, 2023: Survey findings report*. Lao Statistics Bureau. <https://www.unicef.org/laos/media/12521>
- Manzoor, A., Basri, R., Ali, I., Javaid, S., Amjad, M., Amin, U., & Kamran, H. (2020). Smartphone addiction and dietary behaviour among students: A systematic review. *EAS Journal of Nutrition and Food Sciences*, 2(5), 228-235. <https://doi.org/10.36349/easjnfs.2020.v02i05.007>
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, 15(4), 351-377. <https://doi.org/10.1177/109019818801500401>
- Medeiros, G. C. B. S., Azevedo, K. P. M., Garcia, D., Oliveira Segundo, V. H., Mata, Á. N. S., Fernandes, A. K. P., Santos, R. P., Trindade, D. D. B. B., Moreno, I., Guillén Martínez, D., & Piuvezam, G. (2022). Effect of school-based food and nutrition education interventions on the food consumption of adolescents: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health*, 19(17), Article 10522. <https://doi.org/10.3390/ijerph191710522>
- Ministry of Health. (2015). *Global School-Based Student Health Survey 2015: Lao People's Democratic Republic*. World Health Organization. <https://extranet.who.int/ncdsmicrodata/index.php/catalog/483>
- Murphy, G., Corcoran, C., Tatlow-Golden, M., Boyland, E., & Rooney, B. (2020). *See, like, share, remember: Adolescents' responses to unhealthy-, healthy-, and non-food advertising in social media*. *International Journal of Environmental Research and Public Health*, 17(7), 2181. <https://doi.org/10.3390/ijerph17072181>
- Rocka, A., Jasielska, F., Madras, D., Krawiec, P., & Pac-Kożuchowska, E. (2022). The impact of digital screen time on dietary habits and physical activity in children and adolescents. *Nutrients*, 14(14), Article 2985. <https://doi.org/10.3390/nu14142985>
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education Quarterly*, 15(2), 175-183. <https://doi.org/10.1177/109019818801500203>
- UNICEF. (2019). *The State of the World's Children 2019: Children, food and nutrition*. UNICEF. <https://www.unicef.org/reports/state-of-worlds-children-2019>
- UNICEF. (2023). *Nutrition environment assessment for schools: Lao PDR*. UNICEF.
- World Food Programme. (2017). *Fill the nutrient gap: Lao PDR*. World Food Programme.
- World Health Organization. (2018). *Implementing effective actions for improving adolescent nutrition*. World Health Organization.
- World Health Organization & UNESCO. (2021). *Making every school a health-promoting school: Global standards and indicators*. World Health Organization.

Table 1. Guiding questions and observation areas used for data collection

Data-collection method	Participant group	Key guiding questions/observation areas
Focus group discussions	School Adolescent	What do adolescents usually eat and drink during a school day? Which foods and drinks are popular, and why? What factors affect breakfast consumption?
		What does a balanced diet mean? Which food groups should be included in a healthy meal? Why do adolescents choose or avoid fruits, vegetables, and local foods?
		What makes healthy eating difficult? What supports healthier eating? How do taste, cost, time, peers, family, marketing, and the school canteen influence food choices?
		What do adolescents think about snacks? What health effects do they associate with these products?
		What factors are considered when buying packaged foods? Can adolescents understand food labels? What healthy snacks can they prepare using local foods?
		What would make a nutrition education programme useful/engaging?
In-depth interviews	School Adolescent	• What influences your food and drink choices? • How do stress and exams affect what you eat and drink? • Think about the last snack you chose. Why did you choose it? • What activities or programmes would encourage you to participate in nutrition education?
	School teachers	• Are there any school policies that promote healthy eating? • What do students usually eat at school? • Have students' eating habits changed over time? • What support do you need to promote better nutrition? • What nutrition education or services are available for adolescents?
	Parents and village authority	• What do you think about adolescents' current eating habits? • How do you influence or guide their food choices? • What support would help you encourage healthier eating? • What challenges do families face in obtaining healthy and nutritious foods?
School observation	School environment and canteen	• What foods and drinks are sold, bought, and consumed at school? • Are healthy foods and drinking water available alongside unhealthy options such as fried foods, sweets, salty snacks, and sugary drinks? • Are advertisements or promotions for unhealthy foods and drinks visible at school? • Are safe drinking water, handwashing facilities, and clean toilets available and accessible?

Table 2. Participants and data-collection methods

Method	Participants	Purpose
Four FGDs	32 adolescents; groups stratified by sex and lower/upper secondary level	Shared practices, social norms, barriers, enablers and preferred programme activities
Sixteen IDIs	8 adolescents, 3 teachers, 4 parents, 1 village authority representative	Personal routines, decision-making and family, school and community perspectives
Observation	School canteen and surrounding environment during lunch break	Food availability, purchases, marketing, food safety, drinking water and sanitation

Table 3. Summary of key themes and programme recommendations

Theme	Key finding	Programme recommendations
Knowledge–behaviour gap	Basic awareness existed, but taste, convenience and social appeal often outweighed health knowledge.	Combine concise information with repeated practice, motivation and environmental support.
Practical capability	Label interpretation, product comparison and independent cooking skills were limited.	Use real-product label exercises, canteen simulations and simple cooking demonstrations.
Family and peers	Family food routines and peer norms shaped availability, acceptance and purchases.	Engage parents and siblings; use group activities and positive peer norms under adult facilitation.
Digital influence	Social media promoted attractive unhealthy foods but was also a preferred learning channel.	Develop short, accurate, adolescent-created content and promote screen-free meals.
School environment	Healthier choices existed, but ultra-processed products and marketing were prominent.	Pair education with vendor engagement, hygiene standards and greater visibility of healthier options.
Acceptability	Students preferred practical, visual and competitive learning led by knowledgeable adults.	Use student-centred sessions facilitated by teachers, health staff or trained adults.