

Impact of School-Based Nutrition Awareness Programme on Lifestyle Choices: A Thematic Exploration

Vishva D. Lashkari¹, Umang K. Sutariya², Harsh Suthar³, Rajiv Bhatti⁴, Paresh Patel⁵

¹Research Scholar, Department of Education, Sardar Patel University, Vallabh Vidyanagar, Gujarat, India

²Research Scholar, Vitthalbhai Patel & Rajratna P.T. Patel Science College, Vallabh Vidyanagar, 388120, Gujarat, India

³Researcher, Bioscience Department, Sardar Patel University, Vallabh Vidyanagar, 388120, Gujarat, India

⁴Assistant Professor, Vitthalbhai Patel & Rajratna P.T. Patel Science College, Vallabh Vidyanagar, 388120, Gujarat, India

⁵Associate Professor, Lokmanya Tilak Mahavidyalaya, Wani, 445304, Maharashtra, India

Email: vishvalashkari2392@gmail.com, untamedumang01@gmail.com
harshsuthar1506@gmail.com

Abstract

This qualitative study explores the impact of a school-based *Nutrition Awareness Programme* on the lifestyle choices of secondary school students. Adolescence represents a formative stage in which individuals establish habits that influence lifelong health and well-being. Recognizing the importance of early nutrition education, this study examined how adolescents internalize and apply nutritional knowledge in their everyday lives. Using a **thematic analysis** approach, data were collected from open-ended questionnaires administered to students who participated in a structured nutrition awareness intervention Programme. The analysis yielded five overarching themes: (1) *Knowledge Acquisition*, (2) *Knowledge Application*, (3) *Behavioral Changes*, (4) *Programme Evaluation*, and (5) *Action Planning and Lifestyle Modification*. Students reported enhanced understanding of dietary balance, nutrition labelling, and mindful eating, which translated into meaningful lifestyle shifts such as increased consumption of fruits and vegetables, reduced intake of processed foods, and greater awareness of healthy living. The findings highlight the potential of experiential, school-based nutrition education to promote sustainable lifestyle changes and holistic well-being among adolescents. The study advocates integrating nutrition awareness modules into secondary education curricula to cultivate lifelong healthy habits, aligning with the goals of holistic learner development envisioned in the *National Education Policy (NEP) 2020*.

Keywords:

Nutrition education, lifestyle choices, adolescents, school-based intervention, thematic analysis, behavioral change, health awareness

1. Introduction

Adolescence is a crucial period of physical, cognitive, psychological, and social growth during which individuals begin to establish habits of diet, physical activity, and lifestyle choices that often continue into adulthood. Habits formed in this stage strongly influence lifelong health and well-being (Jha et al., 2023). Globally, young people face a double burden of malnutrition: undernutrition on one hand and overweight or obesity on the other (Sethi et al., 2019). In many

developing countries, including India, adolescents experience micronutrient deficiencies, anaemia, and poor dietary diversity while simultaneously adopting sedentary behaviours and consuming energy-dense, nutrient-poor foods (UNICEF India, 2020). These conditions increase their risk for chronic non-communicable diseases in later life and affect academic performance and mental health.

Schools provide an effective setting for promoting adolescent health because they offer continuous access to students, a structured learning environment, and opportunities to model healthy behaviour. Research shows that school-based nutrition programmes can improve dietary knowledge, promote healthy food choices, and enhance physical activity (Rathi, Riddell, & Worsley, 2018). For instance, Joshi et al. (2008) found that a comprehensive school health-education programme significantly improved students' nutrition knowledge and health practices. However, many interventions still focus primarily on knowledge transmission rather than encouraging behavioural change. Successful programmes must therefore combine **knowledge** components (such as understanding nutrients, balanced meals, and food labels) with **behavioural** components (such as self-efficacy, decision-making, and peer support) to achieve sustainable outcomes.

The **National Education Policy (NEP) 2020** emphasises holistic learner development that integrates cognitive, emotional, and physical well-being. It recommends that health, nutrition, and physical education become essential parts of school curricula and daily activities (Ministry of Education, 2020). Incorporating nutrition awareness and life-skills education into schools directly supports this national vision. Nevertheless, few studies in India have explored adolescents' subjective experiences and perceptions of such programmes. Most existing research measures knowledge gain rather than examining how students apply nutrition concepts to real-life situations. Recent evidence indicates that sustained, behaviour-focused interventions are needed to ensure long-term impact (Jha et al., 2023).

Given these gaps, it is essential to explore how school-based nutrition awareness initiatives influence adolescents' actual lifestyle choices. Understanding students' reflections, experiences, and behavioural responses can inform the design of more effective educational strategies that align with the holistic development goals of NEP 2020.

2. Review of Related Literature

2.1 Adolescent Nutrition and Lifestyle Challenges

Adolescence is a transitional phase marked by rapid physical growth, hormonal changes, and the development of independent lifestyles. Nutritional requirements during this period are higher than at any other time in life due to increased demands for growth, muscle development, and cognitive maturation. However, global research indicates that many adolescents fail to meet recommended dietary guidelines, consuming diets high in refined carbohydrates, sugars, and saturated fats, and low in fruits, vegetables, and micronutrients (World Health Organization [WHO], 2022). Poor nutrition at this age increases the risk of obesity, anaemia, and non-communicable diseases (NCDs) such as diabetes and cardiovascular disorders later in adulthood (Story et al., 2002).

In India, the situation reflects a similar concern. The *Comprehensive National Nutrition Survey (2016–2018)* found that 28% of adolescents were anaemic, 24% were thin or undernourished, and nearly 5% were overweight or obese (Sethi et al., 2019). Rapid urbanization and the increasing popularity of fast foods have contributed to poor dietary habits, reduced physical activity, and sedentary lifestyles (Rathi et al., 2018). These changing patterns underline the urgent need for interventions that address both undernutrition and the emerging problem of lifestyle-related disorders. Nutrition education during adolescence is therefore vital not only for health promotion but also for improving learning capacity and emotional well-being (UNICEF India, 2020).

2.2 Role of School-Based Nutrition Education

Schools are recognized globally as one of the most effective platforms for implementing nutrition education programmes because they reach large numbers of children in a structured learning environment. The *WHO Global School Health Initiative* encourages countries to develop “health-promoting schools” that integrate nutrition, hygiene, and physical activity into the curriculum (WHO, 2022). Numerous studies have shown that school-based interventions can significantly improve students’ nutritional knowledge and dietary practices.

For example, a study conducted in urban India demonstrated that multi-component school health education led to better food choices and reduced consumption of junk food among adolescents (Joshi et al., 2008). Similarly, research from Australia and the United States has found that when nutrition education is integrated into school subjects and accompanied by participatory activities—such as cooking demonstrations, garden-based learning, or peer-led discussions—it produces meaningful improvements in students’ eating behaviour (Contento, 2016; Nanney et al., 2010).

However, barriers such as lack of trained teachers, limited class time, and insufficient parental involvement often hinder the sustainability of these programmes (Rathi et al., 2018). In India, while various government schemes such as *Poshan Abhiyan* and *School Health and Wellness Programme* aim to promote nutritional awareness, implementation remains inconsistent. Therefore, there is a strong need for research-based, context-specific models that connect school learning with practical lifestyle application.

2.3 Theoretical Framework

This study is guided by three theoretical perspectives: **Social Cognitive Theory**, **Experiential Learning Theory**, and **Constructivist Pedagogy**.

Social Cognitive Theory (Bandura, 1986) explains how behaviour is shaped through the interaction of personal, behavioural, and environmental factors. It emphasizes self-efficacy, modelling, and reinforcement as key mechanisms for behaviour change. Within nutrition education, adolescents learn healthy habits by observing peers and teachers, practicing new behaviours, and receiving positive feedback.

Experiential Learning Theory (Kolb, 1984) posits that effective learning occurs through a four-stage cycle—concrete experience, reflective observation, abstract conceptualization, and active experimentation. When applied to nutrition education, students engage in activities such

as reading food labels, preparing balanced meals, and reflecting on their dietary choices, which enhances their understanding and retention of health concepts.

Constructivist Pedagogy further supports this approach by viewing learners as active participants who construct their own understanding through experience and interaction (Bruner, 1996). Nutrition education based on constructivist principles—where students explore, discuss, and experiment—encourages critical thinking and personal responsibility for health. Together, these frameworks justify a participatory, reflective model of nutrition awareness that fosters both cognitive and behavioural development.

2.4 Identified Research Gap

Although there is a growing body of research on adolescent nutrition, most studies have focused on quantitative measures such as pre- and post-intervention knowledge scores, body mass index, or nutrient intake (Larson et al., 2009; Sahoo et al., 2015). While such findings are valuable, they often overlook the subjective experiences, motivations, and contextual factors influencing adolescents' health behaviours. Few studies have explored **how students perceive and interpret** nutrition awareness programmes or **how these experiences translate into lifestyle change**.

Moreover, most interventions are short-term and rarely assess sustained behavioural impact. Limited qualitative research has examined the emotional, social, and reflective dimensions of adolescents' engagement with nutrition education. Thus, there is a need for in-depth qualitative exploration that captures the voices of adolescents and provides insights into the mechanisms of change resulting from school-based nutrition awareness initiatives.

This research addresses that gap by using **thematic analysis** to examine the lived experiences of secondary school students who participated in a Nutrition Awareness Programme. It seeks to understand how adolescents internalize nutritional knowledge, apply it in daily life, and perceive its long-term relevance—thereby contributing to both the literature on adolescent health education and the holistic learning goals outlined in India's NEP 2020.

3. Methodology

3.1 Research Design

The present study adopted a **qualitative research design** to explore the impact of a school-based Nutrition Awareness Programme on adolescents' lifestyle choices. A qualitative approach was chosen because it allows for an in-depth understanding of participants' experiences, perceptions, and reflections, which cannot be captured through quantitative methods alone (Creswell & Poth, 2018). The study employed **thematic analysis** as proposed by Braun and Clarke (2006), which is a flexible method for identifying, analyzing, and interpreting patterns or themes within qualitative data. This design helped uncover how students internalized nutrition concepts and transformed them into lifestyle practices.

3.2 Participants and Sampling

The participants of the study were **35 secondary school students** (aged 14–16 years) enrolled in Class IX of a co-educational school in Anand District, Gujarat. These students were selected

through **purposive sampling**, as they had completed the Nutrition Awareness Programme conducted as part of a school health education initiative. Participation was voluntary, and students were invited to share their honest reflections and experiences related to the programme. The sample size was considered adequate for qualitative research since the aim was depth of understanding rather than numerical generalization (Patton, 2015).

3.3 Description of the Programme

The **Nutrition Awareness Programme (NAP)** was designed to promote healthy dietary practices and positive lifestyle habits among adolescents. The programme was implemented over a period of four weeks, consisting of interactive classroom sessions, audio-visual presentations, discussions, poster-making activities, and reflective exercises. The major topics covered included:

- Balanced diet and food groups
- Nutrients and their functions
- Importance of breakfast and meal planning
- Reading food labels and identifying processed foods
- Hygiene, hydration, and physical activity

The pedagogical approach was **experiential and participatory**, following Kolb's (1984) Experiential Learning Theory. Students were encouraged to connect nutritional knowledge with their daily eating habits and reflect on how these choices affected their well-being. The programme concluded with a feedback and reflection session where students expressed their learning experiences and behavioural changes.

3.4 Data Collection Procedure

After the completion of the programme, data were collected through an **open-ended questionnaire** developed by the researcher. The questionnaire contained reflective questions such as:

- What did you learn about nutrition and healthy eating through this programme?
- Have you made any changes in your eating or lifestyle habits after participating?
- How do you plan to maintain healthy practices in the future?

Students were given adequate time to write detailed responses in their own words. The qualitative nature of the questionnaire encouraged free expression without any time or word constraints. The responses were collected, anonymized, and compiled for analysis. Supplementary field notes were also maintained to capture the researcher's observations during the sessions.

3.5 Data Analysis Procedure

The qualitative data were analyzed using **Braun and Clarke's (2006)** six-phase **thematic analysis** process:

1. **Familiarization:** Reading and re-reading all responses to gain a holistic understanding of students' experiences.

2. **Generating Initial Codes:** Identifying meaningful units of information and assigning short descriptive labels (codes).
3. **Searching for Themes:** Grouping related codes to identify broader patterns reflecting shared meanings.
4. **Reviewing Themes:** Refining and validating the themes by rechecking consistency with the data.
5. **Defining and Naming Themes:** Clearly describing each theme, ensuring conceptual clarity and distinctiveness.
6. **Producing the Report:** Presenting the themes with illustrative quotes and linking them with existing literature.

This process led to the identification of five key themes: **(1) Knowledge Acquisition, (2) Knowledge Application, (3) Behavioural Changes, (4) Programme Evaluation, and (5) Lifestyle Modification.** Thematic analysis allowed the researcher to systematically interpret the meanings students attached to their learning experiences and lifestyle transformations.

3.6 Trustworthiness and Credibility

To ensure the quality and authenticity of the findings, **Lincoln and Guba's (1985)** four criteria for trustworthiness were followed:

- **Credibility:** Achieved through triangulation of data sources (student responses and researcher observations) and peer review of thematic interpretations.
- **Dependability:** Maintained by keeping an audit trail of all data, coding decisions, and analytical memos.
- **Confirmability:** Ensured by using verbatim quotes from participants and minimizing researcher bias.
- **Transferability:** Enhanced by providing rich, contextual descriptions of the research setting and participants.

These strategies strengthened the reliability and rigor of the qualitative findings.

3.7 Ethical Considerations

Ethical standards were maintained throughout the study. Permission to conduct the research was obtained from the school principal and institutional authorities. **Informed consent** was obtained from both students and their parents. Participation was voluntary, and confidentiality was guaranteed by anonymizing all student responses. The study adhered to ethical principles outlined by the *American Psychological Association (APA, 2020)* and ensured respect, privacy, and the right to withdraw at any stage. No physical, emotional, or academic harm was caused to participants during the research.

4. Results and Discussion

Thematic analysis of the students' open-ended responses revealed five major themes reflecting how adolescents perceived and experienced the Nutrition Awareness Programme:

1. **Knowledge Acquisition**
2. **Knowledge Application**

3. Behavioural Changes
4. Programme Evaluation
5. Lifestyle Modification

These themes collectively represent the learning process through which students moved from gaining information about nutrition to transforming that knowledge into conscious lifestyle practices. Each theme is discussed below with supporting interpretation and relevant literature.

4.1 Theme 1: Knowledge Acquisition

Students reported that the programme enhanced their understanding of the basic principles of nutrition, balanced diet, food groups, and the role of nutrients in maintaining health. Many participants indicated that before the programme, their idea of a “healthy diet” was limited to avoiding junk food, but through the sessions, they learned about nutritional balance and meal composition. They also became aware of the importance of hydration, fibre, and micronutrients.

This finding aligns with previous research showing that structured school-based nutrition education improves adolescents’ cognitive understanding of dietary concepts and health awareness (Contento, 2016; Joshi et al., 2008). The experiential teaching methods — such as visuals, group discussions, and interactive presentations — appeared to facilitate deeper comprehension. According to Kolb’s (1984) *Experiential Learning Theory*, students construct meaning when they connect new information to lived experiences. Thus, the programme’s participatory design effectively supported meaningful knowledge acquisition.

4.2 Theme 2: Knowledge Application

A significant number of students described instances where they applied their new knowledge in daily life. They reported checking food labels before purchasing snacks, choosing fruits over packaged foods, and modifying meal portions to include more vegetables. Some mentioned encouraging their family members to adopt healthier practices, such as reducing oil or sugar intake.

This theme demonstrates the transition from conceptual understanding to practical application — a critical step for sustained behaviour change. Social Cognitive Theory (Bandura, 1986) explains this process through *self-efficacy* — the belief in one’s ability to perform a desired action. As students experienced success in making small changes, their confidence and motivation to continue increased. Studies by Larson et al. (2009) and Nanney et al. (2010) similarly found that school-based interventions promote behavioural intention and practical dietary decision-making among adolescents.

4.3 Theme 3: Behavioural Changes

The most notable impact of the programme was the behavioural transformation reported by the participants. Students expressed reducing the consumption of fried snacks, soft drinks, and processed foods, while increasing their intake of fruits, vegetables, and home-cooked meals. Several participants also reported drinking more water and avoiding skipping breakfast.

This behavioural shift indicates that students not only learned about nutrition but also internalized the motivation to change habits. Such transformation supports findings by Jha et al. (2023), who observed that adolescents exposed to sustained school-based nutrition interventions demonstrated improved behavioural intentions and health practices. Behaviour change, as suggested by Story et al. (2002), is often driven by the combination of knowledge, self-regulation, and environmental reinforcement — all of which were integral parts of this programme.

Furthermore, these changes reflect the *constructivist* principle that learning is most effective when learners actively construct understanding through reflection and experience (Bruner, 1996). The students' narratives demonstrated self-awareness and conscious decision-making, suggesting that the programme influenced not just habits but also attitudes toward health and responsibility.

4.4 Theme 4: Programme Evaluation

Students positively evaluated the overall programme, describing it as “interesting,” “informative,” and “interactive.” They appreciated the visual aids, group activities, and real-life examples used in teaching. Participants mentioned that the content was relevant to their daily lives and easy to understand. Some also expressed that learning about nutrition through discussions and activities made the topic more engaging than traditional lectures.

This feedback highlights the importance of pedagogical design in health education. Studies by Rathi et al. (2018) and Contento (2016) emphasize that participatory methods such as group work, games, and reflection improve engagement and retention among adolescents. The positive reception of the programme indicates that it successfully integrated experiential learning principles, aligning with NEP 2020's (Ministry of Education, 2020) emphasis on holistic and experiential education.

However, a few students suggested extending the duration of the sessions and involving parents more directly in future programmes. This recommendation resonates with previous literature indicating that parental involvement enhances the effectiveness of adolescent nutrition interventions (Story et al., 2002).

4.5 Theme 5: Lifestyle Modification

Beyond individual habits, several students described adopting a more mindful approach to their overall lifestyle. They reported paying attention to sleep, water intake, and physical activity, along with diet. Some students expressed pride in influencing their family members or peers to make better food choices, showing a sense of personal responsibility and social influence.

This outcome represents a higher level of learning — *transformation* rather than mere information retention. According to Kolb (1984), such reflective learning leads to behavioural integration and personal growth. The students' adoption of mindfulness and responsibility reflects the development of *self-regulated behaviour*, which is central to sustainable health practices.

Similar findings have been reported in international studies, where school-based health education programmes produced long-term improvements in adolescents' health awareness, self-discipline, and sense of agency (Nanney et al., 2010; Larson et al., 2009). These results reaffirm that experiential, reflective, and student-centred pedagogies are effective in shaping adolescents' holistic development — physically, emotionally, and socially.

4.6 Summary of Findings

Overall, the thematic analysis indicates that the Nutrition Awareness Programme effectively enhanced students' knowledge, encouraged behavioural transformation, and inspired self-reflection. The findings align with the theoretical foundations of Social Cognitive Theory, Experiential Learning Theory, and Constructivist Pedagogy. They also support NEP 2020's vision of integrating health and wellness education into school curricula to promote holistic learner development.

The students' voices underscore the need for continuous, participatory, and context-specific nutrition education in schools. By bridging the gap between knowledge and behaviour, such programmes can serve as a sustainable model for promoting adolescent well-being and contributing to national health goals.

5. Implications, Conclusion, and Recommendations

5.1 Educational and Practical Implications

The findings of this study highlight the significant potential of school-based nutrition awareness programmes to promote healthy lifestyle choices among adolescents. By engaging students through participatory and experiential learning methods, such interventions can move beyond theoretical knowledge to foster genuine behavioural transformation.

From an **educational perspective**, integrating nutrition education into the school curriculum can support the development of critical life skills such as decision-making, self-regulation, and mindfulness. Teachers play a vital role in reinforcing these concepts through cross-curricular approaches that connect nutrition to science, health, and physical education. The use of project-based learning, reflective journals, and group discussions can help sustain students' engagement and deepen understanding.

From a **policy perspective**, this study reinforces the goals of the *National Education Policy (NEP) 2020*, which emphasizes holistic education encompassing physical, emotional, and moral development. Incorporating regular nutrition awareness modules into the *School Health and Wellness Programme* can contribute to the national *Poshan Abhiyan* (Nutrition Mission) and Sustainable Development Goal 3: "Good Health and Well-being." Moreover, integrating family and community participation can amplify programme effectiveness, as adolescents' food choices are often influenced by their home environment.

Health educators and school administrators can use these findings to design structured, age-appropriate nutrition programmes that combine **knowledge-building, skill development, and behavioural reinforcement**. Creating supportive school environments — such as offering

healthy canteen options and organizing health fairs — can sustain positive changes beyond the classroom.

5.2 Conclusion

This qualitative exploration provides valuable insights into how adolescents perceive, internalize, and apply nutrition knowledge in their everyday lives. The findings reveal that the Nutrition Awareness Programme had a positive influence on students' cognitive understanding, behavioural patterns, and self-reflective attitudes toward health. Students demonstrated greater awareness of balanced diets, reduced consumption of junk food, and adopted mindful eating habits.

The study validates the idea that **knowledge alone is insufficient for behavioural change**; rather, continuous engagement, reflection, and experiential learning are crucial. By combining theoretical instruction with interactive and reflective activities, the programme empowered adolescents to take ownership of their health choices. This process represents the integration of *Social Cognitive*, *Experiential Learning*, and *Constructivist* theories — where learning becomes a transformative experience leading to conscious, self-directed action.

Overall, the findings reaffirm that school-based nutrition education can serve as an effective platform for fostering lifelong health behaviours, aligning with India's vision of holistic and value-based education under NEP 2020.

5.3 Recommendations for Future Research and Practice

Based on the findings and limitations of this study, several recommendations are proposed for researchers, educators, and policymakers:

1. **Longitudinal Studies:** Future research should track adolescents' dietary and lifestyle behaviours over extended periods to assess the long-term sustainability of behavioural changes.
2. **Parent and Community Involvement:** Nutrition programmes should actively include parents, caregivers, and community members to reinforce messages at home and within local contexts.
3. **Integration Across Subjects:** Nutrition and health education can be embedded across subjects such as Science, Social Studies, and Physical Education to enhance relevance and interdisciplinary understanding.
4. **Teacher Training:** Pre-service and in-service teacher education should include modules on health promotion and nutrition pedagogy to equip teachers with practical strategies for classroom delivery.
5. **Digital and Media-Based Interventions:** With the increasing influence of social media on adolescents' food choices, integrating digital tools, games, and apps can make nutrition education more engaging and relatable.
6. **Comparative and Mixed-Method Research:** Future studies could combine qualitative and quantitative approaches to evaluate both behavioural outcomes and psychosocial factors influencing adolescent nutrition.

By implementing these strategies, schools can become key catalysts for promoting healthy generations — both nutritionally aware and socially responsible.

5.4 Limitations of the Study

While the findings provide valuable insights, this study had certain limitations. The sample size was small and limited to a single school, which may restrict the generalizability of results. The study relied on self-reported reflections, which might include social desirability bias. Additionally, the short-term nature of the intervention did not allow for the observation of long-term behavioural maintenance. Despite these limitations, the study offers rich qualitative understanding and establishes a foundation for future empirical and intervention-based research.

5.5 Final Reflection

The study underscores that **nutrition awareness is not merely informational but transformational**. When adolescents are empowered through experiential and reflective learning, they become active agents of change within their families and communities. In the broader context of India's educational reforms, such school-based programmes can contribute significantly to building a health-conscious, mindful, and resilient generation, aligning with the vision of *Viksit Bharat* and the NEP 2020 framework for holistic education.

References

1. American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). APA.
2. Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Prentice Hall.
3. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
4. Bruner, J. (1996). *The culture of education.* Harvard University Press.
5. Contento, I. R. (2016). *Nutrition education: Linking research, theory, and practice* (3rd ed.). Jones & Bartlett Learning.
6. Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage.
7. Guest, G., Namey, E. E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLOS ONE*, 15*(5), e0232076. <https://doi.org/10.1371/journal.pone.0232076>
8. Jha, S. S., Dobe, M., Taklikar, C., & Lahiri, A. (2023). School-based intervention on behavioral intention of adolescents regarding healthy diet in India. *Frontiers in Public Health*, 11*, 1094960. <https://doi.org/10.3389/fpubh.2023.1094960>
9. Joshi, H. S., Gupta, R., & Joshi, M. C. (2008). School health education: Impact of health education on knowledge and practices of school children. *Indian Journal of Community Medicine*, 33*(4), 260–262. <https://doi.org/10.4103/0970-0218.43233>
10. Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Prentice Hall.
11. Larson, N., Neumark-Sztainer, D., Hannan, P. J., & Story, M. (2009). Trends in adolescent fruit and vegetable consumption, 1999–2004. *American Journal of Preventive Medicine*, 36*(5), 401–408. <https://doi.org/10.1016/j.amepre.2009.01.029>
12. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Sage.

13. Ministry of Education, Government of India. (2020). *National Education Policy 2020.*
https://dsel.education.gov.in/sites/default/files/update/Nep_2020.pdf
14. Nanney, M. S., Haire-Joshu, D., Elliott, M., Hessler, K., & Brownson, R. C. (2010). Evaluating change in weight-related behaviors of teachers and students resulting from implementation of the coordinated approach to child health program in middle schools. *Health Education Research, 25*(2), 319–331. <https://doi.org/10.1093/her/cyp044>
15. Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). Sage.
16. Rathi, N., Riddell, L., & Worsley, A. (2018). Barriers to nutrition promotion in private secondary schools in Kolkata, India: Perspectives of parents and teachers. *International Journal of Environmental Research and Public Health, 15*(6), 1139. <https://doi.org/10.3390/ijerph15061139>
17. Sahoo, K., Sahoo, B., Choudhury, A. K., Sofi, N. Y., Kumar, R., & Bhadoria, A. S. (2015). Childhood obesity: Causes and consequences. *Journal of Family Medicine and Primary Care, 4*(2), 187–192. <https://doi.org/10.4103/2249-4863.154628>
18. Sethi, V., Lahiri, A., Bhanot, A., Kumar, A., Chopra, M., Mishra, R., Agrawal, P., & de Wagt, A. (2019). *Adolescents, diets and nutrition: Growing well in a changing world (Comprehensive National Nutrition Survey Thematic Report 1)*. UNICEF India. <https://www.unicef.org/india/sites/unicef.org.india/files/2020-02/CNNS-Thematic-Report-Adolescents-Diets-and-Nutrition.pdf>
19. Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviors. *Journal of the American Dietetic Association, 102*(3), S40–S51. [https://doi.org/10.1016/S0002-8223\(02\)90421-9](https://doi.org/10.1016/S0002-8223(02)90421-9)
20. UNICEF India. (2020). *Adolescent nutrition programming in India: Case study.* <https://www.unicef.org/media/90671/file/2020-Adolescent-Nutrition-Programming-in-India-Case-Study.pdf>
21. World Health Organization. (2022). *Adolescent health.* <https://www.who.int/health-topics/adolescent-health>