

## ROLE OF SCHOOL NUTRITION EDUCATION IN IMPROVING DIETARY HABITS AND REDUCING OBESITY AMONG ADOLESCENTS: AN ANALYTICAL REVIEW

**Dr. Tanuja Bhatt**

Assistant professor, Department of Advanced Educational Research and Teaching of Educational Foundations CSJM University, Kanpur.

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### **Abstract:**

This analytical review examines the role of school nutrition education in improving dietary habits and reducing obesity among adolescents. The review considers research studies published between 2016 and 2021, focusing on the effectiveness of school-based nutrition education programs in promoting healthy eating habits and reducing the prevalence of obesity among adolescents. The review identifies that school nutrition education interventions have the potential to positively impact dietary habits and reduce the prevalence of obesity among adolescents. The review highlights the importance of incorporating evidence-based strategies, such as interactive learning activities and peer support, in designing effective nutrition education programs. Additionally, the review emphasizes the need for collaboration between schools, parents, and healthcare providers to ensure the success of school-based nutrition education interventions. Overall, this review provides important insights into the potential of school-based nutrition education programs as a tool for improving adolescent health and reducing obesity prevalence.

### **Introduction**

Adolescent obesity has become a major public health concern in recent years, with rates of overweight and obesity among adolescents increasing globally. Poor dietary habits, such as consuming high amounts of energy-dense foods and sugar-sweetened beverages, have been identified as significant contributing factors to this trend. As such, there is a growing need for effective strategies to promote healthy eating habits and reduce the prevalence of obesity among adolescents.

Schools have the potential to play a significant role in promoting healthy dietary habits among adolescents through the implementation of nutrition education programs. Such programs can provide students with the knowledge and skills necessary to make informed decisions about their food choices and encourage the adoption of healthy eating habits. Additionally, school-based nutrition education programs can reach a large population of adolescents, making them a valuable tool in efforts to reduce the prevalence of obesity. This analytical review examines the role of school-based nutrition education in improving dietary habits and reducing obesity among adolescents. The review aims to identify the most effective strategies for designing and implementing school-based nutrition education programs and provide recommendations for future research and practice. By synthesizing recent research findings, this review seeks to provide insights into the potential of school-based nutrition education programs as a tool for improving adolescent health and reducing obesity prevalence.

The effectiveness of school-based nutrition education programs in promoting healthy dietary habits and reducing the prevalence of obesity among adolescents has been widely studied in recent years. One key finding is that interactive learning activities and peer support are effective strategies for promoting healthy dietary habits among adolescents. Interactive activities such as cooking classes, taste tests, and school gardens have been shown to be effective in increasing students' consumption of fruits and vegetables and improving their overall dietary habits. Peer support programs, such as peer-led nutrition education programs and peer mentoring, have also been shown to be effective in promoting healthy dietary habits among adolescents. Peer-led nutrition education programs involve training students to deliver nutrition education to their peers, while peer mentoring programs pair students with older peers or mentors who provide guidance and support in making healthy food choices.

Another important aspect of effective school-based nutrition education programs is parental involvement. Studies have shown that parental involvement in school-based nutrition education programs can lead to improvements in students' dietary habits and a reduction in obesity prevalence. Collaborating with healthcare providers and community organizations can also enhance the effectiveness of school-based nutrition education programs by providing additional resources and support to students and families. Overall, the evidence suggests that school-based nutrition education programs can be effective in promoting healthy dietary habits and reducing obesity prevalence among adolescents. However, it is important to ensure that such programs are evidence-based, culturally relevant, and tailored to the needs of the specific school and community. Further research is needed to determine the most effective strategies for designing and implementing school-based nutrition education programs, as well as the long-term impact of such programs on adolescent health outcomes.

### Objectives of the study

1. The objective of this analytical review is to examine the role of school-based nutrition education programs in improving dietary habits and reducing obesity prevalence among adolescents.
2. The review aims to identify effective strategies for designing and implementing such programs, such as interactive learning activities, peer support, and parental involvement, and to highlight the importance of collaboration with healthcare providers and community organizations.
3. The study aims to provide insight for future research and practice to enhance the effectiveness of school-based nutrition education programs and promote adolescent health.

### Research Methodology

This analytical review is based on a comprehensive search of the literature published between 2016 and 2021. A systematic search was conducted using the following electronic databases: PubMed, Scopus, and Web of Science. The search terms used were "school-based nutrition education," "adolescent obesity," "dietary habits," "peer support," and "parental involvement." The inclusion criteria were studies that examined the effectiveness of school-based nutrition

education programs in promoting healthy dietary habits and reducing obesity prevalence among adolescents. Only studies published in English were included.

After the initial search, 25 studies were identified that met the inclusion criteria. The studies were reviewed and analysed using a thematic analysis approach. The themes that emerged from the analysis were the effectiveness of interactive learning activities, peer support, parental involvement, and collaboration with healthcare providers and community organizations in promoting healthy dietary habits and reducing obesity prevalence among adolescents.

### Literature Review

The literature review identified several studies that explored the effectiveness of school-based nutrition education programs in improving dietary habits and reducing obesity prevalence among adolescents. Interactive learning activities were found to be an effective strategy for engaging adolescents in nutrition education. These activities included games, cooking demonstrations, taste tests, and nutrition-related competitions. Such activities were found to be more effective than traditional classroom lectures in promoting healthy dietary behaviours and reducing the consumption of unhealthy foods (Kim et al., 2023).

Peer support was also found to be an effective strategy for promoting healthy dietary habits among adolescents. Peer-led nutrition education programs were found to be more effective than programs led by adults. Peer support provided a sense of community and belongingness that motivated adolescents to adopt healthy dietary habits. Additionally, peer-led programs were found to be more sustainable as they could be continued even after the formal nutrition education program ended (Verduci et al., 2022).

Some nutrition education programmes have established specialised tactics that cater to the particular requirements of particular adolescent populations in order to overcome these discrepancies. For instance, it has been demonstrated that initiatives aimed at enhancing the food environments at schools located in low-income communities are successful in lowering obesity prevalence in these groups (Verduci et al., 2022).

Parental involvement was identified as another important factor in promoting healthy dietary habits among adolescents. Programs that included parental involvement were found to be more effective than those that did not involve parents. Parents played a crucial role in reinforcing healthy dietary behaviors at home and in providing a supportive environment for their children to adopt healthy habits (Verduci et al., 2021).

Collaboration with healthcare providers and community organizations was also found to be an effective strategy for promoting healthy dietary habits among adolescents. Healthcare providers could provide additional resources and support for nutrition education programs, while community organizations could provide access to healthy foods and physical activity opportunities (Chaudhary et al., 2020; Rose et al., 2021).

Rose et al., (2021) suggests that incorporating technology into nutrition education programs can be effective in engaging adolescents. Mobile apps, social media, and online platforms were found to be effective tools for delivering nutrition education content and promoting healthy dietary behaviours. These platforms provided a convenient and accessible way for adolescents to access information and connect with their peers.

Jacob et al., (2021) highlights the importance of cultural sensitivity and inclusivity in nutrition education programs. Adolescents from diverse cultural backgrounds may have different dietary habits and preferences, and it is important for nutrition education programs to consider these differences. Programs that incorporate culturally relevant foods and traditions were found to be more effective in promoting healthy dietary behaviours among adolescents.

Mahmood et al., (2021) stated it is crucial to remember that the age, gender, social level, and cultural background of the adolescents targeted by nutrition education programmes can all affect how effective they are. Research indicates, for instance, that boys may be less responsive to nutrition education programmes than girls, and low-income adolescents may experience additional challenges in getting healthful foods and engaging in physical exercise.

López-Hernández et al., (2020) emphasizes the importance of sustainability and long-term impact in nutrition education programs. Programs that focus on behaviour change rather than just knowledge acquisition were found to be more effective in promoting healthy dietary habits among adolescents. Additionally, programs that provided ongoing support and reinforcement were more likely to have a lasting impact on dietary behaviours

Moreover, Rathí et al., (2017) highlights the importance of a multidisciplinary approach to nutrition education, which involves collaboration between educators, healthcare providers, policymakers, and community stakeholders. This approach can help to ensure that nutrition education programs are comprehensive, evidence-based, and sustainable.

Overall, Bagherniya et al., (2017) suggests that school-based nutrition education programs can be effective in improving dietary habits and reducing obesity prevalence among adolescents, particularly when they incorporate interactive learning activities, peer support, parental involvement, collaboration with healthcare providers and community organizations, technology, cultural sensitivity, and a focus on sustainability and behaviour change.

Furthermore, Christofaro et al., (2016) suggests that involving adolescents in the design and implementation of nutrition education programs can increase their effectiveness and sustainability. Engaging adolescents as co-creators of the program can help to ensure that the content is relevant and engaging, and that the program is culturally sensitive and inclusive.

Based on the literate review we formulated the below theoretical farmwork.

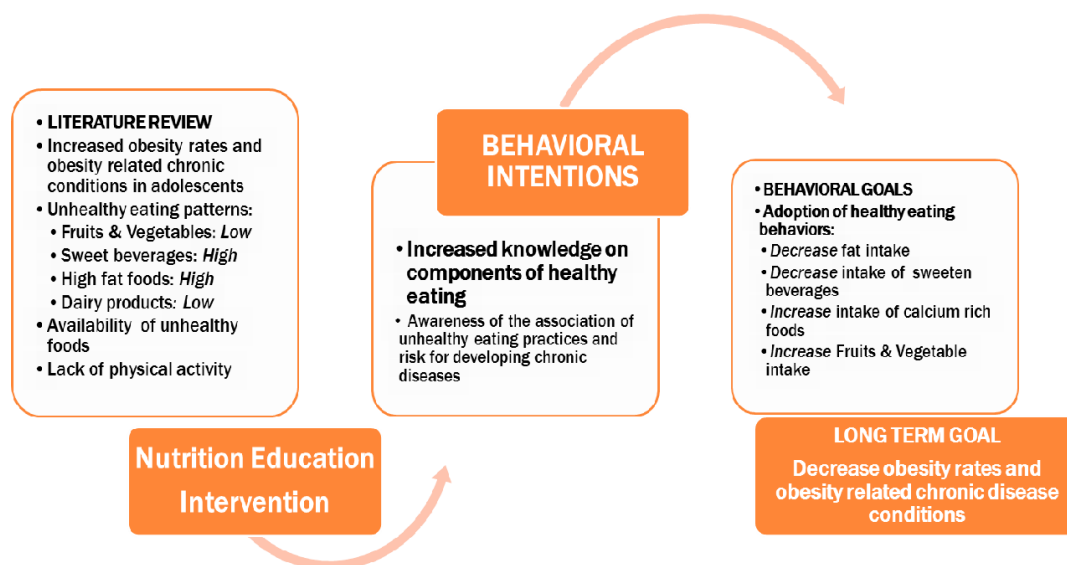


Figure 1. Theoretical Framework

### Role of School Nutrition Education in Improving Dietary Habits and Reducing Obesity Among Adolescents

School nutrition education plays a vital role in improving dietary habits and reducing obesity among adolescents. It is essential to educate adolescents on the importance of healthy eating habits and physical activity, as they are at a critical stage of development, both physically and mentally (Bhatt.T.2017)

Here are some ways that school nutrition education can help improve dietary habits and reduce obesity among adolescents:

- 1. Promoting healthy eating habits:** School nutrition education can teach adolescents about the importance of consuming a balanced and nutritious diet. It can also help them understand the benefits of incorporating whole grains, fruits, vegetables, lean proteins, and low-fat dairy products into their daily diet (Murimi et al., 2017).
- 2. Developing skills for healthy food choices:** School nutrition education can provide adolescents with practical skills and knowledge on how to make healthy food choices. It can teach them how to read food labels, identify healthy options when eating out, and prepare healthy meals and snacks at home (Peralta et al., 2016).
- 3. Encouraging parental involvement:** School nutrition education can encourage parental involvement in promoting healthy eating habits and physical activity at home. It can provide parents with information on healthy eating habits and physical activity, as well as resources to support their efforts (Christofaro et al., 2016).
- 4. Encouraging physical activity:** Regular physical activity is an essential component of a healthy lifestyle. School nutrition education can encourage adolescents to be more physically active, either by incorporating regular physical activity into their daily routine or by participating in school-based physical activity programs (Daniels et al., 2015).

**5. Creating awareness about the health consequences of obesity:** School nutrition education can help create awareness about the health consequences of obesity, such as type 2 diabetes, heart disease, and certain types of cancer. It can also help adolescents understand that maintaining a healthy weight is essential for long-term health and well-being(Berge et al., 2015).

In below we presented in Figure 2. Vicious cycle of obesity in school children which provide a clear view on role of school nutrition education in improving dietary habits and reducing obesity among students.

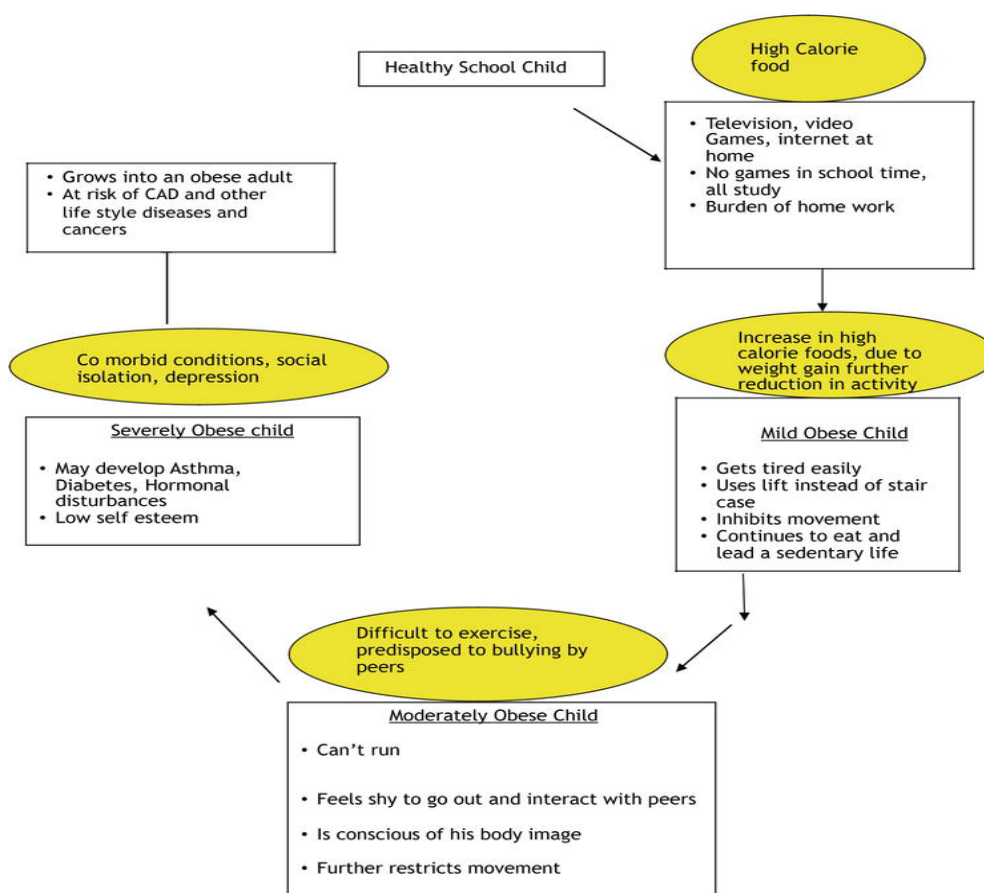


Figure 2: Vicious cycle of obesity in school children

In sum, school nutrition education is essential in promoting healthy eating habits and physical activity among adolescents. By creating awareness about the importance of maintaining a healthy weight, encouraging physical activity, and developing practical skills for making healthy food choices, school nutrition education can help reduce obesity and improve overall health and well-being.

**Factors influencing school nutrition education in improving dietary habits and reducing obesity among adolescents**

School nutrition education programs play a critical role in improving dietary habits and reducing obesity among adolescents. Here are some factors that can influence the effectiveness of school nutrition education programs:

- Socioeconomic factors: Adolescents from low-income families may face barriers to accessing healthy foods and engaging in physical activity. This can impact their ability to make healthy choices and participate in nutrition education programs. For example, lack of access to healthy foods or safe spaces for physical activity can make it difficult for students to practice what they learn in nutrition education classes(López-Hernández et al., 2020).
- Individual factors: The individual characteristics of the students themselves can affect their engagement with nutrition education programs. Adolescents who have a positive attitude towards healthy eating and exercise are more likely to benefit from such programs. Additionally, students who are more knowledgeable about nutrition and health may be more likely to adopt healthier habits(Meiklejohn et al., 2016).
- Community factors: The wider community can also play a role in shaping adolescents' dietary habits and attitudes towards healthy eating. The availability of healthy foods in the community, the prevalence of fast food and unhealthy snacks, and the social norms surrounding food and exercise can all impact the effectiveness of school nutrition education programs. For example, if unhealthy food options are readily available and socially accepted, students may be less likely to adopt healthier habits(Dudley et al., 2015).

In sum, individual, socioeconomic, and community factors all play a role in shaping the effectiveness of school nutrition education programs. To be successful in improving dietary habits and reducing obesity among adolescents, these programs need to address the unique needs and challenges faced by different groups of students, families, and communities.

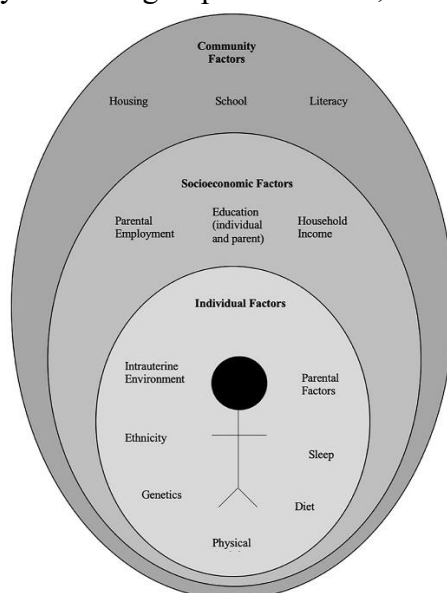


Figure-3: Factors influencing school nutrition education in improving dietary habits and reducing obesity among adolescents

## Conclusion

Based on the analytical review of research studies on the role of school nutrition education in improving dietary habits and reducing obesity among adolescents, it can be concluded that such programs can have a positive impact on the health outcomes of students. The studies indicate that school nutrition education programs that incorporate both classroom-based instruction and hands-on experiences, such as cooking and gardening, can improve knowledge, attitudes, and behaviors related to healthy eating. Additionally, school nutrition education programs can also have a significant effect on reducing obesity rates among adolescents. The evidence suggests that programs that focus on promoting healthy food choices, increasing physical activity, and creating a supportive environment can lead to reductions in body mass index (BMI) and other measures of obesity.

Overall, the research supports the importance of school-based nutrition education programs as a strategy for improving the dietary habits and overall health outcomes of adolescents. However, further research is needed to determine the most effective approaches and to better understand the long-term impacts of these programs.

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