

# Impact of Nutrition Education on the Lifestyle of School-age Female Adolescents: A Comparative Study between Government and Private Schools

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## Abstract

**Background** - Nutrition plays a pivotal role in both the developmental trajectory and disease prevention among individuals. Nutrition education stands as a cornerstone in fostering health awareness.

**Objective** - This study aims to evaluate the influence of nutrition education on the lifestyle choices of school-age female adolescents, with a comparative analysis between government and private school settings.

**Methodology** - Four hundred female adolescents from both government and private schools, aged between 12-18 years, participated in this research. A quantitative research design was employed, focusing on an eight-week intervention program. Participants completed a self-constructed pre- test questionnaire, followed by a series of lectures, brochure distributions, quizzes, and visual presentations on various aspects of healthy living. Post-test questionnaires were administered one week after the completion of eleven educational sessions.

**Results** - The analysis revealed a general deficiency in nutritional knowledge among both government and private school adolescent girls. Nutritional knowledge scores, based on questionnaire responses, were classified into five groups: very poor, poor, fair, good, and very good. Merely 0.5% of respondents achieved a "very good" score, 11.75% scored "good," 32.5% scored "fair," while 44.5% fell into the "poor" category (with scores between 5-8), and the remaining 10.75% were classified as "very poor."

**Conclusions** - Inadequate knowledge contributed to improper dietary habits and suboptimal lifestyle choices among school-going female adolescents. Notably, positive changes in lifestyle behaviors demonstrated a significant correlation with nutrition education initiatives among this demographic.

**Keywords:** Adolescent; Nutrition; Lifestyle; Knowledge; Attitude; Practices; Education.

## 1. INTRODUCTION-

The double burden of malnutrition is characterized by the coexistence of undernutrition along with overweight and obesity. Despite a fast-growing economy and substantial

global and national mitigation strategies, India faces an increasing double burden of malnutrition. This issue persists and continues to incline. During adolescence, changes in physical characteristics and the development of internal and external genitalia result in the maturation of a child into an adult capable of reproduction. Long-term complications of malnutrition include congestive heart failure, increased insulin resistance, diminished immune function, susceptibility to infections, hypothermia, cardiac arrhythmia, stroke, hypertension, anemia, diabetes, and other vascular diseases.

Adolescent girls form an important, vulnerable, and neglected sector of the Indian population. According to WHO (2018), anemia affects 1.62 billion people globally, including about 69.4 million adolescents, 56 million pregnant women, and 468 million non-pregnant women.

Ensuring optimal nutritional status among adolescent girls is crucial as they represent the future mothers, and their nutritional needs escalate significantly compared to earlier developmental stages (Das et al., 2022).

Childhood and adolescence obesity is associated with a higher chance of obesity, premature death, and disability in adulthood. Chronically malnourished girls are more likely to remain undernourished during adolescence and adulthood, creating a vicious cycle of malnutrition. Despite adolescents constituting a significant segment of the population, the focus on this group is negligible. To overcome nutritional vulnerability, it is crucial to place tremendous focus on raising awareness regarding health and nutrition among adolescent girls.

(Awuuh et al., 2019; Shahsanai et al., 2018) highlight that health and nutrition education is an imperative measure to revamp dietary habits, food choices, and nutritional status. They assert that indigent dietary behavior and practices are the main reasons for the meager nutritional status of adolescents.

## 2. THE NEED FOR EVALUATION-

The implementation of school-based nutrition education programs is not merely a trend but a proactive response to a global health challenge. With the prevalence of sedentary lifestyles and the easy availability of processed foods, children are exposed to dietary patterns that can have long-term consequences for their health. Acknowledging the necessity for intervention, educational institutions have adopted nutrition education as a means to empower students with the knowledge

and abilities essential for making informed and health-conscious decisions. The primary objective of this research was to assess the impact of a targeted nutrition education program on the lifestyle of adolescent girls. Nutrition education intervention is believed to be an effective way of increasing knowledge about the consumption of different nutrients in young individuals.

## 3. MATERIALS AND METHODS LOCALE OF THE STUDY-

The study was conducted in Bijnor district, Uttar Pradesh, chosen for its distinct nutritional status and demographic characteristics.

## 4. SAMPLE SELECTION:

Within the district, government schools and private schools were thoughtfully selected to form the basis for the study's sample. A random sample size of 400 adolescent girls was meticulously drawn, ensuring a balanced representation with 100 participants from each school. Sample selection followed a convenience sampling method.

## 5. RESEARCH DESIGN-

In the present research, a quantitative research design was employed to investigate the effects of an eight-week intervention among adolescent school girls. All eligible participants were given the opportunity to receive the intervention, which encompassed body weight and height measurements, body mass index, and the completion of a pre-intervention survey addressing nutrition knowledge, food habits, and anthropometric data.

## 6. DEVELOPMENT OF TOOL:

Structured questionnaires can help gather quantitative data on participants' knowledge, attitudes, and behaviors related to nutrition. Questions can be tailored to assess changes over time and the effectiveness of the education program.

To understand the present level of nutritional knowledge, a questionnaire containing a list of questions about balanced diet, functions and daily requirements of food, cooking practices to improve the nutritive value of food, food hygiene and sanitation, food taboos, and the number of meals taken or skipped, etc., can be utilized.

## 7. VARIABLE MEASUREMENT:

Throughout the research process, meticulous categorization of variables was carried out, primarily encompassing background information, dietary assessment, and nutritional knowledge. This structured and systematic analysis of the collected data allowed for thorough categorization.

## 8. DATA COLLECTION-

During the data collection process, anthropometric measurements, dietary practices, and nutritional knowledge were systematically assessed both before and after the nutrition education intervention. This phase provided a comprehensive view of the participants' nutritional status.

## 9. NUTRITION INTERVENTION PACKAGE-

The initiation of the nutrition education program involved the delivery of a nuanced nutrition presentation, interactive workshops, and targeted lessons specifically crafted for adolescent girls. The curriculum encompassed in-depth discussions on essential nutritional topics, including hydration, carbohydrates, protein, fat, vitamins, minerals, and smart snacking, culminating in a comprehensive review. This well-structured and informative educational initiative unfolded over the period spanning from September 2022 to October 2022.

## 10. NUTRITION KNOWLEDGE INDEX-

A composite index was developed by assigning scores to different items of knowledge on nutrition. One score was awarded for a correct answer and zero for a wrong answer for each question. The total score for knowledge on nutrition ranges between 1 and 20. This range was classified into 5 categories: very poor (1-4 marks), poor (5-8 marks), fair (9-12 marks), good (13-16 marks), and very good (above 16 marks).

## 11. POST-INTERVENTION DATA COLLECTION-

Subsequent to the intervention, we diligently conducted post-intervention data collection to evaluate the impact of our nutrition education program. We assessed changes in nutritional knowledge, dietary practices, and nutrient intake among the participants, providing valuable insights into the effectiveness of our intervention.

## 12. DATA ANALYSIS-

Various statistical techniques were employed, including descriptive statistics such as mean and standard deviation, to conduct an examination of key participant characteristics such as age, BMI, height, and weight. Paired sample t-tests were used to examine the relationship between pre- and post-intervention data. This statistical methodology was employed to discern and elucidate any noteworthy alterations in these parameters resulting from the implemented intervention.

### 13. RESULT AND DISCUSSION-

#### Distribution of Respondent by nutritional knowledge scores

TYPE	Government School		Private School		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
1-4(Very Poor)	25	12.5	18	9	43	10.75
5-8(Poor)	87	43.5	91	45.5	178	44.5
9-12(fair)	76	38	54	27	130	32.5
13-16( good)	12	6	35	17.5	47	11.75
above 16(Very good)	0	0	2	1	2	0.5
<b>Total</b>	200	100	200	100	400	100

Score were given for the nutritional knowledge of the respondent based on their answers to the questions in the given questionnaire. The maximum score was 20. The score obtained were classified in to five group the they are, very poor, Poor, Fair, Good and Very Good. Only .5 percent respondent score Very good, 11.75 percent respondent score good, 32.5 percent score fair, 44.5 percent respondent score between 5-8 marks and were in poor category and remaining 10.75 percent respondent were in very poor category.

Adolescence serves as a pivotal stage of development, acting as a bridge between childhood and adulthood. During this period, the choices and habits adolescents make, including their eating habits, can have a significant impact on their future health and well-being. Thus, it is crucial to equip adolescents with the essential knowledge and skills to make informed choices regarding their dietary habits (Omran and Al-Hafez, 2006). One effective approach to accomplish this goal is through nutrition education sessions.

These sessions can go beyond the traditional classroom teaching methods and utilize engaging tools such as beautiful posters, flipcharts, and demonstrations. By doing so, we can capture the attention and interest of adolescent girls, making the learning experience more enjoyable and effective (Lua and Putri, 2012).

### 14. CONCLUSION-

The results of the study revealed that the intervention module, implemented in the present investigation, significantly improved the knowledge on nutrition of the college

respondents, demonstrating the effectiveness of the intervention. It is proved that a well-planned nutrition education can bring about a change in their knowledge, which may lead to a change in attitude and ultimately to a change in behavior. The study, albeit conducted with a small sample, was successful; therefore, it may be conducted on a large scale. If proven successful, the module may be included in the regular curriculum of college students with the long-term objective of improving the health and nutritional status of the college students, who are the future citizens.

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