

A STUDY TO ASSESS THE NUTRITIONAL KNOWLEDGE AND PRACTICE AMONG ADOLESCENTS IN CHENGALPATTU DISTRICT, TAMIL NADU

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Abstract

Adolescence is a critical period of rapid growth and development in which adequate nutrition is essential for maintaining health and preventing future non-communicable diseases. This study assessed nutritional knowledge, dietary practices, and body mass index (BMI) among adolescents in Chengalpattu District, Tamil Nadu. A descriptive cross-sectional study was conducted among 60 adolescents aged 13–19 years studying in Standards 8–12 at BKM Matriculation Higher Secondary School, Kelambakkam, using non-probability purposive sampling. Data were collected through a structured self-administered questionnaire comprising 11 socio-demographic items, 24 knowledge items, and 20 practice items. Descriptive and inferential statistics were used for analysis. The mean knowledge score was 1.35 ± 0.48 , with all participants demonstrating inadequate nutritional knowledge. Regarding nutritional practices, 38.3% had inadequate, 35% moderate, and 26.7% adequate practices, with a mean score of 1.88 ± 0.80 . A significant moderate positive correlation was observed between nutritional knowledge and practices ($r = 0.64$, $p < 0.001$). BMI assessment showed 43.3% normal weight, 36.7% overweight, 15% obese, and 5% underweight. No significant association was found between knowledge or practice scores and demographic variables ($p > 0.05$). The findings highlight an urgent need for targeted, school-based nutrition education programs to improve dietary practices and reduce future health risks among adolescents.

Keywords: Nutritional knowledge, Nutritional practices, Adolescents, Dietary practices, Body mass index, School-based nutrition education, Chengalpattu, Tamil Nadu.

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Introduction

Adolescence is a critical transitional phase between childhood and adulthood, generally defined as the period between 10 and 19 years of age. It is characterised by rapid physical growth, psychological and social maturation, hormonal changes, and the development of behaviours that may persist throughout adult life. Nutrition during this period is particularly important because adolescents experience substantial increases in energy and nutrient requirements to support growth, bone mineralisation, muscle development, reproductive maturation, and cognitive development. Adequate nutrition during adolescence not only promotes optimal physical and mental development but also contributes to the

prevention of several long-term health problems, including obesity, diabetes, cardiovascular diseases, and certain cancers. Adolescent nutrition has emerged as an important global public health concern because of the coexistence of inadequate nutrient intake and increasing consumption of energy-dense foods. A substantial proportion of adolescents do not consume adequate amounts of fruits and vegetables, while overweight and obesity have increased considerably over recent decades. This nutritional transition is particularly evident in developing countries, where traditional dietary patterns are increasingly being replaced by diets containing greater amounts of processed foods, fats, sugars, and refined carbohydrates. At the same time,

insufficient consumption of nutrient-rich foods and micronutrient deficiencies continue to affect vulnerable adolescent populations. Thus, adolescents may simultaneously experience undernutrition, micronutrient deficiencies, overweight, and obesity. The Indian nutritional scenario reflects this complex and evolving pattern. Adolescents continue to experience undernutrition and micronutrient deficiencies while overweight and obesity are becoming increasingly prevalent. National-level data indicate considerable levels of thinness among adolescent boys and girls, while anaemia remains an important nutritional concern, particularly among adolescent girls. At the same time, increasing urbanisation, changing lifestyles, reduced physical activity, and greater availability of processed and fast foods have contributed to the emergence of overweight and obesity among young people. These circumstances demonstrate the presence of a dual burden of malnutrition in India, where problems related to nutritional deficiency coexist with those associated with excessive energy intake. Tamil Nadu has made considerable progress in health and development indicators; however, adolescent nutritional challenges continue to require attention. Rapid urbanisation and lifestyle changes have altered the food environment, particularly in peri-urban areas. Chengalpattu District represents an important setting in this regard because it includes rural, semi-urban, and increasingly urbanised communities. Industrialisation, educational development, infrastructure expansion, and increasing influence from the nearby Chennai metropolitan region have contributed to changes in lifestyle and dietary behaviour. Traditional dietary patterns based on rice, pulses, and locally available vegetables increasingly coexist with modern dietary practices involving packaged snacks, sugar-sweetened beverages, fast foods, and other energy-dense but nutrient-poor foods. Consequently, adolescents in the region may be exposed to both traditional nutritional challenges and emerging risks associated with overnutrition.

Nutritional knowledge is an important prerequisite for making informed food choices and adopting healthy dietary behaviours. Adolescents who understand the importance of balanced diets, adequate micronutrient intake, appropriate meal patterns, and healthy food choices may be better positioned to make beneficial dietary decisions. However, knowledge alone does not necessarily result in appropriate nutritional practices. Food accessibility and affordability, family eating patterns, peer pressure, taste preferences, time constraints, media exposure, advertising, and the availability of unhealthy foods can influence adolescent food choices. Therefore, it is important to assess both nutritional knowledge and actual dietary practices rather than considering knowledge as the

sole determinant of healthy behaviour. Schools provide an important and practical setting for addressing adolescent nutrition. Adolescents spend a substantial proportion of their time in educational institutions, where teachers, peers, curricula, and the school food environment can influence health-related knowledge and behaviour. School-based nutrition education can therefore provide an opportunity to improve awareness, encourage healthy food choices, and establish appropriate dietary behaviours at an age when lifelong habits are being formed. In addition, schools can serve as suitable settings for nutritional assessment and early identification of unhealthy practices or nutritional problems. The need for focused research in Chengalpattu District is further supported by the limited availability of district-specific evidence regarding adolescent nutritional knowledge and practices. Although national and state-level surveys provide important information, local studies are necessary to understand how socioeconomic conditions, food availability, cultural practices, educational environments, peer influences, and changing lifestyles affect adolescents in specific communities. Chengalpattu's mixed rural and peri-urban characteristics make it particularly relevant for understanding the nutritional transition occurring among adolescents. Adolescence also represents an important opportunity for preventive health intervention because eating patterns established during this period may continue into adulthood. Poor dietary practices may contribute to future obesity, diabetes, cardiovascular disease, and other chronic conditions, whereas appropriate nutritional behaviours can support healthier life trajectories. Nutritional improvement among adolescent girls has additional intergenerational significance because their nutritional status can influence future maternal and child health outcomes. Improving nutrition during adolescence can therefore contribute not only to immediate health and development but also to reducing the long-term and intergenerational burden of malnutrition. Therefore, assessing nutritional knowledge, dietary practices, and nutritional status among adolescents in Chengalpattu District is essential for identifying existing gaps and understanding the relationship between knowledge and behaviour. The findings can provide a foundation for developing targeted, school-based nutrition education programmes and strengthening community health and nursing interventions. Such interventions may help adolescents make healthier dietary choices and reduce the future burden of nutrition-related non-communicable diseases.

Statement Problem

A Study to Assess the Nutritional Knowledge and Practices among Adolescents in Chengalpattu District, Tamil Nadu.

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Objectives of the Study

1. To assess the nutritional knowledge among adolescents in the Chengalpattu district.
2. To assess the nutritional practices among adolescents in the Chengalpattu district.
3. To correlate nutritional knowledge with nutritional practices among adolescents.
4. To associate nutritional knowledge and practices with selected demographic variables (age, gender, education level, family income, parental education, exposure to nutrition education)

Variables of the Study

Independent Variables:

1. Age
2. Gender
3. Education level
4. Family income
5. Parental education
6. Exposure to nutrition education

Dependent Variables:

1. Nutritional knowledge level
2. Nutritional practices

Hypothesis

H₁: There will be a significant positive correlation between nutritional knowledge and nutritional practices among adolescents.

H₂: There will be a significant association between nutritional knowledge and selected demographic variables among adolescents.

H₃: There will be a significant association between nutritional practices and selected demographic variables among adolescents.

Review of Literature

A comprehensive review of literature provides the foundation for understanding existing evidence, identifying research gaps, and establishing the conceptual basis for a research study. The present review focuses on adolescent nutrition, nutritional knowledge, dietary practices, factors influencing eating behaviour, and educational interventions. Literature published between 2015 and 2024 was reviewed from sources including PubMed, CINAHL, Scopus, Google Scholar, and Indian journals using keywords such as “adolescent nutrition,” “nutritional knowledge,” “dietary

practices,” “India,” and “school-based interventions.”

Studies Related to Global and National Nutritional Status

WHO (2022) reported that 80% of adolescents worldwide do not consume sufficient fruits and vegetables, while adolescent overweight has increased substantially since 1990. Anaemia also remains an important concern among adolescent girls. The report highlighted adolescence as an important period for preventing both undernutrition and obesity because dietary behaviours established during this stage may continue into adulthood.

ICMR-INDIAB (2023) reported that overweight and obesity affected 11.4% of urban and 5.2% of rural Indian adolescents. Micronutrient deficiencies, including anaemia and vitamin B12 deficiency, remained widespread. The study also highlighted the advanced nutrition transition occurring in southern Indian states, including Tamil Nadu.

Similarly, NFHS-5 (2019–21) reported substantial nutritional challenges among Indian adolescents. Anaemia affected approximately 40% of adolescent girls and 18% of adolescent boys, while thinness was observed among 25% of boys and 24% of girls. These findings demonstrate the coexistence of undernutrition and overnutrition among Indian adolescents.

Studies Related to Nutritional Knowledge

Sharma and Gupta (2021) assessed nutritional knowledge among 400 school-going adolescents in Delhi and found that 58% had moderate knowledge and 42% had poor knowledge, while none demonstrated good knowledge. Knowledge was significantly higher among girls and adolescents whose mothers had higher educational levels. Important knowledge gaps were observed regarding dietary sources of iron and the importance of dietary fibre.

Kumar et al. (2022) reported a mean nutritional knowledge score of 58% among college students in Chennai. Medical students demonstrated greater knowledge than non-medical students. Significant gaps were observed regarding recommended salt intake and physical activity guidelines. Students with a family history of non-communicable diseases showed significantly better nutritional knowledge.

Studies Related to Nutritional Practices

Singh et al. (2020) found poor dietary practices among adolescent girls in rural Punjab. Only 22% met the recommended iron intake, while 78% consumed inadequate vegetables. Breakfast skipping and daily consumption of fried snacks were also common.

Patel et al. (2021) reported frequent consumption of packaged snacks and sugar-sweetened beverages among adolescents in Ahmedabad. Overweight and obesity were also prevalent, with parental occupation and peer influence significantly associated with junk food consumption.

Gupta et al. (2021) found that daily fruit and adequate vegetable consumption were low among adolescents in North India. Fried-food consumption was common, while only a minority met recommended physical activity levels.

Factors Influencing Adolescent Nutrition

Joshi et al. (2020) identified taste preferences, peer pressure, unhealthy school-canteen food availability, lack of time for breakfast, and the cost of healthy foods as important barriers to healthy eating. Family eating patterns were also significantly associated with adolescent dietary practices.

Choudhury et al. (2021) demonstrated the potential role of community health workers in improving nutrition awareness. Integration of nutrition education into village health meetings improved awareness, while mothers' education was identified as an important predictor of adolescent girls' nutritional knowledge.

Educational Interventions

Mehta et al. (2022) evaluated a school-based intervention involving curriculum integration, physical activity, healthier canteen options, and parent education. The programme produced substantial improvements in nutritional knowledge, attitudes, and fruit and vegetable consumption, while many parents also reported making dietary changes at home.

Fernandes et al. (2023) found that interactive health education approaches, including group discussions and cooking demonstrations, produced better knowledge retention than conventional didactic lectures. Bhattacharya et al. (2022) further demonstrated that involving children in family-based education enhanced adult behaviour change compared with adult-only education.

Research Gap

The reviewed literature indicates limited research simultaneously assessing nutritional knowledge and dietary practices among adolescents, particularly in peri-urban areas of Tamil Nadu such as Chengalpattu. There is also inadequate attention to the knowledge–practice gap and limited evidence regarding culturally appropriate and school-based nutrition interventions. Therefore, the present study aims to assess nutritional knowledge and practices among adolescents in Chengalpattu District and examine their relationship, thereby providing evidence for targeted school-based nutrition education and health promotion programmes.

Research Methodology

The methodology adopted for the present study provides a systematic account of the research approach, research design, setting, population, sample size, sampling technique, criteria for sample selection, research tool, validity and reliability, and data collection procedure. The methodology was planned to assess nutritional knowledge and nutritional practices among adolescents and to examine the relationship between these variables.

Research Approach

A quantitative research approach was adopted for the present study. The quantitative approach was considered appropriate because the study involved the collection of numerical data to measure the level of nutritional knowledge and nutritional practices among adolescents. The collected data were analysed using descriptive and inferential statistical methods.

Research Design

A descriptive cross-sectional research design was used. This design was appropriate because the study aimed to assess nutritional knowledge and practices at a particular point in time without introducing any experimental intervention. The design also enabled the investigator to examine the relationship between nutritional knowledge and nutritional practices among the selected adolescents.

Research Setting

The study was conducted at BKM Matriculation Higher Secondary School, Kelambakkam, Chengalpattu District, Tamil Nadu. The school was selected based on the accessibility of the setting and the availability of adolescents belonging to the required age group and educational standards.

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Population

1. The population of the study comprised adolescents aged 13–19 years.
2. Target population: The target population consisted of all adolescents aged 13–19 years residing in Chengalpattu District, Tamil Nadu.
3. Accessible population: The accessible population consisted of adolescents aged 13–19 years studying in Standards 8–12 at the selected school and available during the period of data collection.

Sample and Sample Size

A total of 60 adolescents were selected as the sample for the study.

The sample size was estimated using the following formula:

$$n = Z^2 \times p \times q / d^2$$

Where:

- $Z = 1.96$ at 95% confidence level
- $p = \text{Expected proportion} = 0.5$
- $q = 1 - p = 0.5$
- $d = \text{Allowable error} = 0.13$

Thus:

$$n = (1.96)^2 \times 0.5 \times 0.5 / (0.13)^2$$

$$n = 3.84 \times 0.25 / 0.0169$$

$$n = 0.96 / 0.0169 = 56.8 \approx 60$$

Therefore, the final sample size was taken as 60 adolescents.

Sampling Technique

A non-probability purposive sampling technique was used for selecting the study participants. Adolescents who fulfilled the predetermined inclusion criteria were selected from the chosen school until the required sample size of 60 participants was achieved.

Criteria for Sample Selection

Inclusion Criteria

The study included adolescents who:

1. Were studying in Standards 8th to 12th.
2. Were aged between 13 and 19 years.
3. Were willing to participate in the study.
4. Could understand and respond in Tamil or English.

Exclusion Criteria

Adolescents were excluded if they:

1. Were absent during the period of data collection.
2. Were unwilling to participate in the study.
3. Had any illness during the period of data collection.

Description of the Research Tool

A structured self-administered questionnaire was used for data collection. The tool consisted of three sections.

Section A: Socio-Demographic Variables

Section A consisted of 11 socio-demographic variables. Information was collected regarding age, gender, type of living area, educational qualification, parental education, type of family, socio-economic status, perceived health status, smoking habit, alcoholic habit, and BMI.

Section B: Structured Knowledge Questionnaire on Nutrition

Section B consisted of 24 multiple-choice questions designed to assess nutritional knowledge among adolescents. The questionnaire covered major nutritional domains, including macronutrients such as carbohydrates, proteins, and fats; micronutrients such as vitamins and minerals; their functions and sources; nutritional deficiencies; and basic dietary recommendations.

Each question had four options, with one correct answer.

Scoring system:

- Correct answer = 1 mark
- Incorrect answer = 0 marks
- Maximum score = 24 marks

The level of nutritional knowledge was classified as follows:

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Knowledge Level	Score
Inadequate knowledge	0–12
Adequate knowledge	13–18
Well adequate knowledge	19–24

Section C: Structured Practice Questionnaire on Nutrition

Section C consisted of 20 questions assessing nutritional practices. A dichotomous Yes/No response format was used.

Scoring system:

- Yes = 1 mark
- No = 0 marks
- Maximum score = 20 marks

The level of nutritional practices was classified as follows:

Practice Level	Score
Inadequate practices	1–10
Moderate practices	11–15
Adequate practices	16–20

Validity and Reliability

Content Validity

The research tool was reviewed for content validity by two experts from the Department of Community Health Nursing. Their expert opinions were considered in assessing the relevance and appropriateness of the items included in the questionnaire.

Reliability

The reliability of the research tool was assessed using the test-retest method. The questionnaire was administered to the same group on two occasions with an interval of two weeks to assess the consistency of responses.

Data Collection Procedure

Data collection was conducted over a period of two weeks in the selected school. Prior permission was obtained from the concerned school authorities before commencement of data collection. The investigator introduced himself to the participants and explained the purpose and nature of the study. Any doubts raised by the participants were clarified before administration of the questionnaire. Assent was obtained from the participating adolescents, and consent was obtained from their parents. The structured self-administered questionnaire containing socio-demographic variables, nutritional knowledge questions, and nutritional practice questions was distributed to the selected participants. The participants were provided approximately 20–30 minutes to complete the questionnaire. They were encouraged to provide responses independently. The completed questionnaires were collected on the same day and checked for completeness.

Data Analysis and Interpretation

To Assess The Nutritional Knowledge And Practice Among Adolescent. Descriptive and inferential statistics used for analyzing the data based on objectives

Statistical Analysis Organization of Research Findings

SECTION I: Frequency and percentage distribution of the demographic variables among adolescent.

SECTION II: Comparison of mean and standard deviation of Nutritional Knowledge and Practice among Adolescent

SECTION III: Association of Nutritional Knowledge among Adolescent with selected demographic variable.

SECTION IV: Association of Practice among Adolescent with selected demographic variable.

Table: 1 Frequency and percentage distribution of the demographic variables among adolescent

S. No.	Demographic Variables	Category	Frequency (f)	Percentage (%)
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1	Age (years)	10–12	11	18.3
		13–15	28	46.7
		16–18	17	28.3
		Up to 19	4	6.7
2	Gender	Male	24	40.0
		Female	36	60.0
		Transgender	0	0.0
3	Type of Living Area	Urban	33	55.0
		Rural	27	45.0
4	Parental Education	Primary education	15	25.0
		Secondary education	20	33.3
		Higher secondary education	25	41.7
5	Type of Family	Nuclear family	30	50.0
		Joint family	30	50.0
		Extended family	0	0.0
		Single- parent family	0	0.0
6	Socio- Economic Status	Low	14	23.3
		Middle	31	51.7

		High	15	25.0
7	Perceived Health Status	Good	27	45.0
		Average	31	51.7
		Bad	2	3.3
8	Smoking Habit	Smoker	0	0.0
		Ex- smoker	0	0.0
		Never smoker	60	100.0
9	Alcoholic Habit	Alcoholic	0	0.0
		Non- alcoholic	60	100.0
10	Body Mass Index (BMI)	Underweight	3	5.0
		Normal	26	43.3
		Overweight	22	36.7
		Obese	9	15.0

Table: 1 shows the demographic data shows that most adolescents were in the age group of 13–15 years (46.7%), followed by 16–18 years (28.3%), 10–12 years (18.3%), and up to 19 years (6.7%). Regarding gender, 60% were female and 40% were male, with no transgender participants. In terms of residence, 55% lived in urban areas and 45% in rural areas. Concerning parental education, 41.7% had higher secondary education, 33.3% had secondary education, and 25% had primary education. The type of family was equally distributed, with 50% from nuclear families and 50% from joint families. Regarding socio-economic status, 51.7% belonged to the middle class, 25% to high class, and 23.3% to low class. Most adolescents perceived their health as average (51.7%), followed by good (45%) and bad (3.3%). None of the participants reported smoking or alcohol habits (100% non-smokers and non-alcoholics). Based on BMI assessment, 43.3% had normal weight, 36.7% were overweight, 15% were obese, and 5% were underweight.

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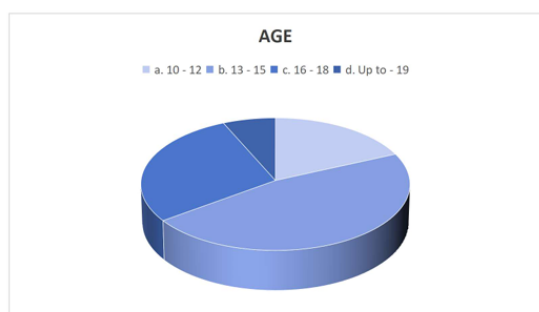


Figure 1: Percentage of age of the adolescent

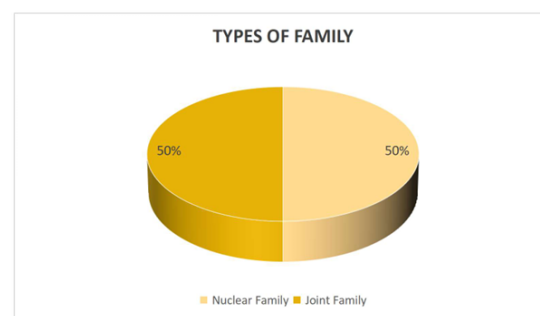


Figure 5: Percentage of Types of Family

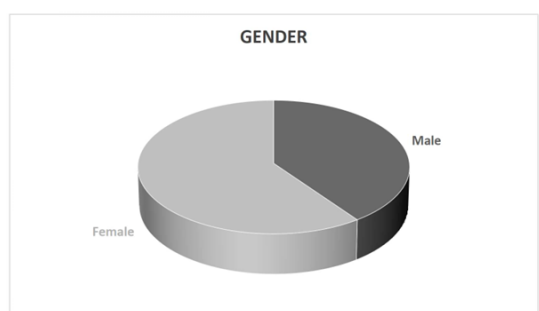


Figure 2: Percentage of Gender

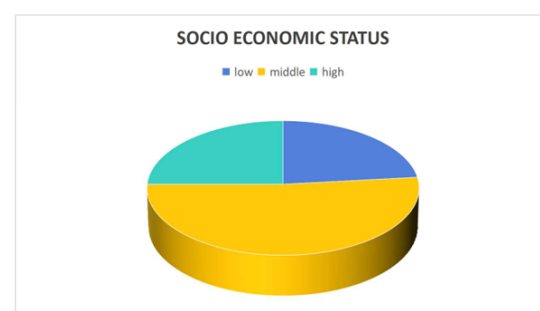


Figure 6: Percentage of Socio Economic Status

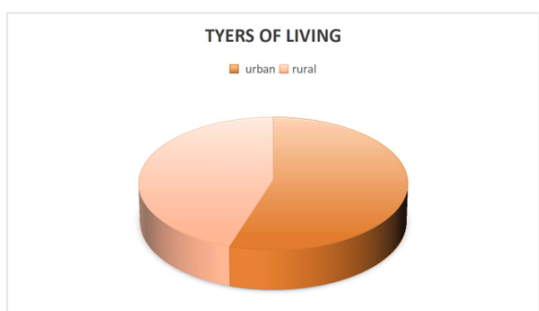


Figure 3: Percentage of Types of Living

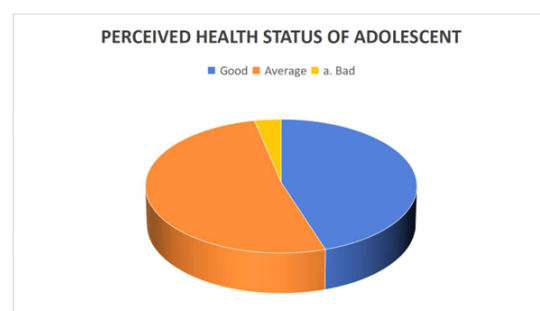


Figure 7: Percentage of Perceived Health Status of Adolescent

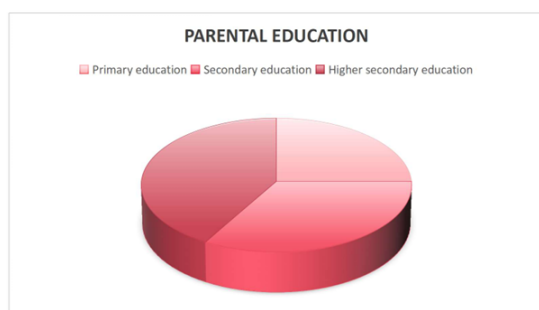


Figure 4: Percentage of Prenatal Education

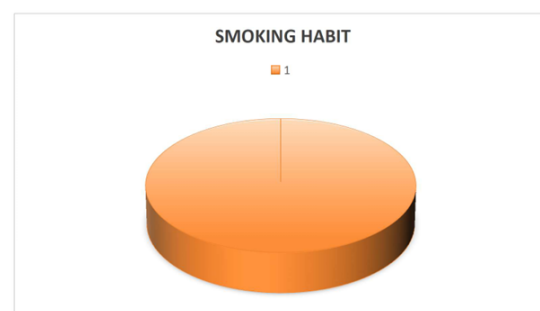
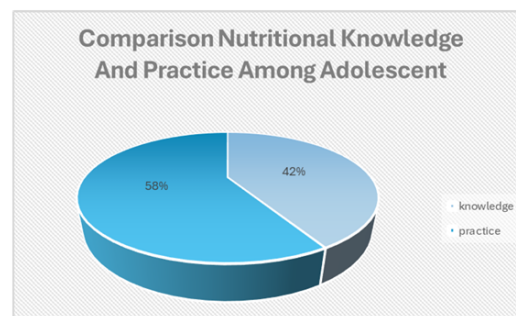


Figure 8: Percentage of Smoking Habit

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Figure 9: Percentage of Alcoholic Habit



Figures 11: Comparison Nutritional Knowledge and Practice among Adolescent

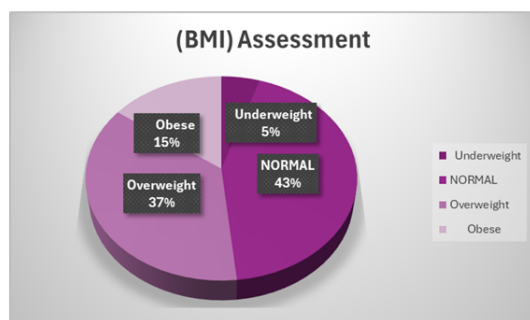


Figure 10: Percentage of BMI Assessment

Table: 2 Comparison of mean and standard deviation of Nutritional Knowledge and Practice among Adolescent

S. No	Variable	Mean	Standard Deviation	Correlation (r)
1	Knowledge	1.35	0.48099	0.64
2	Practice	1.8833	0.80447	

Table 2 shows the mean knowledge score was 1.35 with a standard deviation of 0.48099, while the mean practice score was 1.8833 with a standard deviation of 0.80447. The correlation coefficient between knowledge and practice was 0.64, indicating a strong positive correlation between the two variables.

Table: 3 Association of Nutritional Knowledge among Adolescent with selected demographic variable

S. No	Demographic Variable	Category	Inadequate Practice	Moderate Practice	Adequate Practice	Chi-square (χ^2)	df
1	Age in years according to WHO	10–12	4	7	–	6.628	3
		13–15	22	6	–		
		16–18	11	6	–		
		Up to 19	2	2	–		
2	Gender	Male	17	7	–	0.598	1
		Female	24	14	–		
		Transgender	–	–	–		
3	Type of Living Area	Urban	20	13	–	0.622	1
		Rural	19	8	–		

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4	Parental Education	Primary education	10	5	—	3.853	2
		Secondary education	16	4	—		
		Higher secondary education	13	12	—		
5	Type of Family	Nuclear family	18	12	—	0.659	1
		Joint family	21	9	—		
		Extended family	—	—	—		
		Single-parent family	—	—	—		
6	Socio-economic Status	Low	8	6	—	1.030	2
		Middle	22	9	—		
		High	9	6	—		

7	Perceived Health Status	Good	16	11	—	5.257	2
		Average	23	8	—		
		Bad	0	2	—		
8	Smoking Habit	Smoker	—	—	—	—	—
		Ex-smoker	—	—	—		
		Never smoker	39	21	—		
9	Alcoholic Habit	Alcoholic	—	—	—	—	—
		Non-alcoholic	39	21	—		
10	Body Mass Index (BMI)	Underweight	1	2	—	1.988	3
		Normal	17	9	—		
		Overweight	14	8	—		
		Obese	7	2	—		

Table 3 shows that there was an association between knowledge and the selected demographic variable, type of family. However, there was no significant association between knowledge and the other selected demographic variables, including age, gender, type of living area, parental education, socio-economic status, perceived health status, smoking habit, alcoholic habit, and BMI assessment.

Table 4: Association of Practice among Adolescents with Selected Demographic Variables

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S . N o .	Demographic Variable	Category	Inadequate Practices n	Moderate Practices n	Adequate Practices n	Chi-square (χ^2)	df
1	Adolescent age in years according to WHO	10–12	6	3	2	9.470	6
		13–15	13	6	9		
		16–18	4	9	4		
		Up to–19	0	3	1		
2	Gender	Male	12	8	4	2.952	2
		Female	11	13	12		
		Transgender	–	–	–		
3	Type of Living Area	Urban	13	12	8	0.222	2
		Rural	10	9	8		
4	Parental Education	Primary education	5	6	4	2.508	4
		Secondary education	7	9	4		
		Higher	11	6	8		

		secondary education					
5	Type of Family	Nuclear family	11	14	5	4.627	2
		Joint family	12	7	11		
		Extended family	–	–	–		
		Single-parent family	–	–	–		
6	Socio-economic Status	Low	5	7	2	2.575	4
		Middle	13	9	9		
		High	5	5	5		
7	Perceived Health Status of Adolescent	Good	12	9	6	1.921	4
		Average	11	11	9		
		Bad	0	1	1		
8		Smoker	–	–	–	—	—

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	Smoking Habit	Ex-smoker	—	—	—		
		Never smoker	23	21	16		
9	Alcoholic Habit	Alcoholic	—	—	—	—	—
		Non-alcoholic	23	21	16		
10	Body Mass Index (BMI) Assessment	Underweight	0	3	0	6.367	6
		Normal	10	9	7		
		Overweight	9	6	7		
		Obese	4	3	2		

Table 4 shows the association between nutritional practices among adolescents and selected demographic variables. The findings indicate that there was no significant association between nutritional practices and the selected demographic variables, including age, gender, type of living area, parental education, type of family, socio-economic status, perceived health status, smoking habit, alcoholic habit, and BMI assessment.

Discussion

The present descriptive cross-sectional study assessed the nutritional knowledge and practices among 60 adolescents in Chengalpattu District, Tamil Nadu. The findings revealed a marked deficiency in nutritional knowledge, with a mean knowledge score of 1.35 ± 0.48 out of 24 and all participants categorized as having inadequate knowledge. This indicates a substantial gap in adolescents' understanding of essential nutritional concepts and healthy dietary choices. Nutritional practices were also unsatisfactory, with a mean practice score of 1.88 ± 0.80 out of 20. Among the participants, 38.3% had inadequate practices, 35%

had moderate practices, and 26.7% had adequate practices, indicating that a considerable proportion followed less desirable dietary practices. A moderate positive correlation was identified between nutritional knowledge and practice ($r = 0.64$, $p < 0.001$), suggesting that better nutritional knowledge was associated with better practices. However, other factors such as food availability, family habits, affordability, peer influence, and food marketing may affect the implementation of knowledge. No significant association was found between nutritional knowledge or practices and the selected demographic variables. The study also identified a concerning nutritional status, with 51.7% of participants being overweight or obese, highlighting the need for effective school-based nutrition education and preventive interventions.

Implications of the Study

The findings of the present study have important implications for nursing practice, nursing education, nursing administration, and nursing research. In nursing practice, community health nurses and school health nurses should incorporate nutritional assessment and screening into routine adolescent health services. Nurses should provide interactive, practical, and culturally appropriate nutrition education focusing on healthy food choices, locally available foods, food-label reading, and simple meal planning. Parents and caregivers should also be involved in nutrition-related interventions to encourage a supportive home environment and promote healthy dietary practices. Regular monitoring of BMI should be encouraged in schools, with appropriate nutritional counselling and referral for adolescents identified with undernutrition or overweight and obesity. In nursing education, the nursing curriculum should strengthen the content related to adolescent nutrition, with greater emphasis on healthy dietary behaviour, prevention of nutritional problems, and behavioural change strategies. Student nurses should be trained in adolescent-friendly communication and counselling skills so that they can effectively educate and motivate adolescents to adopt healthier dietary practices. Community-based learning experiences can also provide nursing students with opportunities to conduct nutritional assessments and organize health education programmes for adolescents, thereby connecting theoretical knowledge with practical application. In nursing administration, nursing administrators should support the planning, implementation, and evaluation of sustained adolescent nutrition promotion programmes in schools and community settings. Adequate educational materials, trained personnel, nutritional counselling services, and appropriate referral mechanisms should be made available. Nursing administrators can also collaborate with school

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authorities and educational departments to strengthen nutrition education and encourage healthier food environments within and around schools. In nursing research, the findings highlight the need for further research focusing on interventions that can improve nutritional knowledge and promote healthy dietary practices among adolescents. Future studies may evaluate the effectiveness of structured nutrition education programmes, school-based interventions, family involvement, and behavioural counselling in reducing the gap between nutritional knowledge and actual dietary practices.

Limitations

The present study has certain limitations that should be considered while interpreting the findings. The study included a relatively homogeneous sample of adolescents aged 13–15 years, which may limit the generalizability of the findings to adolescents from other age groups and different populations. The small sample size of 60 participants and the use of non-probability purposive sampling may have limited the statistical power and external validity of the study. Since the study adopted a descriptive cross-sectional design, the data were collected at a single point in time; therefore, causal relationships between nutritional knowledge, nutritional practices, and other variables could not be established. The study also relied on self-reported information, which may have been influenced by social desirability and recall bias, as participants might have reported responses they considered favourable or may not have accurately recalled their dietary practices. Furthermore, the study was conducted in one district, Chengalpattu, and therefore the findings may not be representative of adolescents from other districts of Tamil Nadu or other regions of India. These limitations should be considered when interpreting and applying the findings of the study.

Recommendations

Based on the findings of the present study, it is recommended that the State Health and Education Departments mandate and implement a structured, skill-based nutrition education module within the secondary school curriculum in Tamil Nadu. School health programmes should be strengthened by incorporating regular interactive sessions on healthy eating, cooking demonstrations, and school garden projects to improve adolescents' practical nutritional knowledge and dietary skills. Public awareness campaigns through social media platforms commonly used by adolescents should also be developed to promote positive dietary messages and address misleading food marketing. In addition,

appropriate policy measures should be considered to regulate the availability and sale of high-fat, high-sugar, and high-salt foods in and around school premises, thereby creating a healthier food environment for adolescents.

Future research should include large-scale studies using probability sampling methods and involving both genders and a wider adolescent age range of 10–19 years to obtain more representative findings. Qualitative and mixed-methods studies are recommended to explore the barriers and facilitators influencing dietary choices among adolescents within the cultural context. Longitudinal studies may be conducted to examine changes in nutritional knowledge and practices over time and to evaluate the long-term effects of nutritional interventions. Experimental studies, including randomized controlled trials, should also be undertaken to determine the effectiveness of innovative school- and community-based nutrition intervention programmes. Further research should explore the influence of specific factors such as peer influence, digital media consumption, and parental feeding practices on adolescent dietary behaviours, particularly in urbanizing Indian settings.

Conclusion

This study provides a clear assessment of nutritional knowledge and practices among adolescent girls in Chengalpattu District. The findings revealed that 100% of the participants had inadequate nutritional knowledge, while more than 73% demonstrated inadequate to moderate dietary practices. A moderate positive correlation ($r = 0.64$) between nutritional knowledge and practices indicates that better knowledge is associated with better dietary practices; however, the overall levels of knowledge and practices remained low. No significant association was found between nutritional knowledge or practices and the selected demographic variables, suggesting that the nutritional concerns identified in the study were not restricted to any particular demographic subgroup. The high prevalence of overweight and obesity, accounting for 51.7% of the participants, further highlights the importance of addressing adolescent nutrition. These findings emphasize the need for timely and coordinated action through school-based nutrition education, active family involvement, supportive policy measures, and nurse-led community interventions. Nurses, as frontline healthcare professionals and educators, are uniquely positioned to assess nutritional needs, provide appropriate health education, promote healthy dietary behaviours, and support adolescents and their families. Strengthening nutritional interventions during adolescence can contribute significantly to preventing future health problems.

and promoting healthier adults and future generations.

References

1. World Health Organization. (2022). Noncommunicable diseases: Key facts. Geneva: WHO. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
2. Indian Council of Medical Research. (2023). ICMR-INDIAB study on diabetes in India. New Delhi: ICMR.
3. Ministry of Health and Family Welfare. (2021). National Family Health Survey-5 (2019-21). Mumbai: International Institute for Population Sciences.
4. Reddy, K. S., et al. (2021). Burden of non-communicable diseases in India: An overview. *Indian Journal of Medical Research*, 154(1), 1-5.
5. International Institute for Population Sciences. (2024). IJCM_42A: Nutritional assessment and association of malnutrition with food insecurity among adolescent females of age 15-19 years in an urban slum of Raipur City. *Indian Journal of Community Medicine*, 49(Suppl 1), S12-S13. doi:10.4103/ijcm.ijcm_abstract42
6. Siddiqui, F., et al. (2025). Knowledge-practices regarding a balanced diet and nutrition and its sociodemographic correlates among adolescent girls in Lucknow, India. *Clinical Epidemiology and Global Health*, 101757. doi:10.1016/j.cegh.2025.101757
7. Vaz, R. P., Acharya, A. S., & Shrivastava, S. (2025). Awareness and use of nutrition information in food labels among school-going adolescents of East Delhi: A descriptive cross-sectional study. *Indian Journal of Medical Specialities*, 16(1).
8. Pareek, P., Thorat, A., Chandrasekar, C., Khanna, P., & Kulkarni, R. (2025). Knowledge, attitude, and practice towards micronutrients among adolescent girls. *Journal of Health Sciences*, 15(2), 82-87. doi:10.17532/jhsci.2025.2816
9. Chatterjee, P., & Nirgude, A. (2025). Designing, developing and deploying smart nutrition education intervention to promote nutrition related knowledge among school children: A cluster randomized control trial. *Pharmacognosy Journal*, 17, 703-713. doi:10.5530/pj.2025.17.88
10. Mehta, N., et al. (2022). School-based program for obesity and NCD prevention among adolescents in Mumbai. *Indian Journal of Pediatrics*, 89(4), 345-350.
11. Janani, M. Z., Devanand, C. G., & Lal Vasudev, D. (2025). Association of breakfast skipping with body mass index and concentration levels among adolescents: A school-based cross-sectional study in Chennai. *Testing, Psychometrics, Methodology in Applied Psychology*. doi:10.7334/tpm2025.894
12. Fathima, A., Daniel, A., & Kumar, S. (2024). A cross sectional study of junk food consumption among children and adolescents in the rural and urban service areas of a tertiary care hospital in Puducherry. *Journal of Research and Health*, 14(2), 161-168. doi:10.32598/JRH.14.2.2411
13. Rathi, N., et al. (2025). Factors that influence snacking behaviors among urban Indian adolescents - a qualitative inquiry. *Frontiers in Nutrition*, 12, 1637799. doi:10.3389/fnut.2025.1637799
14. Prem Kumar, A., & Lakshminarayanan, K. (2026). Prevalence of overweight and obesity and their associated factors among adolescent children in an urban school in Tamil Nadu. *Cureus*, 18(2), e103933. doi:10.7759/cureus.103933
15. Ovan, P., A. S., H. P., & Singaram, K. (2023). Nutritional status of rural school-going children (11-13 years) of Dharmapuri district, Tamil Nadu, South India. *International Journal of Community Medicine and Public Health*, 10(8).
16. Halder, P., James, A., & Negi, U. (2023). Breakfast eating habits and its influence on nutritional status. *Journal of Health and Allied Sciences NU*. doi:10.1055/s-0043-1777021
17. Singh, P., et al. (2020). Dietary practices and nutritional status of adolescent girls in rural Punjab. *Indian Journal of Public Health*, 64(3), 234-239.
18. Patel, V., et al. (2021). Junk food consumption and its association with obesity among adolescents in Ahmedabad. *Journal of Family Medicine and Primary Care*, 10(5), 1985-1990.
19. Bharati, S., Pal, M., & Bharati, P. (2015). Assessment of nutritional status among adolescent boys in an urban population of South India. *Global Journal of Health Science*, 7(3), 335-344. doi:10.5539/gjhs.v7n3p335
20. Kumar, S., et al. (2022). A study on awareness of non-communicable diseases and their risk factors among college students in Chennai. *Journal of Education and Health Promotion*, 11(1), 45.
21. Agarwal, A., et al. (2024). Nutritional status and dietary pattern of government

- school going adolescents of Lucknow city with reference to recommended dietary allowances-ICMR 2024, India. *Clinical Epidemiology and Global Health*, 29, 101757. doi:10.1016/j.cegh.2024.101757
22. Bhuvaneswari, B., & Parameshwari, S. (2023). Prevalence of overweight/obesity among adolescents in urban and rural areas of Madurai district, Tamil Nadu, India. *Shanlax International Journal of Arts, Science and Humanities*.
 23. Raja, & Ranganathan, K. (2018). Prevalence of overweight and obesity among rural adolescent school students in Kanchipuram district, Tamil Nadu. *International Journal of Community Medicine and Public Health*, 6(1), 173-176.
 24. Galhotra, A., Das, S., & Shukla, A. K. (2024). Nutritional assessment and association of malnutrition with food insecurity among adolescent females of age 15-19 years in an urban slum of Raipur city. *Indian Journal of Community Medicine*, 49(Suppl 1), S12-S13.
 25. Ranjani, H., et al. (2022). Epidemiology of childhood and adolescent obesity in India. *Journal of Obesity & Metabolic Syndrome*.
 26. Fernandes, S., et al. (2023). Impact of health education on knowledge and attitude regarding diabetes prevention among middle-aged adults in Goa. *Indian Journal of Endocrinology and Metabolism*, 27(1), 55-60.
 27. Mallick, R., Kumari, R., Bahurupi, Y., et al. (2024). The effect of two health education packages on nutritional knowledge, practices, and physical activity levels among school-going adolescents in Rishikesh: A cluster randomized trial. *Cureus*, 16(7), e63950. doi:10.7759/cureus.63950
 28. Thakur, S., & Sharma, D. (2024). Impact of free school lunch program on nutritional status and academic outcomes among school children in India: A systematic review. *BMJ Open*.
 29. Bharti, B., & Kaur, S. (2025). Effectiveness of health education on nutrition and hygiene among school-going adolescents in Hyderabad, India: A pre- and post-interventional study. *Preventive Medicine: Research & Reviews*.
 30. Nair, S., et al. (2025). School-based behaviour change intervention to reduce ultra-processed food consumption among adolescents: Evidence from a cluster-randomised controlled trial in India. *BMJ Global Health*.
 31. Thakur, R. (2025). A trial to study the effects of two health education packages on the nutritional knowledge, practices and physical activity levels among school going adolescents in Rishikesh. *MedPath*.
 32. Bhavani, S. (2025). Improving adolescents' dietary behavior through teacher-delivered cancer prevention education: A school-based cluster randomized intervention trial in urban Rajasthan. *Ovid Technologies*.
 33. Rathi, N., et al. (2023). How do adolescents classify foods as healthy and unhealthy? A qualitative inquiry from rural India. *PLoS ONE*. doi:10.1371/journal.pone.0294587
 34. Srivastav, P., Broadbent, S., Nayak, B., & Bhat, H. V. (2020). Prevention of adolescent obesity: The global picture and an Indian perspective. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 1195-1204. doi:10.1016/j.dsx.2020.06.039
 35. Sharma, M., & Gupta, R. (2021). Nutritional knowledge and practices among school-going adolescents in Delhi. *Indian Journal of Community Health*, 33(2), 234-240.
 36. Joshi, A., et al. (2020). Barriers to healthy eating among adolescents in Maharashtra. *Indian Journal of Community Medicine*, 45(2), 156-161.
 37. Niranjana, R., Daniel, J. A., & Prasad, T. (2020). Awareness level and associated factors for non-communicable disease screening among adults in rural Puducherry. *International Journal of Community Medicine and Public Health*, 7(5), 1892-1898.
 38. Kaur, G., & Sharma, S. (2024). Dietary diversity and food variety scores and their association with nutrition and health status of Indian children and adolescents: A multicenter study. *ScienceDirect*. doi:10.1016/j.jn.2023.03.001
 39. Choudhury, M., et al. (2021). A study on knowledge, attitude, and practice of non-communicable diseases among rural adults in Assam. *Journal of Family Medicine and Primary Care*, 10(5), 1985-1990.
 40. Unnithan, S. B., et al. (2023). Undernutrition and anaemia among Indian adolescents: Role of dietary diversity and hygiene practices. *Journal of Nutritional Science*, 12, e45. doi:10.1017/jns.2023.38.