

A study to assess the knowledge and attitude regarding food habits among school-going children in government school, khanda kheri

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ABSTRACT

The nutritional health of school-going children is a major public health concern, especially in rural and semi-urban regions where dietary transitions and increasing exposure to processed foods are rapidly influencing lifestyle behaviours. Healthy food habits developed during childhood play a vital role in ensuring proper physical growth, cognitive development, immune competence, and long-term disease prevention. However, inadequate nutritional awareness, changing family food patterns, and increasing junk food consumption have negatively affected the dietary practices of many children.

The present study was conducted to assess the knowledge and attitude regarding food habits among school-going children in Government School, Khanda Kheri, Hisar District, Haryana. A quantitative descriptive cross-sectional research design was adopted for the investigation. The study population included students aged 11–15 years enrolled in classes 6th to 10th. A total sample of 150 students was selected through non-probability purposive sampling technique. Data were collected using a structured knowledge questionnaire and a modified Likert attitude scale after obtaining institutional permission and informed consent from parents and participants.

The findings revealed that the majority of students (54.7%) possessed a moderate level of knowledge regarding healthy food habits, while 28.0% demonstrated poor knowledge and only 17.3% showed adequate knowledge. In terms of attitude, 38.0% of the participants exhibited a favourable attitude toward healthy eating, whereas 36.7% had a neutral attitude and 25.3% demonstrated an unfavourable attitude toward dietary practices. The study further identified statistically significant associations between knowledge and maternal education as well as household income. Similar significant associations were observed between attitude scores and socio-demographic variables. Pearson's correlation analysis demonstrated a moderate positive correlation ($r = 0.52$, $p < 0.01$) between knowledge and attitude scores, indicating that better nutritional knowledge was associated with healthier dietary attitudes.

The study concludes that although students possessed partial awareness regarding nutrition, substantial gaps still exist in their practical understanding and attitudes toward healthy eating. The findings emphasize the importance of structured school-based nutritional education programs, parental involvement, and community-level awareness initiatives to promote healthy dietary behaviours among children. The study highlights the need for culturally relevant interventions aimed at improving both cognitive understanding and positive attitudes regarding food habits among rural school-going children.

Keywords: Knowledge, Attitude, Food Habits, School-Going Children, Government School, Khanda Kheri, Agrarian Transition, Nutritional Literacy.

1. INTRODUCTION

1.1 Background of the Study

Meaning of Food Habits

Food habits are the established, repetitive, and socio-culturally conditioned patterns through which individuals or groups select, prepare, consume, and utilize available dietary options. These habits are rarely simple responses to metabolic demands; instead, they are shaped by a complex mix of historical traditions, geographic availability, household economic capacity, peer dynamics, and commercial environments.

From a developmental psychology perspective, childhood food habits represent learned behaviours that form early and serve as foundational templates for lifestyle patterns in adulthood. During these formative years, taste preferences are highly malleable, though evolutionary traits often lean toward energy-dense items. In modern environments where low-cost, ultra-processed options are highly accessible, these evolutionary preferences can lead to problematic dietary patterns.

Additionally, shifts in local household dynamics—such as changes in family structures, alterations in agricultural routines, and the availability of ready-to-eat convenience items—further influence childhood food habits. As a result, assessing a child's dietary behaviour requires evaluating the broader socio-ecological context in which they live.

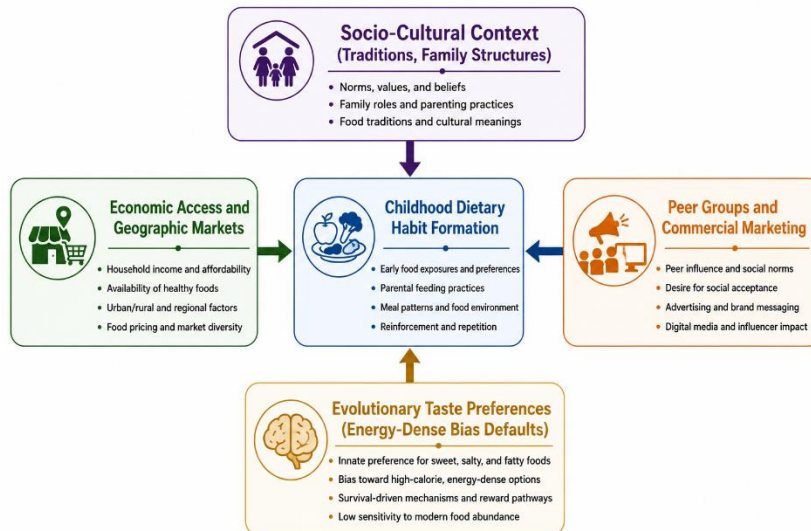


Figure 1: Determinants of Childhood Dietary Habit Formation
Importance of Balanced Diet in School-Age Children

The school-age period represents a critical developmental window characterized by continuous physical growth, neuromuscular expansion, cognitive maturation, and metabolic stabilization. Maintaining a balanced diet—defined as a nutritional intake that provides essential macronutrients (carbohydrates, proteins, and lipids) and micronutrients (vitamins and minerals) in appropriate proportions—is essential during this phase.

A balanced diet provides the physiological substrates required for cellular differentiation, bone elongation, and neurological development. Proper nutrition is also linked to cognitive performance, helping support attention spans, working memory capacity, and general scholastic outcomes.

Furthermore, optimal dietary intake supports immune function, helping protect against common childhood infections and reducing the risk of early-onset metabolic issues. When a child's diet is consistently deficient in key nutrients, the consequences can be immediate and long-lasting, manifesting as reduced processing speeds, lower scholastic performance, and limited accumulation of bone mineral density, which can increase vulnerability to structural health challenges later in life.

Nutritional Requirements During Childhood

The metabolic demands of school-going children fluctuate depending on chronological age, biological sex, and daily physical energy expenditure. Achieving macro-nutritional balance requires careful proportioning:

- **Carbohydrates:** Should constitute 50% to 60% of total daily caloric intake, with an emphasis on complex, unrefined starches with low glycaemic indexes to support stable blood glucose levels and sustained concentration.
- **Proteins:** Essential for structural tissue growth, enzymatic synthesis, and immune maintenance, requiring approximately 0.95 to 1.1 g/kg/day of high biological value protein to support growth demands.
- **Lipids:** Vital for nervous system development, cellular membrane integrity, and the absorption of fat-soluble vitamins, requiring 25% to 30% of total daily energy intake, with less than 10% derived from saturated fatty acids.

Micro-nutritional adequacy is equally critical during this growth phase:

- **Calcium and Phosphorus:** Required in elevated amounts (1000 to 1300 mg/day of calcium) to optimize peak bone mass during skeletal development.
- **Iron:** Vital to support expanding erythrocyte mass, protect against iron-deficiency Anemia, and maintain active cognitive processing pathways.

- **Vitamins A, C, and Zinc:** Essential for supporting cell-mediated immunity, maintaining epithelial tissue health, and aiding wound healing.

Total Daily Energy Requirements = Basal Metabolic Rate (BMR) × Physical Activity Factor (PAF)

Protein Target Substrate Ratio = $\sum$ Essential Amino Acids Profiles × Dry Biomass Weight

Common Unhealthy Eating Patterns

Modern transformations in agrarian food production and distribution chains have introduced significant dietary modifications in rural communities. Traditional whole-grain and pulse-based diets are increasingly replaced by energy-dense, nutrient-poor alternative items. Common unhealthy patterns observed in modern school children include:

1. **Breakfast Skipping:** Often caused by early morning scholastic transit demands or shifting domestic routines, leading to metabolic slowing, mid-day cognitive deficits, and subsequent compensatory overeating of low-quality snacks.
2. **Inadequate Produce Consumption:** Low intake of fresh leafy greens and local fruits, which induces persistent sub-clinical micronutrient deficiencies, often termed "hidden hunger."
3. **High Intake of Processed Foods:** Frequent consumption of deeply fried items, refined flour-based bakery goods, and high-fructose beverages, leading to dyslipidemia, systemic inflammation, and metabolic stress.

1.2 Need for the Study

Increasing Junk Food Consumption

In contemporary rural settings like Haryana, the rapid infiltration of affordable, ultra-processed food items has reshaped the local food environment. Small-scale retail establishments located near rural educational facilities consistently stock inexpensive snacks high in trans-fats, sodium, and monosodium glutamate. These items are intentionally designed to be highly palatable, appealing directly to children's taste preferences and creating a competitive advantage over traditional, nutrient-dense home-cooked alternatives.

The physical accessibility and low cost of these processed options make them highly appealing to children who possess limited pocket money. Commercial marketing strategies explicitly target young demographics, framing processed snack consumption as a marker of modern lifestyle alignment. This structural shift undermines traditional dietary practices that historically relied on whole grains, home-churned dairy products, and local seasonal vegetables.

Poor Nutritional Awareness Among Children

Despite the widespread socio-economic changes brought about by rural development, systematic education regarding food and nutrition remains limited in public curricula. Children frequently make dietary choices based on taste satisfaction or commercial advertisements, with little understanding of the long-term metabolic consequences. Many students cannot distinguish between simple energy density and complex nutritional density, leaving them highly susceptible to peer influence and aggressive marketing.

This gap in understanding is further widened by a lack of access to accurate nutritional data within rural domestic environments. Parents, often possessing limited formal literacy, are frequently unable to counter commercial narratives or guide their children on micro-nutritional health. Consequently, children develop dietary choices based on contemporary peer preferences rather than a sound understanding of physiological health requirements.

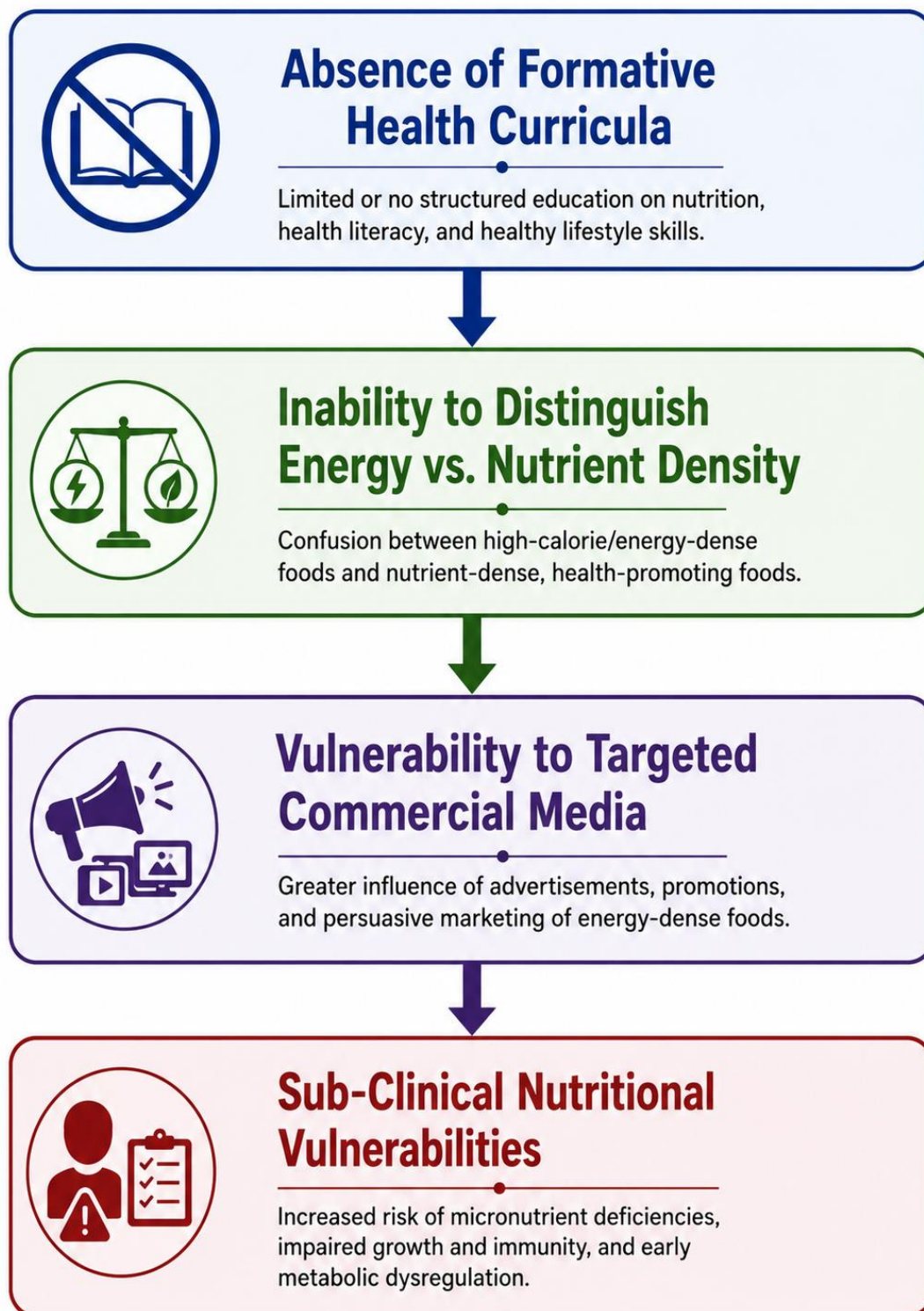


Figure 2: Pathway Linking Health Education Deficits to Nutritional Vulnerabilities in Children and Adolescents

Importance of Healthy Dietary Behaviour

Developing appropriate dietary habits during early childhood is a foundational public health strategy. Unhealthy habits established in youth often persist into adulthood, creating a direct pathway to non-communicable diseases (NCDs) like type 2 diabetes mellitus, cardiovascular disease, hypertension, and hepatic steatosis.

Conversely, positive dietary behaviours help maintain physical health and reduce the risk of the triple burden of malnutrition: the concurrent presence of undernutrition, micronutrient deficiencies, and overweight or obesity within the same population. Evaluating the baseline knowledge and attitudes of students in specific rural areas is essential for creating effective, culturally tailored educational programs. Intervening during this

formative period allows public health systems to foster health-seeking behaviours that can significantly reduce the long-term societal and economic costs of chronic metabolic conditions.

1.3 Problem Statement

A descriptive study to assess the baseline knowledge and attitude regarding food habits among school-going children aged 11 to 15 years in Government School, Khanda Kheri, Hisar District, Haryana, India.

1.4 Objectives of the Study

1. To evaluate the existing level of knowledge regarding healthy food habits among school-going children using a structured knowledge questionnaire.
2. To ascertain the attitude regarding dietary practices among school-going children via a modified Likert attitude scale.
3. To determine the correlation between the knowledge scores and attitude scores regarding food habits among the target sample.
4. To analyse the statistically significant association between the baseline knowledge and attitude scores of school-going children and selected socio-demographic variables (such as age, sex, grade level, parental education, and parental income).

1.5 Research Hypothesis

- **H₁:** There is a statistically significant, positive correlation between the level of knowledge and the attitude regarding food habits among school-going children at a significance level of $p < 0.05$.
- **H₂:** There is a statistically significant association between the levels of knowledge regarding food habits and selected socio-demographic variables of the school-going children at a significance level of $p < 0.05$.
- **H₃:** There is a statistically significant association between the attitude scores regarding food habits and selected socio-demographic variables of the school-going children at a significance level of $p < 0.05$.

1.6 Operational Definitions

- **Knowledge:** Refers to the cognitive understanding, information retention, and objective awareness possessed by school-going children regarding balanced diets, essential nutrients, the dangers of junk food, and healthy lifestyle choices, as measured by scores obtained on a structured knowledge questionnaire.
- **Attitude:** Refers to the expressed beliefs, emotional dispositions, and behavioural inclinations of school-going children toward choosing and consuming healthy foods over processed variants, quantified using a 5-point Likert scale.
- **Food Habits:** The established patterns, choices, and frequencies of food consumption exhibited by children, including meal consistency, snack preferences, and beverage intake.
- **School-Going Children:** Refers to male and female students aged 11 to 15 years enrolled in grades 6th through 10th at Government School, Khanda Kheri.

1.7 Assumptions and Delimitations

Assumptions

1. School-going children possess the cognitive capacity to comprehend basic dietary concepts and express clear opinions regarding their food preferences.
2. Responses provided by participants during data collection will reflect their true understanding and authentic dietary attitudes.
3. Improving nutritional knowledge can help shift personal attitudes toward healthier lifestyle choices.
4. The structural configuration of a validated questionnaire is sufficient to capture subtle behavioural and cognitive variations within a rural student cohort.

Delimitations

1. The study is strictly confined to students enrolled at Government School, Khanda Kheri, Haryana, which may limit the direct generalizability of the findings to urban or elite private school cohorts.
2. Data collection is restricted to a specific multi-week timeframe, capturing a cross-sectional view of student habits rather than longitudinal behavioral trends.
3. The assessment relies on self-reported questionnaire responses, which are subject to inherent social desirability bias and memory recall limitations.

1.8 Conceptual Framework

The conceptual framework for this investigation is based on the modified Knowledge, Attitude, and Practice (KAP) Theoretical Model, derived from classic cognitive-behavioural theory. This framework posits that an individual's behavioural choices do not occur in isolation but result from a sequential cognitive pathway.

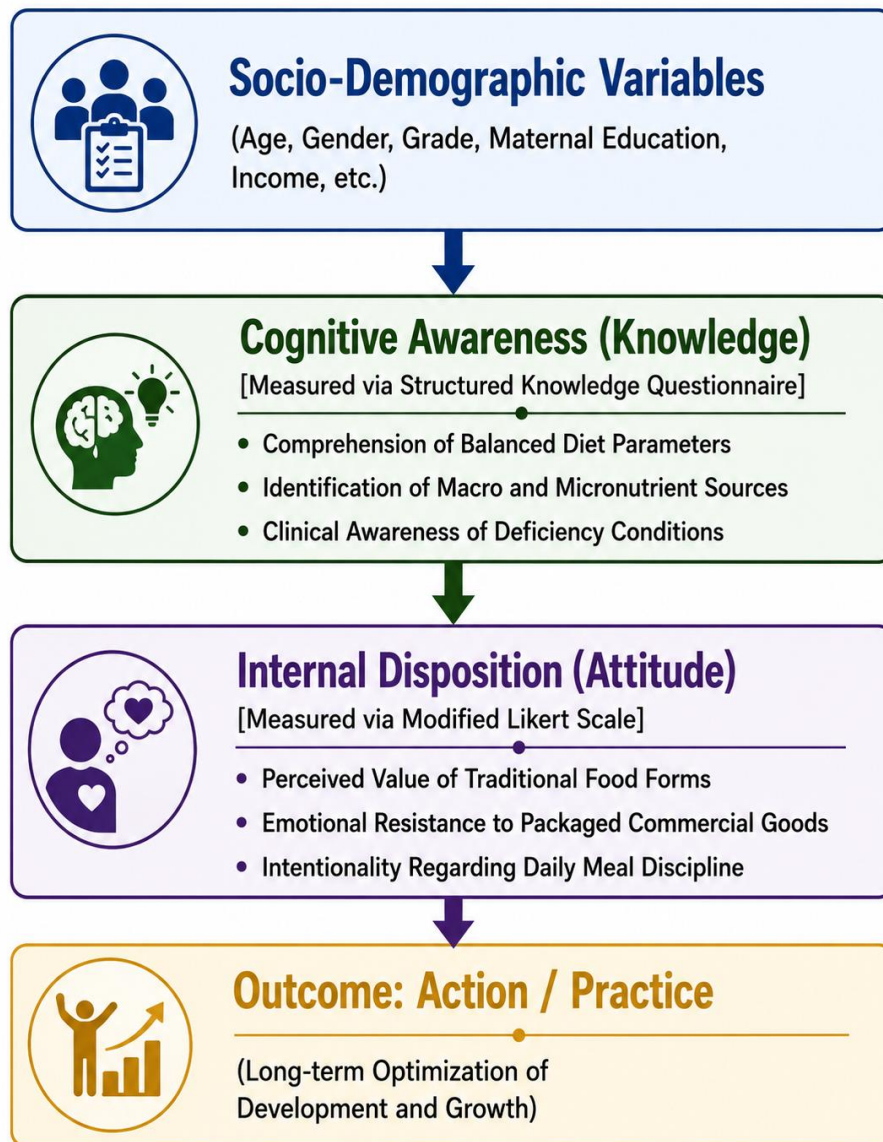


Figure 3: Conceptual Framework of the Knowledge–Attitude–Practice (KAP) Model for Nutritional Behavior

As illustrated, external stimuli and socio-demographic factors shape the acquisition of objective facts (Knowledge). The assimilation of this knowledge refines internal values and beliefs, creating a structured psychological disposition (Attitude), which ultimately guides behavioural choices (Practice). The study focuses specifically on assessing the first two stages of this pathway within a rural educational setting, establishing how structural background factors can influence the cognitive and attitudinal stages of development.

2. REVIEW OF LITERATURE

2.1 Literature Related to Food Habits Among School Children

Evaluating the dietary habits of school-age children in India reveals a complex interplay between traditional home-cooked meals and modern processed food options. Research indicates that rural child populations are increasingly moving away from historic whole-grain diets toward more convenient options. Studies show that structural challenges, such as skipping breakfast due to early school schedules, are common across various socio-economic groups. This shifting dietary environment has created unique nutritional challenges, where children face concurrent risks of undernutrition and early metabolic imbalances.

Epidemiological evaluations highlight that the dietary variations observed in rural school-age populations are closely tied to regional agricultural shifts. In states like Haryana, the transition from multi-crop cultivation to standardized wheat-paddy systems has altered localized food variety. Longitudinal observations indicate that while general caloric deprivation has decreased, the intake of diverse micronutrients has concurrently declined, resulting in higher rates of hidden hunger among school-age children. This situation emphasizes the need to systematically evaluate how structural factors influence daily food habit patterns.

2.2 Literature Related to Knowledge Regarding Nutrition and Healthy Eating

Cross-sectional surveys conducted in school settings consistently show a clear gap between general health awareness and specific nutritional literacy. While many students understand broad concepts like "healthy eating," they often struggle to identify specific micronutrient sources or explain the long-term health risks of high-sodium diets. Research highlights that children's functional understanding of food tracking and nutritional labels remains low, with very few actively evaluating nutritional declarations before consuming packaged snacks. This baseline literacy deficit emphasizes the need for structured, evidence-based educational tools in schools.

Investigating the cognitive barriers to nutritional literacy reveals that standard primary education frameworks often present health information abstractly, without connecting it to daily lifestyle choices. Consequently, children can often memorize basic food groups for academic evaluation but remain unable to apply these concepts when purchasing snacks from local vendors. This gap between theoretical recollection and practical comprehension highlights the importance of using structured assessment questionnaires to accurately evaluate the actionable knowledge levels of school children.

2.3 Literature Related to Attitude Toward Food Habits

An individual's dietary choices are strongly influenced by their psychological and social attitude toward food. Even when children possess adequate theoretical knowledge about nutrition, their practical attitudes are often guided by taste preferences and peer dynamics. Studies indicate that children frequently view traditional, nutrient-dense diets as unappealing or old-fashioned, while heavily processed options are associated with modern lifestyles and social acceptance. Bridging this gap requires interventions that improve both theoretical knowledge and practical attitudes toward healthy eating.

Attitudinal analysis indicates that peer groups exert a strong influence during pre-adolescent and adolescent development. When peer circles value processed convenience foods over home-cooked alternatives, individual student preferences align with group norms to avoid social exclusion. This social dynamic can override existing theoretical knowledge, leading students to knowingly select less nutritious options. Therefore, evaluating the emotional and attitudinal parameters governing food habits is an essential step in designing effective public health strategies.

2.4 Literature Related to Junk Food Consumption and Health Effects

The rising consumption of ultra-processed, energy-dense foods among school-age children has become a significant public health focus. These food options are engineered to be highly appealing, but their high trans-fat and refined sugar content can contribute to early systemic health challenges. The widespread availability of low-cost processed foods near schools encourages frequent consumption, which can lead to issues like childhood obesity, dental caries, micronutrient deficiencies, and metabolic strain. Addressing this trend requires comprehensive regulatory policies and targeted health education.

Clinical tracking of children with high frequencies of junk food intake shows a rising prevalence of early-stage non-communicable disorders in rural communities. The high concentration of simple sugars and saturated lipids in modern processed snacks can induce rapid insulin fluctuations, leading to systemic insulin resistance over time. Additionally, the substitution of nutrient-dense meals with low-quality packaged foods contributes to persistent iron-deficiency Anemia, which can negatively impact long-term cognitive and physical development. These risks underscore the urgent need to understand the drivers of regular junk food consumption among school children.

2.5 Literature Related to School-Based Nutritional Awareness Programs

Schools provide an ideal setting for implementing structural health and nutrition interventions. Evidence shows that long-term, multi-component programs that engage students, parents, and teachers can significantly improve dietary awareness and choices. In resource-limited settings, combining structured classroom modules with community involvement has proven effective in promoting healthy growth patterns and reducing childhood health disparities. These findings suggest that updating public school curricula to include comprehensive health education can deliver sustainable, long-term public health benefits.

Analyses of successful school interventions demonstrate that programs using experiential learning methods—such as school vegetable gardens, interactive cooking demonstrations, and guided food label analyses—achieve higher behavioural retention rates compared to lecture-only formats. Furthermore, linking school health initiatives with national welfare systems, like the Mid-Day Meal Scheme, can reinforce positive dietary behaviours across varying socio-economic backgrounds. These structural insights help guide the translation of baseline descriptive data into actionable educational programs.

2.6 Summary of Literature Review

The existing literature highlights that school-going children in developing and transitioning economies face a complex nutritional landscape. While traditional dietary challenges like undernutrition remain prevalent, the

rapid spread of ultra-processed foods has introduced new health risks. The research shows that theoretical knowledge alone is often insufficient to change dietary habits, as practical choices are strongly driven by social environments and personal attitudes.

While broad national and state-level trends are well-documented, there remains a need for localized, granular research within specific rural districts like Hisar, Haryana. Gaps persist in understanding how micro-level shifts in maternal literacy and household income shape the cognitive and attitudinal parameters of students in specific government schools. This investigation aims to help fill these gaps by providing localized data from Government School, Khanda Kheri, to inform targeted educational interventions.

3. RESEARCH METHODOLOGY

3.1 Research Approach and Design

A quantitative research approach using a descriptive, non-experimental cross-sectional design was selected for this study. This design allowed for the simultaneous assessment of baseline knowledge and attitudes regarding food habits within the specified student population at a single point in time, without manipulating the independent variables or introducing therapeutic interventions. This approach is well-suited for exploratory descriptive research aimed at identifying baseline performance variations within a specific demographic cohort.

3.2 Variables of the Study

- **Research Variables:** The primary focus variables were the individual knowledge scores and corresponding attitude scores regarding nutrition and food habits. These variables were assessed using structured quantitative questionnaires designed to measure cognitive understanding and internal behavioural attitudes.
- **Demographic Variables:** Contextual background factors included chronological age, biological sex, current grade level, maternal and paternal education levels, paternal occupation, total family income, type of family structure (nuclear vs. joint), and primary source of nutritional information. These parameters served as independent grouping factors to identify potential socio-demographic associations.

3.3 Setting of the Study

The study was conducted within the main administrative and academic campus of Government School, Khanda Kheri, located in the Hisar District of Haryana, India. This institution serves a diverse student population from the village and surrounding agrarian communities, providing a representative sample of a rural public educational environment. The school environment includes standard academic spaces, a centralized kitchen for the implementation of the Mid-Day Meal Scheme, and outdoor recreational areas, making it a central point for student socialization and dietary choice development.

3.4 Population and Sample

The target population comprised all school-going children aged 11 to 15 years currently enrolled in grades 6th through 10th at Government School, Khanda Kheri. The final sample size consisted of N = 150 students who met all pre-defined inclusion criteria and completed the data collection process during the scheduled administrative timeframe.

3.5 Sampling Technique

A non-probability purposive sampling technique was utilized to select participants. This approach allowed the researcher to recruit students within the desired age range and academic grades who were available and willing to participate during the scheduled data collection period, ensuring efficient resource utilization within the institutional environment.

3.6 Inclusion and Exclusion Criteria

Inclusion Criteria

- Students enrolled in grades 6th to 10th at Government School, Khanda Kheri.
- Academic age between 11 and 15 years.
- Present in the academic facility on the days of instrument administration.
- Provided explicit verbal assent, backed by signed informed parental consent forms.

Exclusion Criteria

- Students with severe acute physical illnesses or cognitive impairments that prevented them from understanding the questionnaire items.
- Students whose parents declined to provide formal participation consent.
- Students transferred into the facility during the active data collection week, limiting exposure to the baseline school environment.

3.7 Description of Data Collection Tool

The comprehensive data collection instrument was divided into three distinct sections:

- **Section A: Demographic Proforma:** Contained 9 items designed to collect background information, including age, sex, grade level, parental education, family type, and monthly income.
- **Section B: Structured Knowledge Questionnaire (SKQ):** Consisted of 30 multiple-choice items covering essential nutritional concepts, including balanced diets, nutrient groups, vitamin deficiency disorders, and the health impacts of ultra-processed foods. Each correct response received 1 point, while incorrect responses received 0 points, resulting in a total possible score range of 0 to 30.
- **Section C: Modified Likert Attitude Scale (LAS):** A 20-item scale designed to assess student viewpoints toward dietary habits. It included 10 positively phrased and 10 negatively phrased statements, evaluated on a 5-point Likert scale (5: Strongly Agree, 4: Agree, 3: Undecided, 2: Disagree, 1: Strongly Disagree, with reverse scoring applied to negative items). Total possible scores ranged from 20 to 100.

3.8 Validity and Reliability

Content validity was established by submitting the draft instruments to a panel of seven experts in Pediatric Nursing, Community Health Medicine, and Nutritional Sciences. Their feedback was used to refine item phrasing, remove ambiguous language, and ensure cultural relevance for a rural student cohort.

Reliability testing was conducted among 15 students who were not part of the final sample. The Structured Knowledge Questionnaire demonstrated strong stability over a two-week interval via the test-retest method ($r = 0.84$). The internal consistency of the Likert Attitude Scale was verified with a Cronbach's alpha value of $\alpha = 0.81$, indicating high reliability and suitability for quantitative analysis.

3.9 Pilot Study

A pilot study was conducted with 15 school-going children at a neighbouring public school in rural Hisar to assess the clarity and feasibility of the instruments. The results indicated that the questions were easily understood, and the average completion time was approximately 35 to 45 minutes per respondent. No major adjustments to the structural layout or content were required, confirming the feasibility of the overall research design.

3.10 Data Collection Procedure

Data collection was carried out over a multi-week period following formal administrative approval. The instruments were administered in a classroom setting during designated free periods to avoid disrupting scheduled lessons.

The researcher explained the purpose of the study, answered participant questions, and distributed the printed questionnaires. Participants completed the forms independently, and the completed instruments were collected immediately for systematic analysis, ensuring data integrity and consistency.

3.11 Ethical Considerations

The study protocol was reviewed and approved by the institutional ethics committee. Formal permission was secured from the Principal of Government School, Khanda Kheri. Written informed consent was obtained from parents or legal guardians, and verbal assent was confirmed with each participating student prior to data collection.

To protect participant privacy, names were replaced with alphanumeric identification codes during data entry and statistical analysis. All physical records were stored securely in a locked cabinet, and digital datasets were protected via encryption to maintain confidentiality.

3.12 Plan for Data Analysis

Data analysis was performed using standard descriptive and inferential statistics. Demographic characteristics, knowledge categories, and attitude scores were summarized using percentages, frequencies, means, and standard deviations to establish baseline profiles.

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} \quad \text{and} \quad \sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n}}$$

Pearson's product-moment correlation coefficient (r) was used to evaluate the strength and direction of the relationship between knowledge and attitude scores:

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{[n \sum X^2 - (\sum X)^2][n \sum Y^2 - (\sum Y)^2]}}$$

Chi-square tests (χ^2) were applied to analyse associations between the baseline score classifications and selected socio-demographic variables, with the significance threshold set at $p < 0.05$:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

All calculations were performed using verified statistical software packages.

4. RESULT AND DATA ANALYSIS

4.1 Demographic Characteristics

The socio-demographic profile of the sample (N = 150) is detailed in Table 1, showing the distribution across key variables.

Table 1: Socio-Demographic Distribution of Sample Participants

Demographic Parameter	Stratification Cohort	Frequency (n)	Percentage (%)
Chronological Age	11–12 Years	48	32.0%
	13–14 Years	72	48.0%
	15 Years	30	20.0%
Biological Sex	Male	82	54.7%
	Female	68	45.3%
Academic Grade	6th–7th Grade	52	34.7%
	8th–9th Grade	68	45.3%
	10th Grade	30	20.0%
Maternal Education	Illiterate / No Formal	42	28.0%
	Primary Education	65	43.3%
	Secondary & Above	43	28.7%
Family Structure	Nuclear Family	98	65.3%
	Joint Family	52	34.7%
Monthly Household Income	< ₹10,000	55	36.7%
	₹10,000 – ₹20,000	67	44.7%
	> ₹20,000	28	18.6%

4.2 Assessment of Knowledge Regarding Food Habits

Participant performance on the Structured Knowledge Questionnaire was categorized into three proficiency levels based on total scores: Poor Knowledge ($\leq 50\%$), Moderate Knowledge (51% to 75%), and Adequate Knowledge ($> 75\%$). The findings are summarized in Table 2.

Table 2: Overall, Knowledge Classification Levels

Knowledge Classification Category	Score Range (Out of 30)	Frequency (n)	Percentage (%)	Mean $\pm$ SD
Poor Knowledge	≤ 15 Marks	42	28.0%	

Knowledge Classification Category	Score Range (Out of 30)	Frequency (n)	Percentage (%)	Mean $\pm$ SD
Moderate Knowledge	16–22 Marks	82	54.7%	17.42 $\pm$ 4.38
Adequate Knowledge	23–30 Marks	26	17.3%	

The results show that a majority of the students (54.7%) demonstrated a moderate level of knowledge, while 28.0% had poor knowledge scores, indicating a general need for clearer nutritional guidance.

4.3 Assessment of Attitude Regarding Food Habits

Attitude scores from the Likert Scale were categorized into Favourable ($\geq 75\%$), Neutral (50% to 74%), and Unfavourable ($< 50\%$) dietary mindsets, as detailed in Table 3.

Table 3: Attitude Profile Classifications

Attitude Profile Classification	Score Range (Out of 100)	Frequency (n)	Percentage (%)	Mean $\pm$ SD
Unfavourable Attitude	< 50 Marks	38	25.3%	
Neutral Attitude	50–74 Marks	55	36.7%	61.35 $\pm$ 8.92
Favourable Attitude	≥ 75 Marks	57	38.0%	

The data indicate that 38.0% of participants held a favourable attitude toward healthy food choices, while the remaining 62.0% fell into neutral or unfavourable categories, often showing a preference for processed snack options over traditional foods.

4.4 Association Between Knowledge and Demographic Variables

Chi-square tests were performed to examine associations between knowledge levels and demographic characteristics. Maternal education and monthly household income showed statistically significant associations, as shown in Table 4.

Table 4: Association Matrix Between Knowledge Levels and Selected Demographic Variables

Demographic Variable	Poor (n)	Moderate (n)	Adequate (n)	Chi-Square (χ^2)	p-value	Significance
Maternal Education						
Non-Formal	22	16	4	14.85	0.005	Significant
Primary School	14	43	8			
Secondary +	6	23	14			
Household Income						
$< ₹10,000$	24	26	5	11.24	0.024	Significant
₹10,000 – ₹20,000	15	41	11			

Demographic Variable	Poor (n)	Moderate (n)	Adequate (n)	Chi-Square (χ^2)	P-value	Significance
> ₹20,000	3	15	10			

$df = 4$ for both groups; significance threshold set at $p < 0.05$.

4.5 Association Between Attitude and Demographic Variables

Chi-square analyses were also used to evaluate associations between attitude classifications and demographic characteristics, with findings detailed in Table 5.

Table 5: Association Matrix Between Attitude Profiles and Selected Demographic Variables

Demographic Variable	Unfavourable (n)	Neutral (n)	Favourable (n)	Chi-Square (χ^2)	P-value	Significance
Maternal Education						
Non-Formal	18	16	8	12.64	0.013	Significant
Primary School	15	28	22			
Secondary +	5	11	27			
Household Income						
< ₹10,000	22	21	12	10.98	0.027	Significant
₹10,000 – ₹20,000	12	26	29			
> ₹20,000	4	8	16			

$df = 4$ for both groups; significance threshold set at $p < 0.05$.

4.6 Correlation Between Knowledge and Attitude

To analyse the relationship between cognitive awareness and behavioural disposition, individual knowledge scores were correlated with corresponding attitude scores using Pearson's product-moment correlation coefficient (r).

Calculated Correlation Value: $r = 0.5$ ($p < 0.01$)

The analysis revealed a statistically significant, moderate positive correlation ($r = 0.52$), supporting the hypothesis (H_1) that higher levels of nutritional knowledge are associated with more favourable attitudes toward healthy eating habits.

4.7 Summary of Findings

The empirical results indicate that a significant portion of the student sample possessed limited nutritional knowledge and neutral-to-unfavourable attitudes regarding food habits. The analysis demonstrated a clear positive correlation between knowledge and attitude and confirmed that maternal education and household income were significantly associated with scores in both domains. These findings highlight the potential value of targeted educational interventions that address both parental and child awareness.

5. DISCUSSION

5.1 Discussion Related to Knowledge Findings

The finding that a majority of the students (54.7%) possessed a moderate level of knowledge, while 28.0% fell into the poor knowledge category, indicates a clear gap in comprehensive nutritional awareness within the

study cohort. This pattern aligns with broader cross-sectional research across rural India, which often documents a baseline deficit in specific nutritional literacy among public school students.

The data suggest that while students may have a basic awareness of health concepts, they often lack a detailed understanding of core ideas like caloric density, micronutrient diversity, and the structural risks associated with regular processed food consumption. This tracking gap underscores the importance of introducing systematic health education early in the school curriculum.

Further examination of the data shows that specific knowledge deficits were most pronounced in items related to micronutrient identification and vitamin deficiency disorders. Many students correctly identified the broad benefit of consuming vegetables but could not specify the health implications of sub-clinical iron or vitamin A deficiencies. This indicates that current sources of information, whether domestic or academic, often provide generalized health advice rather than functional nutritional guidance. Addressing this deficit requires shifting educational frameworks from basic rote memorization to interactive, practically applicable health literacy modules.

5.2 Discussion Related to Attitude Findings

The attitude assessments revealed that 62.0% of the sample maintained a neutral or unfavourable disposition toward structured nutritional choices, frequently favouring processed alternatives over traditional options. This finding is consistent with qualitative and quantitative studies tracking changing adolescent food preferences in modernizing communities.

The trend suggests that peer dynamics and the widespread availability of low-cost, highly palatable commercial items can strongly influence children's attitudes, often overshadowing theoretical knowledge about health. Addressing these preferences requires interventions that go beyond traditional lecturing to actively encourage positive attitudes toward dietary discipline.

This behavioural tension highlights that building positive attitudes requires modifying the surrounding social and commercial environment alongside providing classroom instruction. When student social groups view processed snacks as status symbols or markers of modern lifestyle alignment, individual choices often follow group trends to maintain social acceptance. Interventions must therefore focus on reshaping these peer perceptions, framing traditional, nutrient-dense eating practices as appealing and socially valuable choices.

5.3 Comparison with Previous Studies

Comparing these results with similar regional studies reinforces the observed connection between socio-demographic factors and childhood nutritional profiles. Research in Northern India consistently demonstrates that maternal literacy and socio-economic status are strong predictors of a child's health awareness and dietary habits.

Furthermore, evidence from structured school-based health initiatives indicates that comprehensive interventions engaging multiple stakeholders can successfully bridge the gap between theoretical knowledge and real-world behaviour. The findings of this study support the idea that localized, culturally relevant educational programs are a necessary component of effective public health strategies for rural youth.

Additionally, regional data from adjacent districts in Haryana indicate that structural welfare initiatives, such as the Mid-Day Meal Scheme, provide an essential baseline of nutrition but must be accompanied by active educational guidance to maximize impact. Studies that combine standardized meal provisions with structured health tracking and interactive cooking classes consistently report higher rates of long-term dietary modification. This study confirms the presence of similar socio-demographic associations, highlighting the potential value of integrated public health approaches in rural educational settings.

6. CONCLUSION

The present study successfully assessed the knowledge and attitude regarding food habits among school-going children in Government School, Khanda Kheri, Haryana. The findings indicate that although many students possessed a moderate level of nutritional awareness, a considerable proportion still lacked comprehensive knowledge regarding balanced diets, micronutrient requirements, and the harmful effects of junk food consumption. Similarly, a large percentage of participants demonstrated neutral or unfavourable attitudes toward healthy dietary practices, reflecting the growing influence of processed foods, peer pressure, and changing lifestyle patterns among rural adolescents.

The study established a statistically significant positive correlation between knowledge and attitude scores, suggesting that improvement in nutritional knowledge can positively influence students' dietary attitudes and behavioural choices. Socio-demographic variables such as maternal education and household income were also found to have a significant association with both knowledge and attitude levels, highlighting the important role of family environment and socio-economic background in shaping children's food habits.

The findings emphasize that nutritional education should not be limited to theoretical classroom teaching alone. Schools must adopt comprehensive and interactive health promotion strategies that encourage practical

understanding of healthy eating behaviours. School-based nutrition programs, awareness campaigns, healthy meal demonstrations, and parental participation can play a major role in strengthening positive dietary habits among children. Teachers, healthcare professionals, and community health workers should work collaboratively to reinforce healthy lifestyle practices during the formative years of child development. In conclusion, promoting healthy food habits among school-going children is essential for preventing future nutritional deficiencies, obesity, metabolic disorders, and other non-communicable diseases. Early educational interventions can contribute significantly toward improving the overall health status, academic performance, and quality of life of children. Therefore, continuous efforts are needed at the school, family, and community levels to create a supportive environment that fosters healthy nutritional practices and long-term well-being among rural school children.

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