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Original Research Article

A STUDY ON PERCEIVED BARRIERS TO HEALTHY EATING IN HIGH SCHOOL ADOLESCENTS IN URBAN SRIKAKULAM

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ABSTRACT

Background: Healthy eating in childhood is essential for growth and prevention of long-term Non communicable diseases. Children face unique barriers shaped by taste preferences, peers, family habits, and food marketing. Understanding these barriers helps in child-centred nutrition interventions.

Objectives: • To identify the barriers to healthy eating in urban high school adolescents in Srikakulam. • To give evidence-based recommendations regarding healthy eating

Materials and Methods: Descriptive cross-sectional study was conducted over 3 months among 550 high school students in urban Srikakulam. Using multistage sampling, five schools were selected randomly and students were chosen using simple random sampling. Data were collected through a self-administered questionnaire on sociodemographic factors and perceived barriers. Data were analysed in Excel and Epi info using descriptive statistics.

Results: Majority of the participants (73.6%) were in the age group of 12-14 years and 60.4% of them were males. Guidance from parents on healthy food choices (mean score =4.28), Guidance from teachers on nutrition and healthy food choices (mean score=3.93), Consumption of atleast 3 meals a day (mean score=3.88), Complexity in understanding information on food labels (mean score=3.73), easy availability of unhealthy foods (samosas, chips) (mean score=3.62) were found to be main perceived barriers.

Conclusion: Innovative behaviour change strategies are needed to inculcate healthy eating habits with engagement of parents and teachers. School curriculum needs to be modified to impart nutritional knowledge as well as motivation for behaviour change.

Keywords: Adolescents, Healthy eating, Perceived barriers.

INTRODUCTION

Adolescents are aged 10-19 years and they constitute approximately 1.2 billion of the world population according to the World Health Organisation (WHO).[1] There are 253 million adolescents in the age group 10-19 years in India according to National Health Mission.[2] The importance of adolescent nutrition can be viewed through two lenses: the immediate biological necessity for the individual and the long-term economic stability of the nation. Poor dietary habits established early in life significantly increase the risk of non-communicable diseases (NCDs) such as obesity, diabetes, and cardiovascular disorders.[3,4] In many developing regions including India, the nutritional landscape is defined by a triple burden: the overlapping crises of growth failure (undernutrition), essential vitamin deficiencies, and rising obesity rates.[5,6,7,8] In this country, home to nearly one-fifth of the world's adolescent population, the nutritional status of this age group is a matter of national priority. Promoting healthy choices among adolescents can help them be healthy and productive into adulthood.[9]

National data (NFHS-5) reveals that roughly 45–47% of Indian teenagers fall outside the normal BMI range. With only 52.6% of boys and 54.9% of girls (Age 15-19) achieving a normal BMI, there is an urgent need to investigate the dietary barriers affecting the remaining half of the population.[10]

While clinical data is available, capturing what adolescents actually eat remains a significant hurdle. National surveys in India currently lack direct, individual-level dietary assessments, relying instead on summary indicators and anthropometry.[11] While the concept of a balanced diet and importance of proper nutrition have been included in their curriculum, it has failed to achieve the desired result.[12,13,14] In order to make meaningful and sustainable interventions we need a better understanding on their perception of nutrition and healthy eating. Viewing the problem from the shoes of an adolescent can give us key information on taking more efficient measures and creating better policies.

High school is a crucial age that marks the psychological transition between parental control and personal autonomy. This is the age where they start to wonder about everything around them and will gain seek indepence to make choices for themselves. We as a society are obligated in guiding them towards making well informed choices ensuring that they are provided with all the necessary information. In the context of nutirion no matter how much of appropriate environment we create, at end of the day, they as individuals will take decisions on how they consume their diet. This choice is often influenced by multiple factors such as peer socialization, school environment, food advertising and family habits.

Research suggests that choices these children make are often influenced by awareness of non-communicable diseases, perceived vulnerability and severity of the effects of unhealthy behaviors, socioenvironmental factors such food availability and accessibility at home and school, sports facilities, and peer pressure.[13,15,16] Personal factors like taste preference, high cost, time constraint, academic pressure, convenience, and motivation also influence their decisions in choosing a healthy diet.[13,15,16]

Most research on this topic is done in a rural setting or a metropolitan city. Tier 2 cities provide a middle ground as they are recently undergoing a rapid transition in terms of nutrition.

This study offers a distinctive approach by specifically targeting the unique socio-ecological landscape of a Tier-2 city like Srikakulam, a setting often overlooked. By including both government and private schools, the research captures a more representative cross-section of the adolescent experience, from varying socioeconomic backgrounds which can be used in generalsiing a population. Unlike broad national surveys that rely on summary indicators, this investigation provides granular, district level data that is essential for understanding the local factors. It moves beyond identifying eating habits to uncover the reasons behind dietary choices, using a 5-point Likert scale to quantify complex internal negotiations like food guilt and the perceived need for strong motivation. Ultimately, focusing on Srikakulam bridges a critical research gap, providing a scalable model for other rapidly urbanizing Indian cities to translate theoretical nutrition knowledge into effective, behavior-based interventions.

Objectives

1. To identify the barriers to healthy eating in urban high school adolescents in Srikakulam
2. To give evidence-based recommendations regarding healthy eating

MATERIALS AND METHODS

This observational cross-sectional study was conducted over a three-month period in schools located in urban Srikakulam. Srikakulam was selected as the study site to evaluate nutritional barriers within a rapidly urbanizing Indian tier-2 city context. Eligible participants included high school students currently enrolled in grades 8, 9, and 10.

To ensure a representative demographic, a simple random sampling technique was employed to select five schools from a comprehensive list provided by the Mandal Educational Office. This sample included a mix of educational environments, specifically three private institutions and two government high schools. Inclusion criteria: High school students who gave assent and from whom parental consent has been obtained

Exclusion Criteria

- Students who are ill at the time of visit
- Students who are not present for 3 visits
- Incomplete questionnaires

Within each selected school, one section from each of the three grade levels was chosen at random. All students within these sections who provided informed assent and secured formal parental consent were included, resulting in a total sample size of 550 adolescents.

Data Collection

The primary data collection instrument was a structured, self-administered questionnaire. To ensure the tool was culturally and linguistically appropriate for the Srikakulam student population, a pilot study was conducted in a school not included in the final sample. Following the pilot phase, necessary modifications were made to the questionnaire to improve clarity and response accuracy.

The final data collection process was initiated only after obtaining official permission from Institutional Ethics Committee, the school principals and the Mandal Educational Office. Before the survey administration, the research team ensured that informed assent was obtained from the students and written consent was received from their parents.

The questionnaire was designed to elicit data on two primary domains

1. Socio-demographic Factors: Including age, gender, family type, socio-economic status, mother's education, father's occupation:
2. Perceived Barriers to Healthy Eating: Focusing on Socio-cultural and Environmental barriers (Peer influence, Digital Information, Family and home environment, School environment),

Personal and behavioural barriers (Barriers related to food literacy, Emotional influence, Personal choices). This section utilized a 5-point Likert scale to quantify student attitudes and obstacles. Participants indicated their level of agreement with various barrier statements using the following options:

(1) Strongly Disagree (2) Disagree (3) Neutral (4) Agree (5) Strongly Agree

By using a self-administered format and a standardized Likert scale, the study aimed to minimize interviewer bias and allow for the calculation of mean scores, providing a quantifiable hierarchy of the most significant barriers faced by adolescents in urban Srikakulam.

Data Management and Statistical Analysis

Upon completion of the field survey, data from the physical hard-copy questionnaires were systematically scrutinized for completeness and consistency. The raw data were then manually digitized and coded into Microsoft Excel to create a database. To ensure accuracy, a double-entry verification method was employed during the data transfer process.

Statistical analysis was performed using a combination of Microsoft Excel and Epi Info™ (Version 7). The socio-demographic characteristics and dietary habits of the study population were summarized using descriptive statistics. Data were expressed as frequencies and percentages.

For the evaluation of perceived barriers to healthy eating, responses were captured using a Likert scale. These data were analyzed and presented as mean scores, allowing for a standardized comparison of the most significant barriers identified by the students.

RESULTS

Socio-Demographic Profile

The socio-demographic characteristics of the 550 high-school students are summarized in Table 1. The study population was entirely urban, with all participants residing in urban Srikakulam.

Age and Gender Distribution

The majority of the participants (73.7%) belonged to the 12–14 years age group, while 26.4% were aged between 15–17 years. In terms of gender distribution, there was a higher representation of males (60.8%) compared to females (39.3%).

Educational and Family Background

Regarding the study setting, 67.6% of students were enrolled in private institutions, while 36.4% attended government schools. The domestic environment for most students was characterized by nuclear family structures (61.4%), followed by three-generation (19.8%) and joint families (18.8%).

Socio-Economic Status

Socio-economic analysis revealed a diverse background where a major proportion of the students (56.0%) fell into the Lower Middle class category.27.2% identified as Upper Middle class. The remaining population was distributed across the Upper Class (8.6%), Upper Lower (6.3%), and Lower Class (1.9%).

Parental Occupation and Education

The literacy level among mothers showed that 26% had completed high school, while 16.5% were graduates or post-graduates. However, a segment of the mothers (5.0%) were illiterate. Regarding paternal occupation, the largest groups were professionals (23.9%) and skilled agriculture/fishery workers (21.7%), followed by skilled workers in shops or markets (18.6%). A small fraction of fathers (0.3%) were reported as unemployed.

Table 1: Socio-demographic details of study participants (n=550)

Socio-demographic factor	Frequency	Percentage
Age		
12-14 years	405	73.70%
15-17 years	145	26.36%
Sex		
Female	216	39.27%
Male	334	60.80%
Type of school		
Government	200	36.40%
Private	350	67.60%
Residence		
Urban	550	100.00%
Family type		
Nuclear	338	61.45%
Joint	103	18.80%
Three-generation	109	19.80%
Socio-economic status		
Upper Class	47	8.60%
Upper Middle	150	27.20%
Upper Lower	35	6.30%
Lower Middle	308	56.00%
Lower Class	10	1.90%
Mother's education		
Professional	33	6.00%
Graduate/Post Graduate	91	16.50%
Intermediate/Diploma	47	8.50%

High School	143	26.00%
Middle School	109	19.90%
Primary School	100	18.10%
Illiterate	27	5.00%
Father's Occupation		
Legislatives/Senior Officials/Managers	0	0%
Professionals	131	23.90%
Technicians and Associate Professionals	79	14.30%
Clerks	0	0%
Skilled Workers/Shop/Market/Sales Workers	102	18.60%
Skilled Agriculture/Fishery Workers	119	21.70%
Craft related Trade Workers	45	8.10%
Plant and Machine Operators and Assemblers	0	0%
Elementary Occupations	72	13.10%
Unemployed	2	0.30%

Perceived Barriers

Participants generally expressed high levels of agreement regarding guidance from parents (Mean score=4.289) and teachers (Mean Score=3.934). 70% of the participants reported that they typically consume 3 meals a day (Mean score=3.884). Perceived barrriers with the highest mean scores are complex nutritional information on food labels (Mean score=3.737), easy availabilty of unhealthy foods (Mean score=3.629), excessive time requirement for planning and consumption of healthy foods (Mean score=3.573) and taste cravings (Mean score=3.572). [Figure 1]

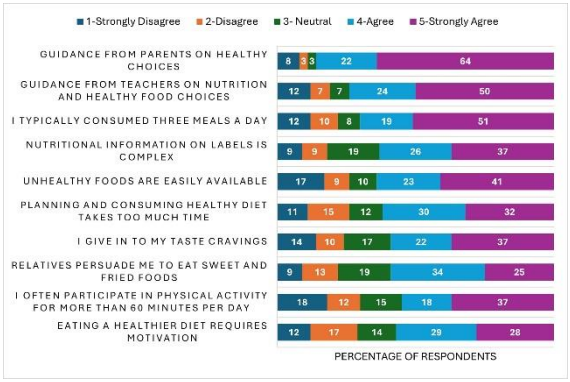

Figure 1: Perceived barriers to healthy eating among participants in descending order of mean scores (n=550)

Respondents lean heavily toward sugary and processed options. For instance, 51% participants (combining "Agree" and "Strongly Agree") indicated a preference for chocolates and ice cream over fruits and vegetables, while 52% participants agreed that taste is more important than nutritional value. Fast foods are perceived as more convenient and easier to prepare, with 48% and 51% participants agreeing with these statements, respectively. A notable portion of the group feels that healthy foods do not taste good (51% in agreement) and don't smell as pleasant as unhealthy alternatives (50% in agreement). Over half of the respondents (53%) agreed that healthy food preparation and cooking skills are missing from their curriculum, pointing to a potential area for institutional intervention. [Figure 2]

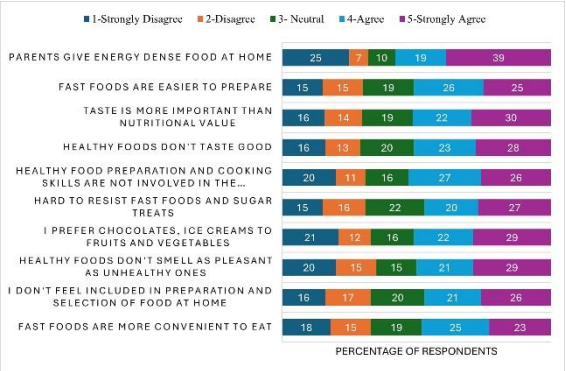

Figure 2: Perceived barriers to healthy eating among participants in descending order of mean scores(n=550)

The survey results from this set of statements reveal a more polarized distribution, where external factors like cost and social settings play a role in food choices (Figure 3). A notable finding is that while many respondents strongly disagree with these barriers, there is a consistent core group of 20%–24% participants who strongly agree that these issues affect them. Specifically, the low cost and proximity of junk food emerged as the most prominent external barrier, with 50% participants (26% "Agree" and 24% "Strongly Agree") identifying this as a factor. The affordability and accessibility of unhealthy options are major drivers; 50% respondents pointed to the low cost of junk food near schools, and 44% respondents agreed that healthy food is perceived as too expensive. Social media and television advertisements make resisting unhealthy food difficult for 40% participants, while 37% respondents reported feeling "awkward" when attempting to choose healthy options in a social setting with friends. Stress and screen time appear to disrupt healthy habits for a notable portion of the group; 40r% participants admitted to eating unhealthy foods when stressed, and 40% others stated that increased screen time causes them to skip meals or healthy options entirely. A specific subset of 45% respondents agreed or strongly agreed that they find healthy foods "slimy," representing a sensory-based barrier to consumption.

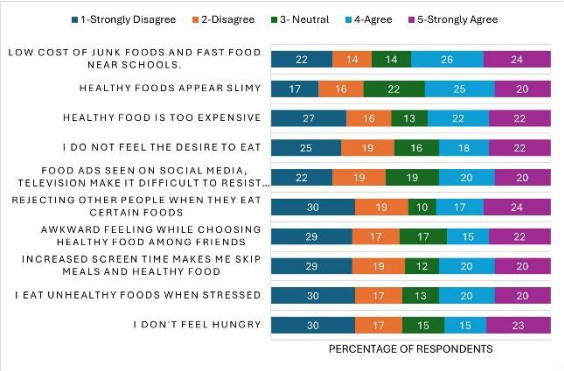

Figure 3: Perceived barriers to healthy eating among participants in descending order of mean scores(n=550)

This study identified several factors that while present, yielded relatively low mean scores among the sampled high school students these included skipping meals because they worry about their weight (Mean score=2.788), eating high calorie foods to gain weight (Mean score=2.669) or gain muscle (Mean score=2.639). The survey item 'My parents do not control what I eat' yielded a low mean score (Mean score= 2.456), with 56.3% of students selecting 'Disagree' or 'Strongly Disagree.' This indicates that for considerable number of participants, parental oversight is an acti sve component of their daily dietary environment. Other factors with low mean scores include peer encouragment (Mean score=2.397), the desire to imitate celebrity lifestyles as a motivation for eating habits received (Mean score=2.369) parents not setting a good example (Mean score=2.307), considering diet pills or dieting as it's easier the healthy eating (Mean score=2.241).

DISCUSSION

The present study found that most students perceived strong guidance from parents and teachers regarding healthy eating, yet continue to face substantial barriers including complex nutrition labels, the easy availability of unhealthy foods, stronger taste cravings, relatives's persuasion and the need for considerable self motivation to maintain a healthy diet.By analyzing both demographic factors and perceived barriers, this study underscores a profound "knowledge-behavior gap" where high school students possess nutritional awareness yet fail to maintain healthy dietary habits despite receiving significant guidance from parents and teachers. This suggests that in the current Indian urban context, providing information alone is insufficient to counteract the environmental and psychological drivers of adolescent food choice.

The most consistent environmental barrier identified in this study is the high perceived accessibility of poor nutritional choices. Approximately 64% of students (Agree and Strongly Agree) identified that "unhealthy foods are easily available". This result is consistent with Locks' national assessment,[17] confirming that the "nutrition transition" is not just a metro-city phenomenon but has fully permeated Tier-2 cities like Srikakulam. Interestingly, while 50% of students agree that "junk foods and fast foods near schools have a low cost," the perceived high price of healthy food was a lesser barrier, with only 44% in agreement.

A critical theme in this research is the disconnect between receiving guidance and acting upon it. A vast majority of students reported receiving guidance on healthy choices from parents (86%) and teachers (74%). Despite this, students identified a severe lack of internal drive, with 57% agreeing that "eating a healthier diet requires motivation". This finding mirrors research from Kolkata, where high awareness (such as 98% knowing breakfast is essential) failed to translate into practice because students found healthy foods "unappetizing" or lacked the discipline to resist taste cravings and 56.1% perceived strong motivation as a major barrier to healthy eating.[13]

In this study 63% students found that nutrition labels on food packaging is complex similar to the result of the Rawat et al study,[18] with 62.8% reporting it is very important to simplify the nutritional information available on food packs. 30.7% of adolescents in their study indicated that they can't eat healthy foods due to higher prices, while 15.3% reported that they don't eat healthy foods as they do not find them tasty whereas in this study 44% agreed that healthy foods are expensive and 55% agreed that taste is more important than nutritional value.

It was found that 70% agreed on consuming three meals a day compared to 86% in the study by D.Vijaylakhmi et al.[19]

A significant lifestyle barrier for these 550 students is the perception of time and the difficulty of processing nutritional information. 62% of students agreed that "planning and consuming a healthy diet takes too much time". In a Tier-2 city where academic workloads and tuition classes are rigorous, this perceived time burden leads to the prioritization of "convenient" fast foods. Furthermore, 63% of students found "nutritional information on labels is complex," suggesting that even when students try to make informed choices, the technical nature of food labeling acts as a deterrent to food literacy.

CONCLUSION

It can be inferred from the study that adolescent eating behavior significantly influenced by a combination of social, cultural, environmental and personal factors as perceived by the adolescents themselves. Innovative behaviour change strategies are needed to inculcate healthy eating habits with engagement of parents and teachers. School curriculum needs to be modified to impart nutritional knowledge as well as motivation for behaviour change.

Recommendations

1. Schools should provide skill-based nutrition and food education or home economic course at all level to all students irrespective of gender.
2. Interventions like limiting the percentage of unhealthy snack options in vending machines or school canteens are required.
3. Parents should be further encouraged to make healthy food choices when purchasing raw food along with enhancing their culinary skills to make healthy food tastier and appealing at home.
4. Adolescents and their peer groups must be motivated and encouraged to adopt healthy food choices and sustain them through nutrition workshops in the school periodically by qualified dieticians.

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REFERENCES

1. Singh JA, Siddiqi M, Parameshwar P, Chandra-Mouli V. World Health Organization Guidance on Ethical Considerations in Planning and Reviewing Research Studies on Sexual and Reproductive Health in Adolescents. Journal of Adolescent Health [Internet]. 2019 Apr 1;64(4):427–9. Available from: https://www.jahonline.org/article/S1054-139X(19)30023-0/fulltext
2. Adolescent Health :: National Health Mission
3. Aakansha Maria Rajeev, Harshini Malisetty, Omkar Prasad Baidya, J KV, Shilpi Siddhanta, Dharan BG. Pediatric Nutrition and Its Role in Preventing Non-communicable Diseases: A Review. Cureus. 2025 Jul 7
4. Borle AL, Gangadharan N, Basu S. Lifestyle practices predisposing adolescents to non communicable diseases in Delhi. Dialogues in Health. 2022 Dec;1:100064.
5. Prentice AM. The Triple Burden of Malnutrition in the Era of Globalization. Nestle Nutrition Institute Workshop Series [Internet]. 2023;97:51–61. Available from: https://pubmed.ncbi.nlm.nih.gov/37023735/
6. Pandurangi R, Mummadi MK, Challa S, Reddy NS, Kaliaperumal V, Khadar Babu C, et al. Burden and Predictors of Malnutrition Among Indian Adolescents (10–19 Years): Insights From Comprehensive National Nutrition Survey Data. Frontiers in Public Health [Internet]. 2022 Jun 15;10:877073.
7. Parida J, Bagepally BS, Patra PK, Pati S, Kaur H, Acharya SK. Prevalence and associated factors of undernutrition among adolescents in India: a systematic review. BMC Public Health. 2025 Feb 28;25(1).
8. Sharma N, Sanjeevi RR, Balasubramanian K, Chahal A, Sharma A, Sidiq M. A Systematic Review on Prevalence of Overweight and Obesity among School Children and Adolescents in Indian Population. Indian Journal of Endocrinology and Metabolism [Internet]. 2024 Apr 1 [cited 2024 May 7];28(2):104.
9. Adolescent health WPRO
10. 2019-21 India National Family Health Survey [FR375]
11. Locks LM, Shah M, Bhaise S, Hibberd PL, Patel A. Assessing the Diets of Young Children and Adolescents in India: Challenges and Opportunities. Frontiers in Pediatrics. 2022 May 17;10.
12. Rastogi S, Mathur P, Khanna A. Gaps in nutrition knowledge and barriers to eating healthy among low-income, school-going adolescent girls in Delhi. Journal of Public Health. 2018 Sep 29;27(5):629–36.
13. Rathi N, Riddell L, Worsley A. Perceptions of eating and food preparation behaviours for urban private school students in India. Child and Adolescent Obesity. 2020 Jan 1;3(1):42–56
14. Daly AN, Kearney JM, O'Sullivan EJ. The underlying role of food guilt in adolescent food choice: A potential conceptual model for adolescent food choice negotiations under circumstances of conscious internal conflict. Appetite [Internet]. 2024 Jan 1;192:107094.
15. Kumar J, Adhikari K, Li Y, Lindshield E, Muturi N, Kidd T. Identifying barriers, perceptions and motivations related to healthy eating and physical activity among 6th to 8th grade, rural, limited-resource adolescents. Health Education. 2016 Feb;116(2):123–37.
16. Moitra P, Madan J. Perceived barriers and facilitators of healthy eating and physical activity: focus groups with children, parents and teachers in Mumbai, India. International Journal Of Community Medicine And Public Health. 2020 May 27;7(6):2363.
17. Locks LM, Shah M, Bhaise S, Hibberd PL, Patel A. Assessing the Diets of Young Children and Adolescents in India: Challenges and Opportunities. Front Pediatr. 2022 May 17;10:725812.
18. Rawal T, Gavaravarapu SM, Backholer K, Mishra VK, Srivastava A, Khan S, et al. What influences food choices of adolescents in India and how their food environment can be improved? BMC Nutrition [Internet]. 2025 Dec 19;11(1). Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC12752363/
19. 1.D. Vijayalakshmi, D. Barbhai Mrunal, J. Deepa, Katte M. Descriptive Study on Dietary Pattern and Health Status of Adolescents from Rural Bengaluru. Asian Journal of Dairy and Food Research. 2022 Nov 30;(Of).