

# Impact of Junk Food Consumption Pattern on the Nutritional Status of Adolescents Aged between 13 and 18 Years

OPEN ACCESS

Volume: 12

Special Issue: 1

Month: July

Year: 2024

P-ISSN: 2321-788X

E-ISSN: 2582-0397

Received: 29.05.2024

Accepted: 30.06.2024

Published: 10.07.2024

Citation:

Mahalakshmi, M., et al. "Impact of Junk Food Consumption Pattern on the Nutritional Status of Adolescents Aged between 13 and 18 Years." *Shanlax International Journal of Arts, Science and Humanities*, vol. 12, no. S1, 2024, pp. 1–7.

DOI:

<https://doi.org/10.34293/sijash.v12i1.8013>

**M. Mahalakshmi**

*Department of Foods and Nutrition  
Muthurangam Government Arts College (A), Vellore, Tamil Nadu, India*

**R. Anitha**

*Department of Foods and Nutrition  
Muthurangam Government Arts College (A), Vellore, Tamil Nadu, India*

**P. Rameshthangam**

*Department of Nutrition and Dietetics  
Alagappa University, Karaikudi, Tamil Nadu, India*

## Abstract

*Nutrition is the cornerstone for human health and growth throughout the life cycle. Today, about one-third of the world's population suffers from a lack of proper nutrition, making it one of the most severe issues facing the worldwide society. Fast food consumption is common among adolescents globally, and it is increasing in low and middle-income countries. This present study aimed to compare the nutritional status and fast-food consumption patterns of adolescent girls aged between 13 and 18 years. It is a cross-sectional and descriptive study that included 100 adolescents, assessed the anthropometry, and elicited information on activity patterns, dietary profile, and fast-food consumption patterns by structured interview schedule. The results revealed that the junk food consumption impacts the health and nutritional status of school-aged adolescents, perhaps contributing to poor growth outcomes. This study offers new insight for formulating research studies for future researchers.*

**Keywords:** Adolescence, Nutritional Status, Junk Food Consumption, Food Frequency, Dietary Profile

## Introduction

Adolescence is the time of life between childhood and adulthood characterised by a rapid rise in the rate of physical growth and changes related to physical development. A country's growth and prosperity are heavily influenced by the nutritional state and growth of adolescent girls, who not only make up one-tenth of the population but also have an impact on the growth of the remaining population (Gupta, 2018). Undernutrition is a major health problem that is especially widespread in developing countries. Adolescent girls' nutritional health, growth, and development are mostly determined by their nutritional requirements, culture, traditions, and eating habits. Girls who are chronically malnourished are more likely to remain undernourished throughout their teens and into adulthood.

When they become pregnant, they are more likely to deliver babies with low birth weights (Rathi et al., 2017). Epidemiological research from both developing and industrialized countries demonstrates a relationship between foetal malnutrition and an increased risk of chronic diseases in adults. Adolescent girls are more vulnerable to malnutrition because they grow faster. They require macronutrients and micronutrients to help them grow and fulfil the increased demand for iron during menstruation (Bhattacharya et al., 2019). Adolescent eating habits are influenced by both physical and psychological influences. A boy does better than a female because his strong appetite and sheer volume of food lead him to consume enough nutrients. Social pressures and personal tensions over body image may lead teens to pursue dangerous, self-imposed crash diets for weight loss. Self-starvation can lead to complex and extensive eating disorders such as anorexia nervosa and bulimia nervosa. Teenagers are known for having the worst eating habits (Singla et al., 2012).

Skipping breakfast may be due to eating disorders, peer pressure, lack of time and nutritional awareness. They may consume fast foods, which are often low in calcium and vitamin A but rich in calories, saturated fats, and sodium chlorides (Purushothaman et al., 2015). Adolescents who diet excessively are more likely to adopt unhealthy eating patterns and engage in less physical exercise. People who embark on diets frequently engage in time-limited behaviour. Instead, individuals should prepare for long-term behavioural changes such as avoiding eating binges, eating more fruits and vegetables, beginning the day with breakfast, and engaging in physical activity (Straker et al., 2014). Poor dietary habits, combined with reduced physical activity, have resulted in an increase in overweight and obesity among adolescents. Obesity occurs when people do not consume enough fruits and vegetables in their diets. Consumption of high glycemic food may cause hormonal and metabolic changes that encourage excessive food consumption.

Excess calorie consumption is less frequently the reason than a lack of activity (Saxena, 2017). Junk food is a type of food that contains an excessive amount of fat, saturated fat, sodium, and low fibre. These foods have been linked to detrimental health impacts in children, including obesity, metabolic disorders, and excessive cholesterol levels. However, junk food intake among adolescents has increased fivefold during the last three decades (Roba et al., 2016). This is due to its delicious taste, easy availability, low cost, variety, and flavour. This boosts the consumption of junk food, raising the risk of obesity and increasing public health problems around the world (Meena and Varma, 2014). This study aims to study the socio-economic and demographic profile of adolescent girls aged between 13 and 18 years, assess the nutritional status, dietary profile and compare the nutritional status and fast-food consumption pattern of adolescent girls aged between 13 and 18 years.

## **Materials and Methods**

### **Selection of the Area**

It is a cross-sectional study undertaken in a government higher secondary school in Polur, Tiruvannamalai District. Tiruvannamalai District (formerly known as Central Arcot and Tiruvannamalai Sambhuvarayar District) is the largest and one of the 38 districts of Tamil Nadu, South India. This area was chosen because of the availability of samples, as well as the ease and cooperation required to complete the study successfully.

### **Selection of the Sample**

About 100 adolescent girls aged between 13-18 years studying in a government higher secondary school located in Polur of Tiruvannamalai District were selected based on the total enumeration sampling techniques.

## **Tools Used for the Study**

The data collection instrument used in the present study was an interview schedule which was adopted from the available existing structured questionnaire and modified the content based on the relevance to the study title. This questionnaire involves various chapters about the baseline information, socio-economic profile, nutrition screening, junk food consumption pattern, assessment of nutritional status, dietary pattern, 24-hour recall survey, food frequency consumption, and frequency of consumption of junk food.

## **Socio Economic Status Survey**

Socio-economic status of the adolescent girls was evaluated through their families' education, occupation and income level. Socioeconomic status is a measure of the economic, educational and social standing of a person or a family. This is the most commonly used scale for measuring socio-economic status of people in India for both urban and rural areas. Sample was classified based on their scores in to various classes such as upper, middle, lower socio-economic status.

## **Nutritional Anthropometry and Dietary Profile**

Anthropometry is the measurement of the human being. It serves as a physical anthropology measurement instrument. It has been used for identification, to comprehend human physical variation, in paleoanthropology, and in numerous attempts to correlate physical characteristics with racial and psychological attributes. Anthropometric data such as height, weight, body mass index, waist and hip circumference, and waist-hip ratio were measured by using appropriate measuring tools. The dietary profile of the sample was assessed using a 24-hour recall survey, a food frequency consumption table, and preferences for junk food consumption. Details about food consumption were collected by estimating the portion size consumed by an individual and calculating the quantity.

## **Analysis of the Data**

Means and standard deviations were used to summarise quantitative variables. The independent t test and one-way ANOVA were used to determine the normal variance of the association between adolescent girls' nutritional status and fast-food consumption patterns. For all the analysis, 5% level of significance was considered significant.

## **Results and Discussion**

### **Demographic, Socio-Economic Profile and Nutritional Screening of College Students**

Table 1 shows that 65 % of the students were 13 – 15 years age category and 35 % were 16-18 years age category and the mean age was 15.6 years. 25 % of them were studying 8th standard, 14 % were 9th standard, 26 % were 10th standard, 21% were 11th standard and 14% of them were studying 12th standard. The majority of them were day scholars (99%) and only one student was staying in hostel. Most of them (93%) were belonged to middle class family and very few (7%) of them were belonged to upper middle-class families. There were no lower-class family students observed in the study. The income of the family of majority of them were 5000 to 10000 (58%). 42% of them had one sibling, 34% had two siblings and 24 % had more than 2 siblings. Majority of the children's parents were farmers (Father -77%, Mother- 50%). Only one mother was a house wife among the entire children.

**Table 1 Demographic and Socio-economic Profile**

<b>Demographic and Socio-economic Profile on the Adolescents</b>	<b>Frequency (No)</b>	<b>Percentage (%)</b>
<b>Age Category</b>		
13-15 Years	65	65
16-18 Years	35	35
<b>Educational Status</b>		
8 <sup>th</sup> Std	25	25
9 <sup>th</sup> Std	14	14
10 <sup>th</sup> Std	26	26
11 <sup>th</sup> Std	21	21
12 <sup>th</sup> Std	14	14
<b>Place of Stay</b>		
Hostel	1	1
Day scholar	99	99
<b>Family status</b>		
Lower middle class	0	0
Middle class	93	93
Upper middle class	7	7
<b>Family Monthly Income</b>		
5000-10000	58	58
15000-20000	35	35
30000	7	7
Above	0	0
<b>Do you have Siblings?</b>		
One	42	42
Two	34	34
Above	24	24

### **Nutritional Status of the Adolescent Girls**

The mean height of girls aged between 16 to 18 years (146.5 cm) was found to be more than girls of 13-15 years (140.5 cm) which may be due to the pubertal growth spurt. Overall, this study population was shorter than the 50th percentile WHO reference cut-off value, and a significant difference exists at less than 1% ( $P=0.0001$ ) between the age category. Similarly, the girl's mean weight was 40.13 kg in 13 to 15 years and 41.8 kg and in 16 to 18 years. For the mean weight of the children between these two-age category, a significant P value of  $< 0.05$  was derived. Similarly, Body Mass Index, waist and hip circumference level was varied between these two-age category. Overall, there is a significant difference at the rate of 1% noted on the waist hip ration between the age category.

**Table 2 Assessment of Nutritional Status of the Adolescent Girls**

(N=100)

Nutritional status of the adolescent girls	13-15 Years			16-18 Years			“F” Value
	WHO	Mean	SD	WHO	Mean	SD	
Weight (Kg)	43.1	40.13	8.99	46.4	41.88	5.72	1.32*
Height (cm)	143.3	140.5	6.93	152.5	146.5	20.49	0.09*
Body Mass Index	18.67	18.09	2.82	18.90	18.66	2.36	1.21*
Waist circumference (cm)	-	67.17	7.96	-	64.12	7.67	3.79**
Hip circumference (cm)	-	81.40	7.54	-	80.79	5.66	0.21
Waist Hip Ratio	-	0.82	0.04	-	0.79	0.05	7.80**

### Preference of Junk Food Consumption

The details on the junk food consumption pattern of adolescent girls are discussed in Table 3. Consumption of burger, pizza and doughnut was found to be rarely among the study population. Majority of the children were eaten biscuits (32%) followed by French fry (14%) and cake (10%) daily. Puffs, noodles and other pastries were consumed once in a week by the students. The soft drinks were taken rarely and occasionally among the groups. Overall, the consumption of junk foods among the adolescent girls found to be less which might be due to the unavailability, access, cost and low economic status of the study population.

**Table 3 Junk Food Preference and Consumption of the Adolescence**

Junk food preference and consumption pattern	Frequency (No)	Percentage (%)
<b>Preference of Junk Foods</b>		
Chats	11	11
Snacks	34	34
Soft drinks	9	9
Candies	46	46
<b>Do you think junk food are healthy?</b>		
Yes	24	24
No	76	76
<b>Which sensory quality attracts you to take junk food?</b>		
Appearance	5	5
Flavour	7	7
Taste	82	82
Colour	4	4
All	2	2
<b>Do you dislike any junk food items?</b>		
Yes	38	38
No	62	62
<b>Do you check the junk food quality?</b>		
Yes	50	50
No	50	50

<b>Do you check the nutrient fact label in the junk food?</b>		
Don't know	7	7
Yes	35	35
No	23	23
Sometimes	35	35
<b>When did you usually consume fast food?</b>		
Morning		
Afternoon	2	2
Evening	8	8
Night	18	18
No specific time	13	13
	59	59
<b>What kind of beverages do you usually drink?</b>		
Carbonated soft drinks	4	4
Coffee or tea	58	58
Fruit juices	38	38
<b>How do you feel about the cost of fast food?</b>		
High	23	23
Low	20	20
Acceptable	37	37
Not Acceptable	20	20

Around 62 % of students liked to consume fast foods, 50% were not checking the quality of the fast foods and majority of them were not aware about to check the label which contain the nutrient fact and expiry. Majority of the adolescent girls liked to eat candies (46%) and snacks in the form of sweets and savouries as 34 %. About 56 % of the students were eaten fast foods daily and 24 % of them were thinking that the consumption of fast food is healthy. Students were attracted for the taste of the fast food (82%) than other sensory qualities. Comparatively, they preferred evening time to eat junk food and around 59 % were eaten at any time. They were feeling that the cost of the fast foods was not acceptably high.

### Conclusion

Junk foods are popular worldwide, and their consumption is steadily increasing. Traditional foods have been nearly replaced by food items that are ready to eat, canned, and have an extended shelf life. Consumption of such food has peaked in rich countries, but there is a growing tendency in less developed nations around the world. The study concludes that junk food consumption patterns have an impact on the health and nutritional status of school-aged adolescents, potentially contributing to poor growth outcomes. Family and peer roles were also found to have a greater influence on junk food consumption as participants raised their intake. Interestingly, media exposure played a promotional role in junk food advertising, with friends having the biggest influence.

## Acknowledgement

The authors are thankful to all who involved in this study and for their kind cooperation.

**Conflict(s) of Interest: Nil**

**Source(s) of funding: Nil**

## References

1. Bhattacharya, A., Pal, B., Mukherjee, S., & Roy, S. K. (2019). Assessment of nutritional status using anthropometric variables by multivariate analysis. *BMC public health*, 19(1), 1-9.
2. Gupta, A., Kapil, U., & Singh, G. (2018). Consumption of junk foods by school-aged children in rural Himachal Pradesh, India. *Indian journal of public health*, 62(1), 65.
3. Meena, M., & Varma, K. (2014). Fast food consumption among adolescent school girls in Jaipur. *Age*, 14(15), 72.
4. Purushothaman, S., Reddy, C., Chaly, P. E., & Priyadarshni, I. (2015). Predilection for junk food consumption among 15-year-old school children in North Chennai, India. *Medical Journal of Islamic World Academy of Sciences*, 109(2459), 1-6.
5. Rathi, N., Riddell, L., & Worsley, A. (2017). Food consumption patterns of adolescents aged 14–16 years in Kolkata, India. *Nutrition journal*, 16(1), 1-12.
6. Roba, K., Abdo, M., & Wakayo, T. (2016). Nutritional status and its associated factors among school adolescent girls in Adama City, Central Ethiopia. *J Nutr Food Sci*, 6(3), 2
7. Saxena, A. (2017). The impact of nutrition on the overall quality of life adolescent girls are living across the city of Kota. *International journal of life sciences*, 1(1), 40-48.
8. Singla, P., Sachdeva, R., & Kochhar, A. (2012). Impact of nutrition counseling on consumption pattern of junk foods and knowledge, attitudes and practices among adolescent girls of working mothers. *Journal of Human Ecology*, 39(3), 221-227.
9. Straker, L. M., Howie, E. K., Smith, K. L., Fenner, A. A., Kerr, D. A., Olds, T. S., ... & Smith, A. J. (2014). The impact of Curtin University's activity, food and attitudes program on physical activity, sedentary time and fruit, vegetable and junk food consumption among overweight and obese adolescents: a waitlist-controlled trial. *PLoS One*, 9(11), e111954.
10. World Health Organization. (2000). *The world health report 2000: health systems: improving performance*. World Health Organization.