

JUNK FOOD CONSUMPTION PATTERN AND OBESITY AMONG SCHOOL GOING CHILDREN IN AN URBAN FIELD PRACTICE AREA: A CROSS SECTIONAL STUDY

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HOW TO CITE THIS ARTICLE:

Vidya B, Damayanthi M. N, Sharada R, Shashikala Manjunatha. "Junk Food Consumption Pattern and Obesity among School Going Children in an Urban Field Practice Area: A Cross Sectional Study". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 12, March 23, 2015; Page: 1845-1851.

ABSTRACT: BACKGROUND: Junk food simply means an empty calorie food; it lacks in micronutrients such as vitamins, minerals, or amino acids, and fibre but has high energy (calories). During school-age years, children begin to establish habits for eating and exercise that stick with them for their entire lives. If children establish healthy habits, their risk for developing many chronic diseases will be greatly decreased. The family, friends, schools, and community resources in a child's environment reinforce lifestyle habits regarding diet and activity.

OBJECTIVES: To study the fast food consumptions pattern and fast food preferences among the school going children (9-13yrs) and some of the determinants related to fast food consumption.

STUDY SETTING: Department of Community Medicine in an Urban field practice area of Rajarajeswari Medical College & Hospital, Bangalore. **STUDY DESIGN:** Cross-sectional study.

STUDY DURATION: Three months duration (Oct–Dec 2014). **STUDY POPULATION:** school students studying in Vth standard to Xth standard. **SAMPLE SIZE:** The selected school had a strength of 200 students. Hence complete enumeration of the students was considered for this study.

DATA COLLECTION: by using pre-structured questionnaire by interview method. The variables included were socio-demographic profile, measurement of height, weight and questions related to junk food consumption and its patterns. **DATA ANALYSIS:** using statistics software SPSS 20. Mean and standard deviation was calculated for anthropometric measurements. Test of significance for proportions was done by Chi- square test. **RESULTS:** Among 200 study subjects, 107 were male (53.5%) and 93 females (46.5%). Majority of the students were in the age group of 12-15 years (66%) and 9-11 years (34%). Snacks (41%), Fast food (25.50%), soft drinks (17.50%) and candies (16%) were the favourite junk foods among the study subjects. Taste and time factors, watching television while consuming junk foods, advertisements regarding junk foods over the televisions, and the parents themselves getting these junk foods are some of the factors related to junk food consumption. **CONCLUSION:** Awareness to the children regarding the harmful effects of junk foods must be stressed. Parents must play an important role in providing more nutritious food to their children and imparting physical activities so that they do not have the risk of developing obesity.

KEYWORDS: Junk foods, Urban Area, Television, Morbidities, School Children.

INTRODUCTION: "Junk food" is an informal term applied to some foods which are perceived to have little or no nutritional value, but which also have ingredients considered unhealthy when eaten regularly or to those considered unhealthy to consume at all. Junk food simply means an

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empty calorie food; it lacks in micronutrients such as vitamins, minerals, or amino acids, and fibre but has high energy (calories). The term junk food was coined as slang in the public interest in 1972 by Michael Jacobson, Director of the Centre for Science, Washington D.C.⁽¹⁾

Eat healthy and live healthy is one of the essential requirements for long life. Healthy nutritious foods have been replaced by the new food mantra – JUNK FOOD! In the context of world economy, junk food is a global phenomenon. India is no exception to this changing fast-food Trend.¹ Trends including fast food consumption and skipping breakfast increased during the transition period of adulthood, and such dietary behaviours are associated with increased weight gain from adolescence to adulthood.^(2,3)

One of the factors leading to bingeing on junk foods is watching television which severely increases unhealthy dietary habits among children.²

As there are limited data regarding the consumption of junk food and its patterns in our field practice area, an effort is been made with the objectives of studying the fast food consumptions pattern and fast food preferences among the school going children (9-13yrs) and some of the factors related to fast food consumption.

METHODOLOGY: This study was conducted by the Department of Community Medicine in an Urban field practice area of Rajarajeswari Medical College & Hospital, Bangalore. Institutional Ethical Committee Clearance was obtained. It was a cross-sectional study carried for three months duration (Oct–Dec 2014). The study population included the school students studying in Vth standard to Xth standard.

A randomly selected school was within a 10-km radius of our hospital. The school authorities were met and explained about the purpose of the study. The class teachers were requested to instruct the students to obtain their parents consent to participate in the study.

The selected school had a strength of 200 students. Hence complete enumeration of the students was considered for this study. Data was collection by using pre-structured questionnaire by interview method. The variables included were socio-demographic profile, measurement of height, weight and questions related to junk food consumption and its patterns.

Weight of the subjects was recorded by using standardized adult weighing machine. Subjects were made to empty the bladder and with their light weight cloth with pockets empty were made to stand on the weighing machine with their feet adequately spaced and head looking straight and both the arms by the side is then weighed on a bathroom scale (Zhongshan Camry Electronic Co. Ltd, Guangdong, China). The measurement were considered to the nearest decimal point of 0.5 kg. It was ensured that weighing machine was regularly standardized and calibrated during the study.

Height was measured with a stadiometer to the nearest decimal and then converted to meters. Subjects were made to stand with bare foot and looking forward. BMI was calculated by dividing weight (kg) by height squared (m²).

Children were classified into normal, underweight, overweight, obese based on WHO Growth reference charts 5-19 years.⁽⁴⁾ Data was analysed using statistics software SPSS 20. Mean and standard deviation was calculated for anthropometric measurements. Test of significance for proportions was done by Chi- square test.

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TOOLS USED FOR THE STUDY:

- a) **Questionnaire method:** The schedule was used to collect the information on general profile, fast food frequency questionnaire and fast food preferences among school going children. Pilot study was conducted to assess reliability and validity of the questionnaire. The self made questionnaire was developed.
- b) **Dietary intake:** The type of fast food consumption was recorded in terms of intake of Pizza, burger, chocolate, ice cream, cookies/cake, pasta and maggi.
- c) **Fast food frequency questionnaire:** The fast food consumption pattern was assessed by the fast food frequency questionnaire in term of daily, 5-6 time per week, 2-4 time per week, once per week, never.
- d) **Statistical analysis:** SPSS version 20 was used for data analysis.

RESULTS: Among 200 study subjects, 107 were male (53.5%) and 93 females (46.5%). Majority of the students were in the age group of 12-15 years (66%) and 9-11years (34%). The students belonged to lower middle class (54%) as per modified Kuppu Swamy's socioeconomic classification. The mean height of the students in centimetres' was 145.01 ± 9.12 , mean weight in kilograms was 36.87 ± 8.85 and mean BMI was 17.49 ± 3.47 .

Snacks (41%), Fast food (25.50%), soft drinks (17.50%) and candies (16%) were the favourite junk foods among the study subjects (Fig. 1).

Most of the study subjects 50(25%) consume junk foods twice a week followed by 21% who consume for three to four times in a week. The taste of the junk foods was the major reason (57.6%) to choose these junk foods. The study subjects consume junk foods at their home (56.5%) followed by school and school premises (23%). 62% of the study subjects spend Rs 10-50/- on junk foods every week.

The source of information on arrival of the new junk food were the media (47%), their friends (35%) and shop advertisements (18%). Most of the study subjects watch television for thirty minute to one hour while consuming junk foods (61.5%), while only 2% watch television for more than two hours while having junk foods. The physical activity per day is thirty minutes to one hour (47%) followed by thirty minutes (25.5%). Majority of the study subjects had normal BMI (76.6%) (Table I).

The study subjects were aware that the consumption of junk food is not healthy (50%), it increases their weight (49.5%) and were aware of the bad effects (52%).

Study subjects who consumed junk food for more than two times a week had fallen sick more often (72%) than those who consumed junk food for less than two times in a week (28%). The difference observed was statistically found highly significant at $p < 0.05$. (Table 2). The common morbidities observed were Acute respiratory infections (62.2%), gastro-intestinal conditions (21.8%) and dental caries (15.5%).

DISCUSSION: The study titled "Junk food consumption pattern and obesity among school going children in an urban area was conducted at school to identify the fast food consumptions pattern and some of the related determinants among the school going children (9-13yrs).

Among 200 study subjects, it was observed that the favourite junk food were snacks (41%) and fast food (25,5%). Dorothy Jaganathan, Meera Mary Mathew⁽⁵⁾ in their study quotes

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that the order of preference for outside food stuff was Noodles, pizza, all chat items and all fast foods were on the top category of preference i.e.; noodles (16%), pizza (23%), chat items (42%) and fast foods (19%). 25% of the study subjects consumed junk food on an average of two to four times/ week (23%), similar observations were made by Monika Singh, Sunita Mishra.⁽⁶⁾

The study subjects mentioned that taste factor (57.6%) was one of the reasons to opt for consuming the junk foods and time factors (21.5%). Review done by Ashakiran and Deepthi R⁽¹⁾ mentioned that Time factor and Taste factor is another important reason to an extent that influences to opt for junk food. Changing life styles are also one of the factors to consume junk foods.

It was observed that 56.5% of the study subjects had junk foods at their homes and 23% in their school premises. Study done by Manpreet et.al⁽⁷⁾ observed that 75% of the parents bought snacks for their children at least once a week and 24% of the children purchased snacks for themselves as these were readily available in their school premises.

The knowledge of arrival of the new junk foods were from Television (47%) and their friends (35%). Similar findings were reported by Manpreet.⁽⁷⁾ Children watch television where fast foods have started domination the advertisements. Television viewing and simultaneous consuming junk foods have been reported by several studies.⁽⁸⁾ 61.5% of the study subjects had the habit of consuming junk foods and watching television which increases the intake of poor quality of the diet among these children.

Another finding related to this study is that majority of the study population (50%) are aware regarding the adverse effects of the junk food, but Vinay Gopal reveals that 25% of the study population were not aware regarding the harmful effects of the junk food and also the presence of the chemicals in junk foods.

It was observed in our study that 76.6% of them had normal Body mass index, 14% were under weight, 7.5% were over -weight and only 2.5% were obese. Study done by Shabana Tharkar and Vijay Viswanathan⁽⁹⁾ concluded that the overall prevalence of overweight was 12.1% among the children and 15.5% among the adolescents irrespective of socio-economic status and gender.

Study subjects who consumed junk food for more than two times a week had fallen sick more often (72%) than those who consumed junk food for less than two times in a week (28%). The difference observed was statistically found highly significant at $p < 0.001$. Amit Vasant Deshpande⁽¹⁰⁾ found that the prevalence of morbidities is higher in males than females, however this difference is not statistically significant ($X^2 = 0.685$, $df = 1$. $P = 0.408$ NS). Behl RK et al⁽¹¹⁾ carried a cross sectional study to determine the prevalence of asthma in Shimla and reported overall prevalence of asthma to be 2.3%.

LIMITATION OF THE STUDY: Given the scope of this survey, some unvalidated measures were used, however some of the factors with fast food intake in this current study is consistent with other studies^(7,8,11)

CONCLUSION: It is concluded that the increasing trend of the modern day epidemic of overweight and obesity in children calls for immediate action through appropriate nutrition intervention programmes involving school children, their parents and school authorities.

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REFERENCES:

1. Ashakiran and Deepthi R. Fast Foods and their Impact on Health, Journal of Krishna Institute of Medical Sciences University, July-Dec. 2012; 1(2): 7-15.
2. Vinay Gopal J, Sriram S, Kannabiran K and Seenivasan R. Student's perspective on junk foods: Survey, Sudanese journal of public health, Jan 2012; 7(1): 21-25.
3. Nicole I. Larson et.al, Fast Food Intake: Longitudinal Trends during the Transition to Young Adulthood and Correlates of Intake, Journal of Adolescent Health, (2008); 43: 79–86.
4. WHO Growth reference 5-19 years, <http://www.who.int/growthref/en/> accessed on 3/1/2015.
5. Dorothy Jaganathan, Meera Mary Mathew. Dietary pattern of obese children in Erode District of Tamil Nadu. International Journal of Health Science and Research, Vol 1; Issue:2; Jan 2012, pg 74-81.
6. Monika Singh, Sunita Mishra, Fast Food Consumption Pattern and Obesity among School Going (9-13 Year) in Lucknow District. International Journal of Science and Research, June 2014; 3(6): 1672-1674.
7. Manpreet Kaur, Amitha M Hedge. Are we aware of what we are, we are what we eat- An epidemiological survey. Jaypee's International journal of Clinical Pediatric Dentistry, Sept – Dec 2008; 1(1): 13-16.
8. Rebecca Kuriyan, Tinku Thomas, S Sumithra, Deepa P Lokesh, et al. Potential Factors Related To Waist Circumference In Urban South Indian Children. Indian Paediatrics, Vol 49, Feb 16, 2012, 124-128.
9. Shabana Tharkar and Vijay Viswanathan. Impact of Socioeconomic Status on Prevalence of Overweight and Obesity among Children and Adolescents in Urban India; The Open Obesity Journal, 2009; 1: 9-14.
10. Amit V Deshpande. A study of lifestyle profile and dietary pattern in school going children of Nagpur District; International Journal of Basic Medicine and Clinical Research, Vol 1, Issue 1 May 2014, page 8-13.
11. Behl R K, Kashyap S, Sarkar M. Prevalence of bronchial asthma in school children of 6-13 years of age in Shimla city; Indian journal of Chest Diseases and Allied Sciences, 2010; 52(3): 145-148.

Consumption of junk food/ week	No (%)
Once	32(16.0)
Twice	50(25.0)
Thrice	42(21.0)
Four times	42(21.0)
>5 times	34(17.0)
Factors influencing the choice of junk food	
Time factor	43(21.5)
Taste factor	114(57.6)
Changing life styles	15(07.5)
Influence of advertisements	28(14.0)

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Place of junk food consumption	
School premises	46(23.0)
Way back to school	41(20.5)
Home	113(56.5)
Amount spent for junk food/ week (Rs)	
Rs 10-50	124(62.0)
Rs 50-100	49(24.5)
Rs > 100	27(13.5)
Knowledge regarding the arrival of new junk foods	
Television	94(47.0)
Friends	70(35.0)
Shop advertisements	36(18.0)
Consumption of junk food & watching TV in a day	
0-30mint	41(20.5)
30 min- 1 hour	123(61.5)
1-2 hour	32(16.0)
>2hrs	04 (2.0)
Physical activity per day	
0-30mint	50(25.5)
30 min- 1 hour	94(47.0)
1-2 hour	49(24.0)
>2hrs	07(03.5)
BMI of the study subjects	
Normal	152(76.6)
Underweight	28 (14.0)
Overweight	15 (07.5)
Obese	05 (02.5)

Table 1: Some of the factors related to Junk food consumption

No. of times junk food eaten	Times fallen sick in last one month		Total (%)
	0-1 time (%)	>2 times (%)	
<2 times a week	68(45.3)	14(28.0)	82(41.0)
>2 times a week	36(72.0)	36(72.0)	118(59.0)
Total	150(75)	50(25)	200(100.0)

Table 2: Junk food consumption and morbidities in last one month

Chi -square =4.658 p=0.031.

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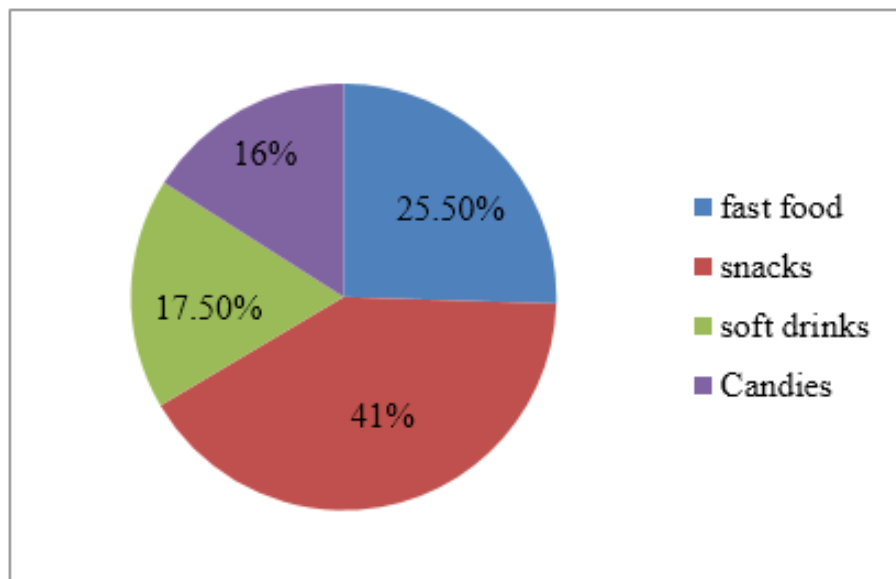


Fig. 1: Favourite junk foods among the study subjects

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Date of Submission: 13/03/2015.
Date of Peer Review: 14/03/2015.
Date of Acceptance: 16/03/2015.
Date of Publishing: 20/03/2015.