

Association of Fast Food Consumption to Weight Status of Adolescents

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Abstract: *Fast foods have become very popular among all age groups. The present study is done to assess the consumption pattern of fast foods (western foods, junk foods, instant foods) among adolescents prior to corona virus outbreak. This cross sectional study was done in Hyderabad (Telangana state). The study group consisted of 230 boys and girls studying 10, 11th, 12th and intermediate first and second year in the age group of 14-19 years, belonging to middle income and high income groups. Semi structured questionnaire was used to collect information. Frequency of consumption fast foods was recorded. Height and weight was taken using standard scales and BMI calculated. The Consumption of fast foods daily ranged between 4.8 percent to 15.2 percent for French fries, vegetable or chicken Manchuria, and fried rice, and chocolates by 28.3 percent. Among liquid foods, packed fruit juices are taken by 21.7 percent which is a healthy sign. Body Mass Index of boys and girls indicate 44.8 percent boys and 36.8 percent girls are under the normal category, in the overweight category boys are 41.2 percent and girls are 32.2 percent while 11.2 percent boys and 23 percent girls are obese. Girls are more than boys in the obese group which is of great concern and requires planning ameliorative measures. Girls consuming fast food once a day are overweight while boys consuming fast foods once a day are distributed between normal and overweight categories. Among girls bad choice of fast foods or no proper exercise could be the contributing factor to overweight.*

Keywords: Fast foods, Junk foods, Western foods, Body Mass Index, obese

1. Introduction

India is experiencing nutrition transition and life style changes leading to increased consumption of junk foods and growing number of meals purchased or consumed away from home. (1) Consumption of junk foods like chips, soft drinks, ice creams, baking products, chocolates, sweets and fried dishes among school children and adolescents are on the increase. (2) The cultural hybridization, increase in junk food/ fast food intake, adverse dietary behavior has penetrated into the smaller cities of India (3-6) The terms Junk food and fast food are interchangeably used, most junk foods are fast foods. As they are prepared and served fast, but all fast foods are not junk foods, especially when the contents are nutritious. e.g., Idly or dosa. (4, 8, 9)Fast food refers to the assembly process. Fast food is obtained at a restaurant, wherever the entire restaurant is designed to get the customer their food in a matter of few minutes. Junk foods refer to foods with more sugar, salt, fat and calories with little nutritive value e.g. Chips. (5, 10, 11, 12).Other terminologies used are convenience food which are available in the departmental stores, instant foods are those fast foods added to boiling water and the product ready to eat e.g. pasta and noodles, western foods – rapidly prepared food in a store such as McDonald's, KFC, Subway, and other traditional street foods sold on the streets and public places (13). Advantages of consuming fast foods as perceived: are saves cash, saves time, some are healthy can spend time with friends and family. Tips to avoid junk food: drink water, eat more protein and distance yourself from the desire, plan your meals, avoid being very hungry, fight stress, get enough sleep and correct meals. WHO reports preprocessed energy denser nutrient poor foods and sugar-sweetened beverages, in increasing portion size at affordable prices have replaced processed fresh foods in schools, colleges and families. These foods should be restricted as adolescents are at the habit-forming stage (4).Rise in fast food counters, increasing consumption of junk foods by adolescents, coupled with mushrooming wellness clinics, advertisement

on to weight management is very confusing - where do we balance?. This study is undertaken to assess the present trend of increasing fast food intake and its influence on weight.

2. Methodology

Cross sectional study was conducted among High school students in the age group of 15 to19 years from Hyderabad during August to October 2019. Three hundred students were identified of them 70 students were rejected, as information was not clear, finally 230 students were selected. A semi-structured questionnaire was prepared in English and was pretested in a group of 15 students before its usage in the main study. A list of common fast foods from KFC, Domino's, Subway, Mc Donald's, Chinese noodles was listed and the frequency of consumption was recorded. Other information like age, frequency of consumption, economic status, type of foods preferred was collected. Student's weight and height was taken using standard electronic balance. The balance is tested for its accuracy regularly. Body Mass Index was calculated and the children were classed as normal, overweight and obese categories (5)

Statistical Analysis: Chi square, ANOVA and percentages was done.

3. Results and Discussion

The response rate of the participants in the present study is 76.7 percent with 230 out of 300 participants effectively answered all questions.

Socio Demographic Profile of Adolescents

The group consisted of 143 boys and 87 girls (Table 1) studying in classes 10th, 11th /Intermediate 1st year/ and 12th class /Intermediated 2nd year. Tenth class students constitute 44.8 percent, and intermediate first year 27.6 percent and

second year intermediate student are 27.6 percent. Among them girls, are 37.8 percent and boys 62.2 percent.

Table 1: Age and Class wise Distribution

Class	Boys		Girls		Total	
	No	%	No	%	No	%
10 th	62	43.4	41	47.2	103	44.8
Inter 1 st yr	42	29.4	23	26.4	65	27.6
Inter 2 nd yr.	39	27.2	23	26.4	65	27.6
	143	100	87	100	230	100

Age distribution (Table 2) showed that the adolescents are in the age range from 14-19 years. Highest percent of boys (21.6) are in the 19 year group while among girls it is 18 year group (20.5)

Table 2: Age wise Distribution Adolescents

Age yrs	Boys		Girls		Total	
	No	%	No	%	No	%
14	18	12.6	10	11.5	28	12.2
15	28	19.6	14	16.2	42	18.3
16	16	11.2	17	19.5	33	14.3
17	22	15.4	17	19.5	39	16.9
18	28	19.6	19	21.8	47	20.5
19	31	21.6	10	11.5	41	17.8
	143	100	87	100	230	100

Economic Status

42.7 percent are from middle income and 57.3 are from high income group. The percent distribution of boys in the two income and age groups of 14-16 and 17-19 is almost similar. Among girls 55.2 percent are from middle income group and 44.8 percent from high income group. Comparing both boys and girls the percentage among boys is more in the higher income than among girls and vice versa in the case of girls (Table 3).

Table 3: Economic Status

Particular	Middle Income	High Income	Total
Boys-years			
14-16	45.2 (28)	54.8 (34)	100 (62)
17-19	40.7 (33)	59.3 (48)	100 (81)
Total	42.7 (61)	57.3 (82)	100 (143)
Girls -years			
14-16	56.1 (23)	43.9 (18)	47.2 (41)
17-19	54.3 (25)	45.7 (21)	52.8 (46)
Total	55.2 (48)	44.8 (39)	100 (87)

Consumption of Fast/junk Foods (dietary behavior of adolescents)

Fast food consumption was reported by 97.5 percent in China, 98 percent in Lucknow, by all students in Jammu and Kashmir, in several other studies done worldwide fast food consumption was between 30.3 to 93.5 percent in children (9.15-18.). In the present study all adolescents consumed fast foods. Among boys non vegetarians are 90.9 percent and 82.8 percent are among girls. Vegetarians constituted 9.1 percent and 17.2 percent of boys and girls respectively.

Frequency of consumption of fast foods in the last one month was recorded. (Table 4). Majority of the participants

expressed of consuming regularly. Many said it is not like a staple grain rice or wheat that we can specify the regularity. However only those who could remember the frequency were listed and others said "Most Often".

Fast foods are categorized as solid and liquid items. Under the solid foods category, majority adolescents (83.8 percent) consumed Pizza most often; lowest of 25.6 percent was recorded for fried rice. Fried rice was consumed very often as a substitute for rice. Consumption of fast foods daily was reported as 14.4 percent (12) as against the present study which ranged between 4.8 percent to 15.2 percent for French fries, veg or chicken Manchuria, and fried rice and chocolates by 28.3 percent. Among liquid foods, packed fruit juices are taken by 21.7 percent which is a healthy sign. Fast food consumption was reported by 97.5% of students in china, (12) 98% in a study done in Lucknow (13) by all students in Jammu and Kashmir (14). In several other studies the fast food consumption was between 30.3 to 93.5% children (9, 14). In the present study fast food consumption is 100 percent. One time per week consumption varied from 6.9 to 43% while in the present study 7.5% (6) In Chandigarh 58.8 % of adolescents preferred fast food, it increased in the present study as all the young consumers preferred tasty attractive foods (12, 14). Frequency of consumption of fast foods in relation to weight of boys and girls is categorized as normal and overweight (Table 5) Obese participants are grouped under overweight.

Table 5: Association of Frequency of Fast Food consumption to Weight Status

Frequency	Normal Weight		Over weight	
	Boys	Girls	Boys	Girls
	Percent (Number)			
Once/day	19.1 (13)	0	20.0 (15)	8.3 (14)
Alternate day	17.7 (12)	0	25.3 (19)	25.0 (12)
2/week	27.9 (19)	35.9 (14)	29.3 (22)	16.7 (8)
1/week	16.2 (17)	30.8 (12)	16.0 (12)	33.3 (16)
Most often	19.1 (13)	33.3 (13)	9.4 (7)	16.7 (8)
Total	100 (68)	100 (39)	100 (75)	100 (48)
Percent of 230	29.6 (68)	16.9 (39)	32.6 (75)	20.9 (48)

Boys consuming fast foods once a day are equally distributed between normal and overweight categories while all girls who took fast food once a day are overweight. It indicates the bad choice of fast foods among the girls or there is no proper exercise contributing to overweight. On the hand over all picture showed that 29.6 percent boys and 16.9 percent girls have normal weight, under the overweight category boys outnumbered girls.

Body Mass Index of boys and girls (Table 6) indicate 44.8 percent boys and 36.8 percent girls are under the normal category, in the overweight category boys are 41.2 percent and girls are 32.2 percent while 11.2 percent boys and 23 percent girls are obese. Girls are more than boys in the obese group is of great concern and requires planning ameliorative measures.

Table 6: Body Mass Index

BMI	Boys	Girls	Total
Normal weight (18.5-24.9)	44.8 (68)	36.8 (39)	46.5
Over weight (25 – 29.9)	41.2 (59)	32.2 (28)	37.8 (87)
Obese (>30)	11.2 (16)	23.0 (20)	15.7 (36)
Normal	63.6 (68)	36.4 (39)	100 (107)
Overweight	60.9 (75)	39.1 (48)	100 (123)

There is significant difference between weight and consumption of fast foods

4. Conclusion

Junk food consumption is 100 percent in this study. Eating junk food at eateries like KFC, McDonalds, Subway etc. rather than going to traditional restaurants has become a fashion and prestige. Study conducted in 2015 (1) indicated that fast foods became popular owing to the hype created by media apart from other sources but today's scenario is different, it is parents who, take their kids occasionally and for birthday parties etc. created a habit for the kids which continued into the adolescent age with increased frequency. Parents should be educated in making healthy choices instead of restricting from going to fast food centers. When children reach adolescent stage they will try to make healthy choices.

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Table 4: Frequency of Consumption of Fast-Foods By Adolescents

	Frequency of Consumption					Total
	Daily	alternate day	2/wk	1/week	most often	
Solids						
Pizza	0	0.9 (2)	3.5 (8)	11.8 (27)	83.8 (193)	100 (230)
Burger	0	14.4 (33)	6.9 (16)	10.4 (24)	68.3 (157)	100 (230)
French Fries	0.9 (2)	0.9 (2)	13.0 (30)	19.1 (44)	66.1 (152)	100 (230)
Sandwich	0	0	23.0 (53)	24.4 (56)	52.6 (121)	100 (230)
Noodles	0	0	23.0 (53)	23.5 (54)	53.5 (123)	100 (230)
Pasta	0	0	17.9 (41)	15.2 (35)	66.9 (154)	100 (230)
Veg. Manchuria	4.8 (11)	10.4 (24)	9.1 (21)	16.1 (37)	59.6 (137)	100 (230)
Chicken Manchuria	4.8 (11)	10.4 (24)	9.1 (21)	13.0 (30)	62.7 (144)	100 (230)
Fried Rice	15.2 (35)	15.7 (36)	21.3 (49)	22.2 (51)	25.6 (59)	100 (230)
Chocolates	28.3 (65)	21.3 (49)	10.0 (23)	15.2 (35)	25.2 (58)	100 (230)
Liquids						
Fruit juices packed	21.7 (50)	4.8 (11)	14.8 (34)	26.1 (60)	32.6 (75)	100 (230)
Tea	56.5 (130)	25.2 (58)	1.7 (4)	2.7 (6)	13.9 (32)	100 (230)
Green Tea	2.2 (5)	11.3 (26)	20.4 (47)	25.2 (58)	40.9 (94)	100 (230)
Coffee	39.1 (90)	16.9 (39)	6.9 (16)	9.2 (21)	27.9 (64)	100 (230)
Carbonated beverages	0	0	16.9 (39)	28.3 (65)	54.8 (126)	100 (230)