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Research Article

**FAST FOOD CONSUMPTION AND INCREASED CALORIC  
INTAKE LEADING TO OBESITY A SURVEY AMONG  
PAKISTANI TEENAGERS OF LAHORE PAKISTAN**

Dr.Sahar Naeem, Dr.Waqas Ahmed, Dr.Mudassar Younas

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**Abstract:**

**Background:** The aim of the study was to determine obesity rate in Pakistani teenagers associated with fast food consumption.

**Methods:** This cross-sectional study was conducted during the month of September 2018 in Lahore Pakistan. Information was collected from teenagers of different age groups ranging from 13-19 years old. A self-structured questionnaire was designed containing four sections to gather information from participants. BMI and %age of different variables were calculated.

**Results:** Total no of 1000 teenagers including male 536(53.6%) and females 464(46.4%) were approached out of which 334(34.4%) were overweight having BMI=25-29.9 and 544(54.4%) were obese having BMI>30. Mostly of them were 17-year-old 425(42.5%). Obesity rate is higher both in males and females but mostly females were more prone.

**Conclusion:** It is concluded from our study that consumption of fast food on daily basis and increased caloric intake will lead towards obesity among teenagers now a days. Obesity rate is greater in females (refer to stage 4. of table. 3) as compared to males however both males and females were prone towards obesity due to increased consumption (thrice a day) of fast food. Other variables like residential area of participants and type of fast food eaten were also accountable in this regard.

**Corresponding author:**

Dr. Sahar Naeem,

QR code



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## INTRODUCTION:

The prevalence of overweight and obesity has also increased substantially in the nutritional transition countries, and the health burden of obesity-related complications is growing. The introduction of fast-food chains and Westernized dietary habits providing meals with fast-food characteristics seems to be a marker of the increasing prevalence of obesity. The mechanisms involved are probably that the supply of foods is characterized by large portion sizes with a high energy density, and sugar-rich soft drinks.[1] Fast food can be defined as convenience food purchased in self-service or carry-out eating venues without wait service.[2]

In addition to the documented increase in fast food expenditures, many aspects of fast food make it suspect to the associated increases in overweight and obesity. Specifically, fast food tend to be energy dense, poor in micronutrients, low in fiber, high in glycemic load and excessive in portion size, causing many to exceed daily energy requirements.[2, 3]

Several dietary factors inherent to fast food may cause excessive weight gain such as massive portion size, high energy density, palatability (appealing to primordial taste preferences for fats, sugar, and salt), high content of saturated and trans fat, high glycemic load, and low content of fiber.[4]

There was no study conducted before in Lahore Pakistan to find out consumption of fast food among teenagers ranging from age of 13-19-year-old. The aims of this study were to determine whether fast food adversely affects diet quality in ways that might plausibly increase risk for obesity among teenagers.

### Literature review:

An investigation was directed in Iran in which the national pervasiveness of overweight and heftiness, just as some related way of life practices, without precedent for Iran were assessed. Overall, 50.4% (n545 113) of the members were male and 64.6% (n557 866) were from the urban regions. The national appraisals of overweight, stoutness and bleak heftiness were 28.6%, 10.8% and 3.4%, separately. Weight list (BMI)\$25 kgm<sup>2</sup> in men, ladies, urban inhabitants and provincial occupants were found in 37%, 48%, 46.7% and 35.5%, individually. Stomach corpulence was available in 43.4% of ladies, 9.7% of men, 28.5% of the urban inhabitants and 23% of the provincial occupants. Overweight just as summed up and stomach heftiness were increasingly common in the 45– 64-year age gathering. In spite of the fact that there was no noteworthy distinction in recurrence of utilization of the nutrition classes in subjects with

various BMI classifications, different sorts of physical exercises demonstrated a consistent decay with expanding BMI.[5]

Another investigation was directed in USA to look at the dietary profile related with fast-sustenance use. To think about the dietary admission of people on the day that they ate junk food with the day that drive-thru food was not eaten. Drive-thru food use was accounted for by 37% of the grown-ups and 42% of the kids. Grown-ups and youngsters who announced eating cheap food had higher admission of vitality, fat, immersed fat, sodium, carbonated soda, and lower admission of nutrients An and C, drain, products of the soil than the individuals who did not revealed eating drive-thru food (P\_.001). Comparative contrasts were seen among people between the day when junk food was eaten and the day when drive-thru food was not eaten. [6]

Another examination was led in Pakistan in which the investigation was meant to investigate dietary practices, physical action and inactive way of life related with overweight and weight, and their socio-statistic connects, among Pakistani elementary school youngsters. Also, we closed from this examination that the Children skipping breakfast (8%), eating junk food and snacks  $\geq$  once per week (43%) and being associated with stationary way of life  $>$  one hour daily (49%) were essentially bound to be overweight and large while those taking an interest in physical action  $>$  two times per week (53%) were altogether more averse to be overweight and hefty (all  $P < 0.01$ ). Skipping breakfast ( $P < 0.001$ ), eating junk food and tidbits ( $P = 0.001$ ) and stationary way of life ( $P < 0.001$ ) demonstrated a free positive relationship with BMI while physical movement demonstrated an autonomous backwards affiliation ( $P = 0.001$ ). Skipping breakfast (aOR 1.82, 95% CI 1.22-2.71), eating drive-thru food and snacks  $\geq$  once per week (OR 1.41, 95% CI 1.07-1.86), physical action  $>$  two times per week (aOR 0.49, 95% CI 0.34-0.70) and stationary way of life  $>$  one hour daily (aOR 1.56, 95% CI 1.19-2.03) were autonomous indicators of being overweight. Skipping breakfast had autonomous backwards relationship with physical action (aOR 0.63, 95% CI 0.45-0.89) and eating cheap food and bites had free positive relationship with inactive way of life (aOR 1.79, 95% CI 1.49-2.16). Female sexual orientation was freely connected with skipping breakfast (aOR 1.50, 95% CI 1.04-2.16). Male sexual orientation (aOR 1.64, 95% CI 1.33-2.02), urban territory with high SES (aOR 5.09, 95% CI 3.02-8.60) and higher parental instruction (aOR 1.74, 95% CI 1.12-2.68) were huge autonomous indicators of eating junk food and snacks

≥ once per week. Living in the rustic territory was freely related (aOR 2.51, 95% CI 1.71-3.68) with physical movement > two times every week. Male sexual orientation (aOR 1.60, 95% CI 1.31-1.95), urban territory with low SES (aOR 1.46, 95% CI 1.02-2.09), high-pay neighborhoods (aOR 1.52, 95% CI 1.02-2.25), higher parental training (aOR 1.55, 95% CI 1.03-2.34) and less kin (aOR 1.38, 95% CI 1.10-1.73) were free indicators of inactive way of life > one hour daily.[7]

Another investigation was directed in USA in which a house hold overview was led to discover impacts of drive-thru food utilization on vitality admission and diet quality among childrens and it was finished up from the review that junk food utilization was exceedingly common in the two sexual orientations, all racial/ethnic gatherings, and all areas of the nation. Controlling for financial and statistical factors, expanded drive-thru food utilization was autonomously connected with male sexual orientation, more seasoned age, higher family wages, non-Hispanic dark race/ethnicity, and living in the South. Kids who ate junk food, contrasted and the individuals who did not, devoured increasingly absolute vitality (187 kcal; 95% certainty interim [CI]: 109– 265), more vitality per gram of sustenance (0.29 kcal/g; 95% CI: 0.25– 0.33), progressively complete fat (9 g; 95% CI: 5.0 – 13.0), increasingly all out starch (24 g; 95% CI: 12.6 – 35.4), more included sugars (26 g; 95% CI: 18.2– 34.6), more sugar-improved refreshments (228 g; 95% CI: 184– 272), less fiber (1.1 g; 95% CI: 1.8 to 0.4), less drain (65 g; 95% CI: 95 to 30), and less leafy foods vegetables (45 g; 95% CI: - 58.6 to 31.4). Fundamentally the same as results were seen by utilizing inside subject investigations in which subjects filled in as their own controls: that is, youngsters ate progressively all out vitality and had poorer eating routine quality on days with, contrasted and without, drive-thru food.[8]

Another study was conducted in California in which relationship between fast-food restaurants near schools and obesity among middle and high school student was determined and we found that understudies with drive-thru food eateries close (inside one half mile of) their schools (1) expended less servings of products of the soil, (2) devoured more servings of soft drink, and (3) were bound to be overweight (chances proportion [OR] = 1.06; 95% certainty interim [CI] = 1.02, 1.10) or corpulent (OR = 1.07; 95% CI = 1.02, 1.12) than were adolescents whose schools were not close junk food eateries, after we controlled for understudy and school-level attributes. The outcome was special to eating at

drive-thru food eateries (contrasted and other close-by foundations) and was not watched for another unsafe conduct (smoking).[9]

## METHODOLOGY:

### Study settings:

A cross sectional study was conducted in Lahore Pakistan in October 2018. In which data was collected from total no of 1000 teenagers ranging from age of 13-19 years.

### Study design:

Data was collected from 1000 teenagers residing in Lahore ,the most populated city of Pakistan .Information was gathered from teenager of different age groups ranging from 13-19 years old. Participants residing in different area of Lahore Pakistan were invited to take part in our survey. We asked them a set of question written in our questionnaire, containing both open and closed ended questions.

### Data collection tool:

A self- made questionnaire was used to gathered information from participants, consisting of four sections.

Section 1. It contains informed consent.

Section 2. Containing information regarding participant ID, gender, age, weight, height, residential area.

Section 3. Containing food intake questions e.g. total no of meal per day including breakfast, lunch, snacks, dinner and fast food intake per day either once ,twice or thrice, weekly or monthly .Also included question about type of fast food (burger, pizza, shawarma ,chicken wings,Bar B Q ,chicken sigi, roast,pratha rolls, pastas,potato fries,soft drinks etc)

Section 4. BMI calculation.

According to WHO criteria classified in 4 stages.

Stage1.Underweight if BMI<18.5

Stage2. Normal if BMI=18.5-24.9

Stage3. Over weight(pre obese) if BMI=25-29.9

Stage 4.Obese if BMI >30

## ANALYSIS:

%age of fast food intake among male and female participants and their BMI were calculated by using SPSS version 20.

**RESULTS:**

A total no of 1000 respondents (teenagers) were approached. Total no of male and females in our study were 536(53.6%) and 464(46.4%) respectively.

Different age groups participants ranging from 13 to 19 years old were take part in study. Majority of them were 17 years old(42.5%). Other %age of respondents age groups given in table 1.

Table 1. Demographic characteristics of respondents N=1000

Demographic variables	Frequency%
<b>Gender</b>	
Male	536(53.6%)
Female	464(46.4%)
<b>Age (y)</b>	
13-14	86(8.6%)
15-16	245(24.5%)
17	425(42.5%)
18-19	244(24.4%)

Table 2. BMI stages, frequency and percentages of respondents N=1000

Stages	Frequency	Percentage
1. Underweight if BMI<18.5	37	3.7%
2. Normal if BMI=18.5-24.9	85	8.5%
3. Over weight(pre obese) if BMI=25-29.9	334	33.4%
4. Obese if BMI >30	544	54.4%

BMI calculations were given in table 2. According to that 37(3.7%), 85(8.5%),334(33.4%),544(54.4%)fall in stage 1,2,3 and 4 respectively, which shows

increased fast food consumption will lead obesity among teenagers. Also table 3 gives detailed figures between BMI stages and other variables.

Table 3. BMI stages among other variables

BMI Stages	Stage1	Stage2	Stage3	Stage4	Total
<b>Gender</b>					
Male	0	83	247	206	536
Female	37	2	87	338	464
<b>Age (years)</b>					
13-14	7	17	25	37	86
15-16	10	21	71	143	245
17	12	36	145	232	425
18-19	8	11	93	132	244
<b>Fast food consumption</b>					
Once a day	0	17	63	73	153
Twice a day	0	0	90	133	223
Thrice a day	0	0	125	271	396
weekly	5	23	42	54	124
Monthly	32	45	14	13	104
<b>Residential area</b>					
Near restaurants	13	33	281	460	787
Far restaurants	24	52	53	84	213
<b>Type of fast food</b>					
pizza	3	13	65	113	194
Burger	5	10	54	105	174

shawarma	2	15	45	97	159
Chicken wings	3	10	25	34	72
Paratha rolls	7	9	20	31	67
Pastas	2	5	17	12	36
Potato fries	1	3	29	37	70
Soft drinks	10	2	32	57	101
Bar B Q	2	2	14	33	51
Chicken sigi	1	9	13	12	35
Roast	1	7	20	13	41

### DISCUSSIONS:

In this survey we found alarming situation regarding the obesity rate among teenagers. Fast food consumption becoming a fashion and easy way to eat quickly prepared food items among teenagers. Other factors like palatability and easily availability of these items also involved. In our survey we found both male and female participants were prone to obesity but mostly females (338) falls in stage 4 of BMI (refer to table 3). In accordance to the age group mostly of our participants of 17 year old were obese. Following three issues should need to be addressed.

Firstly consumption of fast food on daily basis also in mostly cases three times a day among teenagers causes increased obesity rate.

Secondly residential area play vital role in eating habits of fast food, participants living near by the fast food restaurants would like to prefer fast food on home made dishes and in our findings having more obesity rate as compared to those which are not living near restaurants.

Thirdly type of fast (pizza, burger, shawarma and soft drinks) consumption is higher and leads obesity as compared to other items.

### CONCLUSION:

This study was conducted to find out the consumption of fast food and obesity rate among teenagers. Total no of 1000 participants take part in our study. obesity rate is greater in females (stage 4 table 3) as compared to males. No male was fall in stage 1, but majority (247) were in stage 3 of BMI. And we concluded from our study that fast food consumption in teenagers is becoming a trend and its harmful effects will lead towards obesity. Mostly of participants were 17 year old obese (42.5%). Fast food consumption on daily bases mostly thrice a day and residential area (near restaurants) and type of fast food (pizza, burger, shawarma, soft drinks) were majorly involved in obesity rate.

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