

# Trends in fast food consumption among adolescents in Ludhiana (Punjab)

NEMNUNHOI HAOKIP AND SONIKA SHARMA

The aim of this study was to examine the trends of fast food consumption among adolescent in Ludhiana. In a cross-sectional survey, 120 undergraduate students with equal proportions of boys and girls were randomly selected from Punjab Agricultural University, Ludhiana and recruited to participate in this study. The study was carried out using self-designed and pre-tested questionnaire to analyze the fast food consumption pattern of respondents. Twenty-four-hour diet recall and a face-to-face interview food questionnaire were performed. The study revealed that daily consumption of fast foods was higher among boys as compared to girls. Burger, Manchurian, Noodles, Pizza, Patty and *Samosa* were the frequently consumed fast foods amongst college students. The data revealed that 42.5 per cent college students *i.e.* 46.7 per cent boys and 38.3 per cent girls consumed fast foods on daily basis. About 31.7 per cent of the subjects *i.e.* 30 per cent boys and 33.3 per cent girls consumed fast food twice/ thrice a week. While 10.8 per cent respondents consumed fast foods weekly *i.e.* once week and 15 per cent consumed fast food fortnightly. The contribution of fast foods towards the total energy, protein, carbohydrate and fat was  $17.82 \pm 2.8$ ,  $14.1 \pm 3.9$ ,  $12.3 \pm 6.2$  and  $23.82 \pm 5.9$  per cent, respectively. Thus indicating a high consumption of fast foods among college students.

**Key Words :** Adolescents, Fast food consumption pattern, Twenty-four hour diet recall, Frequency of consumption, Contribution to major nutrients

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## INTRODUCTION

Fast food is convenience foods obtained in self service or take-away eateries with minimal waiting and are usually characterized as energy dense, low in micronutrients and fibre, high in simple sugars and salt, generally larger in portion size than conventional home-cooked or restaurant foods and highly palatable (Lewis *et al.*, 2005). Fast food is often highly processed and

prepared in an industrial fashion, *i.e.*, with standard ingredients and methodical and standardized cooking and production methods (Vaida, 2013). Fast food culture is an emerging trend among the younger generation. One of the main reasons college students depend on fast food is that they think they do not have the time to eat a healthier prepared meal at home. The ready availability, taste, low cost, marketing strategies and peer pressure make them popular with children and adolescents. Fast food restaurants are primed to maximize the speed, efficiency and conformity. The menu is kept limited and standardized essentially to minimize the waiting time so that the customers eat quickly and leave. This perspective delineates the emerging fast food culture in India, its impact on children and strategies to counter it (Mellinger,

### MEMBERS OF RESEARCH FORUM

**Author for correspondence :**

**SONIKA SHARMA**, Department of Food and Nutrition, Punjab Agricultural University, LUDHIANA (PUNJAB) INDIA  
Email : drsonika@pau.edu

**Associate Authors' :**

**NEMNUNHOI HAOKIP**, Department of Food and Nutrition, Punjab Agricultural University, LUDHIANA (PUNJAB) INDIA

2006 and Kaushik *et al.*, 2011). Eating out has emerged as a trend, which is prevalent among the Elite group. Two out of every household in this group eat out at least once a month. Moreover, a new and faster pace of life in big cities has also led people to find quicker meal solutions for their shortened lunch hours (Hanson, 2002). With changing life style and aggressive marketing by fast food outlets, fast food is also becoming popular in small towns; therefore, success of existing fast food outlets and entry of more is inevitable (Gupta, 2003). Fast food chains are gaining popularity with nuclear families as working parents have less time for meal preparation at home. The vast majority of working parents with school going children are laboured with exhausting commutes, other household chores and stress. While their children spend most of their time away from home by attending tuition classes after their school hours or engaged in recreational activity. For children skipping breakfast at home, fast food comes handy in school (Niemeier *et al.*, 2006). Childhood and adolescent obesity is an increasing problem. Eating out (fast food restaurants and sit-down restaurants) subjects customers to high caloric density foods, placing them at greater risk for excessive consumption of calories (Yamamoto *et al.*, 2005). High fat content, particularly cholesterol, sugar and salts have their adverse effects on health. Soaring calorie content with sugar can lead to obesity. Dense sugar content can cause dental cavities and type 2 diabetes mellitus (Nisar *et al.*, 2009). WHO has reported the rising incidence of obesity and chronic diseases such as cardio-vascular disease, cancer, osteoporosis, dental carries and diabetes among those who consume more of fast foods and soft drinks. They have proved that there is a link between many of these diseases and the pattern of food consumed. This shows that there is a need to change marketing (ads) strategies for the promotion of health enhancing foods (Andreyeva *et al.*, 2011). The Indian consumer spending rate on processed food had increased at an average rate of 7.6 per cent annually during the years 2008 to 2010 and this was expected to continue as the consumer expense would rise with an average of around 8.6 per cent till the year 2015. According to the National Restaurant Association of India, the fast food industry in India is currently estimated to be between Rs. 6750-Rs. 8000 crore, growing at a compound annual growth rate of 35-40 per cent. Statistics place India in 10<sup>th</sup> place in fast food per capita spending figures with 2.1 per cent

of expenditure of annual total spending. Therefore, the present study was undertaken to study the fast food consumption pattern among the adolescents and its per cent contribution to major nutrients.

## METHODOLOGY

A sample of 120 undergraduate students with equal proportions of boys and girls was randomly selected from Punjab Agricultural University, Ludhiana. In order to assess the type and frequency of fast foods among undergraduate boys and girls and their total food and nutrient intake, a dietary survey was carried out. Dietary survey was recorded by using "24 hour recall method" for seven consecutive days, using standardized containers. The amount of each food item was tabulated and then average daily intake of each food item was calculated. Nutrient intake was calculated using DIET CAL. The average raw amount in grams of each food item consumed was fed in the software. The nutrient intake was compared with RDA by ICMR (2010) and per cent adequacy of the various foods and nutrients were calculated. The type of fast food consumed was recorded from the seven day dietary record that the respondents maintained. From the dietary recall method, the frequency of fast food consumed was also calculated. The respondents were also asked to mention the place of purchase of fast food items.

## OBSERVATIONS AND ASSESSMENT

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

### Consumption of fast food among college students:

The study revealed that 42.5 per cent of college students (46.7% boys and 38.3% girls) consumed fast foods daily (Table 1) while 31.67 per cent of the subjects (30% boys and 33.3% girls) consumed fast food twice/thrice a week. About 10.83 per cent respondents (10% boys and 11.7% girls) consumed fast foods once a week and 15 per cent (13.3% boys and 16.7% girls) consumed fast food fortnightly. The daily consumption of fast foods among boys was more than girls.

### Place of consumption of fast foods :

The results of the places of consumption of fast foods are presented in Table 2. Results revealed that 44.16

per cent of the subjects *i.e.* 48.33 per cent boys and 40 per cent girls consumed fast foods in Students' home canteen situated inside the university campus. The results further revealed that 75 per cent boys and 40 per cent girls, respectively consumed fast foods at College canteen and this constitutes the highest percentage *i.e.* 68.33 per cent. While 30 per cent of respondents *i.e.* 20 per cent boys and 40 per cent girls consumed fast foods from roadside vendors. And 54.16 per cent of the subjects revealed that they consumed fast foods in a fast food centres *i.e.* 55 per cent boys and 53.33 per cent girls. Further it was observed that 65.83 per cent of the subjects *i.e.* 60 per cent boys and 71.6 per cent girls consumed fast foods in Restaurants.

### Frequency of consumption of fast foods among college students:

The data is presented in the Table 3. The results revealed that on a daily basis the fast food consumed by boys were *Samosa* (20%), *Patty* (16.66%), *Burger* (13.33%), *Noodles* (11.66%) and *Manchurian* (3.33%) and *Pizza* was not consumed on a daily basis. Further,

the table reveals that on twice/thrice weeks, the fast food consumption among boys were *Patty* (48.33%), *Samosa* (45%), *Noodles* (43.33%), *Burger* (36.66%) and *Manchurian* (26.66%). While on weekly (*i.e.* once in a week) basis, the consumption of fast foods among boys were *Manchurian* (46.66%), *Pizza* (13.33%), *Noodles* (35%), *Burger* (33.33%), *Patty* (30%) and *Samosa* (23.33%). And on fortnightly basis, the consumption of fast food among boys were *Pizza* (33.33%), *Burger* (16.66%), *Manchurian* (13.33%), *Samosa* (11.66%), *Noodles* (10%) and *Patty* (5%).

Similarly, for girls the table revealed that the fast food consumption on a daily basis were *Burger* (20%), *Samosa* (13.33%), *Patty* (11.66%), *Noodles* (6.66%) while *Manchurian* and *Pizza* were not consumed on a daily basis. Further, it was revealed that on a twice/thrice a week, the fast food consumption among girls were *Patty* (25%), *Samosa* (21.66%), *Noodles* (20%), *Burger* (15%), *Manchurian* (10%) and *Pizza* (8.33%). While on weekly basis (*i.e.* once in a week), the fast food consumption among girls were *Samosa* (45%), *Patty* (35%), *Noodles* (30%), *Burger* (25%), *Manchurian* (23.33%) and *Pizza*

**Table 1 : Consumption of fast foods among college students**

| Particulars            | Boys   |      | Girls  |      | Total   |       |
|------------------------|--------|------|--------|------|---------|-------|
|                        | n = 60 | %    | n = 60 | %    | n = 120 | %     |
| Daily                  | 28     | 46.7 | 23     | 38.3 | 51      | 42.5  |
| Twice/Thrice in a week | 18     | 30   | 20     | 33.3 | 38      | 31.67 |
| Weekly                 | 6      | 10   | 7      | 11.7 | 13      | 10.83 |
| Fortnightly            | 8      | 13.3 | 10     | 16.7 | 18      | 15    |

**Table 2 : Place of consumption of fast foods among college students**

| Place of consumptions  | Boys  |       | Girls |       | Total |       |
|------------------------|-------|-------|-------|-------|-------|-------|
|                        | n= 60 | %     | n= 60 | %     | n=120 | %     |
| Students' home canteen | 29    | 48.33 | 24    | 40    | 53    | 44.16 |
| College canteen        | 45    | 75    | 37    | 61.66 | 82    | 68.33 |
| Roadside vendors       | 12    | 20    | 24    | 40    | 36    | 30    |
| Fast food centre's     | 33    | 55    | 32    | 53.33 | 65    | 54.16 |
| Restaurants            | 36    | 60    | 43    | 71.6  | 79    | 65.83 |

**Table 3 : Frequency of consumption of fast foods among college students**

| Fast foods        | Boys (n=60) |                      |            |             | Girls (n=60) |                      |            |             |
|-------------------|-------------|----------------------|------------|-------------|--------------|----------------------|------------|-------------|
|                   | Daily       | Twice/ thrice a week | Weekly     | Fortnightly | Daily        | Twice/ thrice a week | Weekly     | Fortnightly |
| <i>Burger</i>     | 8 (13.33)   | 22 (36.66)           | 20 (33.33) | 10 (16.66)  | 12 (20)      | 9 (15)               | 15 (25)    | 24 (40)     |
| <i>Manchurian</i> | 2 (3.33)    | 16 (26.66)           | 28 (46.66) | 8 (13.33)   |              | 6 (10)               | 14 (23.33) | 35 (58.33)  |
| <i>Noodles</i>    | 7 (11.66)   | 26 (43.33)           | 21 (35)    | 6 (10)      | 4 (6.66)     | 12 (20)              | 18 (30)    | 22 (36.66)  |
| <i>Patty</i>      | 10 (16.66)  | 29 (48.33)           | 18 (30)    | 3 (5)       | 7 (11.66)    | 15 (25)              | 21 (35)    | 17 (28.33)  |
| <i>Pizza</i>      | -           | 8 (13.33)            | 25 (41.66) | 20 (33.33)  |              | 5 (8.33)             | 12 (20)    | 18 (30)     |
| <i>Samosa</i>     | 12 (20)     | 27 (45)              | 14 (23.33) | 7 (11.66)   | 8 (13.33)    | 13 (21.66)           | 27 (45)    | 12 (20)     |

**Table 4 : Contributions of fast food to major nutrient intake of college students**

| Nutrients    | Boys (%)   | Girls (%)  | Total (%) |
|--------------|------------|------------|-----------|
| Energy       | 16.44±3.39 | 19.2±2.21  | 17.82±2.8 |
| Protein      | 13.5±4.17  | 14.7±3.64  | 14.1±3.9  |
| Carbohydrate | 9.73±6.32  | 14.9±6.11  | 12.3±6.2  |
| Fat          | 19.5±5.34  | 28.14±6.47 | 23.82±5.9 |

(20%). While on fortnightly basis, the consumption of fast food among girls were Manchurian (58.33%), Burger (40%), Noodles (36.66%), Pizza (30%), Patty (28.33%) and *Samosa* (20%).

Arulogun and Owolabi (2011) reported that 80.5 per cent of the respondents consume fast foods weekly. Of these 33.9 per cent took it occasionally, 22.4 per cent once in a week and 18.3 per cent twice a week. The types of commonly consumed were flour products (81.1%) high in carbohydrates, fats and sugar which include meat pie, doughnut, beef roll, egg roll followed by combination of flour products and carbonated drinks (17.7%) and carbonated drink (1.2%). Singh and Mishra (2014) also reported in that out of 100 students 40 per cent of respondent ate pizza once per week, 39 per cent of respondent ate burger 2-4 time per week, 29 per cent of respondent ate chocolate 2-4 time per week, 35 per cent of respondent ate ice cream daily, 33 per cent of respondent ate cookies/ cake 5-6 time per week, 31 per cent of respondent ate chowmine 2-4 times per week, 31 per cent of respondent ate pasta once per week, 42 per cent of respondent ate maggi 5-6 time per week.

#### **Contributions of fast food to major nutrient intake among college students:**

The data on this aspect is depicted in Table 4. Fast food contributed 16.44±3.39 per cent energy among boys and 19.2±2.21 per cent for girls. Per cent contribution of fast foods to protein intake of college students among both boys and girls were 13.5±4.17 and 14.7±3.64 per cent, respectively. Fast food contributed 9.73±6.32 and 14.9±6.11 per cent carbohydrate among boys and girls, respectively. Percentage contribution of fast foods to fat intake was found to be 19.5±5.34 and 28.14±6.47 per cent, respectively among both boys and girls.

Similar finding were reported by Khanna (1995) among 250 adolescents of Jalandhar and Ludhiana cities of Punjab that contribution of fast foods towards total energy, protein, carbohydrate and fat was found to be 9.5, 5.4, 7.9 and 9.8 per cent, respectively. Afolabi *et al.*

(2013) in another study also reported that the mean energy intake by the respondents was 2947±1567.9Kcal. Male respondents had a significantly higher ( $p<0.05$ ) energy intake (3405.6±1387.7Kcal) than the female respondents (2061.9±838.6Kcal) with fast food supplying 20.3 per cent of the total energy intake of both male and female respondents. Powell and Nguyen (2013) reported that fast-food and full-service restaurant consumption, respectively, was associated with a net increase in daily total energy intake of 126 kcal and 160 kcal for children and 310 kcal and 267 kcal for adolescents and higher intakes of regular soda (+74g and +88g for children and +163g and +107g for adolescents) and SSBs generally. Fast-food consumption increased intakes of total fat (+7–8g), saturated fat (+2–5g) and sugar (+6–16g) for both age groups and sodium (+396mg) and protein (+8g) for adolescents). Paeratakul *et al.* (2003) reported that consumption of high-fat fast foods contributes to higher energy and fat intake and lower intake of healthful nutrients. Fast foods have poor nutritional quality as they do not provide any proteins, vitamins and minerals but only supply empty calories to our body. Thus, the excessive consumption of fast foods can lead to many nutritional deficiency diseases and can also result in obesity a life threatening condition (Vaida, 2013 and Srivastava, 2015).

#### **Conclusion :**

Boys daily consumption of fast foods was higher as compared to girls. Burger, Manchurian, Noodles, Pizza, Patty and *Samosa* were the frequently consumed fast foods amongst college students. The contribution of fast foods towards the total energy, protein, carbohydrate and fat was 17.82±2.8 per cent, 14.1±3.9 per cent, 12.3±6.2 per cent and 23.82±5.9 per cent, respectively.

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