Consumption of canteen food items among college students of Ludhiana city

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ABSTRACT
Consumption of takeaway and fast food by young adolescents is no longer confined to the developed countries; it has spread to the developing countries as well. The culture of fast food consumption has replaced the traditional meal among students and is a great public health concern. Excessive consumption of fast food is responsible for obesity epidemics and the cause of a dramatic increase of obesity-related diseases (e.g. diabetes, heart diseases etc). So, there is a need to study the extent of consumption of canteen food items among students and their level of satisfaction from it. Therefore, present investigation entitled “Consumption of Canteen Food Items among College Students of Ludhiana City” was conducted. For the study, 20 colleges were selected purposively and from each selected college 8 students were selected randomly. Therefore, the total sample comprised of 160 students. The data were collected by personal interview. The results of the survey revealed that teenagers were the largest consumers of canteen food. The maximum percentage of students (53.1%) preferred to visit college canteen daily for eating. Majority of respondents (76.5%) preferred to eat fried foods being served in their college canteen. But, most of the respondents were highly dissatisfied with the quality of food, sanitary conditions, ambience and seating arrangement of their canteens. Students are investing a part of their pocket money into buying food items in and around colleges. They need to be taught to see what they are getting in return. Specific health education programs, dietary guidelines and effective public awareness campaigns could be initiated to address the unhealthy life-style of students and improve their health.

Key Words : Fast food, Consumption, Food pattern, Sanitary condition, Ambience

INTRODUCTION
Consumption of takeaway and fast food continues to increase in Western societies and is particularly widespread among young people adolescents. This unhealthy practice is also becoming more popular in developing countries. When the young enter college life, they take more control of their lifestyle, in particular food choices and practices, especially if they are away from home. The food consumption patterns and associated nutritional risks specific to students is a key concern. Changes in lifestyle and loss of the family tradition of eating...
together trigger the popularity of fast foods among young people. The shift from healthy, homemade food to more convenient, longer lasting fast foods combined with a sedentary lifestyle has resulted in global fattening and related health complications. Regular eating of fast food can increase the risk of weight gain and obesity because of having a high energy density with the presence of high levels of fat and sugar in the meal, and a correspondingly low level of fiber and protein.

Dietary habits and lifestyle practices are considered as important determinants of being overweight. Alarmingly, instead of preferring healthy foods, the young generation is buying unhealthy fast foods causing a long term negative effect on their health as well as putting an additional economic pressure on parents as these foods are costly. Though most of the young people consume fast food as a part of social gathering, they are getting addicted due to have addictive ingredients in the processing of it. Most of the time students prefer this kind of ready to eat foods to save both time and money (due to its easy accessibility and availability). Food borne illness associated with the consumption of outside foods has been reported in several places in India and elsewhere. *Salmonella* subspecies is a post modern pathogen which belongs to important food contaminating bacteria, causing a high number of human infections worldwide. *Salmonella* have been isolated from several raw vegetables from many countries and these foods have been implicated in outbreaks of Salmonellosis in U.S. (Toormina, 1997). Hence, it is imperative that the study to be conducted to assess the consumption pattern of canteen food among visitors and problems experienced by them.

**Objectives :**

1. To study the extent of canteen food consumption among students.
2. To assess the level of satisfaction of respondents regarding their college canteen and improvements suggested by them in their college canteen.

**METHODOLOGY**

The study was conducted in canteens of different college of Ludhiana city. 20 colleges were selected purposively keeping in view the convenience and familiarity of investigator with the localities of colleges. Further from each selected college, 8 students were selected randomly for data collection as per the objective of the research study. The total sample comprised of 160 students. Keeping in mind the objectives of the study, interview schedule was prepared for gathering information from the respondent. The interview schedule comprised of following parts:

**Interview schedule-1 :**

It was prepared for collecting information from students which further comprised of two parts:

**Profile of students visiting canteen:**

This part of the interview schedule included statements related to general information about the students like age, class, type of family, size of family, total family income, pocket money received etc.
Specific information:
This part of the schedule was designed to collect information regarding canteen food consumption among students. It included questions related to frequency of eating canteen food, monthly expenditure on canteen food, extent of satisfaction from canteen food and canteen related problems experienced by them.

RESULTS AND DISCUSSION
The results of the present study in accordance with the objectives obtained through the use of prescribed methodology and standard tools have been presented. The results are reported and discussed under the following main sections-
1. Socio economic profile of the students.
2. Extent of canteen food consumption among respondents.
   2.1 Frequency of visiting college canteen by the respondents.
   2.2 Frequency of eating different food items in college canteen.
   2.3 Money spent by the respondents in canteen at each visit.
   2.4 Food liked by the respondents in college canteen.
3. Level of satisfaction of respondents regarding their college canteen.
   3.1 Respondents’ opinion regarding conditions of their college canteen.
   3.2 Respondents’ opinion regarding quality of food being served in college canteen.
   3.3 Likeable aspects of the canteen.
4. Improvements suggested by respondents in college canteen.

Socio-personal profile of the students:
The socio-personal profile of the respondents included age, education, type of family, family size, number of family members, family occupation, and nature of mother’s job, family income and pocket money received/month. It is seen from the data that 70.6 per cent of the selected students were in the age group of 17-20 years, 25.6 per cent of the respondents were in the age group of 20-24 years, 3.1 per cent of the respondents belonged to the age group of 24-28 years. This shows that teenagers are the largest consumers of canteen food.
An analysis of the educational status of the respondents revealed that 33.8 per cent of the respondents were in BA/B.Sc. II yr. followed by 26.3 per cent of respondents were in BA/ B.Sc. I year. This shows that the students of BA/B.Sc. I & II yrs. were the frequent visitors of canteen. In urban areas the nuclear family setup is becoming increasingly popular. Same trend was observed in the present study, i.e. as high as 83.1 per cent of the respondents were from nuclear families as compared to joint families which were only 16.9 per cent.
Regarding the size of the family, the findings revealed that maximum percentage of the respondents (75.0 %) had up to 4 members in their family, whereas 19.4 per cent families had 5 to 8 members in their family. It is evident from the data that majority of the respondents were from business class families i.e. 55.0 per cent whereas 45.0 per cent were from service class families. Majority of respondents’ mothers (78.1%) were housewives. Only 21.9 per cent were working i.e. either they were in Government service/ private service/ teaching service. This shows that mother’s occupation had no bearing on canteen food consumption by the students. Even the students whose mothers remain at the home were...
not bringing homemade food/Tiffin and were depending on canteen food. Maximum percentage of the respondents *i.e.* 56.2 per cent had monthly income up to Rs. 40,000 while 31.3 per cent of the respondents had family income between Rs. 40,000 –Rs. 80,000 per month. Out of total sample, majority of the respondents (44.4%) received pocket money on the daily basis, whereas 38.1 per cent of respondents received pocket money on the monthly basis. The amount of pocket money was worked out considering all the personal allowances received by the respondents. It is clear from the data that majority of respondents (58.8%) got pocket money up to Rs. 3,000/ month, while 35.6 per cent of respondents received pocket money between Rs. 3,000- Rs. 6,000 per month.

**Extent of canteen food consumption among students :**

The consumption pattern of canteen food by respondents was studied in terms of respondent’s frequency of visiting college canteen, money spent in canteen at each visit and food enjoyed in canteen.

**Frequency of visiting college canteen by the respondents :**

The data regarding the frequency of visiting college canteen by the students is presented in Fig 1.

[Fig. 1 : Distribution of respondents according to the frequency of canteen visits]

It is clear from the data in Fig. 1 that the more than half of respondents (55.0 %) preferred to visit college canteen daily for taking refreshment, while 18.7 per cent of respondents visited canteen up to three times in a week. However, 14.3 and 11.8 per cent of respondents visited their college canteen more than three times a week and once a week. This shows that majority of students were enjoying canteen food, without bothering about food hygiene, nutrition and health.
Frequency of eating different food items in college canteen:

It is clear from the Table 1 that majority of respondents 67.5 per cent consumed *samosa* very often. While, only 16.8 per cent of respondents rarely consumed *samosa*. As many as, 75.0 per cent of respondents usually consumed *kachori* and *pavbhaji* being served in their college canteen. More than half of respondents (53.7%) oftenly consumed *paneer pakora* and *dosa*. Half of the respondents rarely consumed pastry, whereas, 66.8 per cent of respondents rarely purchased *barfi* from their college canteen. The data further revealed that 78.1 per cent and 80.0 per cent of respondents usually consumed potato chips and cold drinks. It is clear from the data that students are least bothered about the negative effects of processed and fried food on their health. So, they need to be educated to look into the nutritional value of foods being served in their college canteen and develop taste for healthy choices. Similar were the result of study conducted by Finch *et al.* (2006) who also revealed that the majority of canteen visiting children purchased less healthy foods and high-sugar drinks.

<table>
<thead>
<tr>
<th>Table 1: Distribution of respondents according to frequency of eating food in college canteen (n=160)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sr. No.</td>
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<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<td>6.</td>
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<td>7.</td>
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<td>8.</td>
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<tr>
<td>9.</td>
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<tr>
<td>10.</td>
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<td></td>
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</tbody>
</table>

Figures in parenthesis indicate percentage

Money spent by respondents in canteen at each visit:

The data in Fig. 2 reveals that majority of students (67.5 %) spent Rs. 50 – Rs. 100 in college canteen at each visit, while 22.5 per cent of respondents spent less than ‘50 in canteen. However, Rs. 100 – Rs. 200 were spent by 6.3 per cent of respondents. However, a negligible percentage of respondents *i.e.* 3.7 per cent spent more than Rs. 200 at each visit.

Food liked by respondents in college canteen:

These days people often prefer convenient foods *i.e.* readymade food being more tasty and enjoyable although loaded with calories. A wide variety of snacks are available in college canteens *i.e.* baked, fried and roasted snacks which are liked by the most of the students.
The data in Fig. 3 clearly show that about 2/3rd of the students preferred fried food (76.5 %), while 10.5 and 3.2 per cent of respondents preferred baked and roasted food, respectively. However, 9.8 per cent of respondents preferred to eat packaged chips and soft drinks served in college canteen. This shows that majority of students like high-sugar drinks, fried food and packaged snacks. The results of the present study are supported by the results of study conducted by Bell and Swinburn (2004) disclosed that intake of fast food, snacks, high-sugar drinks and confectionery was high in Australian schools as compared to the healthy foods.

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quality of food being served in the canteen. It was measured on 4 point scale i.e. HS: Highly Satisfied; S: Satisfied; DS: Dissatisfied; HDS: Highly Dissatisfied by assigning 4, 3, 2, and 1 scores, respectively.

**Respondents’ opinion regarding conditions of college canteen:**

The improvements in the basic sanitation, hygiene, quality food and customer’s service of canteen are the most desired factors but these are in very poor condition. So it is important to study the respondents’ opinion about existing conditions of college canteen. The data regarding this are presented in Table 2.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Conditions of college canteen</th>
<th>Percentage</th>
<th>Mean score</th>
<th>Z-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>HS</td>
<td>S</td>
<td>DS</td>
</tr>
<tr>
<td>1.</td>
<td>Overall ambience of the canteen.</td>
<td>0.00</td>
<td>11.3</td>
<td>82.5</td>
</tr>
<tr>
<td>2.</td>
<td>Staff behavior.</td>
<td>3.7</td>
<td>57.5</td>
<td>34.3</td>
</tr>
<tr>
<td>3.</td>
<td>Hygiene of canteen staff</td>
<td>0.62</td>
<td>9.4</td>
<td>76.8</td>
</tr>
<tr>
<td>4.</td>
<td>Cleanliness of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canteen furniture</td>
<td>1.25</td>
<td>63.1</td>
<td>33.1</td>
</tr>
<tr>
<td></td>
<td>Cooking utensils.</td>
<td>0.00</td>
<td>41.2</td>
<td>51.8</td>
</tr>
<tr>
<td></td>
<td>Serving crockery</td>
<td>3.75</td>
<td>7.5</td>
<td>82.5</td>
</tr>
<tr>
<td></td>
<td>Cooking and washing area</td>
<td>2.5</td>
<td>15.0</td>
<td>76.8</td>
</tr>
</tbody>
</table>

* Significant at 5% level, NS- Non significant
HS = Highly Satisfied  S = Satisfied  DS = Dissatisfied  HDS = Highly Dissatisfied

It is observed from the data in Table 2 that 82.5 per cent of respondents were dissatisfied with the overall ambience of their respective canteens and 6.25 per cent of respondents were highly dissatisfied with the overall ambience of their canteen, respectively, while only 11.3 per cent of respondents were satisfied with the environmental condition of their canteen. Majority of the respondents (57.5%) were satisfied with the staff behavior, while 34.3 per cent of respondents were dissatisfied with the behavior of canteen staff. Further, it is clear from the data that maximum percentage of respondents (76.8%) were dissatisfied with the hygiene of canteen staff such as their clothing outfit, nails etc. which mainly affect the quality of food being served in college canteen. So far as cleanliness of canteen furniture is concerned, majority of respondents (63.1%) were satisfied while 33.1 per cent of respondents were dissatisfied. It was observed that, in most of the canteens, the tables were cleaned with very dirty dishcloth which provides a favorable environment for the growth of disease causing microorganisms. Similarly, maximum percentage of respondents (82.5%) were dissatisfied with the cleaning of serving crockery/ utensils while 6.25 per cent of respondents were highly dissatisfied with the cleaning of serving utensils. It was observed by the investigator that, in most the canteens, unhygienic practices of washing of glasses, plates and other utensils were practiced by canteen workers. The utensils were washed in a bucket/ tub of water and without using soap solutions, which leads to an increased contamination with food borne pathogens causing food borne diseases. Regarding cleanliness of cooking and washing area, maximum percentage of respondents (76.8%) were dissatisfied, while 15.0 per cent of
respondents were satisfied with the cleanliness of preparation area.

The data reported in Table 2 were further subjected to statistical analysis for the critical analysis of hygienic condition of college canteen; Z-values were worked out. The statistical analysis of data reveals that the respondents were highly dissatisfied with hygienic conditions of college canteen i.e. staff hygiene, ambience, cleanliness of serving and cooking utensils and washing area with Z-values 3.31, 2.93, 2.47 and 2.12, respectively which are significant at 5% level.

**Respondent's opinion regarding quality of food being served in college canteen:**

Students often spend a major portion of their pocket money for buying food items in and around their college. The canteen food attracts all age groups, but it can be dangerous if not handled properly. These days most of the students are aware about quality and are careful while purchasing canteen food. What are their opinions about the quality of food being served in their college canteen was also studied. The findings in this respect are disclosed in this section of the study.

The data in Table 3 reveal that 87.5 per cent of respondents were dissatisfied with the quality of food being served in their college canteen, whereas only 11.2 per cent of respondents were satisfied. As far as taste of food item is concerned, 85.6 per cent of respondents were satisfied with it, while 13.1 per cent of respondents expressed their dissatisfaction. As high as, 86.8 per cent of respondents were dissatisfied with the quantity of food being served to them. About half the respondents (52.5%) were dissatisfied with the variety of food being served in college canteen, while 45.0 per cent of respondents were satisfied. Regarding the nutritive value of the food item, maximum percentage of respondents (78.1%) were dissatisfied, whereas 11.2 per cent of respondents were highly dissatisfied.

The statistical analysis of Table 3 reveals that respondents were satisfied with the taste of food items being served in college canteen. The Z-value 1.36 was significant at 5% level. However, the respondents were dissatisfied with the other qualities of food being served in college canteen i.e. quantity, nutritive value of food and freshness of food being served to the consumers with Z-values 5.2, 3.18 and 2.51, respectively which are significant at the 5% level. The present results are in tune with the results of the study conducted by Warren et al. (2005) who found that secondary school respondents were more dissatisfied with the nutritional quality of food. It was concluded that most schools suggested the improvement in

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Condition of food served in college canteen</th>
<th>Percentage</th>
<th>Mean score</th>
<th>Z- value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HS</td>
<td>S</td>
<td>DS</td>
<td>HDS</td>
</tr>
<tr>
<td>1.</td>
<td>Food freshness</td>
<td>0.00</td>
<td>11.2</td>
<td>87.5</td>
</tr>
<tr>
<td>2.</td>
<td>Taste/ flavor</td>
<td>0.00</td>
<td>85.6</td>
<td>13.1</td>
</tr>
<tr>
<td>3.</td>
<td>Quantity/ serving.</td>
<td>0.00</td>
<td>4.3</td>
<td>86.8</td>
</tr>
<tr>
<td>4.</td>
<td>Variety</td>
<td>2.5</td>
<td>45.0</td>
<td>52.5</td>
</tr>
<tr>
<td>5.</td>
<td>Nutritive value</td>
<td>0.00</td>
<td>10.6</td>
<td>78.1</td>
</tr>
</tbody>
</table>

* Significant at 5% level, NS= Non significant

HS = Highly Satisfied, S = Satisfied, DS = Dissatisfied, HDS = Highly Dissatisfied
the nutritional quality of the food services, especially through school food policies.

**Likeable aspects of the canteen:**

Food items sold in and around the college during working hours or lunch time play a special role in college life because it provides refreshment and fulfills energy requirements of students. The likeable aspects of the college canteens includes: availability of food items at reasonable rates, quick food service and tasty food items. The detailed results regarding likeable aspects of the canteen of selected users are presented in Fig 4

![Distribution of respondents according to their opinions about likeable aspects of their canteen](image)

*Multiple responses

**Fig 4:** Distribution of respondents according to their opinions about likeable aspects of their canteen

The most likeable aspect of the college canteens was found to be the price of the food items. It was ranked at number one by the 75.0 per cent respondents followed by quick service (54.3%) and seating arrangement (9.3 %) which obtained the second and third rank, respectively. The findings further reveal that quality of food scored the last rank for which only 2.5 per cent of respondents expressed their liking, indicating that the respondents were aware of the fact that food being served in college canteen was not up to the mark with respect to nutritive value even then more than 50 per cent of respondents were regular eaters of canteen food because of their liking for spicy canteen food.

**Improvements suggested by respondents in college canteen:**

The respondents were asked to give their suggestions for making improvements in their college canteen, so that they may feel more safe and satisfied while eating out. The data regarding their suggestion is presented in Fig. 5.

It is clear from the Fig. 5 that 89.3 per cent of respondents suggested the improvement in hygienic and sanitary conditions of their college canteen whereas quality of food and seating arrangement obtained the second and third rank with 78.1 per cent and 64.3 per cent,
respectively. It is evident from the Fig 5 that the quantity of food scored the forth rank (44.3%). Since the college canteens did not provide much variety in food items as per the demand of students. The findings further indicate that the price of food scored the last rank for which only 16.8 per cent of respondents suggested change in price. It can thus be concluded that there is a need to improve hygiene, sanitation, quality and quantity of food, besides proper training for canteen staff is required to improve their food handling, storage, preparation and service practices.

**Conclusion:**

It is clear from the results though maximum percentage of students (78.1%) were dissatisfied with the nutritional of food being served in college canteen still more than half of students (55.0%) of students preferred to visit college canteen daily for eating and spent Rs. 50- Rs. 100 per day on canteen food. It is evident from the results that students preferred fast food without bothering about food hygiene, nutrition and health. Excessive consumption of fast food is responsible for obesity epidemics and the cause of a dramatic increase of obesity-related diseases. Therefore, it is necessary to educate the students regarding nutritional value of the canteen foods, ambience of canteen and hygiene condition of the server to develop healthy choices.

**REFERENCES**


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