Original Research Article

Fast food consumption pattern amongst undergraduates of various disciplines of private colleges in Pune

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ABSTRACT

Background: The consumption of various types of fast food is increasingly germinating in all components of the world, each in developed and developing countries.

Methods: A cross sectional study was done to explore the perception and knowledge regarding fast food consumption from March 2019 to June 2019 amongst the 300 undergraduate students within the ages of 18 to 20 of three established private colleges of different disciplines in Pune. Paperless data was collected by a predesigned, pretested questionnaire with the help of google forms and statistical analysis was done.

Results: The prevalence of consumption of fast food was found to be maximum in the undergraduates belonging to the high-income group (socio-economic class I). Around 85% of the undergraduates consumed fast foods and out of 85% nearly 17% consumed once a day. The undergraduates from all disciplines were also perceived as fast food consumption is measure of one's socio-economic status, 76% for medical and the lowest for engineering undergraduates (55%). A significant difference between medical, engineering and architecture undergraduates was reported regarding the perception that fast food consumption has no harmful effect on body (40, 26 and 57, p<0.001). About 37% of the students had very poor knowledge, 40% of the students had poor knowledge,13% had average and only 10% had good knowledge regarding fast food consumption leading to non-communicable diseases.

Conclusions: The consequences of this study propose that a requirement for health education programs that stimulate healthy eating habits and lifestyle for undergraduate college students.

Keywords: Fast food, Undergraduate students, Knowledge, Perception, Pune

INTRODUCTION

Fast food market in India is expected to be worth US$ 27.57 billion by 2020.[1] Statistics place India in 10th spot in fast food per capita going through figures with 2.1% of expenditure of annual total spending.[2] In 2018, 34.52 percent of respondents in India stated they eat fast food less than once per week.[3] Consumption of fast foods has gradually become a common lifestyle particularly in urban zones and among youngsters regardless of associated adverse health consequences. Epidemiological data from developing and developed countries concluded that with the westernization of the diet, many chronic diseases would emerge, first as obesity followed by diabetes and cardiovascular diseases.[4] In view of urbanization and lifestyle changes, many people supplant healthy foods with fast foods which mostly comprise of saturated and trans-fats with low content of huge portion sizes and fibres. This study therefore was carried out amongst undergraduates of various disciplines of private colleges in Pune with the following objectives such as to assess the fast food

consumption pattern and perception amongst undergraduates and to study the knowledge regarding fast food consumption leading to non-communicable diseases in the same.

METHODS

A cross sectional study was done from March 2019 to June 2019 amongst the undergraduate students of three established Bharati Vidyapeeth University, Pune private colleges of different disciplines in Pune. Considering the 89% prevalence of fast food consumption in undergraduate students and an allowable error was considered as 4% of prevalence, the sample size of 297 was obtained.[5] Thus for the sake of convenience, the study was conducted among 300 undergraduate students of different disciplines (100 from medical college, 100 from engineering college and 100 from architecture college) within the ages of 18 to 20 and studying in 2nd year as they were the most stable and settle students as compare to 1st year and their seniors and also regular with their class schedule. The survey instrument was made after a thorough review of the literature. Google forms has been taken the ideal option as that is easy, student friendly and convenient to conduct the study. The tool was evaluated by two peers and the faculty to obtain face validity. Approval from the Institutional Ethical Board was obtained before data collection. The permission to conduct the study was obtained from respective college principals. All the selected undergraduate students were made well informed of the study aim and objectives and written consent was taken for their participation in the study, just after the lecture in each private college, as that time maximum students were present in the class. Disinterested students and those who have not given the consent were not included in the study. Survey was conducted by circulating the link through WhatsApp to each 2nd year group of 3 private colleges. The question of roll number, name of each student and name of the college were included in the Google forms to avoid the multiple submissions. The Google link was opened till the 100 responses from each private college.

After the survey had been completed, a thanked message for taking the time to complete the survey has been sent on the same WhatsApp group to each private college.

Prior to the development of the survey questionnaire, an exploratory survey with randomly selected 20 undergraduate students of each private college was conducted in order to identify type of fast foods and the factors that likely influence the consumption of fast food.

A predesigned, pretested questionnaire was used to collect data regarding socio-demographic information like age, sex, mothers and father's education, occupation, etc., pattern of fast food consumption, perception about fast food consumption and knowledge regarding fast food consumption leading to non-communicable diseases.

Knowledge was assessed by using a 4-point Likert-type scale and undergraduate students were classified as very poor, poor, average and good.

The data was collected and SPSS statistics version 20 was used for statistical analysis. Chi-square test and percentages were used as per requirement. Odds ratio is calculated to measure the strength of association of knowledge regarding fast food with consumption of fast food in undergraduate students.

RESULTS

Three hundred undergraduate students of three different disciplines that is 100 from medical, 100 from engineering and 100 from architecture took part in the study. The sample was dominated by male undergraduates in each discipline that is 51%, 58% and 55% in medical, engineering and architecture respectively. Majority of the undergraduates that is 45% were coming from their home to college while 32% were staying in hostel. Very few that is 23% were staying as a paying guest. The overall education level of the mothers was lower than that of the fathers. The percentage of middle school mother is 8% while it is 3% for the fathers. The percentage of secondary school mothers is 13.6% while 4.3% for the fathers. The percentage of higher secondary school mothers is 39.66% while 27.6% for the fathers. The percentage of university graduate mothers is 28.9% while 55% for the fathers and the percentage of university postgraduate mothers is 3.6% while 10% in fathers. The most frequent result for the fathers belonging to medical students is graduate and postgraduate as compare to engineering and architect students (p<0.001). Table 1 shows the demographic characteristics.

The results of association of consumption of fast food with gender, stay, mother's and father's education and mother's and father's occupation and socio-economic status is shown in Table 2. The consumption of fast food was slightly higher in males (44.3%) than in females (40%). It also reveals that the consumption of fast food was maximum among undergraduates who are localities (39.3%), followed by hostilities (27%) and staying in paying guest (18.3%). This difference was not found to be statistically significant (p>0.001). The prevalence of consumption of fast food was much more (27.6%) among students whose fathers were in professional occupation (doctors, engineers, CA, etc)/ business or in service (55.3%) as compared to the other category. It can be seen from Table 2 that the prevalence of consumption of fast food among various socioeconomic classes was found to be maximum in the higher socioeconomic class i.e., class I. The overall difference in the prevalence rate of consumption of fast food among various socioeconomic classes was found to be statistically significant (p<0.01).

Table 1: Demographic characteristics of undergraduate students (n=300).

Characteristics	Medical undergraduates (n=100)	Engineering undergraduates (n=100)	Architecture undergraduates (n=100)	Chi square value	P value
Gender					
Male	51	58	55	0.99	0.607
Female	49	42	45		
Stay					
Home	32	54	49		
Hostel	37	26	33	12.1	0.017
Paying guest	31	20	18		
Father's education					
Middle	0	8	1		
Secondary	1	9	3		
Higher secondary	6	55	22	108.32	<0.001
Graduate	72	28	65		
Postgraduate	21	0	09		
Mother's education					
Primary	7	10	1		
Middle	0	19	5		
Secondary	14	18	9	68.8	<0.001
Higher secondary	30	43	46		
Graduate	40	10	37		
Postgraduate	9	0	2		
Father's occupation					
Business	37	29	36		
Service	60	68	62	1.915	0.751
Retired	3	3	2		
Mother's occupation					
Business	13	17	15		
Housewife	55	45	50	2.048	0.727
Service	32	38	35		

Table 2: Association of consumption of fast food with gender, stay, mother's and father's education, mother's and father's occupation and socio-economic status.

Characteristics	Consumption of fast food		Chi square value	P value
	Yes (%)	No (%)		
Gender				
Male	133 (44.33)	31 (10.33)	3.55	0.06
Female	121 (40.33)	15 (5)		
Stay				
Home	118 (39.33)	17 (5.66)		
Hostel	81 (27)	15 (5)	20.93	0.39
Paying guest	55 (18.33)	14 (4.66)		
Father's education				
Middle	3 (1)	6 (2)		
Secondary	10 (3.33)	3 (1)		
Higher secondary	57 (19)	26 (8.66)	50.20	<0.001
Graduate	154 (51.33)	11 (3.66)		
Postgraduate	30 (10)	0 (00)		
Mother's education				
Primary	14 (4.66)	4 (1.33)	37.46	<0.001
Middle	13 (4.33)	11 (3.66)		

Characteristics	Consumption of fast food		Chi square value	P value
	Yes (%)	No (%)		
Secondary	29 (9.66)	12 (4)		
Higher secondary	102 (34)	17 (5.66)		
Graduate	85 (28.33)	02 (0.66)		
Postgraduate	11 (3.66)	0 (0)		
Father's occupation				
Business	83 (27.66)	19 (6.33)		
Service	166 (55.33)	24 (8)	4.95	0.08
Retired	5 (1.66)	3 (1)		
Mother's occupation				
Business	36 (12)	9 (3)		
Housewife	125 (41.66)	25(8.33)	2.19	0.33
Service	93 (31)	12 (4)		
Socio economic status				
Class I	103(34.33)	16 (5.33)		
Class II	85 (28.33)	17 (5.66)	71.2	<0.001
Class III	29 (9.66)	50 (16.66)		

#Figures in parenthesis indicates percentages.

Table 3: Perception about fast food consumption among undergraduate students.

Perception about fast food consumption	Medical undergraduates (n=100)	Engineering undergraduates (n=100)	Architecture undergraduates (n=100)	Chi square value	p value
Fast foods are part of normal diet					
Yes	38	63	75		
No	59	37	25	32.89	<0.001
Don't know	3	0	0		
Fast food consumption is measure of one's socio-economic status					
Yes	76	55	65		
No	20	45	34	18.09	<0.001
Don't know	4	0	1		
Fast food consumption is sign of enjoyment and sophistication					
Yes	79	45	72		
No	18	49	25	28.6	<0.001
Don't know	3	6	3		
Fast food consumption has no harmful effect on body					
Yes	40	26	57		
No	38	53	37	25.35	<0.001
Don't know	22	21	6		
Fast foods are cooked under healthy condition and environment					
Yes	36	15	60		
No	44	43	27		
Don't know	20	42	13	50.15	<0.001
Fast foods contain chemicals/toxins in preservatives					
Yes	45	7	43		
No	34	49	37	45.04	<0.001
Don't know	21	44	20		

In the perception category, most of the architecture undergraduates (75%) overwhelmingly agreed that fast food is a part of normal diet followed by engineering (63%) and medical (38%) (Table 3). This difference was found to be statistically significant (p>0.001). All the undergraduate students from all disciplines were also perceived as fast food consumption is measure of one's socio-economic status, with the highest percentage for medical students (76%) and the lowest for engineering students (55%). A significant difference between medical, engineering and architecture students was reported regarding the perception

that fast food consumption has no harmful effect on body (40, 26 and 57, p<0.001).

Table 4 shows that majority 63% of medical undergraduate students were having knowledge that fast foods contain high calories followed by architecture students (53%) and engineering students (16%). The finding of the present study also reveals that only medical students had more knowledge regarding risk of having high cholesterol and become obese after the frequent consumption of fast food and this difference is statistically significant (p<0.005). Surprisingly majority of the architecture students had

knowledge of getting diabetes, hypertension and heart diseases in later life because of high consumption of fasts food as compared to medical and engineering students.

About 37% of the students had very poor knowledge, 40% of the students had poor knowledge, 13% had average and only 10% had good knowledge regarding fast food consumption leading to non-communicable diseases. From the Table 5, those undergraduates have knowledge about fast food showed the consumption 5.03 times more than that who don't have knowledge.

Table 4: Knowledge regarding fast food consumption leading to non-communicable diseases.

Knowledge regarding fast food consumption	Medical undergraduates (n=100)	Engineering undergraduates (n=100)	Architecture undergraduates (n=100)	Chi square value	P value
Fast foods contain high calories					
Yes	68	16	53	67.27	<0.001
No	22	38	26		
Don't Know	10	46	21		
Eating fast foods frequently increases the risk of high cholesterol					
Yes	44	8	38	36.29	<0.001
No	33	50	38		
Don't know	23	42	24		
Eating fast foods frequently increases the risk of become obese					
Yes	65	13	53	61.65	<0.001
No	20	39	23		
Don't know	15	48	24		
Eating fast foods frequently increases the risk of high blood pressure					
Yes	29	10	45	31.48	<0.001
No	41	48	34		
Don't know	30	42	21		
Eating fast foods frequently increases the risk of heart diseases					
Yes	27	9	53	48.88	<0.001
No	37	50	29		
Don't know	36	41	18		
Fast foods consumption predisposes to develop diabetes					
Yes	27	14	49	36.58	<0.001
No	48	40	26		
Don't know	25	46	25		

Table 5: Association of knowledge score with consumption of fast food (n=300).

Knowledge score	Consumption of fast food in undergraduates		P value
	Yes (%)	No (%)	0.003
Yes (good+average)	66 (22)	3 (1)	OR=5.03
No (poor+very poor)	188 (62.66)	43 (14.33)	CI=1.50 to 16.76

#Figures in parenthesis indicates percentages.

DISCUSSION

The study examines the consumption pattern towards fast food in various disciplines of Pune city in India. The present study shows the males are more attracted towards the fast food than in females. This observation is in line with the study conducted among students of private

universities in Bangladesh.[6] In contrast to our study, among the women 92.6% and 87.8% of the men chose going to the fast food restaurants, a study done by KayiSoglu et al in university students.[7]

Urbanization is also accompanied by changes in habitual dietary practices and food consumption patterns. Important

determinants of the structure of diets in urban areas include demographic factors, the organization of food markets, and the lower relative prices of processed foods relative to staples in urban areas. It should be noted that we found, 45% of the students give preference to fast food than homemade meal. The reasons they quoted for this preference were fast food are more delicious, more nutritious and readily available without stress. The similar reasons like it saves time, convenient for change and fun, offers variety of menu and delicious among others were given in the study done in Ghana.[8]

In the study conducted by Bowman et al adolescents of families with high income and residents of affluent regions consumed more fast foods.[9] Increased income may worsen nutrition in some ways when food environments facilitate spending toward unhealthy diets. These findings corresponded with the present study findings as students, those from affluent families, students who had educated parents and the ones who were studying in medical discipline ate more fast foods than others. These results indicated that in the societies with high income and educational level, the amount of traditional food consumption decreased, whereas fast foods and prepared foods were more consumed. Two studies found that lower education was associated with a higher level of fast food consumption.[10,11]

In our study it is found that despite the place of residing, every student diet consists of fast food, then whether he/she stays at home or hostel. Also, in the study conducted by Jayasinghe et al among university students found no association between the place of residence and consumption of fast food.[12]

Majority of students perceived that the fast food is a part of normal diet. The plausible purpose behind this is the role of TV and other mass media and big names conceivably giving an inappropriate message to adolescents.

An investigation in Iran presented unhealthy eating patterns, high level of soft drink consumption, breakfast skipping, and unseemly recurrence of family suppers for fast food consumption with friends.[13] This observation is consistent with the results of our study, majority of the students perceived that fast food consumption is a sign enjoyment and sophistication.

It is found out that 7% of the students from all disciplines are daily consumers with 17% of them consume fast foods like pizzas, burgers, french fries with coke, etc. more than four times per week. Therefore, it is evident that more or less fast foods have become part of their daily diet.

The medical undergraduates are studying nutrition in their respective bachelor programs and therefore they had enough knowledge of the hazards of consuming frequent fast foods than engineering and architect students. Besides, having such knowledge regarding the harmful effects of consuming fast food, the students do not hesitate to consume fast food. The results of odd ratio between the knowledge of awareness and fast food consumption is 5.03 (CI 51.50, 16.76).

Thus, to conclude that there is a distinction between the knowledge and consumption of fast foods in undergraduate students. Only 10% of the students had good knowledge and were aware of the risks associated with their unhealthy eating habits, but their habits did not correlate with their knowledge base. One of the factors which come into existence is that whose parents were in the category of professional jobs, business and service were indulging more in fast food consumption so parents should be counselled to keep an inconspicuously check on their children's spending habits. Students need to be motivated on how to apply the knowledge they possess into their lifestyle. Further research can also include exercise habits after they eat fast food.

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