www.ThePharmaJournal.com

The Pharma Innovation



ISSN (E): 2277-7695 ISSN (P): 2349-8242 NAAS Rating: 5.23 TPI 2023; 12(3): 4065-4070 © 2023 TPI

www.thepharmajournal.com Received: 19-01-2023 Accepted: 23-02-2023

Jyoti Tiwari

M.Sc. Scholar, Department of Food & Nutrition, Acharya Narendra Deva University of Agriculture and Technology Kumarganj, Faizabad, Uttar Pradesh, India

Sadhna Singh

Professor, Department of Food & Nutrition, Acharya Narendra Deva University of Agriculture and Technology Kumarganj, Faizabad, Uttar Pradesh, India

Shweta Chaudhary

Assistant Professor, Department of Food & Nutrition, Acharya Narendra Deva University of Agriculture and Technology Kumarganj, Faizabad, Uttar Pradesh, India

Corresponding Author: Jyoti Tiwari

M.Sc. Scholar, Department of Food & Nutrition, Acharya Narendra Deva University of Agriculture and Technology Kumarganj, Faizabad, Uttar Pradesh, India

Evaluation of fast foods preferences among college students of rural and urban areas

Jyoti Tiwari, Sadhna Singh and Shweta Chaudhary

Abstract

The present study was conducted to collect information regarding fast foods choice among college students. Faizabad district was purposively selected for the study. Two colleges namely Chandrabali Singh Urmila Mahavidyalay, Shivnagar, Kumarganj – Faizabad from rural area and Saket P.G. College, from urban area Faizabad were selected for the study. A sample of 260 college students 130 each, were selected from two colleges. Information regarding age, sex, caste, family composition, education and economic status of the family and specific information regarding fast food choice, type of fast food liked, reason for consuming fast food, opinion of respondents about fast food etc. were gathered through self-structured questionnaire. In this study the majority of respondents were belong to general category (33.84%). Study also reveals that majority (71.92%) was enjoying fast foods and most of the respondents were belong to vegetarian category. Delicious taste, attractive presentation and low price attract the respondents to consuming fast foods. In case of their preference of fast foods majority of respondents in rural area like chaat (30.76%), samosa (29.23%), chole-bhature (18.46%), burger (30.0%) etc. On the other hand, in urban area the majority of respondents like kachorie (23.84%), samosa (22.30%) followed by chole-bhature (13.84), burger (28.46%).

Keywords: Fast food, self-structured questionnaire, fast food preferences

1. Introduction

Fast food denotes foods which are served quickly at outlets. Fast foods include sandwich, French-fries, pizza, ice-cream, noodles, chips, hamburgers etc. These are western type of fast food which has become popular in metropolitan cities of our country, but in our country also a number of foods like samosa, kachories, pakoras, pav-bhaji, wada-pav, chhole-bhature, chaat, tikki etc. are available with street vendors. Probably there is no Indian who has not heard of these foods. (Joshi, 2002) [7]. Fast food consumption continues to increase in western societies and is particularly widespread among young people adolescents. This practice is also becoming more popular in developing countries. (Bipasha and Goon, 2013) [9]. In parallel with the rapidly developing technology, eating habits of Indians are also undergoing changes. Although, nutrition is important for all segments of the society, it is also important for college students, who gain independence in this period, start to decide on their eating preferences, to eat out more frequently and to get influenced by their circle of friends. (Ozdogen, 2012) [14]. Fast food represents an important part of the daily diet for millions of low- and middle-income consumers in urban areas. Street food plays an important socio-economic role: it provides a regular source of income for millions of low- or unskilled men and women in developing countries. (FAO, 2012) [2]. Consumption of fast foods has become almost a global phenomenon, as more and more people are lured by it. Fast food is especially popular among adolescents, who likely to visit fast food outlet twice per week. (Vaida, 2013) [11].

2. Materials and Methods

1. Locale of the study

Faizabad district of Eastern U.P. was purposively selected because of easy accessibility and availability of sample size

2. Sampling design

For the sample selection stratified sampling was used. One rural college Chandrabali Singh Urmila Mahavidyalay, Shivnagar, Kumarganj, Faizabad and one urban college Saket P.G. College, Faizabad were selected. A sample of 260 college students 130 each, were selected from two colleges. Out of 130, 65 were girls and 65 boys from rural college and 65 girls and

65 boys were from urban college.

3 Tools and techniques used

Self-structured questionnaire was prepared to elicit information of the respondents with respect to their general profile and specific information regarding their fast food choices. Thus, the questionnaire included the following aspects:

a. General Information

Information regarding age, sex, caste, family composition, education and economic status of the family were collected through self-structured questionnaire.

b. Information regarding fast food choice

Specific information regarding fast food choice, type of fast food liked reason for consuming fast food, opinion of respondents about nutritional value of fast food etc.

3. Result and Discussion

3.1The demographic profile of college students

The majority of rural college students were of 21 years of age while, minimum were of 17 and 24 years of age. The majority of urban college subjects were of 18 years and minimum were of 24 years of age.

The majority of rural college students were from other backward classes (30.76%) followed by scheduled caste (25.38%) and least were schedule tribes (15.38%).

In case of urban college students the majority was from general category (39.23%) followed by other backward classes (31.53%), schedule caste (21.53%) and schedule tribe (7.69%), respectively. Overall the maximum (33.84%) subjects were from general category followed by OBC (31.15%), schedule caste (23.46%) and schedule tribe (11.53%).

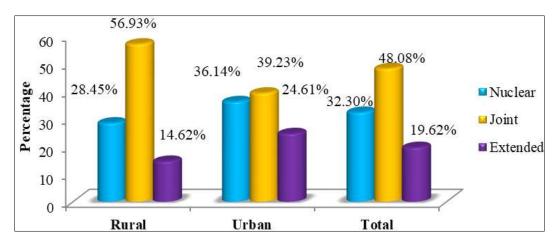


Fig 1: Shows the family profile of selected rural and urban college students. The joint family system still dominated both in rural and urban area and 56.93% subjects were from joint family followed by 28.45% from nuclear family and 14.62% from extended family in rural area

In urban college also majority of subjects were from joint families (39.23%), followed by nuclear family (36.14%) and extended (24.61%) families. The overall 48.08% subjects were from joint family, followed by 32.30% from nuclear families and 19.62% from extended families.

Educational status of rural and urban college students 52.30 and 47.69% rural students were postgraduates and undergraduates. While 74.61 and 25.38% urban college students were undergraduates and postgraduates, respectively. Illicit the information regarding monthly income of head of family of rural and urban college students. Majority of

Enjoy fast food

No

Yes Total subjects (37.30%) were from families having monthly income between Rupees 15,000 to 25,000.

The total 18.46% rural and 13.07% urban college students were not getting pocket money from their parents. In rural college 36.92, 25.38, and 19.23% students received Rs. 100-300 Rs, 301-600 and above Rs. 600 as pocket money. While, in urban college 46.92, 18.46 and 21.53% received Rs. 100-300 Rs, 301-600 and above 600 rupees pocket money.

3.2 Opinion of rural and urban college students regarding fast foods

Rural Urban **Grand total** Total N=130 (%) Boys N (%) Boys N (%) Total N=130 (%) N=260 (%) Girls (%) Girls N (%) 43(33.07) 13(20.00) 30(23.07) 73(28.07) 12(18.46) 31(47.69) 17(26.15) 53(81.53) 34(52.30) 87(66.92) 52(80.00) 48(73.84) 100(76.92) 187(71.92) 65(100) 65(100) 130(100) 65(100) 65(100) 130(100) 260(100)

Table 1: Fast foods choices of rural and urban college students

The data given in Table no. 1 gives a picture of choice of rural and urban college students for fast foods. When asked whether they like fast foods 66.92% rural and 76.92% urban students response was 'yes' whereas, 33.07% rural and 23.07% urban students said 'No' i.e. they don't like fast foods.

Kumar et al. (2006) [8] also reported that samosa was found be

the most popular fast food among 99.2% and pizza was least preferred (22.8%) fast food among adults. Singh *et al.* (2007) ^[4] reported that the young Indian consumers have passion for visiting fast food outlets for fun and change, but homemade food is their first choice. They have highest value for taste and quality (nutritional values) followed by ambience hygiene.

Table 2: Reason for liking fast foods by rural and urban college students

Distribution of reason	Rural				Urban	Grand total N=260 (%)	
Distribution of Teason	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Granu total N=200 (70)
Delicious	19(29.23)	37(56.92)	56(43.07)	16(24.61)	26(40.00)	42(32.30)	98(37.69)
Attractive presentation	19(29.23)	18(27.69)	37(28.46)	21(32.30)	23(35.38)	44(33.84)	81(31.15)
Low price	27(41.53)	10(15.38)	37(28.46)	28(43.07)	16(24.61)	44(33.84)	81(31.15)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

The data given in Table No. 2 explains the reason assigned by college students for liking fast foods. In the present study majority of rural students (43.07%) said that the main reason for liking fast food is that "it is delicious" followed by 28.46%, respectively said that the "attractive presentation" and "low price" of fast food is the main reason for liking fast foods. Whereas, in urban area majority 33.84% each assigned "attractive presentation and low price" as main reasons for

liking fast foods and 32.30% response for liking fast food was "it's delicious taste".

Anand (2011) [1] explored the impact of demographics and psychographics on young consumer's food choice towards fast food in Delhi, India and found determinants impacting consumers' choice towards fast food were passion for eating out, socialization, taste for fast food and convenience.

Table 3: Opinion of rural and urban college students about fast foods

Oninian of rean and onta	Rural				Urban	Crand total N=260(0/)	
Opinion of respondents	Boys N (%)	Girls N (%)	Total N=130(%)	Boys N (%)	Girls N (%)	Total N=130(%)	Grand total N=260(%)
It is tasty	19(29.23)	19(29.23)	38(29.23)	21(32.30)	13(20.00)	34(26.15)	72(27.69)
Leads to obesity	18(27.69)	16(24.61)	34(26.15)	13(20.00)	17(26.15)	30(23.07)	64(24.63)
Easily available	15(23.07)	16(24.61)	31(23.84)	13(20.00)	18(27.69)	31(23.84)	62(23.84)
Unhealthy	13(20.00)	14(21.53)	27(20.76)	18(27.69)	17(26.15)	35(26.92)	62(23.84)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

Table No. 3 and clearly depitics the opinion of the rural and urban college students regarding fast food was asked. The majority of rural and urban student's response was that "it is tasty" (27.69%), 24.63% feel that consumption of fast foods

leads to obesity. 23.84% student's response was that fast food is "easily available". Similar percentages (23.84%) reported that fast food is unhealthy.

Table 4: Type of most preferred fast foods by rural and urban college students

Tyme of Foot food		Rural			Urban	Crond total N=260 (0/)	
Type of Fast food	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Grand total N=260 (%)
Vegetarian	60(92.30)	58(89.23)	118(90.76)	61(93.84)	56(86.15)	117(90.00)	235(90.38)
Non-vegetarian	5(7.69)	7(10.76)	12(9.23)	4(6.15)	9(13.84)	13(10.00)	25(9.61)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

Table No. 4 revealed that vegetarian type of fast foods were mostly liked by rural (90.76%) and urban (90.0%) college students. Only 9.23 and 10.00% rural and urban college students preferred non-vegetarian fast foods. Easy availability of vegetarian fast foods may be the main reason for liking for vegetarian fast foods.

Arulogun and Owolabi (2011) [13] explored the fast food

consumption pattern and the perception of it as a risk factor for non-communicable diseases among undergraduates of Ibadan University. They found that fast food most preferred were flour-based along with cold drinks. Fast food consumption was more among who's where parents were employed.

Table 5: Favorite fast foods of rural and urban college students

Foresite feet feeds		Rural			Urban	Grand total N=260(%)	
Favorite fast foods	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Granu total N=200(70)
Western type	14(21.53)	18(27.69)	32(24.61)	22(33.84)	17(26.15)	39(30.00)	71(27.30)
Chinese	8(6.15)	16(12.32)	24(18.46)	14(10.76)	12(9.25)	26(20.00)	50(19.23)
South Indian	8(6.15)	13(10.00)	21(16.15)	16(12.30)	16(12.30)	32(24.61)	53(20.38)
Others	35(26.94)	18(13.84)	53(40.76)	13(10.00)	20(15.38)	33(25.38)	86(33.07)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

Table No. 5 shows the most preferred fast foods in rural area were other types like chaat, samosa and pani-puri etc. (40.76%). Whereas, in urban area western type of fast foods like burger, pizza, hotdog, pastry etc. were most popular (30.0%). Western, Chinese and south Indian fast foods were liked by 24.61, 18.46 and 16.15% students in rural area.

While, in urban area chaat, pani-puri, samosa etc. were liked by 25.38% students followed by south Indian (24.61%) and Chinese (20.00%) type of fast foods.

Priyadarshani (2016) [15] also found similar observation 64% respondents visit fast food outlets and the most favourite cuisine preferred by the respondents were western fast foods.

Total

Traditional Fast foods		Rural			Grand total		
Traditional Fast 1000s	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	N=260 (%)
Chaat	16(24.61)	24(36.92)	40(30.76)	11(16.92)	11(16.92)	22(16.92)	62(23.84)
Samosa	23(35.38)	15(23.07)	38(29.23)	10(15.38)	19(29.23)	29(22.30)	67(25.76)
Chole-bhature	14(21.53)	10(15.38)	24(18.46)	10(15.38)	8(12.30)	18(13.84)	42(16.15)
Kachories	2(3.07)	4(6.15)	6(4.61)	14(21.53)	16(24.61)	31(23.84)	37(14.23)
Dosa	6(9.23)	4(6.15)	10(7.69)	8(12.30)	5(7.69)	13(10)	23(8.84)
Pakoras	0	3(4.61)	3(2.30)	3(4.61)	1(1.53)	4(3.07)	7(2.69)
Idli	3(4.61)	0	3(2.30)	1(1.53)	1(1.53)	2(1.53)	5(1.92)
Pavbhaii	1(1.53)	5(7.69)	6(4.61)	8(12.30)	4(6.15)	11(8.46)	17(6.53)

Table 6: Most popular traditional fast foods among rural and urban college students

In rural area chaat (30.76%) was found to be most popular traditional fast food followed by Samosa (29.23%), Chole-bhature (18.46%), Dosa (7.69%), Kachories (4.61%), Pav-bhaji (4.61%), and Idli (2.30%) and Pakoras (2.30%), respectively. Among urban college students the most popular traditional fast food was Kachories (23.84%) followed by Samosa (22.30%), Chaat (16.92%) Chole-bhature (13.84%), Dosa (10.0%), pav- bhaji (8.46%), Pakoras (3.07%) and Idli

65(100)

65(100)

(1.53%), respectively.

65(100)

65(100)

Kumar *et al.* (2006) ^[8] also reported in their study that samosa, a deep fried Indian snack, was most preferred (99.2%) fast food item. Whereas, Arulogun and Owolabi (2011) ^[13] showed that respondents mostly preferred flour-based fast food products together with carbonated drinks. Chaat also came out to be the most common fast food item preferred by 99.2%, respondents.

130(100)

Table 7: Most popular western/chinese fast foods among rural and urban college students

Western Fast foods		Rural			Urban	Grand total N=260(%)	
Western Fast foods	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Granu total N=200(70)
Burger	20(30.76)	19(29.23)	39(30.00)	16(24.61)	21(32.30)	37(28.46)	76(29.23)
Noodles	1(1.53)	3(4.61)	4(3.07)	9(13.84)	10(15.38)	19(14.61)	23(8.84)
Pizza	10(15.38)	3(4.61)	13(10.00)	13(20.00)	5(7.69)	18(13.84)	31(11.92)
Hot dog	11(16.92)	19(29.23)	30(23.07)	14(21.53)	9(13.84)	23(17.69)	53(20.38)
Pastry	20(30.76)	17(26.15)	37(28.46)	12(18.46)	12(18.46)	24(18.46)	61(23.46)
Chicken burgers	3(4.61)	4(6.15)	7(5.38)	1(1.53)	8(12.30)	9(6.92)	16(6.15)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

The choice of students regarding most popular western/chinese fast food was also explored and results (Table 7) showed that among western type of fast foods burger was the first choice (30.0%) Among urban college students most popular western fast foods was burgers (28.46%), it was followed by pastry (18.46%), Hotdog (17.69%), Noodles (14.61%), pizza (13.84%) and chicken burger (6.92%),

respectively.

Ismail (2016) ^[6] also found that the most preferred fast food item was burger (44.7%). On the other hand, Kumar *et al.* (2006) ^[8] found that pizza (22.8%) came out to be least preferred fast food items. Followed by pastry (28.46%), Hotdog (23.07%), Pizza (10.0%) chicken burgers (5.38%) and noodles (3.07%) in rural college students.

Table 8: Reasons for consuming fast foods by rural and urban college students

Reasons	Rural				Urban	Grand total N=260 (%)	
Keasons	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Grand total N=200 (%)
They are quick	10(15.38)	6(9.23)	16(12.30)	11(16.92)	11(16.92)	22(16.92)	38(14.61)
I like taste	7(10.76)	10(15.38)	17(13.07)	10(15.38)	8(12.30)	18(13.84)	35(13.46)
They are inexpensive	16(24.61)	12(18.46)	28(21.53)	9(13.84)	15(23.07)	24(18.46)	52(20.00)
Offers variety	9(13.84)	11(16.92)	20(15.38)	11(16.92)	17(26.15)	28(21.53)	48(18.46)
Too busy to cook	9(13.84)	15(23.07)	24(18.46)	14(21.53)	11(16.92)	25(19.23)	49(18.84)
Attractive presentation	9(13.84)	6(9.23)	15(11.53)	4(6.15)	0	4(3.07)	19(7.30)
Any other	5(7.69)	5(7.69)	10(7.69)	6(9.23)	3(4.61)	9(6.92)	19(7.30)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

Data given in Table No. 8 reveals the reasons for consuming fast foods were asked by both rural and urban college students. The rural students response was that fast foods are inexpensive (21.53%), too busy to cook (18.46%), offers a variety (15.38%), like its taste (13.07%), they are quick to prepare (12.30%), presentation is attractive (11.53%) and 7.69% rural students gave other reason i.e. that they consume fast foods just to give company to their friends, or they get it during celebrations and party birthday etc. In urban area majority of students feel that there is variety in fast foods i.e. why they consume it 19.23% students reported that they are too busy and can't cook i.e. why they consume fast foods

followed by 18.46% consume fast food because fast foods are inexpensive, 16.92% because fast foods are quick to prepare, 13.84% like fast food because of its taste and 3.07% like fast foods because of its attractive presentation. Remaining 6.92% urban student said that they consume fast food because it is easily available, low price etc.

Similar reasons were also reported by Vani *et al.* (2016) [12] which explored that reasons for consuming fast food, 83.4% found it tasty and 56.4% said that it is easy availability. While Ismail (2016) [6] found that the main reason for their fast food consumption was convenience (55.3%).

Table 9: Frequency of eating fast food among rural and urban college students

Frequency of eating	Rural				Urban	Grand total N=260 (%)	
r requency or eating	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Grand total N=200 (%)
Twice a day	2(3.07)	2(3.07)	4(3.07)	12(18.46)	5(7.69)	17(13.07)	21(8.07)
Once daily	19(29.23)	24(36.92)	43(33.07)	23(35.38)	34(52.30)	57(43.84)	100(38.46)
Once a week	20(30.76)	24(36.92)	44(33.84)	18(27.69)	18(27.69)	36(27.69)	80(30.76)
Occasionally	24(36.92)	15(23.07)	39(30.00)	12(18.46)	8(12.30)	20(15.38)	59(22.69)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

Both rural and urban college students were asked how frequently they consume fast foods. The result presented in Table 9, showed 43.84% urban and 33.07% rural college students consume fast foods daily, while the frequency of consuming twice a day was 13.07 and 3.07% in urban and rural college students. In a study Feeley *et al.* (2009) [16] investigated that fast food consumption among 17 to 20 years old participants and found that 30% of participants consumed

fast foods 5-7 times a week with another 20% having it 2-4 times a week. Whereas, Arulogun and Owolabi (2011) [13] showed that most respondents consume fast food once a week. Eighteen% students found fast foods as an alternative to breakfast (Gopal *et al.* 2012) [3]. Approximately 22% college student were found to consume fast foods 4 days per week and more than one-fifth had the meal every day (Bipasha and Goon, 2013) [9].

Table 10: Timing for visiting fast foods outlets by rural and urban college students

Distribution of timing	Rural				Urban	C 1 4-4-1 N 2(0 (0/)	
Distribution of timing	Boys N (%)	Girls N (%)	Total N=130 (%)	Boys N (%)	Girls N (%)	Total N=130 (%)	Grand total N=260 (%)
Morning	2(3.07)	2(3.07)	4(3.07)	3(4.61)	2(3.07)	5(3.84)	9(3.46)
Afternoon	17(26.15)	20(30.76)	37(28.46)	29(44.61)	23(35.38)	52(40.00)	89(34.23)
Evening	37(56.92)	30(46.15)	67(51.53)	23(35.38)	33(50.76)	56(43.07)	123(47.30)
Late night	9(13.84)	13(20.00)	22(16.92)	10(15.38)	7(10.76)	17(13.07)	39(15.00)
Total	65(100)	65(100)	130(100)	65(100)	65(100)	130(100)	260(100)

Data presented in Table No. 10 reveals that evening time was preferred by majority of rural (51.53%) and urban (43.07%) college students for visiting fast food outlets while; morning time was least preferred for visiting fast food outlets both by rural and urban college students.

Summary and conclusion

Fast food is one of the world fastest growing sectors in food industry. Due to urbanization, increase in number of working women, economic growth, increase in per capita income, movement for higher education as well as due to globalization fast food culture gained prominence in India and the world. The majority of rural college students were of 21 years of age while minimum were of 17 and 24 year age. While, majority of urban students were of 18 year and minimum of 24 years of age. Majority of rural college students were from other backward classes (28.46%) while majority of urban students were from general category. Joint family system dominated both in rural and urban areas. The majority of rural and urban college students were from families having monthly income between Rs. 15,000 to 25,000.18.46% rural and 13.07% urban college students were net getting pocket money between Rs. 100 to 300 per month.66.92% rural college students and 76.92% urban college students showed their liking for fast foods while 33.07 rural and 23.07% urban students did not like fast foods. "Delicious taste" and "attractive presentation" of the fast foods were main reasons for liking fast foods. While "attractive presentation" and "low price" were main reason assigned by urban students for liking fast foods. Other types of fast foods like chaat, samosa, and pani-puri etc. (40.76%) are first choice of student were most common in rural area. While, western type of fast foods likes burger, pizza, hotdog, pastry etc. were most popular among urban area. Burger was the first choice among western type of fast foods in both rural and urban areas. Majority of rural students reported that fast foods are inexpensive i.e. why they like it,

whereas majority of urban students prefer fast foods because there is variety in fast foods. 43.84% urban and 33.07% rural college students consume fast foods daily. The evening time is the most preferred time to visit fast food outlets by 46.15% rural and 43.07% urban college students.

References

- Anand R. A study of determinants impacting consumer's food choice with reference to the fast food consumption in India, Society and Business Review. 2011;6(2):176-187
- FAO. National food safety policy and seminar entitled Towards a National Food Safety and Quality Policy: A key note speeches. Available at accessed on May 19, 2013. http://bdfoodsafety.org/ news.php?NewsId=22
- 3. Gopal V, Sriram S, Kannabiran K, Seenivasan R. Student's perspective on junk foods: Survey. Sudanese Journal of Public Health. 2012 Jan, 7(1).
- 4. Goyal A, Singh NP. Consumer perception about fast food in India, British food Journal. 2007;109:182-195.
- 5. Hulya Y, Yahya O, Ayse OO, Metin SS. Fast food consumption habits of students: The Sample of Ankara. Pakistan Journal of Nutrition. 2012;11(3):265-269.
- 6. Ismail I. Trend of fast food consumption among university girls in Karachi, Pakistan. International Journal of Endorsing Health Science Research. 2016 March, 4(1).
- 7. Joshi SA. Nutrition and dietetics (Second edition). Tata Mcgraw- Hill publishing company limited, New Delhi. 2002. p. 422-535.
- 8. Kumar D, Mittal PC, Singh S. Socio-cultural and Nutritional Aspects of Fast Food Consumption among Teenagers and Youth Indian Journal of Community Medicine. 2006 July-Sept, 31(3).
- 9. Munmun SB, Shatabdi G. Fast food preference and food habits among students of private university in Bangladesh, South East Asia Journal of Public Health.

- 2013;3(1):61-64.
- Saranya CP. A study on consumer preference on fast food outlets with reference to Coimbatore city. International Journal of Multidisciplinary Research and Modern Education. (IJMRME) ISSN (Online): 2454 -6119 (www.rdmodernresearch.org). 2016, 2(1).
- 11. Vaida N. Prevalence of fast food intake among urban adolescent students. The international journal of engineering and science (IJES). 2013;2(1):353-359.
- 12. Vani HC, Suryanarayana SP. Junk food consumption and malnutrition among Medical and Dental college students, Bangalore RGUHS National Journal of Public Health. 2016 Jan, 1(1).
- 13. Arulogun OS, Owolabi MO. Fast food consumption pattern among undergraduates of the University of Ibadan, Nigeria: implications for nutrition education. Journal of Agriculture and food technology. 2011;1(6):89-93.
- 14. Thenkabail PS, Knox JW, Ozdogan M, Gumma MK, Congalton RG, Wu ZT, *et al.* Assessing future risks to agricultural productivity, water resources and food security: How can remote sensing help? PE&RS, Photogrammetric Engineering & Remote Sensing. 2012;78(8):773-782.
- 15. Priyadarshani P, Li Y, Yao L. Advances in biological therapy for nucleus pulposus regeneration. Osteoarthritis and Cartilage. 2016 Feb 1;24(2):206-212.
- 16. Brass AL, Huang IC, Benita Y, John SP, Krishnan MN, Feeley EM, *et al.* The IFITM proteins mediate cellular resistance to influenza A H1N1 virus, West Nile virus, and dengue virus. Cell. 2009 Dec 24;139(7):1243-1254.