



KNOWLEDGE, ATTITUDE AND PRACTICE OF JUNK FOOD CONSUMPTION AMONG UNIVERSITY STUDENTS OF DELHI/NCR, INDIA

Clinical Research

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ABSTRACT

Objective: To assess the knowledge, attitude and practice of junk food consumption among students of a University in Delhi/NCR, India.

Methods: A cross-sectional study was carried among 133 students of Amity University, Noida. The questionnaire contained the following 4 sections. Demographic data, knowledge questions, questions on attitude and questions on practice of junk food consumption. The responses were measured on a 3 point and 5 point likert scale of agreement based on the questions.

Result: 50.4% of students in this study had inadequate knowledge regarding the junk food consumption, and 49.6% showed adequate knowledge. 52.3% of study participants showed poor attitude while 47.4% had good attitude towards junk food consumption. The most important outcome that we came across after this study was that students who agreed (55.2%), disagreed (29.9%), and remained neutral (14.9%) on asking junk food consumption relieving stress showed inadequate knowledge. Likewise, adequate knowledge was seen in 28.8%, 59.1%, 12.1% for the same respectively. Also, it was found to be statistically very significant with p-value=0.002.

Conclusion: Junk Food consumption has a significant role to play in causing obesity. Checking this in adulthood may lower the risk for DM, cardiovascular disease, osteoarthritis and certain types of cancer as well as other non-communicable diseases. It was noticed students with inappropriate knowledge consumed junk food for relieving stress. Likewise, ones with poor attitude consumed junk food believing it to be a relieving factor in stress management.

KEYWORDS

Knowledge, Attitude, Practice, Junk food, Stress

INTRODUCTION

Food is an essential part of balanced diet. It is essential because everyone needs it for day to day life. Without food no one can sustain. We as human beings need food for development, growth and to lead a healthy life.[1] It plays an important role in maintaining good health and in prevention and cure of diseases. The right kind of food is of utmost importance for promotion of health and the wrong kind of food is leads to promotion of diseases.[2]

The term junk food was coined as a slang in the public interest in 1972 by Michael Jacobson, Director of the Centre for Science. Junk food is the type of food which is high in calorie, high in cholesterol and low in nutritive value.[3] Junk food comprises of anything which is easily available with reasonable price, quick, being delicious and taste changer. With lifestyle changes there has been an increased consumption of junk food among university students. Junk food are classified as products which are high in salt and sugar, fats and energy and contain little or no amount of vitamin, mineral or protein.[4] For example junk food such as fried fast food, salted snack food, sweet desserts, gum candy and bakery items. Many food items such as hamburgers, pizza and tacos can be considered either healthy or junk food depending on their ingredients and preparation methods.[5] This is one food which is consumed by all ages.[6] It's a habit starting from our childhood. Soon we get addicted to it and continue it for life time. The consumption of junk food is prevalent in both the genders causing increased risk for obesity.[7] Skipping breakfast, lower consumption of fruits, higher consumption of junk food and low nutritive snacks with low quality and quantity of meals are common habits that can lead to problems such as obesity.[8] It is reported that children belonging to middle and lower social class families are more habitual to fast food and less likely to intake fruits and vegetables.

Eating junk food has also become a trend these days which is very injurious to health. Urban area with busy lifestyle and advanced technology has widely affected the life of many people. The effects of these changes have substituted the tradition of cooking and eating at home[9]. Due to frequent consumption of these junk food very often, the excess fat, carbohydrates and processed sugars found in them

contributes to cardiovascular problems, hypertension, hyperlipidemia, impaired glucose tolerance, metabolic syndrome, musculoskeletal disorders and cancers which raises a public health concern. [10] University students though being sensible enough to understand the difference between right and wrong. Still the consumption of junk food is highly amongst them. Due to this quiet a number of students suffer from obesity or some kind of health issues. One of the factors contributing to consumption of junk is that they most likely skip breakfast and attend college, later wanting to grab a quick snack. Other major causes of junk food consumption is lack of parental awareness, television advertising and attractive packaging.[11]

Nutrition experts have come to a conclusion that the junk food manufacturing companies are fooling people by showing the advertisement of junk food as healthy. We must abstain the junk food and substitute it with healthier foods like vegetables and fruits. Based on the observations, educational intervention should be provided to university students for better understanding of consumption of healthy food.[12]

METHODS

A cross-sectional study was carried among 133 students of Amity University, Noida. The participants were taken from various courses. The survey was conducted from 25th January to 9th of February 2020. The questionnaire constructed by the investigators contained the following 4 sections. Demographic data, knowledge questions, questions on attitude and questions on practice of junk food consumption. All efforts to maintain the confidentiality of the participants was ensured. The responses were measured on a 3 point or a 5 point likert scale of agreement based on the questions. The data was fed into Microsoft Excel sheet. IBM SPSS software version 23.0 (IBM SPSS Statistics for Windows, Version Corp. Released 23.0. Armonk, NY: IBM Corp.) was adopted to analyze the data. Descriptive Analysis was performed to study the distribution of data. For assessing the knowledge of the participants, a score of 1 was awarded for every correct response and a score of 0 was given for every incorrect response. For attitude and each positive answer was awarded a score of 2, for neutral response a score of 1 and for a negative response a score

of 0 was awarded. Overall Knowledge and Attitude were divided into 2 categories on the basis of median scores. The fourth section of this evaluation highlighted participants' practice of junk food consumption, how often they eat junk food, influencing factors, etc. Chi-square statistics was used to study the association between categorical data. A p-value of less than 0.05 was regarded as statistical significance.

RESULT

Number of study participants included in the study were 133. Non-response rate was found to be 10%. Socio-Demographic Variables are represented in Table 1.

Table 1: Socio Demographic Variables of study participants

Variables	Frequency	Percentage (%)
Age (in years)		
17-21	52	39.1
22-26	73	54.9
27-31	8	6.0
Gender		
Female	63	47.4
Male	70	52.6
Family Income (lakhs per annum)		
5-10	44	33.1
11-15	58	43.6
16-20	28	21.1
Above 20	3	2.3
Course		
Btech	90	67.7
Law	16	12.0
MPH	27	20.3
Residence		
Delhi	102	76.7
Outside Delhi	31	23.3

Majority of study participants belonged to the age group of 22-26 years (54.9%) of which 52.6% were males and 47.4% were females. Annual income of the participants varied from 5-10 lakhs (33.1%), 11-15 lakhs (43.1%), 16-20 lakhs (21.1%), and above 20 lakhs (2.3%). Students belonged to different courses B tech (67.7%), Law (12%), MPH (20.3%). 76.6% were residents of Delhi/NCR region where as 23.3% lived outside Delhi.

Knowledge

50.4% of students indulge in this study had inadequate knowledge regarding the junk food consumption, and 49.6% showed adequate knowledge. Figure 1 depicts the same.

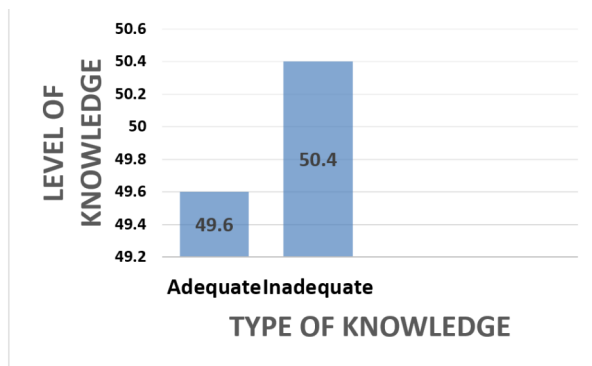


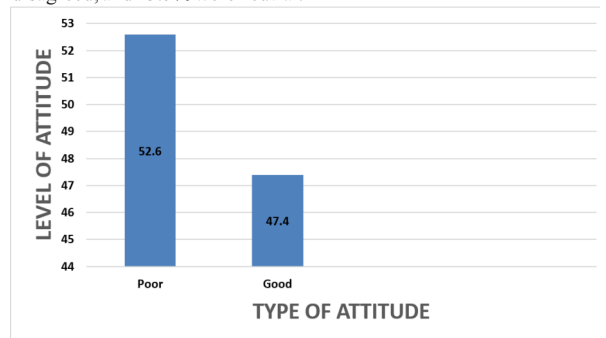
Fig 1: Level of Knowledge among study participants

Table 2: Based on Knowledge of Junk Food Consumption among University Students

Variables	Frequency	Percentage (%)
Junk food consumption results in obesity (gaining weight)?		
Disagree	33	24.8
Neutral	25	18.8
Agree	75	56.4
Consumption of junk food causes heart attack?		
Disagree	39	29.3

Neutral	27	20.3
Agree	67	50.4
Consumption of junk food relieves stress		
Disagree	56	42.1
Neutral	18	13.5
Agree	59	44.4
Junk food is not necessarily unhealthy.		
Disagree	58	43.6
Neutral	18	13.5
Agree	57	42.9
Does junk food consumption lead to inactivity?		
Disagree	55	41.4
Neutral	19	14.3
Agree	59	44.4
Junk food has no adverse effects on the overall health of an individual.		
Disagree	47	35.3
Neutral	16	12.0
Agree	70	52.6
Junk food is high in calories, salt & low in nutritive value.		
No	15	11.3
Yes	118	88.7
Do you know the harmful effects of junk food?		
No	19	14.3
Yes	114	85.7
Do you know having junk food on a daily basis makes you eat more?		
Disagree	52	39.1
Neutral	18	13.5
Agree	63	47.4

Table 2 illustrates 56.4% of the study participants agreed that junk food consumption leads to obesity, while 24.8% disagreed, and 18.8% remained neutral. On asking the participants if they know that junk food causes heart attack, 50.4% agreed, 29.3% disagreed, and 20.3% remained neutral. 44.4% students revealed that consuming junk food relieved stress, 42.1% disagreed and rest 13.5% were neutral. 42.9% reported that junk food is not necessarily unhealthy, 43.6% disagreed, 13.5% were neutral for the same. Confirming the students about inactivity caused due to junk food consumption 44.4% agreed, 41.4% disagreed and 14.3% remained neutral. 52.6% agreed that junk food has no effects on overall health of an individual, 35.3% disagreed and 12% were neutral. Majority (88.7%) of the students accepted that junk food is rich in calories and salt and has low nutritive value, where as 11.3% declined the same. 85.7% were aware of the harmful effects of junk food and 14.3% didn't unfortunately. 47.4% students reported that they knew consuming junk food makes them eat more, but 39.1% disagreed, and 13.5% were neutral.



Attitude

Figure 2 depicts that 52.3% of study participants showed poor attitude while 47.4% had good attitude towards junk food consumption.

Table 3: Based on Attitude towards Junk Food Consumption among University Students.

Variables	Frequency	Percentage (%)
You make a point to eat healthy & avoid junk food.		
Never	15	11.3
Sometimes	58	43.6

Yes	60	45.1
<i>If I have money, I buy and eat whatever I want to without making sure to eat healthy.</i>		
Never	66	49.6
Sometimes	52	39.1
Yes	15	11.3
<i>Do you consume junk food even if you are sick?</i>		
Never	13	9.8
Sometimes	62	46.6
Yes	58	43.6
<i>Do you restrict your diet in case of your health condition?</i>		
Never	7	5.3
Sometimes	59	44.4
Yes	67	50.4
<i>Do you read nutritive value labels of packaged food before buying?</i>		
Never	16	12.0
Sometimes	58	43.6
Yes	59	44.4
<i>Do you take junk food as an alternative to breakfast?</i>		
Never	74	55.6
Sometimes	43	32.3
Yes	16	12.0

Table 3 illustrates various attitude variables among the study participants. 45.1% confirmed that they eat healthy and avoid junk food, 43.6% accepted to avoid junk food sometimes, and only 11.3% never avoided the same. 43.6% reported to consume junk food even if they are sick, 46.6% consumed sometimes, while only 9.8% never consumed junk food on being sick. On asking on putting restrictions on their diet depending on their health condition 50.4% said yes with affirmation, 44.4% accepted to do it sometimes, and only 5.3% said never did it. 44.4% of students read nutritive value labels of packaged food before buying, 12% never did, 43.6% checked sometimes. 55.6% never take junk food as an alternate to breakfast, 32.3% sometimes do and 12% confirmed doing the same.

Table 4: Based on Practice of Junk Food Consumption among University Students.

Variables	Frequency	Percentage (%)
<i>How often do you eat junk food?</i>		
Once a month	24	18.0
Once a week	40	30.1
Sometimes	27	20.3
Rarely	22	16.5
Never	20	15.0
<i>For snacking I would prefer nuts & fruits, something healthy over instantly available packaged food.</i>		
Yes	56	42.1
Never	9	6.8
Sometimes	68	51.1
<i>Do you consume food at home that can be prepared instantly (like noodles, canned food, frozen food that is easily made in microwave)?</i>		
Yes	57	42.9
Never	9	6.8
Sometimes	67	50.4
<i>Are you influenced by particular brands to buy junk food?</i>		
Yes	60	45.1
Never	21	15.8
Sometimes	52	39.1
<i>Do you consume junk food in spite of knowing its ill-effects?</i>		
Yes	61	45.9
Never	11	8.3
Sometimes	61	45.9

Practice

Table 4 shows different Practice variables among study participants. Only 15% of the participants never consumed junked food. Maximum students (30.1%) consumed junk food once a week and 18% once a

month. 51.1% of students preferred healthy food over instantly available packed food for snacking sometimes, 42.1% on the contrary preferred packed food available while 6.8% would never prefer it. 42.9% consumed food at home that can be prepared instantly (like noodles, canned food, frozen food that is easily made in microwave). 41.1% study participants were influenced by the brand for purchasing junk food while 15.8% never got influenced. 45.9% consumed junk food in spite of knowing its ill-effects.

Table 5: Bivariate Analysis of Knowledge among study participants and Socio Demographic Variables

Variable	Type of Knowledge		p- value
	Inadequate	Adequate	
<i>Age (in years)</i>			
17-21	30 (48.3%)	22 (33.3%)	.188
22-26	35 (52.2%)	38 (57.6%)	
27-31	2 (3%)	6 (9.1%)	
<i>Gender</i>			
Female	29 (43.3%)	34 (51.5%)	.342
Male	38 (56.7%)	32 (48.5%)	
<i>Family Income (in lakhs/annum)</i>			
5-10	24 (35.8%)	20 (30.3%)	.154
11-15	32 (47.8%)	26 (39.4%)	
16-20	11 (16.4%)	17 (25.8%)	
Above 20	0 (0%)	3 (4.5%)	
<i>Course</i>			
B tech	52 (77.6%)	38 (57.6%)	.000
Law	11 (16.4%)	5 (7.6%)	
MPH	4 (6.0%)	23 (34.8%)	
<i>Residence</i>			
Delhi	52 (77.6%)	50 (75.8%)	.800
Outside Delhi	15 (22.4%)	16 (24.2%)	

Table 5 clearly depicts association of level of knowledge among study participants with different socio demographic variable. Maximum (57.6%) of students had adequate knowledge and 52.2% had inadequate knowledge belonged to 22-26 years of age group. 56.7% of Males and 43.3% of females had inadequate knowledge. 48.5% of males and 51.5% of females reported to have adequate knowledge. 47.8% of students had inadequate level of knowledge whose family income was found to be ranged between 11-15 lakhs annually., while 39.4% showed adequate level of knowledge. It was seen that only 4.5% students was seen with adequate knowledge whose family income was found 20 lakh and above per annum. Students belonging to different professional courses showed statistical significance with the knowledge (p-value<0.05). 77.6% students from B-Tech, 16.4% students from Law, and 6% students from MPH had inadequate level of knowledge regarding junk food consumption. On the contrary 57.6%, 7.6% and 34.8% students had adequate knowledge from the same educational courses respectively. 77.6% residents of Delhi and 22.4% non-residents of Delhi showed inadequate knowledge in this study while 75.8% and 24.2% reported to have adequate knowledge.

The most important outcome that we came across after this study was that students who agreed (55.2%), disagreed (29.9%), and remained neutral (14.9%) on asking junk food consumption relieving stress showed inadequate knowledge. Likewise, adequate knowledge was seen in 28.8%,59.1%, 12.1% for the same respectively. Also, it was found to be statistically very significant with p-value=0.002.

Table 6: Bivariate analysis of Type of Attitude towards Junk Food Consumption among University students with different Socio Demographic Variables.

Variable	Type of Attitude		p- value
	Poor	Good	
<i>Age (in years)</i>			
17-21	21 (30.0%)	31 (49.2%)	.008
22-26	47 (67.1%)	26 (41.3%)	
27-31	2 (2.9%)	6 (9.5%)	
<i>Gender</i>			
Female	33(47.1%)	30 (47.6%)	.956
Male	37 (52.9%)	33 (52.4%)	
<i>Family Income (in lakhs/annum)</i>			
5-10	22 (31.4%)	22 (34.9%)	.740

11-15	29 (41.4%)	29 (46.0%)	
16-20	17 (24.3%)	11 (17.5%)	
Above 20	2 (2.9%)	1 (1.6%)	
Course			
B tech	50 (71.4%)	40 (63.5%)	.410
Law	6 (8.6%)	10 (15.9%)	
MPH	14 (20.0%)	13 (20.6%)	
Residence			
Delhi	53 (75.7%)	49 (77.8%)	.779
Outside Delhi	17 (24.3%)	14 (22.2%)	

Table 6 shows the Association of the type of Attitude towards junk food consumption among study participants with different socio-demographic variables. A lot of variation in attitude towards junk food consumption was noticed in different age groups among students. 49.2% students showed good attitude and 30.1% showed poor attitude belonging to age group of 17-21 years. In students belonging to 22-26 years of age group 41.3% had good attitude whereas 67.1% had poor. Similarly, students belonging to age group 27-31, 2.9% had poor attitude and 9.5% had good attitude. 41.4% of students showing poor attitude and 46% showing good attitude belonged to the families whose annual income ranged between 11-15 lakhs. Students pursuing different courses showed variation in their attitude towards junk food consumption. Students from B-Tech (71.4%), Law (8.6%), MPH (20%) had poor attitude. 63.5%, 15.9% and 20.9% showed good attitude from respective courses. 75.7% residents of Delhi and 24.3% Non-Residents of Delhi had a poor attitude while 77.8% and 22.2% residents and non residents respectively had good attitude towards junk food consumption.

Another outcome that we noticed in this study was that students who agreed (47.1%), disagreed (38.6%), and remained neutral (14.3%) on asking junk food consumption relieving stress showed poor attitude. Likewise, good attitude was seen in 36.5%, 50.8%, 12.7% for the same respectively.

DISCUSSION

The purpose of our study was to find out the junk food consumption patterns among University students as well as their knowledge concerning junk food consumption. The findings of our study showed that 49.6% had adequate knowledge, while 52.6% had a poor attitude towards junk food consumption, which is the favorable attitude. This result is comparable to another study conducted by Lt Col Mercy Antony et al. in which the score was found to be 42.3% adequate knowledge.[13]

The present study found out that 30% students preferred to consume junk food once a week. Another study revealed that 39.4% students of the University consumed junk food once a week.[14]

32.3% of the students said that they sometimes had junk food as an alternative to their breakfast. This is in concordance to another study where it is revealed that 23.3% students skipped breakfast.[6] The reason behind this could be the early class timings of students. Mass media seems to play an important role behind shaping the practices of junk food consumption among university students as 45.1% revealed that they are influenced by particular brands to buy junk food. Formulation of laws to provide the correct information while advertising may be helpful in reducing junk food consumption among university students.

It was revealed that 49.6% students said that they never buy junk food just because they have enough money to purchase it. Therefore affordability doesn't seem to be an issue among university students for junk food consumption.

A significant association between gender and attitude ($p=0.003$) was found. 27.8% males had a negative attitude towards junk food whereas 24.8% females had a negative attitude. This is contradictory to another study done by Ramchandra et al. where it was found that males are more frequently used to junk food than females.[1]

When asked about their awareness of the harmful effects associated with junk food, majority of the participants (85.7%) said 'yes'. Supportive of this, a study done by Sapkota et al. also found 79.6% participants aware of the effects of junk food consumption.[3]

To the best of our knowledge there is no study of knowledge, attitude

and practice of junk food consumption among university students of Delhi NCR. Strength of this study lies in its attempt to estimate the factors that lie behind student's attitudes and practices of junk food consumption.

There were certain limitations in the study. This study was conducted on a small group of samples. It only captures baseline information about the knowledge, attitude and practice of junk food consumption among university students of Delhi NCR. Conducting followup interviews and focus groups can provide additional insights into the rationale that shape these patterns.

CONCLUSION

Junk Food consumption has a significant role to play in causing obesity. Checking this adulthood. This may lower the risk for DM, cardiovascular disease, osteoarthritis and certain types of cancer as well as other non-communicable diseases. Identifying the magnitude of the junk food prevalence and factors promoting its consumption is a primary step towards planning multipronged strategies to address this growing health hazard.

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Declarations

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Conflict of interest

The authors have no conflicts of interest associated with the material presented in this paper.

Ethical Approval

The study was conducted with the consent of all the study participants and ethical approvals were taken.

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