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Original Article

Nutritional Knowledge and Eating Habits among IT Undergraduates of Kathmandu Metropolitan City

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ABSTRACT

Background & Objectives: Undergraduate students can be almost of any age, but majority of the students are in their late teens and early twenties. It is the time of physical and emotional changes as the body matures and the mind becomes more curios and independent and there is an increased desire for knowledge. Thus, the aim of the study was to access the nutritional knowledge and eating Habits among Information technology (IT) undergraduates of Kathmandu Metropolitan City.

Material and Methods: This was descriptive cross-sectional study based in Kathmandu Metropolitan City. A total of 422 samples were taken and the study population was IT undergraduates. Chi-square test was used to determine the statistical relationship between dependent and independent variables.

Results: The respondent's average age was 20.19. One of the primary sources of nutritional knowledge was education. Nearly all of the respondents thought that fast food and junk food tasted good. The main drivers of junk food and fast food consumption were convenience and flavor. A statistical association existed between the amount spent each week on fast food and junk food and the amount of monthly pocket money. The vast majority of respondents had poor eating habits and insufficient nutritional knowledge. While the majority of students skipped their meals, three-fourths of respondents ate three meals a day, with breakfast being skipped the most frequently, followed by lunch, dinner, and snacks.

Conclusion: The study concluded that the vast majority of respondents had poor eating habits and insufficient nutritional knowledge. The primary reason of meal skipping was irregular college hours. It requires constant and long-term effort in personal, parental and college policy in order to make healthy eating a lifestyle must begin from the earliest age possible.

Keywords: Eating habits, information technology, nutritional knowledge, undergraduates

INTRODUCTION

Knowledge is one of the determinants of food choice may be intuitive, various kind of psychological and environmental factors might play a role in such choice, which leads to a different attitude towards behavior change [1].Nutrients are often measured as 'too much' and 'too little', consequently nutrition is a quantitative science. Six essential nutrients include protein, vitamins, carbohydrates, fats, minerals and water [2]. Nutritional knowledge is concerned with food composition, food consumption and food practices. Nutritional knowledge is important to maintain and sustain a healthy life and therefore reduces the risk of severe chronic diseases. Significance of knowledge is one of the determinants of food choices. Healthy eating habits promote overall health of an individual [3]. Healthy eating behavior should be practiced on a regular basis which tends to become a habit later in life. Healthy eating habit should be adopted at the very young stage of life as it shapes an individual, his/her lifestyle and life choices [3].

Unhealthy eating habits refers to the way how and why the person or groups eat food which are low in fiber or high in fat, salt and sugar and includes under or overeating. Processed foods have been linked to the growing rates of overweight and obesity. The most common unhealthy eating behavior among college students comprises following of strict slimming diets; dissatisfaction with the own body image and imitation of the fashion and trends for being slim and skinny [4]. Undergraduate students are at the higher risk for making poor dietary choices that can lead to significant health problems. Most of the college students eat at college canteen which has limited healthy food options. Some of them carry junk food or packaged food which seems to be an easy option and most of them tend to care less about eating healthy food which have high nutrients values and neglect their nutritional requirements. They are liberal to make their own eating choices. Unhealthy eating habits is common among undergraduates and as this time is critical healthy and good eating habits should be established because these habits often continue through adulthood and are very difficult to modify once they are adopted [5]. Thus, the aim of the study was to access the nutritional knowledge and eating Habits among IT undergraduates of Kathmandu Metropolitan City.

MATERIAL AND METHODS

In Kathmandu Metropolitan City, a quantitative cross-sectional descriptive study was carried out from Sept. 2020 to July 2021. For this study, probability sampling was used. The IT colleges served as the sample frame. In the Kathmandu Metropolitan City, there were 33 IT institutions. Based on their locations, these colleges were grouped into 11 clusters, and one cluster was chosen using a lottery system. The probability proportionate sampling method was employed to choose the respondents. On the day of data collection, 384 undergraduate students who were available and willing to participate in the study responded to a semi-structured questionnaire. The questionnaire consisted of four parts. The first part contained seven demographic questions; the second part contained seven question testing the respondents' nutritional knowledge, the third part contained 15 questions concerning eating habits and the fourth part contained eight questions regarding factors influencing

eating habit. The study excluded those students who were absent on the day of the data collection or who refused to consent to the gathering of their data. Respondent's self-administration was done as per data collection technique. Pre-testing of the tool was done among 10% of total sample i.e. (n=40) in one of the colleges of Kathmandu Metropolitan City. Data entry and analysis was done SPSS version 16.0. For consistency check of data, the data entry was done in the evening of the day after the completion of data collection. For ethical consideration ethical approval letter was taken from IRC of Nobel College, authorities were contacted to get permission and favorable time for data collection.

RESULTS

The table 1 shows the distribution of socio-demographic characteristics among the respondents. Majority (78.2%) of the respondents were male. It was found that mean age of the respondent was 20.19 and standard deviation was 1.503. Out of 422, age of the respondents ranged from 17 to 29 and majority (33.7%) of the population aged 20.

The table 2 represents the distribution of respondents concerning their knowledge on food. 41% responded food is substance that provides us energy, 40.8% responded food is substance that provides essential components of life and 18.2% responded food is substance that we consume respectively. The distribution of respondents concerning their knowledge on daily required calorie, where 39.3% responded 2000-2400, 18.2% responded <2000, 13.6% responded 2400-2800 and 28.9% didn't know about the daily required calorie for the body.

Table 1: Socio-demographic Status of participants

Variables	Frequency (n=422)	Percentage
Sex		
Male	330	78.2
Female	92	21.8
Age		
17	3	0.7
18	35	8.3
19	89	21.1
20	142	33.7
21	111	26.3
22	21	5
23	10	2.4
24	3	0.7
25	2	0.5
26	1	0.2
27	3	0.7
28	1	0.2
29 Mean $\pm$ SD = 20.19 $\pm$ 1.503	1	0.2
Religion		
Hindu	376	89.1
Buddhist	33	7.8
Muslim	5	1.2
Christian	5	1.2
Others	3	0.7
Ethnicity		
Brahmin	162	38.3
Chettri	113	26.8
Janajati	119	28.2
Dalit	7	1.7
Others	21	5
Monthly household income		
Up to Rs. 20,000	20	4.7
Rs.20,000-Rs.50,000	121	28.8
Rs.50,000-Rs.100,000	223	52.8
More than Rs.100,000	58	13.7
Monthly pocket money		
Rs.500- Rs.1,500	57	13.5
Rs.1,500- Rs.3,000	104	24.6
Rs.3,000-Rs.5,000	151	35.8
More than Rs.5,000	110	26.1
Living Status		
With family	291	69
With friends	43	10.2
Alone	37	8.8
Hostel	41	9.6
Others	10	2.4

Table 2: Distribution of level of knowledge in terms of nutrition

Variables	Frequency (n=422)	Percentage
Knowledge about food		
Substance that we consume	77	18.2
Substance that provides us energy	173	41
Substance that provides essential components of life	172	40.8
Eat nutritious food		
For adequate growth and development	309	73.2
For development of immunity power	60	14.2
For adequate mental growth	23	5.5
Others	18	4.3
Don't know	12	2.8
Required calorie (per day)		
<2000	77	18.2
2000-2400	166	39.3
2400-2800	57	13.6
Don't know	122	28.9
Source of Calories in diet		
Fats	46	10.9
Carbohydrate	248	58.8
Protein	103	24.4
Iron	8	1.9
Vitamin A	11	2.6
Minerals	6	1.4
Required amount of water per day		
Less than two ls	36	8.5
two-three ls	230	54.5
More than three ls	149	35.3
Don't know	7	1.7
High or low in fiber (Banana)		
High	266	63
Low	81	19.2
Not sure	75	17.8
High or low in fiber (Egg)		
High	206	48.8
Low	129	30.6
Not sure	87	20.6
High or low in fiber (Broccoli)		
High	260	61.6
Low	68	16.1
Not sure	94	22.3
High or low in fiber (Nuts)		
High	258	61.1
Low	66	15.7
Not sure	98	23.2
High or low in fiber (Fish)		
High	220	52.1
Low	100	23.7
Not sure	102	24.2
High or low in fiber (Chicken)		
High	213	50.5
Low	118	28
Not sure	91	21.5
Awareness about health problems		
Yes	283	67.1
No	139	32.9

The table 3 represents eating habit of respondents. Number of meals consumed in a day where 45.5% responded they consume three meals a day, 23.7% responded they consumed two meals a day, 27.3% responded they consume four meals a day and 3.6% responded they consume one meal a day correspondingly, 55.5% of the respondents skipped their meals while 44.5% respondents did not skip their meals.

Reason for skipping meals was demonstrated above where out of 234 respondents, 73.5% responded irregular college hours/work hours was the reason for skipping meals, 13.7% responded due to busy lifestyle, 8.1% responded due to consciousness of body image and 4.7% responded other reasons for skipping meals. Respondents were asked whether they were vegetarian, vegan or non – vegetarian, where it was found that majority (89.8%) of the respondent were non – vegetarian, very few (7.6%) were vegetarian and minority (2.6) of the respondent were found to be vegan respectively.

Table 3: Distribution of respondents in term of eating habit

Variables	Frequency (n=422)	Percentage
Number of meals in a day		
One	15	3.6
Two	100	23.6
Three	192	45.5
Three or more	115	27.3
Meal skipping		
Yes	234	55.5
No	188	44.5
How often is the meal skipped	(n =234)	
One time in a week	69	29.5
Two times in a week	76	32.5
More than 3 times a week	89	38
Which meal is skipped the most	(n =234)	
Breakfast	97	41.5
Lunch	64	27.4
Snacks	32	13.6
Dinner	41	17.5
Reasons for skipping meals	(n =234)	
Irregular college hours/workhours	172	73.5
Busy lifestyle	32	13.7
Consciousness of body image	19	8.1
Ohers	11	4.7
Dieting		
Never	226	53.6
Rarely	95	22.5
Sometimes	76	18
Usually	25	5.9
Are you		
Vegetarian	32	7.6
Non-Vegetarian	379	89.8
Vegan	11	2.6
Frequency of eating meat	(n =379)	
Daily	56	14.8
Alternatively	102	26.8
Once a week	67	17.7
Twice a week	142	37.5
Others	12	3.2
Frequency of eating fruits		
Everyday	119	28.2
Alternatively	86	20.3
Two or three times a week	140	33.2
Rarely	72	17.1
Never	5	1.2
Water per day		
Less than two liters	108	25.6
Two-three liters	224	53.1
More than three liters	75	17.7
Don't know	15	3.6
Carry homemade food to college		
Yes	35	8.3
No	387	91.7
Addictive food		
Homemade food	127	30.1
Fast food	230	54.5
Junk food	65	15.4
Rate your dietary intake		
Extremely healthy	27	6.4
Healthy	126	29.9
Neither healthy nor unhealthy	219	51.8
Unhealthy	37	8.8
Extremely unhealthy	13	3.1
Frequency of Soft drinks consumption		
Everyday	41	9.6
Three-four times a week	69	16.4
One-two times a week	108	25.6
Rarely	191	45.3
Never	13	3.1
Frequency of Fast-food consumption		
Everyday	111	26.3
Three-four times a week	123	29.2
One-two times a week	121	28.7
Rarely	63	14.9
Never	4	0.9
Frequency of Packaged food consumption		
Everyday	47	11.1
Three-four times a week	60	14.3
One-two times a week	125	29.6
Rarely	170	40.3
Never	20	4.7
Frequency of Street food consumption		
Everyday	40	9.5
Three-four times a week	65	15.4
One-two times a week	122	28.9
Rarely	167	39.6
Never	28	6.6
Frequency of Fried Food consumption		
Everyday	92	21.8
Three-four times a week	110	26.1
One-two times a week	138	32.7
Rarely	70	16.6
Never	12	2.8

The table 4 shows 99.3% respondents enjoyed the taste of the junk food/ fast food whereas 0.7% did not enjoy the taste of the junk food or fast food. Amount spent on junk food or fast food in a week, where 38.9% spent more than Rs.500, followed by 28.9% who spent Rs.200, 16.8% spent Rs.400 and 15.4% spent Rs.300 respectively. The major reason to choose junk food was the taste, 46.9% respondents enjoyed the taste and 22% responded due to the easy access, 85.5% respondents' parents encouraged to consume home cooked meals and food whereas 14.5% responded that there was no such encouragement. Eating food depends on emotion to which 32.7% respondents agreed, 27.5% were neutral, 21.3%strongly agreed whereas 13% respondents disagreed and 5.5% respondents strongly disagreed, 35.8% responded education was the source of information regarding nutritional intake, 20.1% responded family members were the source of information, 19.4% responded online sources/ social media, 5% responded friends, similarly 15.2% responded all of the above. When asked to the respondents whether nutritional information influences their choice regarding fast food and junk food, 47.4% responded sometimes,16.1% responded most of the time, 15.9% responded rarely, 12.8% responded not at all and 7.8% responded always respectively.

According to Table 5, there was no statistically significant correlation between age and nutritional knowledge (p-value = 0.895). The relationship between gender and knowledge of nutrition was not statistically significant (p-value=0.719). There was no statistically significant correlation between ethnicity and nutritional knowledge (p-value =0.396).

Table 4: Distribution of respondents based on influencing factors

Variables	Frequency	Percentage
Enjoy the taste of junk food		
Yes	419	99.3
No	3	0.7
Amount spent on junk food/fast food		
Rs.200	122	28.9
Rs.300	65	15.4
Rs.400	71	16.8
More than Rs.500	164	38.9
Reasons for choosing junk food/fast food		
Advertisement	8	1.9
Enjoy the taste	198	46.9
Easy access	95	22.5
Attractive packaging	7	1.7
Common in peer groups	32	7.6
Cost/Price	10	2.4
Variety of menu	16	3.7
Endorsement by celebrities	2	0.5
Eat with friend/family	54	12.8
Encouragement to eat home cooked meals		
Yes	361	85.5
No	61	14.5
Availability of junk food/fast food		
Yes	393	93.1
No	29	6.9
Eating food depends on emotion		
Strongly agree	90	21.3
Agree	138	32.7
Neutral	116	27.5
Disagree	55	13.0
Strongly disagree	23	5.5
Source of information about regarding nutritional intake		
Family members	85	20.1
Education	151	35.8
Friends	19	4.5
Health care professional	21	5
Online sources/Social media	82	19.4
All of the above	64	15.2
Nutritional Information influences choice		
Not at all	54	12.8
Rarely	67	15.9
Sometimes	200	47.4
Most of the time	68	16.1
Always	33	7.8

Table 5 Association between socio-demographic characters and nutritional knowledge of IT undergraduates

Nutritional Knowledge				
Socio-demographic characters	Poor knowledge (%)	Good knowledge(%)	Chi square value	P- value
Age				
20 years and under	160 (59.5%)	109 (40.5%)		
		0.17	0.895	
21 and above	90 (58.8%)	63 (41.2%)		
Gender				
Male	194 (58.8%)	136 (41.2%)		
			0.129	0.719
Female	56 (60.9%)	36 (39.1%)		
Religion				
Hindu	221 (58.8%)	155 (41.2%)		
			0.309	0.578
Non-Hindu	29 (63%)	17 (37%)		
Ethnicity				
Brahmin/ Chettri	167 (60.7%)	108 (39.3%)		
			0.722	0.396
Others	83 (56.5%)	64 (43.5%)		

*Statistically significant association between socio-demographic characters and nutritional knowledge

Table 6 depicts there was no statistically significant correlation between age and eating habits (p-value = 0.594). Gender and eating behaviour had no statistically significant relationship (p-value = 0.611). Religion and eating habits had no statistically significant relationship (p-value = 0.794). The relationship between ethnicity and eating habits was not statistically significant (p-value = 0.576). The relationship between financial situation and eating habits was not statistically significant (p-value=0.443). The relationship between pocket money and eating habits was not statistically significant (p value = 0.618). The relationship between eating habits and living situation was not statistically significant (p-value = 0.525). Table 7 depicts that association between nutritional knowledge and eating habit (P-value =0.350). Statistically there was no association between nutritional knowledge and eating habits.

Table 8 Among 281 respondents who had monthly household income more than Rs.50000, it was found that 63.7% spent below Rs.400 and 36.3% spent Rs.400 and above on fast food/junk food. Whereas among 141 respondents who had monthly income below Rs.5 0000 it was found that 56% spent below Rs.400 while 44% spent more than Rs.400 and above on junk and fast food. The p-value of association between nutritional knowledge and eating habit is 0.127. No significant correlation was found between monthly household income and the amount spent on fast food or junk food. A statistical correlation existed between the amount of money spent on fast food and junk food each month (P-value=0.030).

Table 6 Association between socio-demographic characters and eating habits

	Eating Habits			
Socio-demographic variables	Good eating habit (%)	Bad eating habit (%)	Chi square value	P- value
Age				
20 years and under	1 (0.4%)	268 (99.6%)	0.164	0.594
21 and above	1 (0.7%)	152 (99.3%)		
Gender				
Male	2 (0.6%)	328 (99.4%)	0.560	0.611
Female	0	92 (100%)		
Religion				
Hindu	2 (0.5%)	374 (99.5%)	0.246	0.794
Non-Hindu	0	46 (100%)		
Ethnicity				
Brahmin/ Chettri	1 (0.4%)	274 (99.6%)	0.204	0.576
Others	1 (0.7%)	146 (99.3%)		
Financial status				
Below Rs.50,000	0	141 (100%)	1.008	0.443
Rs.50,000 and above	2 (0.7%)	279 (99.3%)		
Pocket money				
Below Rs.3,000	1 (0.6%)	160 (99.4%)	0.120	0.618
Rs.3,000 and above	1 (0.4%)	260 (99.6%)		
Living status				
With family	1 (0.3%)	290 (99.7%)	0.337	0.525
Not with family	1 (0.8%)	130 (99.2%)		

*Statistically significant association between socio-demographic characters and eating habits

Table 7: Association between nutritional knowledge and eating habit

	Eating Habit			
Nutritional Knowledge	**Good eating habit (%)**	**Bad eating habit (%)**	**Chi-square**	**P- value**
Poor knowledge	2 (0.8%)	248 (99.2%)	1.383	0.350
Good knowledge	0	172 (100%)		

**Statistically significant association between nutritional knowledge and eating habits*

Table 8: Association between monetary status and amount of money spent on fast-food/ junk food

	Amount of money spent in a week			
Monetary status	**Below Rs.400 (%)**	**Rs.400 and above (%)**	**Chi square**	**P- value**
Monthly household income				
Below Rs.50000	79 (56%)	62 (44%)	2.326	0.127
Rs. 50000 and above	179 (63.7%)	102 (36.3%)		
Monthly pocket money				
Below Rs.3000	109 (67.7%)	52 (32.3%)	4.721	0.030*
Rs.3000 and above	149 (57.1%)	112 (42.9%)		

**Statistically significant association between monetary status and amount of money spent on fast-food/ junk food*

DISCUSSION

According to the study conducted among 121 college students on " College students eating habits and knowledge of nutritional requirements" in 2018 findings showed that the participants agreed most strongly was that fast food contains unhealthy additives, other agreements included unhealthiness of fast food, drinking soda, and eating processed food, the statement with which participants showed the least level of agreement was that exercise is more important than the type of food they eat, participants had a fair agreement that smart phones help to find the right food, an important note is that even the least agreed statements indicated that most students have knowledge in nutritional requirements for health and the students were knowledgeable that consuming fast food, soda, and processed food are unhealthy and they contain additives [6].

Similarly, a study named "Nutritional knowledge and dietary habits survey in high school population" adolescents had poor knowledge about energy requirement, recommended serving of fruit and vegetables was unfamiliar to a large part of adolescents [7]. A study was conducted to assess the nutritional knowledge, the findings showed that nutritional knowledge varied in relation to the age of the participants, increasing in the older group, although this difference was not statistically significant for all the considered items , nutritional knowledge also varied in relation to the gender of the participants, with females in particular seeming to possess better cognition, for each age group there was poor knowledge about the items healthy diet, snacks, milk and dairy products, meat/fish/ legumes/eggs, and fats and dressings [8,9].

A recent study conducted on "Dietary habits and lifestyle practices among university students in University" in 2018, findings revealed the prevalence of overweight/obesity was 28.8% the majority ate regular daily meals, but more than half skipped breakfast , frequent snacking, fried food consumption was at least three times per week and low intake of daily fruits and vegetables were common, the frequency of visits to fast food restaurants was significantly higher in the overweight/obese, 25.4% of the students exercised at least three times per week [10]. Similarly, a study conducted on "College students eating habits and knowledge on requirements" among 121 college students. Choosing food according to taste preference seems to be the hallmark of college students. The relationship between the habit and knowledge of drinking soda was positive [7].

Previously a study conducted on "Fast-food consumption behavior of students in Manipal University" showed that students, staying away from home and in hostels, are eating unhealthy food and because of the availability of various food choices around the city, they do not eat healthy food, results indicated that most of the students are willing to pay between Rs.200-Rs.300 per visit to a fast food restaurant and most of them prefer to go out on weekdays and also on weekends [6].A study named "Fast food consumption behavior among college students "revealed that deviation in the pocket money may affect the fast-food consumption, and it proved that one who has more pocket money is likely to consume more fast food and it also proved that age plays a significant role in the consumption behavior of fast-food products among college students [11].

CONCLUSION

The study concluded that more than majority of the respondents had bad nutritional knowledge and bad eating habit. The major reason for skipping meal was irregular college hours. Education was one of the main sources of nutritional knowledge. Nutrition educators and communicators, as well as those in other scientific fields, need to address the web communication and guidelines, booklets, newspapers, or TV.

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Conflict of interest

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