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Research

PERCEPTION AND PRACTICE OF JUNK FOOD CONSUMPTION AMONG UNDERGRADUATE STUDENTS IN A MEDICAL UNIVERSITY IN CHENGALPATTU DISTRICT

Kokilaa GL, Postgraduate[1][a], Gowthamkarthic R, Assistant Professor[2], Abhinandan Wali, Associate Professor[2], Soumya Agadi, Assistant Professor[1]

[1] Department of Community Medicine, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education, [2] Department of Community Medicine, Jagadguru Gangadhar Mahaswamigalu Moorsavirmath Medical College

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Introduction

Junk foods are defined as processed foods with negligible nutrient value and are often high in salt, sugar, and fat. Junk foods with high sugar content deplete energy levels and the ability to concentrate for extended periods, especially for college students who are forced to consume junk food to curb their hunger as it gives them a sense of pleasure. Due to low prices and affordability, they consume junk food as an alternative to home food.

Methodology

This was a cross-sectional study carried out among undergraduate medical college students in the Chengalpattu district by systematic random sampling. A semi-structured questionnaire which was framed after reviewing similar works of literature was used to assess the knowledge, attitude, and practice regarding junk food consumption. The collected data were entered into MS Excel and analyzed using SPSS version 21. P value <0.05 was considered significant.

Results

Of the 260 participants, 51% were males and 49% were females with a mean age of 20±2.0 years. 65% of the respondents had adequate knowledge regarding the harmful effects of junk food consumption and their BMI scores tended to be in the normal range. 45% of participants felt lethargic after consuming junk food. Chi-square revealed a statistically significant association between the student's year of study (0.004) and their knowledge score, suggesting that the knowledge level was higher for interns.

Conclusion

The present study concludes that most participants had adequate knowledge of junk food consumption patterns. Nutrition counseling regarding a balanced diet and the harmful effects of junk foods may help to curb junk food addiction.

INTRODUCTION

We as human beings need food for development, and growth and to lead a healthy life (Gladies, Peerapur, and Kalmath 2020). The right kind of food is of utmost importance for the promotion of health and the wrong kind of food leads to the promotion of diseases. There is an increase in malnutrition during the adolescent phase of life (Christian and Smith 2018). Malnutrition in all its forms including undernutrition, obesity, and nutrient deficiencies is the leading cause of poor health globally (WHO, n.d.). With the rapid growth of urbanization and advancement in modern technology, people's ways of living and food habits have greatly changed.

Generally, junk foods are defined as processed foods with negligible nutrient value and high in salt, sugar, and/or unhealthy fats (Sapkota and Neupane 2018). Consuming junk food leads to a deficiency of essential nutrients and vita-

a Corresponding author: kokilaagl@gmail.com

mins required for the proper growth and development of the body. Excess soda and sugar intake may cause tooth decay and the weakening of bones. Consumption of excess junk food leaves the brain in a dilemma. Excessive sugar intake can cause blood sugar levels to fluctuate, making the brain demand more food, eventually leading to overeating and indigestion (Zahra, Ford, and Jodrell 2013). Nutrition experts have concluded that junk food manufacturing companies are fooling people by advertising junk food as healthy. A study conducted by Dixon and his colleagues (2007) explains the role of television advertisements in attracting college students to junk foods (Dixon et al. 2007). Students are indulging in junk food to curb their hunger, at social gatherings with peers, and to save time. Junk foods give them a sense of pleasure. Due to low prices, they consume junk food as an alternative to home food. Even though university students are mature enough to understand the difference between healthy and unhealthy foods, the consumption of junk food is still the highest among them. One of the factors contributing to junk food consumption is that they most likely skip breakfast and attend college, later wanting to eat a quick snack (Manapurath, Hadaye, and Gadapani 2020). Other causes are lack of parental awareness, advertising, and attractive packaging. Accurate data on knowledge, attitude, and practice of junk food consumption among college students is essential to implement public health measures to reduce mortality and morbidity, even later in life. Although many studies have been conducted in various parts of India to document junk food consumption patterns of the general population, there is a lack of research on undergraduate students. This study was undertaken to fill these existing lacunae. **Objectives:** To assess the knowledge, attitude, and practice of junk food consumption among undergraduate students, to assess their junk food consumption patterns, and to find the association between knowledge level and nutritional status among the students.

MATERIALS AND METHODS

Study design: This was a Cross-sectional study

Study setting: This study was carried out at Chettinad Medical University in Chengalpattu District, Tamil Nadu

Study population: The inclusion criteria were the undergraduate students who gave informed consent to participate in the study. Students who were diagnosed with any form of mental illness, currently on medication, and who were absent on the day of data collection were excluded from the study.

Sample size: The sample size was calculated based on the prevalence of adequate knowledge of junk food consumption conducted in Nepal (Subedi et al. 2021), which was 19%, with an allowable error of 5%, assuming a non-response rate of 10%. resulting in a required sample size of 260.

Sampling method: Systematic random sampling was used in this study. There were 1250 undergraduate students in the medical teaching institute out of which 1 person was selected randomly between 1 to 10 from every batch and then every 5^{th} person was selected according to the attendance order. Sampling interval "5" was calculated by dividing the total number of students by the estimated sample size

Study period: The study was conducted from Dec 2022 – Feb 2023

Study tool: Data were collected by a pretested, semi-structured questionnaire in four sections which was framed after reviewing literature from similar research. Section A consisted of questions about the Sociodemographic profile of the participants. Section B included yes or no questions. There were ten questions to assess the knowledge regarding junk food consumption. Respondents with a knowledge score of 7 and above were considered to have adequate knowledge and a score of less than 7 was considered to have inadequate knowledge. Sections C and D consisted of questions to assess the attitude and practice towards consuming junk food. Nutritional status which included height and weight was assessed based on the self-reported data of the participants and BMI was calculated and categorized as per the WHO classification system (WHO, n.d.).

Data collection: Informed consent was obtained from the participants; the questionnaires were explained and the responses were filled out by interview method.

Data entry and analysis: The collected data were entered into Microsoft Office Excel and analysed using Statistical Package for Social Sciences (SPSS) version 21. Relevant prevalence was calculated and tabulated. The quantitative variables were expressed in mean and standard deviation and the qualitative variables were expressed in frequency and percentage. The Chi-square test was used to determine statistical significance. P value <0.05 was considered significant.

RESULTS

Table 1 shows the baseline characteristics of study participants. 58 % were undergraduates of MBBS and the other 42% were dental and nursing students. Nearly 30% of respondents were doing internships. 62% belonged to the upper class of socioeconomic status as per the modified BG Prasad scale (Feb 2023). 65% had adequate knowledge (⩾7 out of 10 questions) regarding the harmful effects of junk food consumption.

The association between baseline characteristics and knowledge levels of respondents is presented in Table 2. Chi-square revealed a statistically significant association between the knowledge score and both years of study (p= 0.004) and father's occupation (p= 0.039), indicating that the knowledge level is higher for interns and for the offspring of professional parents. A significant association was also observed between body mass index and knowledge scores (p= 0.001). As shown in Figure 1, a majority of participants with adequate knowledge had a BMI in the normal range; however, knowledge alone did not protect them from being overweight.

86% of participants felt that consuming junk food is nutritious and 50% said they have been influenced by the nutrition information like labels that contain calorie values

Table 1. Baseline characteristics of study participants (n=260)

Baseline characteristics		Frequency (n)	Percentage (%)
Age	<20 years	113	43
	>20 years	147	57
Gender	Males	132	51
	Females	128	49
Religion	Hindu	192	73.8
	Muslim	17	6.5
	Christian	50	19.2
	others	1	0.4
Department	MBBS	150	58
	Dental	55	21
	Nursing	55	21
Year of studying	First-year	40	15.4
	second year	45	17.3
	Third year	57	21.9
	Final year	40	15.4
	Interns	78	30.0
Living status	Parents	93	35.8
	Relatives	8	3.1
	Hostel	114	43.8
	Friends	34	13.1
	Alone	11	4.2
Father's education	Primary	58	22.3
	Higher secondary	62	23.8
	Graduate & above	140	53.5
Father's Occupation	Professional/Semiprofessional	141	54.2
	Clerical/Shopkeeper	50	19.2
	Skilled/Semi-skilled/Unskilled	58	22.3
	Unemployed	11	4.2
Mother's education	Primary	59	22.7
	Higher Secondary	65	24.6
	Graduate & above	136	51.9
Mother's occupation	Professional/Semiprofessional	72	27.7
	Clerical/Shopkeeper	7	2.7
	Skilled/Semi-skilled/Unskilled	25	9.6
	Unemployed	5	1.9
	Homemaker	151	58.1
Socio-economic status (modified BG Prasad scale 2022)	Upper	162	62.3
	Upper middle	55	21.2
	Lower middle	40	15.2
	Upper lower	1	0.4
	Lower	2	1
Type of family	Nuclear	157	60.4
	Joint	46	17.7
	Three generation	55	21.2
	Broken	2	.8

Baseline characteristics		Frequency (n)	Percentage (%)
BMI	Underweight	23	8.8
	Normal weight	135	51.9
	Overweight	102	39.2

and advertisements on the junk food products. 70% agreed that they prefer junk food because it is inexpensive and readily available. The association between the knowledge score the and attitude of respondents is shown in Table 3. A significant association was observed between knowledge score and individuals who consume junk food even when they are sick ($p = 0.011$) and consider junk food as inexpensive ($p = 0.012$)

53% of participants consumed junk food more than 2 times a week and 48% preferred junk food for dinner. 48% consumed junk food when they felt stressed and the burger was the most preferred junk food consumed by most of the respondents. Table 4 shows the association between knowledge score and junk food consumption practices among the respondents. Those with adequate knowledge were more likely to use fast-food restaurant delivery services.

DISCUSSION

The purpose of our study was to assess the junk food consumption patterns among university students, their knowledge concerning junk food consumption, and links between knowledge, behavior, and attitude. 65% had adequate knowledge which contrasts with the study conducted by Poornima et al. (2020) in Delhi among university students where the knowledge level was adequate among 49% of participants. The reason for these findings may be because our study was conducted in a medical university where the awareness is more on junk food and its effects. Our study also found a significant association between knowledge and the body mass index of respondents, with greater knowledge associated with a normal BMI but not with a lower level of overweight. This is similar to a study conducted by Shah et al (2014) suggesting that knowledge deficit may be the most significant factor that prevents young adults from adopting a healthy lifestyle. Knowledge levels can be increased by implementing educational programs related to the side effects of junk food consumption. Shabanian et al. (2018) found that an educational program was one of the efficient strategies to reduce the intake of fast food. That father's occupation is significantly associated with junk food consumption was supported by a study conducted in Nepal (Cohen et al. 2012).

Knowledge level has a significant association with the attitude of individuals who may relate to eating junk food even when participants were sick, perhaps considering that junk food is nutritious, inexpensive, and readily available also found by Bohara et al. (2021) in Nepal.

A study done on Saudi adults (Mandoura et al. 2017) found that 52.3% of participating adults consumed junk foods because they found them more delicious than home-made foods. In addition, junk food was to save time, also similar to our findings.

Even though the present study was limited to a single institute, it provides insights into the perception and practice of junk food consumption in a group of young undergraduate adults in India and the factors influencing its consumption. This may be important in implementing public health measures for preventing malnutrition. However, recall bias could not be eliminated, since some of the factors were assessed based on the participant's recall of the required information.

CONCLUSION

The present study concludes that most participants had adequate knowledge of junk food consumption patterns and those with adequate knowledge level were more likely to have a normal BMI; however, they were not more likely to avoid being overweight. Even though most of the participants had adequate knowledge of the diverse effects of junk food, they still consumed junk food and this was not related to their socioeconomic status or educational level. The advertising practices and health claims made by makers of junk food should be regulated by the government.

SOURCE OF FUNDING

There are no sources of funding.

CONFLICT OF INTEREST

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Table 2. Socio-demographic characteristics and knowledge level of respondents(n=260)

Socio-demographic characteristics		Inadequate knowledge n (%)	Adequate knowledge n (%)	P
Gender	Males	40(30%)	92(70%)	0.054
	Females	52(41%)	76(59%)	
Religion	Hindu	65(34%)	127(66%)	0.452
	Muslim	5(29%)	12(71%)	
	Christian	22(44%)	28(56%)	
	others	0(0%)	1(100%)	
Department	MBBS	50(33%)	100(67%)	0.473
	Dental	21(34%)	40(66%)	
	Nursing	21(43%)	28(57%)	
Year of studying	First-year	18(45%)	22(55%)	**0.004**
	second year	20(44%)	25(56%)	
	Third year	27(47%)	30(53%)	
	Final year	11(27.5%)	29(72.5%)	
	Interns	16(20.5%)	62(79.5%)	
Living status	Parents	34(36.5%)	59(63.5%)	0.527
	Relatives	2(25%)	6(75%)	
	Hostel	36(31.5%)	78(68.5%)	
	Friends	16(47%)	18(53%)	
	Alone	4(36%)	7(64%)	
Father's education	Primary	21(36%)	37(64%)	0.516
	Higher Secondary	26(42%)	36(58%)	
	Graduate & above	45(32%)	95(68%)	
Father's Occupation	Professional/Semiprofessional	47(33%)	94(67%)	**0.039**
	Clerical/Shopkeeper	20(40%)	30(60%)	
	Skilled/Semi-skilled/Unskilled	17(29%)	41(71%)	
	Unemployed	8(73%)	3(27%)	
Mother's education	Primary	26(44%)	33(56%)	0.436
	Higher Secondary	23(36%)	41(64%)	
	Graduate & above	43(31%)	94(69%)	
Mother's occupation	Professional/Semiprofessional	24(33%)	48(67%)	0.507
	Clerical/Shopkeeper	4(57%)	3(43%)	
	Skilled/Semi-skilled/Unskilled	10(40%)	15(60%)	
	Unemployed	3(60%)	2(40%)	
	Homemaker	51(34%)	100(66%)	
Socio-economic status	Upper	57(35%)	104(65%)	0.678
	Upper middle	17(40%)	38(60%)	
	Lower middle	17(40.5%)	25(59.5%)	
	Upper lower	0(0%)	1(100%)	
	Lower	1(50%)	1(50%)	
Type of family	Nuclear	55(35%)	102(65%)	0.530
	Joint	13(28%)	33(72%)	
	Three generation	23(42%)	32(58%)	
	Broken	1(50%)	1(50%)	
BMI	Underweight	15(65%)	8(35%)	**0.001**

Socio-demographic characteristics		Inadequate knowledge n (%)	Adequate knowledge n (%)	P
	Normal weight	37(27%)	98(73%)	
	Overweight	40(39%)	62(61%)	

Chi-square test applied. P value < 0.05 is significant

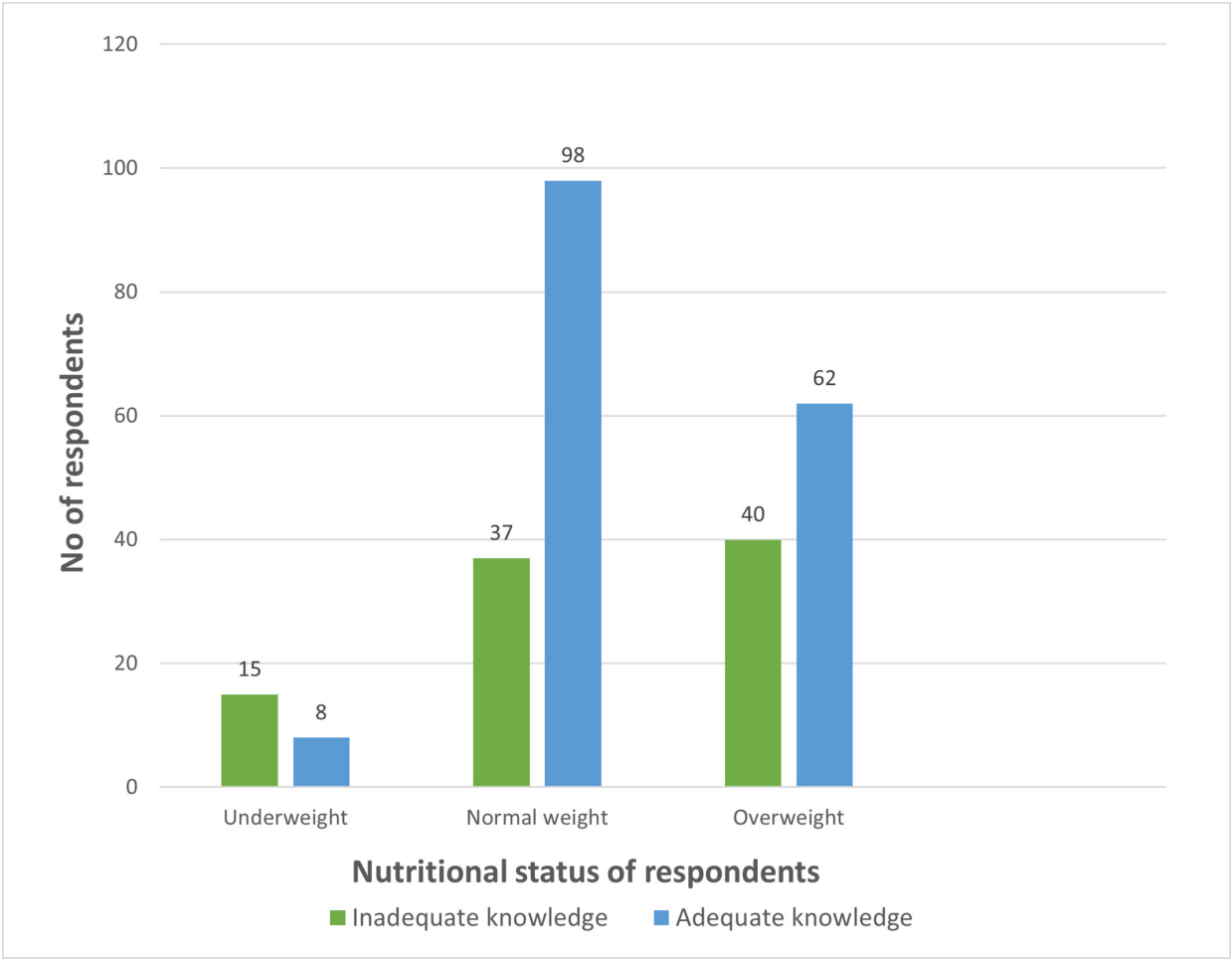

Figure 1. Knowledge level and Nutritional status

Adequate knowledge was defined as correctly responding to 7 out of 10 yes/no questions
Nutritional status was assessed based on BMI as per WHO Classification

Table 3. Attitude and knowledge score of respondents (n=260)

Attitude toward junk food consumption	Response	Inadequate knowledge n (%)	Adequate knowledge n (%)	P
Do you make a point to eat healthily and avoid junk foods?	Never	10(11%)	7(4%)	0.065
	Sometimes	59(64%)	105(62.5%)	
	Yes	23(25%)	56(33.5%)	
Do you consume junk food even if you are sick?	Never	40(44%)	96(57%)	**0.011**
	Sometimes	35(38%)	60(36%)	
	Yes	17(18%)	12(7%)	
Do you read the nutritive value of packed food before buying it?	Never	32(35%)	46(27%)	0.162
	Sometimes	39(42%)	92(55%)	
	Yes	21(23%)	30(18%)	
Does the nutritional information about a product influence your decision to buy junk food?	Yes	46(50%)	86(51%)	0.854
	No	46(50%)	82(49%)	
Do you think that if you have money, you buy and eat whatever you want to without making sure to eat healthily?	Never	31(34%)	66(40%)	0.600
	Sometimes	44(48%)	70(42%)	
	Yes	17(18%)	32(18%)	
Do you use discount coupons to buy fast food?	Never	31(34%)	68(40%)	0.339
	Sometimes	32(35%)	59(35%)	
	Yes	29(31%)	41(25%)	
I eat junk food because it is inexpensive	Yes	59(64%)	124(74%)	**0.012**
	No	33(36%)	44(26%)	
I eat junk food because I do not like to prepare food by myself	Yes	53(58%)	107(64%)	0.335
	No	39(42%)	61(36%)	
Do you often feel drowsy or lethargic after junk food consumption?	Yes	52(56%)	91(54%)	0.715
	No	40(44%)	77(46%)	
Do you think that junk food nowadays is nutritious?	Yes	68(74%)	13(8%)	**0.001**
	No	24(36%)	155(92%)	

Chi-square test applied. P value < 0.05 is significant

Table 4. Practice and knowledge levels of respondents (n=200)

Junk food consumption pattern	Response	Inadequate knowledge n (%)	Adequate knowledge n (%)	P
Do you eat junk food often?	Yes	38(41%)	86(51%)	0.298
	No	54(59%)	82(49%)	
How many times a week do you prefer to eat junk food?	None	14(15%)	10(6%)	0.154
	1-2 times	43(47%)	94(56%)	
	3-4 times	27(29%)	50(30%)	
	More than 5 times	8(9%)	14(8%)	
Which junk food restaurant(s) do you mostly patronize?	KFC	36(39%)	55(33%)	0.749
	McDonald's	11(13%)	16(10%)	
	Burger King	5(5%)	12(7%)	
	Pizza hut	35(38%)	74(44%)	
	Others	5(5%)	11(6%)	
I choose junk food because	No choice	3(3%)	8(5%)	0.188
	Feel satisfied	14(15%)	27(16%)	
	Delicious	53(58%)	83(49%)	
	Readily available	20(24%)	50(30%)	
I frequently prefer junk food for?	Breakfast	8(9%)	27(16%)	0.061
	Lunch	9(10%)	4(2%)	
	Tea	31(33%)	55(33%)	
	Dinner	44(48%)	82(49%)	
I choose junk food when I am	Stressed	9(10%)	4(3%)	0.374
	Very Hungry	9(10%)	18(12%)	
	Saves time	44(48%)	82(34%)	
	Others	38(32%)	56(51%)	
Do you often use delivery services provided by fast-food restaurants?	Yes	26(28%)	67(40%)	**0.012**
	No	66(72%)	101(60%)	
Which is your most preferred Junk food?	Pizza	41(45.5%)	49(29%)	0.060
	Burger	18(19.5%)	50(30%)	
	French fries	18(19.5%)	32(19%)	
	Sandwich	15(15.5%)	37(22%)	
What kind of beverages do you drink with junk food?	Soft drinks	36(39%)	76(45%)	0.209
	Coffee/Tea	34(37%)	46(27%)	
	Fruit juice	13(14%)	35(21%)	
	Energy drinks	9(10%)	11(7%)	
Do your family members also consume junk food?	Yes	41(44.5%)	73(43%)	0.863
	No	51(55.5%)	95(57%)	

Chi-square test was applied. P value < 0.05 is significant

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