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HEALTH AWARENESS AND DIETARY PRACTICES AMONG UNIVERSITY STUDENTS: A CROSS-SECTIONAL STUDY ON FAST FOOD CONSUMPTION

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ABSTRACT

Background

Fast food consumption is increasingly prevalent among college students, driven by the decline of traditional meals, peer influence, accessibility, and marketing. Coupled with sedentary lifestyles, this trend contributes to poor dietary habits and health issues. This study aimed to assess and compare students' knowledge, awareness, and practices regarding fast food, and to explore how gender, academic background, and socioeconomic status influence these behaviors and consumption patterns.

Methods

A six-month cross-sectional online survey among JIS University students used a validated KAP questionnaire. Data from 32 pilot responses confirmed the reliability of the questionnaire. Final data were analyzed using SPSS v20 with descriptive statistics, Mann–Whitney U, Kruskal–Wallis, and correlation tests to examine demographic associations with KAP scores.

Results

A survey of 202 University students revealed high knowledge (83.17%) and moderate awareness (47.03%) about the health risks of fast food, though most showed neutral dietary practices. The mean knowledge, awareness, and practice scores were 16.35 ± 0.31, 20.74 ±

0.33, and 38.51 ± 0.51, respectively. Statistical analysis revealed that BMI, gender, and residence had significant associations with specific KAP scores ($p<0.05$), while age, field of study, and income had no significant impact ($p>0.05$). Pearson's correlation showed significant positive relationships among knowledge, awareness, and practice scores, indicating interdependence among these domains.

Conclusion

The analysis revealed that convenience and peer influence drive fast-food consumption among students, underscoring the need for targeted interventions to improve knowledge, awareness, and adoption of healthier eating habits.

Keywords: Cronbach's alpha, Fast food, KAP, Kruskal–Wallis, Mann–Whitney U, Students

INTRODUCTION:

The consumption of fast food among college students has emerged as a widespread trend, influenced by factors such as convenience, taste preferences, and affordability. Comprehending the fundamental influencing factors, like the easy availability of cheap, ready-to-eat meals, have made fast food a dominant part of their diet **[1, 2]**. The growing presence of fast-food outlets near university campuses, along with the rise of meal delivery apps, has made fast food more accessible to students, reinforcing consumption despite awareness of its health risks. Students are particularly influenced by marketing tactics such as limited-time offers and student discounts. Additionally, social media platforms like Instagram and Facebook intensify this trend through celebrity endorsements, eye-catching visuals, and targeted ads that promote unhealthy food choices **[3]**. Frequent exposure to such advertisements disrupts healthy eating habits and increases cravings for nutrient lacking junk food predisposing them early, to many health-associated factors **[4]**. Increasing trend in disease development among young generation is linked to consumption of energy-dense fast food **[5]**. University students are more prone to obesity type 2 diabetes and hypertension as they consume more processed snacks and junk food frequently **[6-8]**. Additionally sedentary lifestyle, which is a common factor among students accelerates the situation as there is no scope of excess fat burn out **[9]**.

The type of diet consumed has been correlated with up regulation of inflammation markers related to cardiovascular diseases and hypertension. Inflammation of the endothelium causes vascular dysfunction, promotes atherosclerosis and induces type 2 diabetes and insulin resistance **[10]**. As highlighted by Bahadoran *et al*., 2016 fast food meals are typically high in calories, trans fats,

refined carbohydrates and sodium, while being low in essential nutrients and dietary fiber **[11]**. Moreover, the habitual intake of fast food disrupts overall diet quality and promotes a pro-inflammatory environment, further predisposing individuals to the onset and progression of metabolic complications **[12-14]**.

Local street vendors sell food without proper food handling certifications, and thus risk of contamination arises through improper cooked food, unclean water, and inadequate storage facilities **[15]**. Most of these vendors are uneducated and for quick gain use low-quality raw ingredients, packaging material, and reused cooking oils. These re-used oils generate trans-fat which is unfit for human consumption as they contain free radicals that act as carcinogens and alter DNA **[16]**. Again, heavy metals like Ni, Co, and Cd have also been noted among street food sauces and condiments, which are beyond recommended standards by World Health Organization/Food and Agriculture Organization (WHO/FAO) guidelines **[17]**. Heavy metals inside the human body can cause detrimental effect leading to cancer and metabolic dysfunction. Moreover, improper cooking and food storage can lead to food contamination and infection through food-borne pathogens and cause serious gastroenteritis problems **[18, 19]**. The present study aimed to assess and compare the knowledge, awareness, and consumption practices related to fast food among JIS University students from different academic backgrounds in Kolkata, India, and to explore how factors like gender, field of study, and socioeconomic status influence these patterns. The hypothesis of the current study was that there were significant differences in knowledge, awareness, and consumption practices regarding fast food among students based on their academic background, gender, and socioeconomic status.

MATERIALS AND METHODS:

Study design

A cross- sectional questionnaire-based online survey

Target study population

The target study population included students of JIS University from varied academic backgrounds.

Study duration

The research was conducted between October 2024 and March 2025 for a period of six months.

Inclusion and exclusion criteria

This cross-sectional survey was conducted on JIS University students. The study's inclusion criteria included males and female students who studied at JIS University, as well as students' who voluntarily participated in the study. Exclusion criteria included a refusal to participate in the study and failure to complete the assigned

questionnaires through the survey conducted.

Validation of the study questionnaire

A draft questionnaire was developed after reviewing relevant literature and categorized into four domains: demographic, knowledge, awareness, and practice. A pilot study involving 32 respondents was conducted to assess the reliability and appropriateness of the tool. Reliability, indicating the consistency of measurements, was evaluated using Cronbach's alpha to determine internal consistency. A coefficient between 0.6 and 0.7 is generally acceptable **[20]**. The initial questionnaire showed low reliability, prompting modifications. The final version achieved acceptable Cronbach's alpha scores: 0.731 for knowledge (10 items), 0.678 for awareness (6 items), and 0.677 for practice (13 items). The finalized questionnaire was created using Google Forms and included an introduction to the study, a confidentiality statement, and a note on voluntary participation. It comprised 8 demographic questions along with knowledge, awareness, and practice-based items. The form was distributed among students via various social media platforms.

Scoring

Section	Scoring details	Scoring classification
Knowledge	**Correct response- 2** **Incorrect response- 0**	**Low- 0–6** **Moderate- 7–13** **Good- 14–20**
Awareness	**Least favorable response- 1** **Most favorable response- 5**	**Low- 6-13** **Moderate- 14-21** **Good- 22-30**
Practice	**Least desirable response- 1** **Most desirable response- 5**	**Undesirable- 13-30** **Neutral- 31-48** **Desirable- 49-65**

Data analysis

The Statistical Package for Social Sciences (SPSS) software (version 20) was used to analyze the data. Cronbach analysis was conducted to estimate the reliability of the preliminary questionnaire. Categorical variables were represented as frequencies and percentages. The Mann–Whitney U test and Kruskal–Wallis test were employed to identify significant differences between two groups and among multiple groups of an independent variable, respectively. Furthermore, correlation analysis was carried out to examine associations between demographic factors and KAP, as well as interrelationships among the KAP variables.

RESULTS:

Socio-demographic characteristics of the study participants

A total of 202 students participated in the survey, comprising 45.05% males (n = 91) and 54.95% females (n = 111). **Table 1** presents the socio-demographic characteristics. Most participants (56.44%, n

= 114) were aged ≤21 years, with a mean age of 21.19 ± 0.15 years. Regarding BMI, 44.55% had normal weight, 13.37% were underweight, 17.82% overweight, and 24.26% obese. The majority (87.62%, n = 177) were from health-allied fields. Most students resided in urban areas (65.35%, n = 132) and lived with their families (61.39%, n = 124), while 78 stayed in hostels or as paying guests. In terms of annual family income, 65.35% fell within the 3–6 lakh range, and only 5.94% reported income above 18 lakhs.

Table 1: Socio-demographic characteristics of the study population

Factors	Frequency	Percentage
Gender		
Male	**91**	**45.05**
Female	**111**	**54.95**
Age		
<=21	**114**	**56.44**
>21	**88**	**43.56**
Body Mass Index (BMI)		
Underweight	**27**	**13.37**
Normal	**90**	**44.55**
Overweight	**36**	**17.82**
Obese	**49**	**24.26**
Field of study		
Health-allied field	**177**	**87.62**
Non-health-allied field	**25**	**12.38**
Locality		
Urban	**132**	**65.35**
Suburban	**51**	**25.25**
Rural	**19**	**9.41**
Residence		
With family	**124**	**61.39**
Without family	**78**	**38.61**
Annual family income		
3-6 lakhs	**132**	**65.35**
6-12 lakhs	**48**	**23.76**
12-18 lakhs	**10**	**4.95**
>18 lakhs	**12**	**5.94**

KAP Scores of Participants

The average knowledge score was 16.35 ± 0.31, with 83.17% (n=168) scoring high, indicating strong understanding of fast food's health impacts. Most participants recognized homemade food as healthier (71.29%), associated fast food with insulin resistance (84.65%) and cardiovascular risks (90.10%), and linked high sugar/fat content to obesity (93.56%). Obesity-related complications like insulin resistance (74.75%) and type 2 diabetes (79.70%) were also well-identified. The average awareness score was 20.74 ± 0.33, with 47.03% scoring high and 45.05% moderate. While most were aware of unhealthy fats and sodium in fast food, only 37.13% knew about dietary guidelines, and 44.55% understood the concept of "empty calories." Awareness of street food risks was moderate to high

(75.74%). The average practice score was 38.51 ± 0.51, with 78.71% showing neutral practices. Fast food choices were influenced by convenience, peer pressure, and availability. While 53.47% cited busy schedules, 43.56% attempted to balance with home-cooked meals. Hygiene (39.11%) and portion size (36.14%) were often considered. Notably, 69.80% planned to reduce fast food intake.

Association of socio-demographic variables with KAP scores

Table 2 illustrates the association of different socio-demographic characteristics with the KAP scores. Statistical analysis with Mann-Whitney U test claimed that age and field of study of the subjects were not significantly associated with the KAP scores ($p>0.05$). On the contrary, Kruskal-Wallis test confirmed that BMI had a significant impact on the knowledge score of the subjects ($p<0.05$). It was evident that those with normal BMI had a higher knowledge score compared to the other groups. Mann-Whitney U test further emphasized that significant difference in the knowledge and practice scores associated with the gender of the subjects ($p<0.05$). Compared to the males, the females had a higher score. Statistical analysis also documented that the awareness score was significantly higher for those residing with their family ($p<0.05$). Furthermore, those residing in urban area had a significantly higher knowledge score as confirmed by Kruskal-Wallis test ($p<0.05$). There was no significant influence of annual family income on the KAP scores ($p>0.05$).

Table 2: Association between socio-demographic variables with KAP scores

Parameters	% (total value)	TOTAL	KS						p value	AS						p value	PS						p value
			% (LOW)	low	%(MOD)	moderate	%(HIGH)	high		% (LOW)	low	%(MOD)	moderate	%(HIGH)	high		% Undesirable	Undesirable	%(Neutral)	Neutral	% (Desirable)	Desirable	
AGE																							
1. <=21	56.44	114	2.48	5	7.92	16	46.04	93	0.889	4.46	9	26.24	53	25.74	52	0.533	7.43	15	43.56	88	5.45	11	0.495
2. >21	43.56	88	2.97	6	3.47	7	37.13	75		3.47	7	18.81	38	21.29	43		4.95	10	35.15	71	3.47	7	
BMI																							
1. underweight	13.37	27	1.49	3	1.98	4	9.90	20	0.018*	0.99	2	7.43	15	4.95	10	0.096	1.98	4	10.89	22	0.50	1	0.796
2. normal	44.55	90	2.48	5	6.93	14	35.15	71		2.97	6	21.29	43	20.30	41		5.94	12	33.66	68	4.95	10	
3.overweight	17.82	36	0.99	2	1.98	4	14.85	30		1.49	3	5.94	12	10.40	21		0.99	2	15.35	31	1.49	3	
4. obese	24.26	49	0.50	1	0.50	1	23.27	47		2.48	5	10.40	21	11.39	23		3.47	7	18.81	38	1.98	4	
STUDY FIELD																							
1. medical	87.62	177	5.45	11	8.91	18	73.27	148	0.285	6.93	14	40.59	82	40.10	81	0.439	9.90	20	70.30	142	7.43	15	0.686
2. non medical	12.38	25	0.00	0	2.48	5	9.90	20		0.99	2	4.46	9	6.93	14		2.48	5	8.42	17	1.49	3	
GENDER																							
1. male	45.05	91	3.96	8	6.44	13	34.65	70	0.032*	3.96	8	21.78	44	19.31	39	0.408	6.93	14	34.65	70	3.47	7	0.031*
2. female	54.95	111	1.49	3	4.95	10	48.51	98		3.96	8	23.27	47	27.72	56		5.45	11	44.06	89	5.45	11	
RESIDENCE																							
1. With family	61.39	124	1.98	4	6.93	14	52.48	106	0.088	3.47	7	25.74	52	32.18	65	0.015*	9.41	19	45.54	92	6.44	13	0.301
2. Without family	38.61	78	3.47	7	4.46	9	30.69	62		4.46	9	19.31	39	14.85	30		2.97	6	33.17	67	2.48	5	
LOCALITY																							
1. urban	65.35	132	3.47	7	7.92	16	53.96	109	0.014*	5.94	12	27.72	56	31.68	64	0.781	8.91	18	50.99	103	5.45	11	0.071
2. suburban	25.25	51	0.99	2	1.98	4	22.28	45		0.50	1	15.35	31	9.41	19		2.97	6	20.30	41	1.98	4	
3. rural	9.41	19	0.99	2	1.49	3	6.93	14		1.49	3	1.98	4	5.94	12		0.50	1	7.43	15	1.49	3	
ANNUAL INCOME																							
1.3-6 lakhs	65.35	132	3.47	7	9.41	19	52.48	106	0.111	4.95	10	30.69	62	29.70	60	0.956	6.93	14	52.97	107	5.45	11	0.835
2. 6-12 lakhs	23.76	48	0.50	1	0.99	2	22.28	45		2.48	5	9.90	20	11.39	23		3.96	8	17.82	36	1.98	4	
3. 12-18 lakhs	4.95	10	0.00	0	0.50	1	4.46	9		0.00	0	1.98	4	2.97	6		0.50	1	3.47	7	0.99	2	
4. >18 lakhs	5.94	12	1.49	3	0.50	1	3.96	8		0.50	1	2.48	5	2.97	6		0.99	2	4.46	9	0.50	1	

*** Indicates significance at p<0.05**

Correlation between the KAP scores

Pearson correlation analysis revealed significant positive linear correlations between knowledge score and awareness score ($r= 0.202$, $p<0.01$), knowledge score and practice score ($r= 0.144$, $p<0.05$), and awareness score and practice score ($r= 0.495$, $p<0.01$). These results confirm the interdependency of the students' knowledge, awareness, and practice levels. Therefore, the higher the knowledge level, the awareness is also improved and practices are also desirable.

DISCUSSION:

This study establishes the cross-sectional relationships between poor nutrition choice by the University students compounded with sedentary behaviour and physical inactivity, as emerging risk factors that contribute to overweight and obesity. The study population has a wide set of socio-demographic traits. The majority of participants were female (54.95%), with more than half being 21 years or younger (56.44%). Another similar study conducted in Lucknow, India, also revealed that 54.64% were females and median age of the students were 22 years **[21]**. According to BMI distribution, 44.55% of respondents were in the normal range, while 17.82% were overweight and 24.26% obese. Most participants (87.62%) were from health-related fields, with 65.35% residing in cities, followed by 25.25% from suburban and 9.41% from rural areas. About 60% lived with their families, and 65.35% had an annual family income of 3–6 lakhs, indicating a middle-income background. Participants demonstrated strong knowledge of the health risks of fast food, with most correctly linking frequent consumption to insulin resistance, diabetes, and cardiovascular issues. A survey by Ahmed *et al*., 2024 also reported that 86.42% of the students were aware of the health hazards associated with fast food consumption **[21]**. The present study revealed that the knowledge and practice scores were significantly higher ($p<0.05$) for the females as compared to the males. Ahmed *et al*., 2024 also reported that the females were more aware of the ill effects of fast food as compared to the males **[21]**. Another study carried out among Pre-University students in Udupi Taluk, Karnataka, India found that only 26.25% possessed adequate knowledge regarding the impact of fast food consumption **[22]**. Studies suggest that girls were more inclined to use emotional eating as a way to cope with stress, depression, and negative emotions, whereas boys tended to exhibit overeating behaviors and preferred consuming larger food portions **[23]**. The responses to the awareness-based questions indicate a moderate to high level of awareness among participants regarding the health risks associated with street food consumption. These findings suggest that

while many participants understand the general health risks of fast and street food, gaps remain in specific nutritional knowledge, particularly regarding empty calories. Public health initiatives could further enhance awareness, especially in clarifying misconceptions and reinforcing the importance of balanced, home-cooked meals.

Practice-based responses reveal a conflict between fast food convenience and health goals. While 65.34% consumed street food regularly, key drivers were taste (61.88%), affordability (39.6%), and convenience (62.38%). Though 69.3% balanced intake with healthy foods and 63.37% practiced portion control and hygiene, 51.98% rarely considered nutrition. Influences like promotions (48.51%), peer pressure (46.53%), emotional states, and hostel living shaped behavior. Despite frequent consumption, 69.8% intended to reduce intake, reflecting growing health awareness amid lifestyle challenges.

CONCLUSION:

Despite good awareness, healthy dietary practices remain lacking among students, especially those who are obese or living independently. Demographic factors influence knowledge but don't always lead to behavior change. Targeted interventions are needed to translate awareness into action. The high rates of overweight and obesity highlight the urgency of promoting nutritious diets and physical activity to prevent early onset of chronic diseases and reduce future health burdens.

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REFERENCES:

[1] Beal T, Morris SS, Tumilowicz A. Global patterns of adolescent fruit, vegetable, carbonated soft drink, and fast-food consumption: a meta-analysis of global school-based student health surveys. *Food Nutr Bull* 2019;40(4):444–59.

[2] Didarloo A, Khalili S, Aghapour AA, Moghaddam-Tabrizi F, Mousavi SM. Determining intention, fast food consumption and their related factors among university students by using a behavior change theory. *BMC Public Health* 2022;22(1):314.

[3] Gupta A, Kapil U, Singh G. Consumption of junk foods by school-aged children in rural Himachal Pradesh, India. *Indian J Public Health* 2018;62(1):65–7.

[4] Almoraie NM, Saqaan R, Alharthi R, Alamoudi A, Badh L, Shatwan IM. Snacking patterns throughout the life span: potential implications on health. *Nutr Res* 2021;91:81–94.

[5] Sobhani SR, Mortazavi M, Kazemifar M, Azadbakht L. The association between fast-food consumption with cardiovascular diseases risk factors and kidney function in patients with diabetic nephropathy. *J Cardiovasc Thorac Res* 2021;13(3):241.

[6] Schwingshackl L, Schwedhelm C, Iqbal K, Shahid M, Knüppel S. Food groups and risk of type 2 diabetes mellitus: a systematic review and meta-analysis of prospective studies. *Eur J Epidemiol* 2019;34(12):1205–22.

[7] Kazi RNA, El-Kashif MML, Ahsan SM. Prevalence of salt rich fast food consumption: A focus on physical activity and incidence of hypertension among female students of Saudi Arabia. *Saudi J Biol Sci* 2020;27(10):2669–73.

[8] Mahumud RA, Sahle BW, Owusu-Addo E, Chen W, Morton RL, Renzaho AM. Association of dietary intake, physical activity, and sedentary behaviours with overweight and obesity among 282,213 adolescents in 89 low and middle income to high-income countries. *Int J Obes* 2021;45(11):2404–18.

[9] Li L, Sun N, Zhang L, Xu G, Liu J, Hu J, Han L. Fast food consumption among young adolescents aged 12–15 years in 54 low-and middle-income countries. *Glob Health Action* 2020;13(1):1795438.

[10] Hart MJ, Torres SJ, McNaughton SA, *et al*. Dietary patterns and associations with biomarkers of inflammation in adults: a systematic review of observational studies. *Nutr J* 2021;20:24.

[11] Bahadoran Z, Mirmiran P, Azizi F. Fast food pattern and cardiometabolic disorders: a review of current studies. *Health Promot Perspect* 2016;5(4):231–40.

[12] Azemati B, Kelishadi R, Ahadi Z, Shafiee G, Taheri M, Ziaodini H, *et al*. Association between junk food consumption and cardiometabolic risk factors in a national sample of Iranian children and adolescents population: the CASPIAN-V study. *Eat Weight Disord* 2020;25(2):329–35.

[13] Kagaruki GB, Mahande MJ, Kimaro GD, Ngadaya ES, Mayige TM, Selemani M, Bonfoh B. Prevalence and correlates of cardio-metabolic risk factors among regular street food consumers in Dar es Salaam, Tanzania. *Diabetes Metab Syndr Obes* 2021;14:1011–24.

[14] Saravanan D, SK B, Sabarathinam S. A narrative review on the impact of processed foods/junk foods/preserved foods: Why special attention is required to prevent metabolic syndrome? *Obes Med* 2023;42:100507.

[15] Tesfaye A, Tegene Y. Assessment of food hygiene and safety practices among street food vendors and its associated factors in urban areas of Shashemane, West Arsi Zone, Oromia Ethiopia, 2019. *J Biomed Res Environ Sci* 2020;6(2):001–5.

[16] Fekadu D, Abera S, Weldemichael H. The influences of street food vendor frying equipment on the quality of frying oil. *Heliyon* 2024;10(7):e28293.

[17] Khaleeq A, Ahmed M, Huma R, Mujtaba A, Noor S, Rehman R, Hameed A. Evaluation of trace and heavy metals in different varieties of sauces to characterize their impact on human health. *J Food Compos Anal* 2022;114:104789.

[18] Perilli M, Telera G, Colacicco G, Cortazzi N, Iannetti L, Migliorati G, De Massis F. A survey to assess food safety knowledge and habits among high school students, their parents and teachers in Pescara and Chieti Provinces, Abruzzo Region (Italy). *J Food Prot* 2023;86(12):100186.

[19] Koumassa OAB, Ouétchéhou R, Hounsou M, *et al*. Factors influencing street-vended foods quality and safety in developing countries: a review. *Discov Food* 2025;5:18.

[20] Kausar MN, Fitriana E, Khairunnisa K, *et al*. Development and validation of the knowledge, attitude, and practice questionnaire for community pharmacy personnel in tuberculosis case detection, drug monitoring, and education: a study from Indonesia. *Infect Drug Resist* 2023;16:3729–41.

[21] Ahmed SS, Asthana A, Dwivedi S. Fast food consumption pattern and its awareness among youth. *Acta Sci Nutr Health* 2024;8(3):51–60.

[22] Khongrangjem T, Dsouza SM, Prabhu P, Dhange VB, Pari V, Ahirwar SK, Sumit K. A study to assess the knowledge and practice of fast-food consumption among Pre-University students in Udupi Taluk, Karnataka, India. *Clin Epidemiol Glob Health* 2018;6(4):172–5.

[23] Jena S, Parida J, Panda A, Behera SS, Pradhan A, Patra PK, Pati S, *et al*. Knowledge, practices and

influencing factors defining unhealthy food behavior among adolescents in India: a scoping review. *Front Psychol* 2023;14:1161319.