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Abstract

This study aimed to assess the prevalence and factors influencing fast food consumption among medical students at Al-Iraqia University. A cross-sectional study was conducted at Al-Iraqia University, Baghdad, Iraq, from December 2023 to February 2024. The study included students from all six academic years of the College of Medicine. A total of 420 students participated, with 222 (52.9%) males.

Prevalence and Factors of Fast-Food Consumption among Iraqi Medical College Students, Iraq

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The mean age of participants was 21.11 ± 1.71 years (range: 18–24 years), and the mean BMI was 32.18 ± 13.88 . Frequent fast-food consumption ($\geq$ twice per week) was reported by 320 students (76.2%). The most commonly consumed fast foods were burgers and sandwiches, with lunch being the preferred meal for consumption. The primary factors driving fast food consumption included convenience, taste, and time constraints, while affordability and availability of utensils played a lesser role. The study revealed a high prevalence of fast-food consumption among medical students, primarily driven by time constraints, convenience, and taste preferences. Given the potential health risks associated with frequent fast-food intake, implementing targeted awareness programs and promoting healthier dietary alternatives may be crucial in improving students' eating habits and overall well-being. Observed during examination periods. Although consumption levels were generally within safe limits, the findings highlight the need for greater awareness regarding the long-term effects of excessive caffeine consumption.

Keywords

Fast Food, Iraq, Al-Iraqia University, Out-of-home foods, junk food, eating behavior, fast food consumption.



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Introduction

Fast food represents one of the fastest-growing food industries globally and constitutes a fundamental component of Western-style diets. These foods are characterized by their rapid preparation, affordability, and convenience while often being high in calories, fats, sugars, and salts (1–4). Typically purchased from restaurants utilizing precooked ingredients, fast food is commonly served in a packaged format, facilitating easy consumption.

Regular fast food (RFF) consumption is defined as the intake of fast food at least twice per week (5). The concept of fast food is not new; it dates back to the early 19th century during the industrial revolution when laborers worked extensive hours, leaving little time for meal breaks. This necessity led to the emergence of snack stalls and kiosks outside factories. In contemporary society, quick meals consumed outside the home have become integral to modern lifestyles, particularly among individuals with demanding schedules (6).

Over the past three decades, the caloric intake derived from fast foods has increased fivefold. Daily fast-food consumption varies, with approximately 30% of children and over 50% of college students incorporating it into their diets. Simultaneously, a marked rise in global obesity prevalence, especially among children and adolescents, has been observed. However, limited awareness exists regarding the adverse health effects associated with fast food consumption (7, 8).

Frequent fast-food consumption has been linked to an increased risk of obesity, cardiovascular diseases, diabetes, weight gain, and various chronic health conditions. Studies indicate that by one's 30s, arterial blockages may begin to develop, thereby increasing the likelihood of heart disease and cardiovascular events (9, 10). Furthermore, the number of fast food establishments has drastically increased worldwide in recent decades (11). Eating outside the home has become a widespread dietary habit among university students, particularly those residing away from their families. Several factors contribute to this phenomenon, including the availability of diverse menu options, enhanced flavor profiles, taste preferences, lack of cooking skills and utensils, affordable pricing, time constraints, and the overall convenience of fast food (5, 12–14).

Medical students, in particular, experience a transition from academic learning to professional responsibilities. Given their extensive knowledge of food composition and its physiological effects, they are expected to adopt healthier dietary habits. However, research suggests that despite their expertise, many medical students and even practicing physicians fail to adhere to the healthy lifestyle recommendations they provide to others. The rigorous academic curriculum, stress, and sedentary nature of medical education often contribute to increased reliance on fast food as a primary dietary option (15, 16).



In Iraq, research on dietary habits, especially fast-food consumption among university students, remains scarce. Additionally, there is a complete lack of studies addressing fast food consumption trends among medical students. Given this gap, the present study aims to assess the prevalence of fast-food consumption and its associated factors among medical students at Al-Iraqia University.

The study aims to identify the prevalence and related factors to fast food consumption among AL-Iraqia University students.

Materials &Methods

Study Population and Sampling

The study population comprised all medical college students enrolled at Al Iraqia University College of Medicine , Al-Adhamiyah District, located in east central of the city of Baghdad, Iraq, from December 2023 to January 2024. Convenience sampling was used to recruit a sample of 420 students from various academic years. Only those who consented to participate were included in the study. This sampling technique was chosen due to its practicality and ease of implementation, given the constraints of the study environment.

Data Collection

Data were collected electronically through an online form that was distributed to the participating students. The online form was developed using a secure and user-friendly platform to ensure ease of access and completion. The self-administered questionnaire was developed based on a thorough review of relevant literature (5, 14–

16), validated by two professors from Al-Iraqia University College of Medicine. The questionnaire gathered information on sociodemographic characteristics, frequency of fast-food consumption, fast food consumption patterns, and potential associated factors.

Data Management and Analysis

Data collected through the online form were automatically transferred into a computerized database, facilitating efficient data entry and minimizing the risk of errors. Prior to analysis, the data underwent thorough review to identify and address missing values and outliers. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) software version 29.

Descriptive statistics,

including frequencies, percentages, means, and standard deviations, were used to summarize the data. Chi-square tests were applied to assess associations between categorical variables, while independent t-tests and one-way ANOVA were employed to compare numerical variables across different groups. Additionally, logistic regression analysis was conducted to determine independent predictors of fast-food consumption among the study participants.

Ethical Considerations

The study protocol received approval from the Ethics Committee of Al-Iraqia University. Informed consent was obtained from all participants prior to their inclusion in the study. Confidentiality and anonymity were strictly maintained throughout the research process.



Results

A total of 420 students participated in the study. Stage 4 students constituted the largest group, comprising 104 participants (24.8%). Among the participants, 222 (52.9%) were male, while 198 (47.1%) were female. The overall mean age of the sample was 21.11 ± 1.71 years, with a range of 18 to 24 years. The mean height was 158.62 ± 24.85 cm, and the mean weight was 75.48 ± 16.56 kg. The mean BMI was 32.18 ± 13.88 .

Regarding marital status, 406 (96.7%) of the participants were single. In terms of living arrangements, 252 (60%) of students resided with their family members. Additionally, only 69 (16.4%) of participants were engaged in part-time employment, while 100 (23.8%) reported having more than 50,000 IQDs as weekly pocket money. The socio-demographic characteristics of the participants are summarized in Table 1.

When participants were asked about their frequency of exercise per week, 158 (38.8%) reported not exercising at all, while 100 (24.2%) stated they exercised once a week. Additionally, 89 (21.2%) reported exercising twice a week, while 73 (17.4%) exercised three or more times per week. These findings are illustrated in Chart 1. When participants were asked about the frequency of fast food consumption, 141 (33.5%) reported consuming fast food twice per week, 89 (21.2%) consumed it three times per week, and 90 (21.4%) reported consuming fast food

more than three times per week. Only 21 (5%) of participants reported not consuming fast food at all.

According to the aforementioned definition of regular fast food (RFF) consumption, the prevalence of fast-food consumption among Al-Iraqia University medical students was found to be 76.2%. These results are further illustrated in Chart 2, which presents the distribution of fast-food consumption frequency among all subjects. Chart 2 illustrates the distribution of fast food consumption frequency among all subjects. The mean number of RFF meals was higher among males (2.50 ± 1.12) compared to females (2.18 ± 1.17) ($p=0.004$). Students who lived with their families reported a lower mean number of RFF meals than those living alone or with colleagues ($p<0.001$). Additionally, students with a weekly pocket money of more than 100,000 IQD reported a higher mean number of RFF meals than those with less than 25,000 IQD per week ($p<0.001$).

No significant differences in RFF consumption were observed based on weekly exercise frequency, marital status, or BMI values ($p>0.05$).

Fast food consumption was significantly correlated with burgers ($p<0.04$) and processed sandwiches ($p<0.001$), whereas no significant correlation was detected with fries.



Table 1: Socio-demographic data of the participants summarized. Total no: 420

	Variable	Frequency	Percentage
Gender	Male	222	52.9%
	Female	198	47.1%
Age			
	18 Years	38	9%
	19 Years	59	14%
	20 Years	47	11.2%
	21 Years	75	17.9%
	22 Years	102	24.3%
	23 Years	75	17.9%
	24 Years	24	5.7%
Marital Status	Single	406	96.7%
	Married	14	3.3%
Residence	Live with family members	252	60%
	Live with non-family members (i.e., college dorm)	168	40%
Working as a part-time job?	Yes	69	16.4%
	No	351	83.6%
Personal pocket money/week	< 25,000 IQD	138	32.9%
	25,000 - 50,000 IQD	182	43.3%
	> 50,000 IQD	100	23.8%
Year of Study	1st stage	81	19.3%
	2nd stage	70	16.7%
	3rd stage	53	12.6%
	4th stage	104	24.8%
	5th stage	75	17.9%
	6th stage	37	8.8%



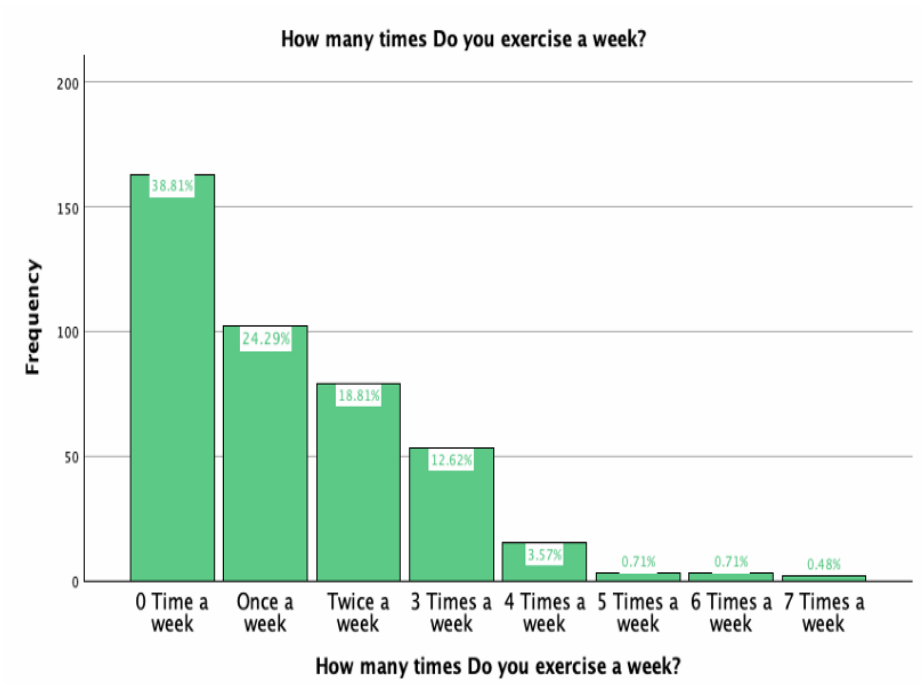


Chart 2: distribution of fast-food consumption frequency among all subjects.



Table 2: Fast food Consumption Patterns Reasons for Fast Food Consumption

Variable	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Restaurant Environment	146 (34.8%)	126 (30%)	95 (22.6%)	37 (8.8%)	16 (3.8%)
Enjoy the taste of fast food	183 (43.6%)	179 (42.6%)	30 (7.1%)	23 (5.5%)	5 (1.2%)
Convenient and easy	195 (46.4%)	163 (38.8%)	38 (9%)	20 (4.8%)	4 (1%)
Faster than prepared food at home	166 (39.5%)	140 (33.3%)	63 (15%)	40 (9.5%)	11 (2.6%)
The cost/price is less than the food Homemade	58 (13.8%)	36 (8.6%)	2 (0.5%)	157 (37.4%)	167 (39.8%)
Variety of menu	97 (23.1%)	179 (42.6%)	83 (19.8%)	40 (9.5%)	21 (5%)
Eating with friends / Family	168 (40%)	165 (39.3%)	35 (8.3%)	37 (8.8%)	15 (3.6%)
Influence of advertisements	128 (30.5%)	122 (29%)	37 (8.8%)	89 (21.2%)	44 (10.5%)
Lack of time	225 (53.6%)	138 (32.9%)	0 (0%)	41 (9.8%)	16 (3.8%)
Change in living conditions	188 (44.8%)	126 (30%)	0 (0%)	73 (17.4%)	33 (7.9%)
Lack of cooking skills	135 (32.1%)	115 (27.4%)	35 (8.3%)	79 (18.8%)	56 (13.3%)
Lack of cooking utensils	60 (14.3%)	69 (16.4%)	76 (18.1%)	138 (32.9%)	77 (18.3%)
Cravings for fast food	143 (34%)	139 (33.1%)	58 (13.8%)	45 (10.7%)	35 (8.3%)

Food Preferences and Consumption Habits

The most preferred fast-food item was burgers (160 participants, 38.1%), followed by sandwiches (95 participants, 22.6%). The most common time for fast food consumption was lunch (139 participants, 33.1%), followed by dinner (122 participants, 29%).

The most preferred meal size was medium (240 participants, 57.1%), as summarized in Table 2.

The most commonly cited reasons for RFF consumption were convenience, taste enjoyment, and lack of time. Socializing with family or friends was also a frequently mentioned factor. The least common reasons were lower price and lack of cooking utensils, as detailed in Table 3.



Table 3: Related Factors to fast food consumption

	Variable	Frequency	Percentage
preferred fast food	Burger	160	38.1%
	Pizza	62	14.8%
	French fries	35	8.3%
	chicken	68	16.2%
	sandwich	95	22.6%
time of consumption of fast food	Breakfast	13	3.1%
	Breakfast & lunch	37	8.8%
	Lunch	139	33.1%
	Lunch & Dinner	109	26%
	Dinner	122	29%
meal size	Small	130	31%
	Medium	240	57.1%
	Large	50	11.9%

Discussion

This study examined the prevalence and associated factors of fast-food consumption among medical students at Al-Iraqia Medical College in Iraq. The findings revealed a high frequency of fast-food intake, with 76.2% of students reporting consumption at least twice a week. This prevalence is 16% higher than the rate reported among Mutah University students in Jordan (59.4%) (17) And more than double the prevalence reported in Michigan (28%) (5). currently, no published studies document the prevalence of regular fast-food consumption (RFF) among students at Al-Iraqia University. However, studies from other Arab countries with similar dietary patterns indicate widespread consumption. For instance, studies conducted in Kuwait and Egypt found that 81.4% and 50.5% of university students, respectively, consumed fast food (18, 19). Similarly, research from

Saudi Arabia and Lebanon reported that 74.5% and 58% of university students consumed fast food 1-2 times per week, respectively (20,21). These findings align with global trends indicating a growing preference for fast food, particularly among young adults (22).

Existing literature suggests that higher RFF consumption is often associated with a lack of physical activity, indicating potential concerns regarding health consciousness among university students (5, 17, and 23). However, our study did not establish a significant association between RFF intake and the frequency of weekly exercise.

Additionally, male students reported significantly higher RFF consumption than females ($p < 0.05$), a trend consistent with previous research (24, 25). However, this finding contrasts with Mwafi N.'s study,



which found no significant gender-based differences in RFF consumption (17).

The most frequently cited reasons for RFF consumption among participants were convenience (84%), taste preference (86%), lack of time (86%), and socializing with family or friends (79%). These findings align with previous literature, although the ranking of reasons varies across studies (18, 19, and 24). The least frequently reported factor influencing fast food consumption was affordability, which contrasts with some studies (24, 25) but is consistent with the relatively high cost of fast food in Iraq compared to other living expenses (26).

Consistent with previous studies, lunch was the most common mealtime for fast food consumption (33.1%) (12, 19). This finding reflects a broader trend among students who often skip breakfast due to academic schedules (12), making them more likely to rely on fast food during midday meals.

Our study identified a significant correlation between fast food consumption and specific items such as burgers and sandwiches, whereas no significant correlation was observed with fries. This finding contradicts the results of Eljamay's study (27), which may be due to differences in participant demographics, age groups, and study environments.

Conclusion

This study revealed a notably high prevalence of fast-food consumption among medical students at Al-Iraqia University, with most participants consuming fast food at least twice per week. Several factors contributed to this high consumption, including:

Time constraints: The demanding academic schedules and heavy workloads led students to opt for fast food as a convenient option.

Accessibility: The availability of numerous fast-food outlets on campus and in surrounding areas facilitated easy access to fast food.

Social factors: Eating fast food was often a social activity shared with friends and family.

Living arrangements: Students living away from their families had limited access to home-cooked meals, making fast food a more viable alternative.

Given these findings, there is a need to implement interventions that promote healthier eating habits among medical students. Strategies such as increasing the availability of nutritious meal options on campus, encouraging meal planning and home cooking, and raising awareness about the long-term health implications of frequent fast-food consumption should be considered. Future research should further explore effective interventions to reduce fast food consumption and promote healthier dietary behaviors in university students.

Recommendations

These findings underscore the crucial need for interventions aimed at encouraging healthier dietary habits among medical students. Potential strategies include:

Increasing the availability of healthy food options on campus.

Promoting cooking and meal preparation skills through workshops or educational programs.

Educating students on the importance of balanced nutrition for their own health and well-being, as well as their role as future healthcare professionals.

Further research is needed to gain a deeper understanding of the factors influencing fast food consumption in this population and to develop effective targeted interventions.



Implementing these strategies can empower medical students to make informed dietary choices, improving their health and setting a positive example for the communities they will serve.

Additionally, university students as a whole represent a promising target group for educational and support initiatives aimed at raising awareness of healthy eating options and encouraging healthier food choices.

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