

Prevalence and factors related to obesity and fast food consumption among Mutah University students, Jordan

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Abstract

Objective: To identify the prevalence and factors related to obesity and fast food consumption among university students.

Methods: The cross-sectional study was conducted at Mutah University, Al-Karak governorate in southern Jordan, from January to April, 2019, and comprised students recruited from different faculties. Data was collected using a structured, validated questionnaire. Height and weight were measured for body mass index calculation. Data was analysed using SPSS 23.

Results: Of the 503 students, 278(55.3%) were females. The overall mean age of the sample was 21.62±2.22 years (range: 19-39 years). Fast food consumption was ≥2 times/week for 299(59.4%) students. The prevalence was significantly higher among students spending ≥21 Jordanian dinar per week ($p=0.020$) and those who were not performing physical exercise ($p=0.025$). Significant correlations were found between fast food consumption and fried potato ($p<0.001$), processed meat products ($p<0.001$), coffee ($p=0.006$) and candies ($p=0.039$). No significant relation was found between fast food consumption and body mass index, religion, gender, field of study or living away from family ($p>0.05$). The most common reason for consumption was shortage of time 115(38.5%); lunch time was the most preferred time 210(70.2%); 97(32.4%) students were willing to read the nutrient information; and 211(70.5%) were interested in choosing healthy meals.

Conclusion: The prevalence of fast food consumption among university students was found to be high.

Keywords: Fast food, Physical exercise, University students, Body mass index, Cross-sectional study.

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Introduction

Fast food refers to any kind of food that is produced in standardised large amounts in very short time to be quickly offered to people who do not have the time to cook.¹ The preparation of fast food meals tend to prioritise the speed of making food over the nutritional value of the food served, given that it is originally designed for commercial resale.² Evidence suggests that fast food is considered unhealthy compared to home-cooked meals. As such, fast food is found to be rich in fat, sodium, sugar and calories and is found to be poor in fruits, vegetables, whole grains, vitamins and minerals.³ Several studies showed a strong association between fast food consumption and increased body mass index (BMI) which is a parameter used to assess overweight and obesity.^{4,5} Additionally, a significant relationship between fast food intake and colorectal cancer was reported.⁶

In the past decades, there has been a drastic increase in the number of fast food restaurants worldwide.⁷ Eating out of

home is becoming common and popular dietary habits among university students, particularly those living away from their family homes, which is a challenging and stressful condition noticeably affecting the trends in food selection.⁸ The availability of various menu choices, delicious flavour and taste, large portion sizes with reasonable prices, delivery services, and being convenient and satisfying are the factors influencing and encouraging fast food consumption, particularly among the adolescents and youth.^{4,8} Moreover, fast food meal is substantially served with high-calorie beverages, such as carbonated soft drinks, which adversely affects the value of fast food meal and increases the risk of cardiovascular diseases, incidence of hypertension, obesity, type 2 diabetes and metabolic syndrome.^{9,10}

In Jordan, the exposure to fast food has increased during the past two decades with the openings of fast food outlets. It is reported that females constitute about 25.8% of the Jordanian employees in both public and private sectors¹¹ and 53% of the total number of undergraduate students at Jordanian universities.¹² This increased number of women engaged in the workforce or education may have eventually limited the time spent cooking and facilitated the increased demand of fast food. Studies about the level or the prevalence of fast food consumption among Jordanian population in general and among

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university students in particular are lacking. The current study was planned to identify the prevalence of fast food consumption and its related factors among university students in Jordan.

Subjects and Methods

The cross-sectional study was conducted at Mutah University in the Al-Karak governorate in southern Jordan, from January to April 2019. After approval from the institutional ethics review committee, the sample was raised from among Jordanian undergraduate students aged 19 years and above enrolled with any of the 14 faculties in two principal categories: Health and Scientific faculties comprising Medicine, Nursing, Pharmacy, Sciences, Agriculture, Engineering and Information Technology; and Humanities comprising Business, Sharia, Educational Sciences, Law, Sports Sciences, Social Sciences and Arts. Participants were selected from all these disciplines using randomised sampling technique, with the sample size being proportional to the total number of the students in that faculty.

After taking informed consent, data was collected using an interviewer-administered questionnaire adapted from literature.¹³ The valid and reliable questionnaire had two parts. The first part contained socio-demographic information, while the second part consisted of questions related to fast food consumption.

In addition, height and the weight of each participant were measured using an electronic scale and a measuring tape in order to calculate BMI. The students were classified based on their calculated BMI value into four categories using the World Health Organisation (WHO) classification:¹⁴ Underweight <18.5 kg/m², Normal weight 18.5-24.9 kg/m², overweight 25-29.9 kg/m² and obese ≥30.0 kg/m².

Regular fast food (RFF) consumption was defined as consuming fast food at least two times per week,¹³ while the cut-off point for regular physical exercise was 150 minutes / week as defined by the WHO.¹⁵

Data was analysed using SPSS 23. Descriptive analyses involved mean with standard deviation (SD) for continuous variables and frequencies and percentages for nominal data. Independent t-test was used to examine inter-

group differences. Pearson correlation analysis was performed to explore the correlation relation between fast food consumption and certain food items. P<0.05 was considered significant.

Results

Of the 503 students, 278(55.3%) were females. The overall mean age of the sample was 21.62±2.22 years (range: 19-39 years). Respondents living with their families were 279(55.5%), while 224(44.5%) were living either alone or with colleagues. The mean personal pocket money was 26.07±12.40 Jordanian dinar (JD) per week. The mean height was 165.20±8.69cm and the mean weight was

Table-1: Socio-demographic characteristics of the subjects (n=503).

Socio-demographic Characteristics	n (%)	Male n (%)	Female n (%)	Mean ± tSD
Gender				
Female	278 (55.3)			
Male	225 (44.7)			
Age (years)				21.62 ± 2.22
18-24	471 (93.6)			
25-30	27 (5.4)			
>30	5 (1.0)			
Ethnicity				
Jordanian	503 (100.0)			
Others	0 (0.0)			
Religion				
Muslims	483 (96.0)			
Christians	20 (4.0)			
Others	0 (0.0)			
Height (cm)	503 (100.0)			165.20 ± 8.69
Weight (kg)	503 (100.0)			66.11 ± 14.93
*BMI (kg/m²)				24.11 ± 4.37
*Under weight	28 (5.6)	9 (4.0)	19 (6.8)	
*Normal weight	293 (58.3)	120 (53.3)	173 (62.2)	
*Over weight	130 (25.8)	67 (29.7)	63 (22.6)	
*Obese	52 (10.3)	29 (12.9)	23 (8.3)	
<25 kg/m ²	321 (63.8)	129 (57.3)	192 (69.1)	
≥ 25 kg/m ²	182 (36.2)	96 (42.7)	86 (30.9)	
Personal pocket money / week				26.07±12.40
≤ 20 JD	221 (43.9)	76 (33.8)	145 (52.2)	
≥ 21 JD	282 (56.1)	149 (66.2)	133 (47.8)	
Working as Part-time Job	63 (12.5)	54 (24)	9 (3.2)	
Living with family	279 (55.5)	135 (60.0)	144 (51.8)	
Living in a dorm (alone or with colleagues)	224 (44.5)	90 (40.0)	134 (48.2)	
Marital status				
Married	18 (3.6)			
Unmarried	485 (96.4)			
Faculties				
Humanities faculties	240 (47.7)			
Scientific faculties	153 (30.4)			
Health faculties	110 (21.9)			
Physical exercise				
yes	223 (44.3)			
No	280 (55.7)			

*BMI: Body mass index: Underweight <18.5, Normal weight 18.5-24.9, Overweight 25-29.9 and Obese 30; SD: Standard deviation.

Table-2: The relation of fast food consumption with students' characteristics and certain food items.

Characteristics	RFF consumption (≥2 times/week) n (%)	Mean±SD	Test of significance	p-value*
Gender				
Female	163 (58.6)	2.56 ± 2.29	t=1.011	0.312
Male	136 (60.4)	2.81 ± 3.16		
Religion				
Muslim	290 (60.0)	2.69 ± 2.72	t=0.501	0.617
Christian	9 (45.0)	2.38 ± 2.59		
Faculty				
Science & health faculties	149 (56.7)	2.58 ± 2.94	t=0.789	0.430
Humanities faculties	150 (62.5)	2.77 ± 2.44		
Pocket money / week				
≤ 20 JD	113 (51.1)	2.36 ± 2.84	t=2.337	0.020
≥ 21 JD	186 (66.0)	2.93 ± 2.59		
BMI (kg/m²)				
< 25	200 (62.3)	2.85 ± 2.54	t=0.817	0.414
≥ 25	99 (54.4)	2.62 ± 3.00		
Physical exercise				
Performing	128 (57.4)	2.37 ± 2.13	t=2.246	0.025
Not performing	171 (61.1)	2.91 ± 3.08		
Living				
With family	177 (63.4)	2.80 ± 2.56	t=1.133	0.258
In dorm (alone or with colleagues)	122 (54.5)	2.52 ± 2.89		
Certain specific food items				
Fried potato		r=0.374	<0.001	
Processed meat		r=0.509	<0.001	
Red meat		r=0.005	0.913	
Nuts		r=0.066	0.139	
Drinking Coffee		r=0.122	0.006	
Salty snacks (e.g. chips)		r=0.410	0.092	
Candy (e.g. chocolate and ice cream)		r=0.092	0.039	
Deserts (e.g. backed sweets, cake and donuts)			r=0.080	0.072

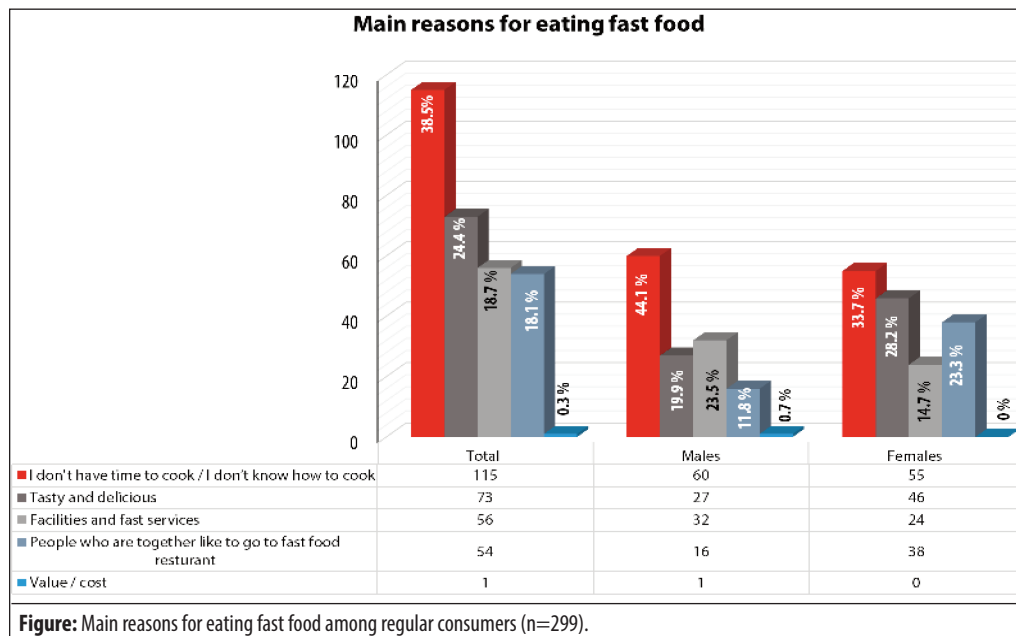
*p-value calculated using t-test, RFF: Regular fast food; SD: Standard Deviation.

66.11±14.93 kg. The mean BMI was 24.11±4.37 (Table 1).

Overall, 408(81.1%) students consumed fast food at least once a week, while RFF was found in 299(59.4%) participants. Additionally, 78(15.5%) students consumed fast food at least once daily, and 56(11.1%) did not eat fast food at all or very rarely (< once / month). The mean number of RFF meals was higher among males 2.81±3.16) than females 2.56±2.29 (p=0.312). The mean number of RFF consumption was significantly higher among students who spent ≥21 JD/w (p= 0.020). Students performing physical exercise had significantly lower RFF consumption (p=0.025). No significant difference in RFF consumption was found on the basis of BMI values (p>0.05), while students who lived with their families reported higher mean number of RFF consumption than those living in alone or with colleagues ((p=0.258).

Fast food consumption was significantly correlated with fried potato (p<0.001), processed meat (p<0.001), coffee (p=0.006) and a variety of candies (p=0.039). No significant correlation was detected with red meat, salty snacks, nuts and deserts (Table 2).

The most common reason for RFF consumption was shortage of time 115(38.5%), while the cost of fast food was the least cited reason for RFF consumption (Figure).



Lunch time was the most preferred time for RFF consumption 210(70.2%); 97(32.4%) students were willing to read the nutrient information; and 211(70.5%) were interested in choosing healthy meals if they were available on the menu (Table 3).

Discussion

In the present study the prevalence of RFF consumption among Mutah University students was 59.4% which was two times higher than the

Table-3: Characteristics of fast food consumed regularly (≥ 2 times / week; n=299).

Character	RFF consumers(n=299) n (%)
The meal mostly ordered	
-Lunch	210 (70.2)
- Dinner	28 (9.4)
- Breakfast and lunch	26 (8.7)
- Breakfast	15 (5)
- Lunch and dinner	12 (4)
- Other	8(2.7)
Type of fast food	
-Meal (sandwich, potato and soda)	143(47.8)
-Sometimes a meal, sometimes a particular food category	88 (29.4)
-A particular food (only the main course)	67 (22.4)
-Side dishes only (salad, potato,...etc)	1 (0.3)
Usually eat fast food with	
-Friends	239 (79.9)
-Alone	41 (13.7)
-Family	15 (5.0)
-Colleagues	4 (1.3)
Order the largest size of the food	
	80 (26.8)
Nutrient information	
- Would read them if they were provided by the restaurant in the menu	97 (32.4)
- Would choose "the healthy meal" if it were available:	
Great possibility	91 (30.4)
Impossible	88 (29.4)
There is a possibility / small possibility	120 (40.1)
Always eat the fast food at the restaurant	120 (40.1)
Always Order it as "take away"	75 (25.1)
Sometimes takeaway and sometimes at the restaurant	104 (34.8)

prevalence in Michigan (28%).¹³ This finding is a threatening indicator of the widespread unhealthy lifestyle among youth as fast food consumption is increasing all over the world. No studies measuring RFF prevalence among university students in Jordan was found. However, comparing the results with studies from other Arab countries where food culture is expected to be similar, two studies from Kuwait and Egypt reported the prevalence of RFF consumption among university students as 81.4% and 50.5% respectively.^{16,17} Similarly, two more studies from Saudi Arabia and Lebanon showed that 74.5% and 58.7% of university students consumed fast food 1-2 times/week, respectively.^{18,19} These numbers indicate that the habit of fast food consumption is increasingly becoming prevalent among the youth in Arab countries, including Jordan.

The current study found RFF consumption significantly higher among students not performing physical exercise which may indicate that this group of students is less health-conscious. This is in agreement with a study¹³ in which respondents less engaged in physical activity reported more RFF consumption. In addition, the present study found RFF consumption to be significantly different based on the students' weekly pocket money. Literature

generally reports increased fast food consumption with increased individual or household income.²⁰ Research also shows that university students spend a high percentage of their pocket money on fast food.⁸ The current study showed no significant difference in RFF consumption related to BMI which is contradictory to findings in Saudi Arabia⁵ and Bangladesh.²¹ Nonetheless, the current finding is consistent with other studies done in Kuwait¹⁷ and Saudi Arabia.¹⁸ This inconsistency of the reported results might be attributed to various definitions of fast food, and also because frequency might not reflect the size/portion consumed per meal which could be higher among those with greater BMI.

Although the current study found the mean RFF consumption to be higher in males compared to females, but the difference was not significant. Several studies have shown a significant difference in RFF consumption based on gender, with females having lower mean consumption than males.^{22,23} The current results showed gender differences in terms of the preferences of fast food consumption, like the number of female students who preferred to eat fast food when accompanied by their friends was two times more than their male counterparts. These differences could be culturally driven as more barriers are present and could restrict females attending outdoor places unaccompanied.

The top three reasons for RFF consumption among the study participants were shortage of time (38.5%), palatability and taste (24.4%), and quick services in food preparation (18.7%). Literature shows similar reasons with varying order.^{16,17,23} This variation might be attributed to different study settings. On the other hand, the least factor mentioned among the current respondents was the cost and price which is contradictory to some studies^{2,23} but is consistent with the fact that fast food is relatively expensive similar to other costs of everyday life in Jordan.²⁴

Lunch was the most preferred time for fast food consumption, and the finding was similar to other studies.^{8,16} Lunch time is usually in the middle of the day and studies show that most students usually skip their breakfast due to class pressures.⁸ Therefore, they are expected to be exposed to fast food outlets more at lunch. Fast food consumption was significantly correlated with certain food items, like fried potato, processed meat, chips and chocolate, which is in line with an earlier study.²⁵ These are probably the most attractive items to be consumed by youth. Finally, 32.4% of the current participants were willing to read nutritional information of the food if it was available and almost two-thirds of them were willing to order a healthy meal if they found it among menu options. Findings from literature show the interest of students to eat

healthy when facilitated by the environment in terms of provision of healthy options as well as limiting the availability of unhealthy foods.²⁶

Conclusion

There was a very high prevalence of fast food consumption, including junk food items like fried potato, among university students in Jordan. University students could be a potential target for educational and support strategies designed to improve awareness regarding healthy food options.

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