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Original Article

Dietary Habits among Medical Science Students in Duhok City

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ABSTRACT

Background and objectives: Students at the university level are more exposed to changes in physical and social status and lifestyle changes, which will affect students' eating habits. This study aimed to assess dietary habits among medical science students in Duhok city.

Methods: A descriptive cross-sectional study was conducted from 20th January 2019 to 28th April 2019. The cluster sampling procedure enrolled 359 medical science students aged 18-26 years from five medical science colleges in Duhok city. Dietary habits were obtained by direct interview. The questionnaire consists of three parts: socio-demographic characteristics, questions regarding main meals, and measuring dietary habits using a Likert scale. Data were analyzed using SPSS version 23.

Results: Most of the study participants were males 56.8% with a mean age was 21 years. Slightly more than half of the students 52% claimed they ate three main meals every day and about 11% skipped it. About 45% of the participants ate breakfast every day. The most frequently eaten meals and beverages among students were soft drinks 80%, rice 80%, snacks 72%, and sweats/chocolate 70%. Decreased intake of fruits 60%, vegetables 50%, and dairy products 38% were observed. There were significant differences among males and females in food consumption and beverages namely, sports drinks, eggs, cheese, red meat, chips, and sweets/chocolate.

Conclusion: The current study indicated that skipping meals was typical among students. Most students had unhealthy food habits and behaviors according to the standard recommendations for eating and drinking daily. The assessment of dietary habits as a part of the health component can serve as a screening tool to identify adult students to improve their well-being and dietary habits.

Keywords: Dietary habits, Medical students, Nutrition, Duhok City, Kurdistan Region, Iraq

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INTRODUCTION

Proper eating is one of the most effective methods to improve one's overall health. A well-balanced diet should include a variety of raw and fresh meals, plenty of fruits, vegetables, as well as vitamin- and mineral-dense foods and beverages. A healthy lifestyle also includes regular physical activity and dietary choices suitable for both physical and mental well-being [1, 2, 3]. For various causes and obstacles, university populations are particularly vulnerable in terms of their dietary habits [4]. A variety of factors, such as a new environment, study stress, a lack

of adequate time management and hectic class schedules, and the cost of healthy food, can all contribute to a lack of interest in their well-being [3, 4]. Most students engage in unhealthy eating and lifestyle habits throughout this stage of their lives, including meal skipping, snacking, fast-food intake, smoking, and excessive internet usage [5]. Personal and environmental factors both influence and are influenced by one's eating habits. People are influenced by psychological and biological elements, whereas these same aspects influence the immediate social environment. Aside from school lunches and fast-food restaurants, other aspects to consider are the community, which includes family members, friends, and peer networks. [6] Another critical issue is the social framework, often known as the macro system, which comprises elements such as mass media, marketing, and advertising, in addition to society's social and cultural standards. A growing body of evidence and study indicates that some aspects of eating behaviors are critical in managing weight and overall health [7]. Contextualizing advice and providing realistic counsel on appropriate meal consumption, including which meals should be consumed more frequently and in which combination, and at what times will aid in developing and translating dietary recommendations. The majority of students in the Kurdistan region experiences challenges during their academic careers, prompting the current study to assess dietary habits and eating patterns of medical university students in Duhok City.

The Objectives of the study are to assess dietary habits among medical science students, find out consumption of diets per week, determine patterns of eating according to main meal and to find out male and female behaviors regarding dietary habits.

METHODS

Design and sampling procedure From the 20th of January 2019 to the 28th of April 2019, the present study was conducted at medical science/colleges in Duhok, and it was designed as a descriptive cross-sectional study. Students ranging in age from 18 to 26 years old were chosen from a pool of 359 students 56.8 % males and 43.2% females. The sample size calculated from a total of 2147 students was 326. To decrease bias and increase representativeness, this number increased to 359 [8]. Each of the five medical science colleges provided samples for this study from different disciplines, including nursing, medicine, pharmacy, dentistry, and health sciences. Students were selected using a basic random sample technique after using the cluster sampling procedure. Direct interviews were used to obtain information about students' food habits and socio-demographic characteristics. The questionnaire consisted of two components: questions surrounding socio-demographic characteristics and questions assessing nutritional behaviors. Dietary habits were measured using a Likert scale (Always (7 days per week), Sometimes (3 days per week), and Never (never at all/0 days per week). Daily and weekly eating and drinking habits were assessed with questions about foods that were eaten including breakfast, the number of snacks and main meals throughout the day, intake of fruits, vegetables, and rice and dairy products. Data were analyzed using SPSS version 23 for descriptive statistics such as frequency and percentages, along with t-tests and analysis of variance to examine various forms of eating behavior (dependent variable) and gender (two categories), as well as (years).

RESULTS

Three hundred and fifty-nine medical students participated in this study, of which 204 (56.8%) were males. The age of students ranged from 18 to 26 years with a mean age of 21 years. Most of the respondents were students at colleges of medicine 31.1% and pharmacy 23.5%. The higher percentage of students was in their first year (24.2%) and third year (24.5%) as shown in (Table 1).

Table 1: Demographic characteristics of Medical Science Students

Character Age	F (%)
18-20	115 (32)
21-23	177 (49.3)
24-26	67 (18.7)
Sex	
Male	204 (56.8)
Female	155 (43.2)
Colleges	
Nursing	57 (15.9)
Medicine	112 (31.1)
Dentistry	50 (13.9)
Pharmacy	84 (23.5)
Health Sciences	56 (15.6)
Classes	
1st class	87 (24.2)
2nd classes	66 (18.4)
3rd classes	88 (24.5)
4th classes	67 (18.7)
5th classes	38 (10.6)
6th classes	13 (3.6)
Total	**359 (100)**

Approximately more than half (52%) of students had three main meals and 11% skipped them. Of the students that had three main meals, 45% always eat breakfast, and 19% never have breakfast. As illustrated in (Figure 1), the most consumed foods and beverages per week among medical science students were soft drinks (80%), rice (80%), snacks (72%), and sweets (70%). Fruits (60%), eggs (58%), chips (54%), red meat (52%), fried foods (50%), and vegetables and dairy products (38%) were the lesser consumed foods and beverages. Gender seems to influence food and beverage consumption frequency, as shown in Table 3. The most common foods influenced by gender were sport drinks with (mean difference -2.1, t-value-13.3, p-value 0.0001), red meat (mean difference 0.44, t-value -5.43, p-value 0.0001), and chips (mean difference 0.59, t-value 4.03, p -value 0.003). Other food items include sweets/chocolate (mean difference 0.40, t-value 3.1, p-value -0.02), cheese (mean difference 0.07, t-value 49, p-value 0.017), and eggs (mean difference -0.24, t-value-1.63, p-value 0.03). It is also important to highlight that breakfast meals were also influenced by gender (mean difference -0.44, t-value-2.8, p-value 0.001). There were no variations in how males and females consumed other foods.

Table 2: Patterns of eating according to main meals

Servings per weak	Main meals (%)	Breakfast (%)
Always	188 (52)	163 (45)
Sometimes	134 (37)	130 (36)
Never	37 (11)	66 (19)
Total	**100**	**100**

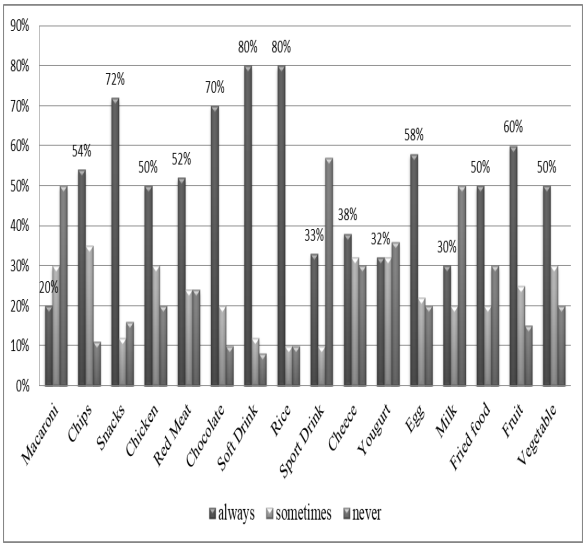

Figure 1: Consumption of food items per. week

Table 3: Mean weekly consumption of food items of medical students according to genders.

Food Items	Male (n=204)		Female (n=154)		Mean difference	t-value	p-Value
	Mean	S.d.	Mean	S.d.			
Fresh Fruits	3.26	1.27	3.20	1.23	0.055	0.40	0.77
Raw Vegetables	3.38	1.18	3.33	1.34	0.050	0.37	0.33
Sport Drinks	5.42	0.98	3.31	1.76	-2.1	-13.3	**0.0001**
Milk	4.22	1.38	4.03	1.51	0.19	1.25	0.300
Fried food	3.58	1.43	3.65	1.47	-0.07	-0.49	0.786
Cheese	3.91	1.23	3.84	1.50	0.07	0.49	**0.017**
Yogurt	4.10	1.38	3.95	1.49	0.14	0.96	0.295
Eggs	3.31	1.38	3.56	1.41	-0.24	-1.63	**0.032**
Rice	2.65	1.44	2.62	1.20	0.03	0.2	0.218
Soft drinks	2.44	1.36	2.20	1.23	0.23	1.67	0.243
Sweets/ Chocolate	3.11	1.36	2.65	1.41	0.40	3.1	**0.021**
Red meat	3.20	1.35	4.00	1.40	-0.79	-5.43	**0.0001**
Chicken meat	3.46	1.30	3.67	1.09	-0.21	-1.62	0.070
Snacks	2.91	1.33	3.14	1.49	-0.22	-1.5	0.423
Chips	3.67	1.37	3.07	1.40	0.59	4.03	**0.003**
Macaroni/Spaghetti	4.55	1.25	4.24	1.22	0.30	2.3	0.109
Breakfast	2.67	1.40	3.12	1.61	-0.44	-2.8	**0.001**

(S.d= standard deviation) *Statistical significance set at p≤ 0.05 and calculated with t-test, t-value, mean difference and significant values are in bold.

DISCUSSION

Medical students must have a positive outlook toward a balanced lifestyle and eating practices as they will be the future healthcare providers who will affect the public. The data indicate that medical students in Duhok Medical Universities have negative attitudes and a lack of awareness and good practices selecting nutritious and safe foods and beverages. Students' eating habits have never been addressed, and the need to track eating habits among students has grown in recent years as the number of students enrolled each year has increased. In this study, eating habits of medical science students revealed that slightly more than half of the students ate daily meals; this result was higher than those recorded in Saudi Arabia, such as the College of Health Sciences at Rass, Qassim University (36.7%) [9], and Abha University (31.0%) [10]. Meanwhile, this result was lower than those recorded for Chinese (83.6%) [11], Lebanese (61.4%) [12], Iraq (56.7%) [13], and Malaysian medical students (57.6%) [14]. Breakfast was the most commonly skipped meal, with only around half of students eating breakfast every day. A similar propensity for missing breakfast

has been recorded among Iraqi medical students [13], Malaysia [15], Turkish [16], and India [17]. Meal skipping was prevalent, which may be attributed to students' changing life habits, time, study, and the fact that some students live far from family. Educational initiatives in the Kurdistan Region aimed at improving healthy eating habits must be initiated. The current study's findings contradict those of studies conducted in Saudi Arabia (22%) [18], (20.4) [2], Bahrain (26.3%) [19] and Pakistan (20%) [20]. However, higher consumption (81.8%) was recorded by another study [14]. Adults can consume a minimum of five servings (400 g) of vegetables and fruits each day, according to the World Health Organization (WHO) [21]. The majority of students eat fried food 50 % of the time; this may be attributed to fast food's low cost, good taste, and the fact that they did not have time to prepare meals. Fried food consumption was found to be similar in both groups [14]. In the present study, rice, soft drinks, sweets/chocolates, and snacks were eaten by the vast majority of students more than any other form of food. This reveals that medical students have poor eating habits and that immediate action is required since soft drink use increases the risk of obesity and type 2 diabetes mellitus [22]. Furthermore, frequent snacking and eating fried meals might be harm students' health due to the availability of energy-dense and high-fat elements found in these foods [23]. The result of the current study was in agreement with the results of other studies [24, 19, 25]. However, these findings were higher than other studies that reported lower intake in Eastern India [26], and in Sudan [27]. In addition, low consumption of milk and dairy products among students was common in this study, which was similar to other studies [28], [29]. However, this result was lower than that of a study conducted among school kids in the Kore sub-district of Erbil in Iraq's Kurdistan region, which found that milk and dairy products were consumed more frequently (83.8%) [13]. Taking into account the gender differences in food consumption among medical students, the current study found that female students consume significantly more sports drinks, breakfast, energy drinks, red meat, cheese, eggs, sweets/chocolate, and chips than male students. In Kuwait, similar findings were discovered: male students consume more sports drinks, cheese, and chips, whereas female students consume fast food, high-fat foods, sweets, soft drinks, and chips [30]. Another study conducted in Iraq, which supports the current findings, found substantial variations in the intake of energy drinks, sugar-sweetened drinks, sweets/chocolate consumption, and fast food consumption between males and females [19]. Gender differences were observed in a study of teenage consumption of fast food, sweets, red meat, and sugary beverages in Syria [31]. Unhealthy eating patterns have become a significant concern worldwide resulting in a rise in the community's incidence of non-communicable diseases in the future. Students are not immune to this phenomenon, as their eating patterns change while at university. In other contexts, it has already been mentioned how difficult it is for students to maintain healthy eating habits. Food preferences are affected by several factors, including changes in lifestyle, the convenience of fast foods, taste, and the physical and social environment in which they live.

Conclusion

According to the current study, skipping meals was common among students. The majority had unhealthy food habits and behaviors based on the standard food groups' daily eating and drinking

recommendations. There were differences among males and females in consuming some .foods and beverages. The health component's assessment of dietary habits can be used as a screening tool to identify adult students who need to improve their well-being and healthy diets.

Recommendation

Include nutritional health education messages and the appropriateness of proper food choices in each health educational plan. Emphasis should be placed on the importance of breakfast, the dangers of eating unhealthy fast food, high-calorie snacks regularly, and the importance of certain food products in obesity prevention. High-calorie items including chips, sweetened beverages, and other high-calorie foods can be avoided by consciously engaging with the media.

Conflict of interest

There is no conflict of interest .

Ethical considerations

The study was given ethical approval by the Scientific Committee of the University of Duhok's College of Nursing and Duhok Directorate General of Health. Each participant gave written informed consent at the beginning of the study. All participants' rights to privacy and policy were maintained.

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