Eating habits in university students of health science programs

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Abstract

Objective: The objective of the study was to evaluate eating habits in university students who belong to health science programs. **Methods:** The study was conducted to 1503 students from the health area of five institutions of the Juárez University of the State of Durango: FAMEN (32.5%), FAPYTCH (23.4%), FAEO (16.1%), FODO (14.2%), and FCCFYD (13.8%). Each student was given an instrument to assess their eating habits. **Results:** There are few statistical differences in the ITEMS of the instrument applied to evaluate eating habits in university students of health science programs, presenting a low consumption of fruits, vegetables, protein-rich foods, and low water consumption. In contrast, there is a high intake of processed and high-calorie food. **Conclusions:** It is concluded that there is no difference between the variables of the instrument applied in the participating population, noting that students evaluated in both men and women are on a mostly regular scale, and when questioning the population studied about how often they follow a diet, a high percentage responded that sometimes, and a minimum percentage always mentions being within a diet.

Key words: Eating habits. College students. Health.

Introduction

Health and education are valuable assets to the state of well-being and, thus, fundamental columns of Mexico. The National Survey of Health in Schools (2018) highlights the fact that although school performance is linked to different factors, health issues linked to diet and nutrition significantly affect the students' ability to learn¹.

Thus, it was important to conduct this research to assess the eating habits of higher education students who belonged to science programs at the "Juárez University of the State of Durango" (UJED by its Spanish acronym), since it is well-known that not all people

follow a proper dietary regime, and even the people who attend a consultation with a nutritionist quit or do not follow the suggestions made to them.

Exogenous obesity is linked to sedentarism and bad dietary habits. Today, it is considered a worldwide epidemic and an emerging public health issue. Being overweight or obese leads to greater mortality risk, as well as to the development of different diseases such as diabetes, hypertension, ischemic cardiopathy, and cerebral vascular accidents, which are the main causes of death in our country²⁻⁴.

Obesity and overweight are defined as the abnormal or excessive accumulation of fat, which can be adverse to health. A simple way of measuring obesity is the body

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mass index (BMI). This is the weight of a person in kilograms divided by the square of their height in meters. Anybody with a BMI equal to or greater than 30 is considered obese. Moreover, a person with a BMI equal to or greater than 25 is considered overweight. Obesity and overweight are considered risk factors for numerous chronic diseases, including diabetes, cardiovascular diseases, and cancer⁵.

Many patients attend medical consults with the idea that obesity is resolved by following a diet without considering other areas in their lives. Sometimes, this attitude can be strengthened by the professional, who focuses the entire patient's attention on weight loss, leaving aside the need to modify their habits and lifestyle^{6,7}.

A balanced diet not only provides the essential nutrients for proper physical development but also proper intellectual development. However, having proper dietary habits are a matter of education rather than money, since people often spend a lot of money on food with low nutritional value, commonly known as "junk food"⁸.

We are conducting this research in the spirit of contributing to the development of scientific knowledge since, thus far, there is no record of studies with the proposed reference. Therefore, the main objective of this research is to assess the perception of dietary habits in university students who belong to health sciences programs imparted at the "Juarez University of the State of Durango."

Materials and methods

A quantitative study was conducted for this investigation, gathering and analyzing data to answer research questions, thus proving a hypothesis previously developed, relying on numerical measurements, counts, and frequency in the use of statistics to establish behavioral patterns within a population accurately.

The research was developed in the state of Durango considering a study population of 1503 university students properly enrolled in the maximum house of studies and belonging to the health science programs.

The percentage of students who participated by school is described below:

1. School of Medicine and Nutrition (FAMEN by its Spanish acronym) with a total sample of 488 students (32.5%)
2. School of Psychology and Human Communication Therapy (FAPYTCH by its Spanish acronym) with 352 students (23.4%)

3. School of Nursing and Obstetrics (FAEO by its Spanish acronym) with 242 students (16.1%)

4. School of Odontology (FODO by its Spanish acronym) with 214 students (14.2%)

5. School of Physical Culture and Sport Sciences (FC-CFYD by its Spanish acronym) with 207 students (13.8%).

The qualitative variables of this investigation include higher education students from the Health Sciences programs at the UJED, and the quantitative variables were their dietary habits.

Dietary habits were evaluated using an instrument designed by the authors of this research. This instrument was called "Instrument to assess the dietary regime in Health Sciences students" (Annex 1), which was utilized as a technique to gather information on different aspects of the subjects in this study, and an analysis of the measurements and impact of the study, therefore determining dietary conditions according to each subject. The instrument was validated using the Cronbach alpha item analysis before the study with a population of 40 volunteer students.

For the application of the questionnaire, we benefited from the support of 15 students in their 5th semester of the Nutrition Bachelor's degree at the FAMEN. For a period of 6 weeks, these students were responsible for commuting and taking the instruments to the different learning institutions included in this research. It is worth noting that they were supervised and accompanied by the researchers responsible for this study for the entire time. The students in charge of the surveys were trained and prepared by the researchers so that they knew the questions in the questionnaire and the correct way to apply them.

The questionnaire included the weight and height of the interviewees to calculate BMI using a calibrated, portable, and an easy-to-transport measuring device (Omron HBF-514C scale and Avanutri 315 portable stadiometer).

After conducting the aforementioned measurements, the obtained results were shared with each of the subjects personally, so they were informed of their status and received a brief explanation of what this measurement meant.

Each participant of the different institutions of the UJED required written consent to be evaluated, and data collection was performed at the institutions where they were enrolled. The subjects were selected through a list provided by the school services department at the UJED. The university included the number of students officially registered from the first to the eighth semester.

Finally, the answers obtained through this instrument were analyzed using the software SPSS Statistics V.20. The following tests were conducted: Cronbach's alpha reliability tests, index calculation, average, mean, standard deviation, and range.

The study adhered to the guidelines established by the General Health Law guidelines in health-care research, always respecting the dignity of the subjects with a polite and professional treatment and the protection of their human rights.

Results

The study included 1503 students from five higher learning institutions from the Juarez University of the State of Durango: 488 students from the FAMEN (32.5%), 352 from the FAPYTCH (23.4%), 242 from the FAEO (16.1%), 214 from the FODO (14.2%), and 207 from the FCCFYD (13.8%), presenting a Cronbach's alpha reliability of 0.876.

Table 1 describes the demographic characteristics of the interviewees, considering the number of students from the different learning institutions, the distribution of students from all the different majors, the total of students enrolled by semester, and the male-female ratio of those who participated in the study.

The results were obtained by calculating indexes; we established a hierarchy of ponderations that responded to the values measured concretely in dietary habits and regime.

The mean age of the interviewees was 20.87 years of age with a standard deviation of 2.61, ranging from 17 to 45 years of age, with most of them being around 20 years old (22.6%).

Most interviewees, 984 students (65.5%), presented a BMI with normal weight; however, some of them were overweight, and others had some degree of obesity (**Table 2**).

Results from **Table 3** correspond to the consideration of students' dietary habits, where 835 (55.6%) responded to be regular compared to 42 (2.8%) students who selected the option of excellent.

When questioned about the perseverance that university students have to follow a dietary regime (**Table 4**), 505 students (33.6%) sometimes answered, followed by 448 students (29.8%) who answered that they have never followed one and 36 (2.4%) students who said that they were always within a dietary regime.

Following this line, the interviewees were asked about who indicated said dietary regime, 1058 (70.4%) students responded that they did it by themselves,

Table 1. Demographic characteristics of university students

Faculty	n	Percentage (%)
FAMEN	489	32.5
FAPYTCH	352	23.4
FAEO	242	16.1
FODO	213	14.2
FCCFYD	207	13.8
Degree	n	Percentage (%)
Medicine	283	18.8
Nutrition	206	13.7
Psychology	218	14.5
Communication Therapy	134	8.9
Nursing	242	16.1
Dentistry	213	14.2
Physical Education	207	13.8
Semester	n	Percentage (%)
First	256	17.0
Second	280	18.6
Third	284	18.9
Fourth	192	12.8
Fifth	157	10.4
Sixth	131	8.7
Seventh	124	8.3
Eighth	79	5.3
Sex	n	Percentage (%)
Male	528	35.1
Female	975	64.
Age	n	Percentage (%)
17.00	3	0.2
18.00	126	8.4
19.00	323	21.5
20.00	339	22.6
21.00	282	18.8
22.00	180	12.0
23.00	102	6.8
24.00	62	4.1
25.00	35	2.3
26.00	14	0.9

(continues...)

Table 1. (Continued)

Age	n	Percentage (%)
27.00	9	0.6
28.00	6	0.4
29.00	5	0.3
30.00	2	0.1
32.00	1	0.1
33.00	3	0.2
34.00	1	0.1
35.00	1	0.1
37.00	3	0.2
40.00	1	0.1
41.00	3	0.2
43.00	1	0.1
45.00	1	0.1
Total	1503	100.0

Source: own research

274 (18.2%) said that it was directed by a nutritionist, 92 (6.1%) students indicated that it was recommended by an acquaintance, and 60 (4%) answered that a physician had indicated the diet.

The students were questioned whether they followed their dietary indications, 1045 (69.5%) responded “almost always,” 310 (20.6%) said “sometimes,” 71 (4.7%) students said “always,” and 14 (0.9%) students said “never.”

Regarding their dietary habits, 48 (3.2%) students answered that they did not have any, while 510 (33.9%) responded “only sometimes,” 464 (30.9%) students said “almost always,” and 332 (22.1%) said “always.”

In their frequency of dietary habits, 421 (28%) students in the health area mentioned that they had breakfast at home, and 143 (9.5%) mentioned that they never had breakfast at home. They were also asked whether they ate lunch at home, and 410 (27.3%) students said “always,” and 39 (2.6%) said that they never eat at home. When asked if they prepared their meals, 523 (34.8%) answered “sometimes,” and 164 (10.9%) said “rarely.”

Concerning their physical activity, 497 (33.1%) students answered that they sometimes performed physical activity. On the other hand, 138 (9.2%) of the students stated that they never performed it.

Table 2. BMI level in university students

Level	n	Percentage (%)
Low weight	99	6.6
Normal weight	984	65.5
Overweight	337	22.4
Obese grade 1	72	4.8
Obese grade 2	10	0.7
Obese grade 3	1	0.1
Total	1503	100

Source: own research

Table 3. Consideration of eating habits in university students

Habits	n	Percentage (%)
Bad	154	10.2
Regular	835	55.6
Good	472	31.4
Excellent	42	2.8
Total	1503	100.0

Source: own research

Table 4. The consistency with which university students follow a diet

Diet	n	Percentage (%)
Never	448	29.8
Almost never	387	25.7
Sometimes	505	33.6
Almost always	127	8.4
Always	36	2.4
Total	1503	100.0

Source: own research

In their daily consumption of three meals a day, we were able to observe that 705 (47%) students answered that their diet is “very healthy,” 485 (32.3%) responded “healthy,” 286 (17.2%) said “not healthy,” and 53 (3.5%) students said “unhealthy.”

To determine their daily consumption of protein-rich foods such as meat, chicken, fish, cheese, eggs, and

Table 5. Correlation between study variables

	Level of daily consumption	Level of protein consumed	Level of fruits and vegetables consumed	Level of sausages consumed	Family diet level
Faculty to which the student belongs	0.040	0.035	-0.041	0.087**	0.052*
	0.121	0.178	0.110	0.001	0.042
Career completed	0.049	0.011	-0.045	0.057*	0.036
	0.060	0.658	0.080	0.028	0.158
Sex	-0.023	-0.117**	0.025	-0.110**	-0.104**
	0.383	0.000	0.328	0.000	0.000
Relationship status	0.051*	0.038	0.002	0.038	0.023
	0.047	0.139	0.948	0.144	0.372
Number of family members	0.025	-0.028	-0.024	0.004	-0.017
	0.326	0.274	0.343	0.864	0.508
Eating habits	0.508**	0.092**	0.210**	-0.087**	0.036
	0.000	0.002	0.000	0.003	0.219
Eating frequency	-0.022	0.019	-0.007	0.009	0.014
	0.479	0.537	0.818	0.766	0.654

Source: Own elaboration using Pearson's correlation (bilateral)

grains, 612 (40.7%) of the subjects stated that they did not healthily consume them, contrary to 56 (3.7%) who answered that they healthily consumed them.

From the studied population, 648 (43.1%) responded that their daily consumption of fruits and vegetables, including natural juices, was “not healthy,” 478 (31.8%) said “not very healthy,” 216 (14.4%) said “regularly healthy,” and 161 (10.7%) students answered that they had a healthy food intake.

Regarding processed food, which includes sausages, boxed, enveloped, or bottled beverages, carbonated drinks, packed snacks, pastries, pancakes, and consumption of sweets and chocolate, results show that 32 (2.1%) students consume these products in a “healthy” manner, 526 (35%) did so in a “not so healthy” manner, 122 (8.1%) answered that they did so in a “regularly” healthy manner, and 824 (54.8%) answered in an “unhealthy” manner.

From the analyzed results on the level of a family dietary regime, results show that 821 (54.6%) were “not very healthy,” followed by 434 (28.9%) who were “unhealthy,” 231 (15.4%) who were “regularly healthy,” and only 17 (1.1%) as “healthy.”

Using the Pearson's correlation (bilateral) statistical study to search for a connection between the faculty and the students belonged to and the level of

consumption being $p > 0.05$, we found that there were no connections, and neither were there any connections with the level of protein consumed, nor fruit consumption. However, there was a relationship between the consumption of sausages and the level of family dietary regime, although the levels were very low (0.087 and 0.052) (Table 5).

Moreover, there were no links between the major the students were enrolled for and their daily consumption, level of protein consumption, fruit and vegetable consumption, or the family dietary regime. However, there was a connection with the consumption of sausages, although a very low one (0.057).

Furthermore, there was no evidence of a relationship between daily consumption and fruit and vegetable consumption. However, there was a relationship with protein consumption, sausage consumption, and family dietary regime, although with an inverse relationship.

Only the relationship status of couples and daily consumption showed a relationship, although the level was low (0.051). The number of family members and their dietary frequency did not have a connection to consumption in any of its forms. However, dietary habits and daily consumption did show a relationship (0.508) and dietary habits with fruit and vegetable consumption (0.210).

Discussion

Highlighting the results of the present research of dietary habits applied to students of the different professional health-care majors, there is a low consumption of fruit, vegetables, protein-rich foods, and water; on the other hand, there is an elevated consumption of processed food and with high-calorie content. A study published by Durán et al. states that the dietary intake of nutrition students compared to other university majors has dissonant results and a lower intake of vegetables and sugary drinks but higher bread, fish, and milk intake⁹.

A noticeable result is that the majority of interviewed students present a BMI with normal weight; however, some were overweight, and some had a degree of obesity, and with regard to physical activity, the obtained results were discouraging, since one might think that being students in the health-care area, they should be more aware of the importance that physical activity has in their physical and emotional development. This can be compared to that published by Valdes, where the nutritional state of university students was evaluated, and both men and women were mostly normal. However, women who were enrolled in physical education majors displayed a higher value when compared to women of other majors, which could be a result of the higher level of physical activity practiced by these women¹⁰.

The previous studies conducted by Sanchez Socarrás on dietary habits in university students make the distancing from healthy dietary patterns evident: a diet is usually not enough to cover nutritional needs, especially in concert with micronutrient contribution, and students usually do not eat a proper breakfast or are used to a poor diet during examination periods¹¹.

Likewise, the literature mentions that the prevalence of inadequate eating habits, together with the follow-up of weight loss diets aimed at satisfying the concern for their figure, together with the tendency toward a sedentary lifestyle, constitutes risk factors in the appearance of overweight and eating disorders¹¹.

The eating habits of the university students evaluated in both men and women are on a mostly regular scale. When questioning the study population about their diet, a higher percentage sometimes answered, followed by a response of never and, discouragingly, the lowest percentage mentioned always being on a diet.

Due to these results, the eating habits that the study population follows are not important to them, since most mention not having any, likewise, the

family diet, since the results reflect that the highest percentage was unhealthy, followed by not very healthy, and only a minimum percentage was considered healthy.

It can be seen in the results of Valdés that in his study, students, in general, do not exhibit major differences in the consumption of cereals and homemade food, vegetables, and fruits. However, in these past two foods, a low intake is observed concerning daily recommendations¹⁰, which would affect the nutritional status of the students. Which according to what He et al. found, the increase in the intake of fruits and vegetables is associated with a decrease in weight gain¹², having similarities to the study by Duran, where it is pointed out that the consumption of fruits is associated with having a better BMI in students¹³.

According to the instrument applied to evaluate eating habits in the university population of the health sciences area, it is appreciated that the university students evaluated, both men and women, are on a mostly regular scale, and when questioning the study population about their diet, only a minimum percentage mentioned always being on a meal plan.

It is a priority to continue monitoring the eating habits of higher education students at the Juarez University of the State of Durango, which will allow the design of nutritional interventions for the prevention of diseases related to poor diet and the nutritional control of subjects as well as carry out confirmatory studies of the main findings mentioned above.

Conclusions

In this study of eating habits in the studied population, the students do not consider it important to stick to a diet since the results showed that scholars in the health sciences area of the UJED have low consumption of fruits, vegetables, water, cereals, etc. In contrast, there is a high intake of processed food with a high-caloric content. The highest percentage of the interviewed students presented a BMI with normal weight but low physical and a predominantly sedentary lifestyle.

Based on these results, it is evident that healthy eating habits should be promoted within the university population to improve their health and develop actions to prevent possible chronic degenerative non-communicable diseases in the short and/or medium term, as well as carry out campaigns to recommend physical activity,

which will bring favorable benefits to the student population.

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Conflicts of interest

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Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

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Annex

Annex 1. Instrument to evaluate dietary habits in Health Sciences students

Instructions: Next, items are broken down that refers to the evaluation of a diet in Health Sciences students, so please answer all questions and mark the most appropriate answer with an X.

Sex: Female ☐ Male ☐

Age: _____

Weight Height BMI

1. How do you consider your eating habits?

Bad ☐ Normal ☐ Good ☐ Excellent ☐

2. Do you follow a diet?

Never Rarely ☐ Sometimes ☐ Almost always ☐ Always ☐

3. If your previous answer was yes, mark which indicated your diet

Nutritionist ☐ Doctor ☐ A friend ☐ Yourself ☐

Other _____

4. Do you follow the indications that they suggested in your diet?

Never Rarely ☐ Sometimes ☐ Almost always ☐ Always ☐

5. Do you respect customs in the eating habits of your family?

Never Almost never ☐ Sometimes ☐ Almost always ☐ Always ☐

6. How often do you perform the following habits:

	Never	Almost never	Sometimes	Almost always	Always
Eat breakfast at home					
Eat lunch at home					
Eat dinner at home					
Make your own meals					
Consume snacks during the day					
Perform physical exercise					

7. How often do your family members eat the following foods:

	Never	Almost never	Sometimes	Almost always	Always
Vegetables					
Fruit					
Legumes					
Cereals					
Rice					
Milk					
Yogurt					
Cheese					

Eggs					
Soup					
Tortillas					
Beef					
Pork					
Chicken					
Fish					
Seafood					
Sausages					
Sweet bread					
White bread					
Sugar					
Fast food like pizza and hamburgers					
Water					
Fruit juice					
Soda					
Coffee					
Tea					
Alcohol					