البيانات الديموغرافية و المقاييس الأنثروبومترية و العادات الغذائية لطالبات كلية التربية الرياضية بنات – جامعة حلوان

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المستخلص :

تؤثر العادات الغذائية على الحالة الصحية للشباب. وتحتاج المغذيات إلى تغييرات خلال حياة الإنسان للحفاظ على تكوين الجسم ويتم توفيرها من خلال نظام غذائي متوازن. هدفت الدراسة الحالية إلى تقييم الحالة الغذائية لطالبات كلية التربية الرياضية للبنات جامعة حلوان. في هذه الدراسة ، تم مشاركة ستون طالبة وتم تقسيمهن بالتساوي إلى أربع مجموعات حسب السنوات الدراسية ، تراوحت أعمارهن بين ١٩–٢٢ سنة. بدأت هذه الدراسة من مارس ٢٠٢١ إلى مايو ٢٠٢١. تم استخدام أربعة نماذج من الاستبيان لمدة ثلاثة أيام. البيانات الاجتماعية والاقتصادية ، والقياسات البشرية ، والحالة الصحية ، والعادات الغذائية. وقد وجد أن أعلى نسب التعليم الثانوي للآباء والأمهات تم تسجيلها في الصف الأول. وأظهرت النتائج الإحصائية لتوزيع الخصائص الأسرية للصفوف الأربعة أنه من بين الصفوف الأربعة ، كانت أعلى النسب المئوية للفرد (١–٤). تم تسجيل حجم الأسرة في الصفين الثالث والرابع. وأظهرت بيانات معلومات الدخل أنه في الحديقة ٤ كانت هناك أعلى نسب تتراوح بين ٣٠٠٠–٤٠٠٠ جنيه مصري. أظهرت النتائج أن

متوسط قياسات الارتفاع في الدرجات ١ و ٢ و ٣ و ٤ كانت ١٦٣,٨ ± ٤,٢ و ١٦٣,٦ ± ٣,٩ و ١٦٢,٧ ± ٣,٣ و ١٦٥,٨ ± ٦,٣ سم على التوالي. كانت قياسات الوزن المتوسطة للصفوف ١ و ٢ و ٣ و ٤ ٥٨,٩ ± ٧,٢ و ٦٠,٩ ± ٦,٥ و ٦٠,٣ ± ٦,٣ و ٦٤,٥ ± ٧,٤ كجم على التوالي. كانت قيم مؤشر كتلة الجسم المتوسطة للصفوف ١-٤ ٢١,٩ ± ٢,٣ و ٢٢,٨ ± ٢,٣ و ٢٢,٨ ± ٢,٢ و ٢٣,٤ ± ١,٩ على التوالي. كانت الأظافر الصحية هي الأكثر شيوعًا بين الفئات الأربع وكانت نسب الشعر الصحي أكثر من تساقط الشعر بين الفئات الأربع. أظهرت النتائج الإحصائية أن هناك حوالي ٧٣,٣٪ من مجموع السكان الخاضعين للدراسة يستهلكون منتجات الألبان يوميًا. حوالي ٣٦,٦٪ من السكان الخاضعين للدراسة أجابوا بنعم حول تناول وجبة الإفطار يوميًا. حوالي ٣٣,٣٪ من الطلاب في جميع الصفوف تناولوا الكثير من الأطعمة الدسمة. ٣٨,٣٪ من الطلاب لديهم عادات شرب الكثير من المشروبات الغازية. حوالي ٥٦,٥٪ من الطلاب استهلكوا الفواكه والعصائر.

Demographic, anthropometric measurement and food habits of Students at Faculty of Physical Education for Girls-Helwan University

Abstract

Nutritional habits influence the health status of young adults. Nutrients need changes through the human's life for maintaining body composition and are supplied by a balanced diet. The current study aimed to evaluate the nutritional status of students at Faculty of Physical Education for girls-Helwan University. In this study, sixty female students were participated and equally divided into four groups according to grades, their age ranged from 19-22 years. This study started from March 2021 to May 2021. Four forms of questionnaire were used for seven days; the socio-economic data, anthropometric measurements, health status, and food habits. It was found that the highest percentages of the high school education of fathers and mothers were recorded in grade 1. The statistical results of the

household characteristics distribution for the four grades showed that among the four grades, the highest percentages of the 1-4 person's family size were recorded in grades 3 and 4. The data of the income information demonstrated that in garde 4 there were the highest percentages of 3000-4000 Egyptian pounds range. The results showed that the mean height measurements of grades 1, 2, 3, and 4 were 163.8 ± 4.2, 163.6 ± 3.9, 162.7 ± 3.3, and 165.8 ± 6.3 cm, respectively. The mean weight measurements of grades 1, 2, 3, and 4 were 58.9 ± 7.2, 60.9 ± 6.5, 60.3 ± 6.3, and 64.5 ± 7.4 kg, respectively. The mean BMI values of grades 1-4 were 21.9 ± 2.3, 22.8 ± 2.3, 22.8 ± 2.2, and 23.4 ± 1.9, respectively. The healthy nails were the most common among the four grades and the healthy hair percentages were more than the falling of hair among the four grades. The statistical results demonstrated that there was about 73.3% of all the population under the study consumed dairy products daily. About 36.6% of the population under the study was answered yes about eating breakfast's meal daily. Approximately 33.3% of the students in all grades ate a lot of fatty food. 38.3% of the students have the habits of drinking a lot of carbonated beverages. About 56.5% of the whole students consumed fruits and juices.

Keywords: Demographic, Anthropometric measurements, Food habits, Students

Introduction

Lifestyle changes particularly, nutritional habitats in adolescents and young adults are necessary because of the increased tendency of various adverse health outcomes including hypertension, dyslipidemia, diabetes mellitus, and metabolic syndromes **(Anthony *et al.*, 2014)**. Proper dietary behavior and adequate physical activities reduce the risks of such diseases. Sedentary lifestyle is associated with

unhealthy nutritional habitats, including low intake of fruits and vegetables and overconsumption of energy and fat. Previous study has underlined the risks of excessive energy intake, fast food, and sedentary lifestyle in young adults, which can be associated with the increased prevalence of obesity, diabetes mellitus, and cardiovascular diseases **(Chapman *et al*., 2015)**. It has been reported that around 6% of the total public health expenditure worldwide is related to physical inactivity and bad nutritional habitats **(World Health Organization, 2003).**

Nutritional habits and physical activity influence the health status of young adults. Adequate nutrition and balanced diet that contain macro- and micro-nutrients are essential factors conditioning physical and mental development, while, poor nutrition can cause deterioration of health and diseases. The nutritional habitats contributes to the youth's activities aiming to shape their bodies and, in particular, studying persons run the risk of nutritional deficiencies, which is also connected with irregular time of classes **(Głodek and Gil, 2012)**. A study reported by **Głodek and Gil (2012)** showed that the daily food rations of University students were characterized by low energy values and the protein content at the level of standards recommended intake. Because the level of physical activity influences on physical condition, health status, and quality of life, it is important to undertake physical activity to maximize the development of motor skills and physical fitness **(Chakravarthy *et al*., 2002)**.

Nutritional status is closely related to food intake consumed both in quantity and quality. Nutritional status can be illustrated through anthropometric calculations; this can be identified the poor nutritional status, the normal nutritional status, or the excess nutritional status **(Shoeps *et al*., 2016)**. In addition, nutritional status is a reference for assessing the health status of the balance between intake

and nutritional needs of human's body. On the other hand, the lack of nutritional status caused by a lack of intake of the amount of nutritional needs can result in disruption of the growth and various diseases **(Asmara and Yasin, 2020).** The association between nutritional status and educational achievement among students in developing countries has not been recognized well **(Sarma and Sivananthawerl, 2013)**.

University students are the first post-childhood group who reach adulthood. A new period begins in the nutrition of students as they, following the start of education, have become more open to external factors and begin to make their own choices more explicitly. It was found that students do not have enough knowledge of adequate and balanced diet **(Ozkok, 2015)**. Previous study demonstrated the physical activity, nutritional status, and dietary habits of students of a medical university, this study concluded that the dietary habits should be modified to prevent the development of diet-dependent diseases **(Grygiel-Go´rnia *et al*., 2016).** A previous crosssectional study reported the physical activity and nutritional habits among Physical Education undergraduate's students. Furthermore, the evaluation of nutrition knowledge among Physical Education Students at An-Najah National University revealed that the overall nutrition knowledge is insufficient **(Badrasawi *et al*., 2018)**. **Gropper *et al*., (2012)** and **Ren *et al*., (2015)** reported studies on changes in weight, composition, and shape of the body in a 4 yearlong study of college students. **Peltzer *et al*., (2014)** addressed the prevalence of overweight/obesity and its associated factors among university students from different countries. Monitoring such subjects about a healthy lifestyle, nutrition status, and physical activity is vital, because in the future these students will themselves be responsible for ensuring public health care and

its promotion **(AlBuhairan *et al.*, 2015)**. Taking into consideration the abovementioned criteria, it was noticed that many athletes do not practice the optimum nutrition habits desired for good health and performance. The present study aimed to evaluate the impacts of the demographic, anthropometric measurements and food habits on a group of girl's students studying at the Faculty of Physical Education at Helwan University. This can be achieved by evaluating the nutritional awareness of the student's and assessing the relationship between the economic level and the food habits of the students.

Subjects and Methods

Subjects:

Sixty (60) female students of the Faculty of Physical Education for Girls-Helwan University, Egypt were participated in the current study. These students were equally divided into four groups according to grades from grade 1 to grade 4, their age ranged from 19-22 years. The period of this study was conducted for three months started from March 2021 to May 2021.

Study design and questionnaire:

A retrospective design was used in the present study, which allows evaluating the nutritional status of students at Faculty of Physical Education for Girls-Helwan University, Egypt. The approval from the Faculty of Physical Education for Girls-Helwan University was asked. Interviews were held with students using questionnaire sheets that were designed to collect the data regarding food habits, attitudes, and anthropometric measurements.

Three forms of questionnaire were used in this study during the interviews as the follow; the first was the socio-economic data including demographic data father and mother education levels, household characteristics, income, and father

and mother occupation. The second were the anthropometric measurements that included weight, height, and body mass index (BMI). The third were the health status including the current health complaints, hair, and nails status. Sheets were used for 24 hours recalls of dietary intake.

Anthropometric measurements:

The anthropometric measurements were performed according to **Jelliffe, (1966)** as the follow: Body weight was measured by using a spring type scale to the nearest 1 kilogram without shoes, with minimum of the under clothing. Body height was taken to the nearest 0.5 centimetre using the vertical measuring rod. The subject stood on a flat floor at the scale with feet parallel, shoulders and back of head touching the upright board. The arms were hanging at the sides in natural manner. Body mass index (BMI) was obtained by calculating weight in kilograms/ square height in meters (Kg/m^2) according to **Hofman and Vandenbroucke, (1992)**.

Statistical analysis:

To analyse the collected data statistically, all data were tabulated for each variable. Means and standard deviations were calculated for each variable using Excel 2013 (Microsoft Corporation). Furthermore, the percentages of nutrients consumption and the frequency distribution were evaluated compared to the RDA according to the computer program in the Faculty of Home Economics, Tanta University. The analysis of the results was performed by using SPSS/PC program 6, the threshold of significance at P value < 0.05.

Results and discussion

The socio-economic factors influence the nutritional habits of the University students. The ethnic background and educational level of families affect food choices. The demographic data obtained from the current study showed that among the four grades, the highest percentages of the read and write education of fathers were recorded in grade 4, and of mothers were recorded in grade 1. The highest percentages of the high school education of fathers and mothers were recorded in grade 1. The highest percentages of the Bachelor degree education of fathers were recorded in grade 3, and of mothers were recorded in grade 2. The highest percentages of the Master degree education of fathers and mothers were recorded in grade 2 **(Table 1 and Figure 1)**.

Table (1): Distribution of students according to their father and mother education

Education	Grade 1		Grade 2		Grade 3		Grade 4		P values (< 0.05)
	No	%	No	%	No	%	No	%	
Father education									
Read and write	3	20.0	1	6.7	2	13.3	4	26.7	0.086
High school	8	53.3	3	20.0	5	33.3	6	40.0	
Bachelor	4	26.7	7	46.7	8	53.3	4	26.7	
Master	0	0.0	4	26.7	0	0.0	1	6.7	
Mother education									
Read and write	3	20.0	1	6.7	0	0.0	2	13.3	0.069
High school	8	53.3	3	20.0	9	60.0	7	46.7	
Bachelor	4	26.7	7	46.7	5	33.3	6	40.0	
Master	0	0.0	4	26.7	1	6.7	0	0.0	

P-value < 0.05 was considered to be statistically significant.

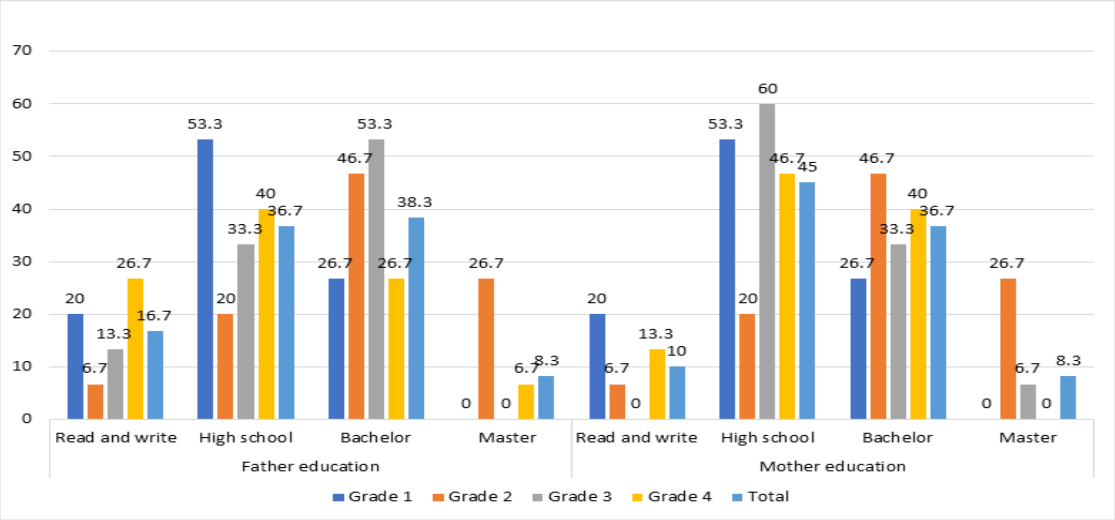

Figure (1): Percentages of father and mother education in the populations under the study

The statistical results of the household characteristics distribution for the four grades showed that among the four grades, the highest percentages of the 1-4 person's family size were recorded in grades 3 and 4. The highest percentages of the 4-6 person's family size were recorded in grade 2. The highest percentages of the 6-8 person's family size were recorded in grade 1 **(Table 2 and Figure 2)**. The data of the income information demonstrated that in garde 4 there were the highest percentages of 3000-4000 Egyptian pounds range, while 4000-6000 Egyptian pounds range was recorded high percentages in grades 2 and 3. Furthermore, the highest percentages of the families who have room number less than 2 were recorded in grade 3, 2-3 rooms were the most common in grades 1, 2, and 3 **(Table 2 and Figure 2)**.

Table (2): Distribution of students of the four grades according to their household characteristics

Characteristics	Grade 1		Grade 2		Grade 3		Grade 4		P values (< 0.05)
	No	%	No	%	No	%	No	%	
Family size									
1-4 persons	7	46.7	6	40.0	8	53.3	8	53.3	0.835
4-6 persons	6	40.0	8	53.3	7	46.7	6	40.0	
6-8 persons	2	13.3	1	6.7	0	0.0	1	6.7	
Income									
3000-4000	3	20.0	1	6.7	3	20.0	5	33.3	0.353
4000-6000	6	40.0	4	26.7	2	13.3	4	26.7	
>6000	6	40.0	10	66.7	10	66.7	6	40.0	
Rooms									
<2	1	6.7	0	0.0	2	13.3	1	6.7	0.642
2-3	13	86.7	13	86.7	13	86.7	12	80.0	
≥4	1	6.7	2	13.3	0	0.0	2	13.3	

P-value < 0.05 was considered to be statistically significant.

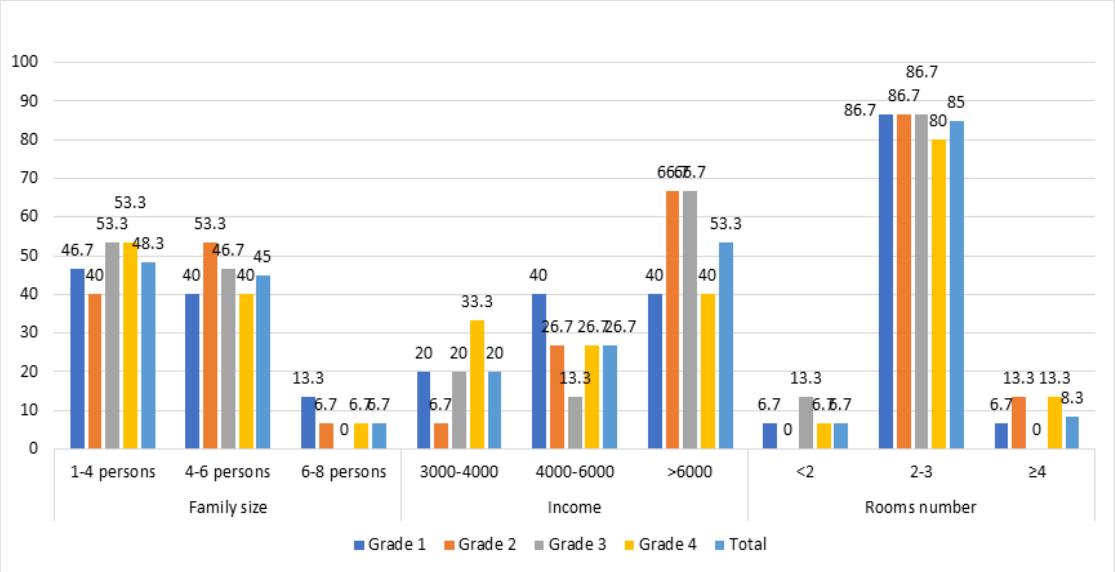

Figure (2): Percentages of household characteristic in the populations under the study

Regarding the data of the father and mother occupations, the statistical results showed that the highest percentages of employee among fathers and mothers were represented 80.0% in grade 2. Worker fathers were recorded 33.3% in grade 4, and Worker mothers were recorded 20% in grades 3, and 4. Among all grades under the study, the free business fathers were more than mothers. But Non-working mothers were more than fathers **(Table 3 and Figure 3)**.

Table (3): Distribution of students according to their father and mother occupation

Occupations	Grade 1		Grade 2		Grade 3		Grade 4		P values (< 0.05)
	No	%	No	%	No	%	No	%	
Father		33.		80.		53.		33.	
Employee	5	3	12	0	8	3	5	3	
Worker	4	26.	0	0.0	4	26.	5	33.	0.121
Free business	4	7	3	20.	2	7	5	3	
Non-working	2	26.	0	0	1	13.	0	33.	

		7 13.3		0.0		3 6.7		3 0.0	
Mother Employee Worker Free business Non-working	 3 2 1 9	20.0 13.3 3 6.7 60.0	 7 0 0 8	 46.7 0.0 0.0 53.3	 6 3 0 6	40.0 20.0 0.0 40.0	 0 3 1 11	 0.0 20.0 0 6.7 73.3	0.121

P-value < 0.05 was considered to be statistically significant.

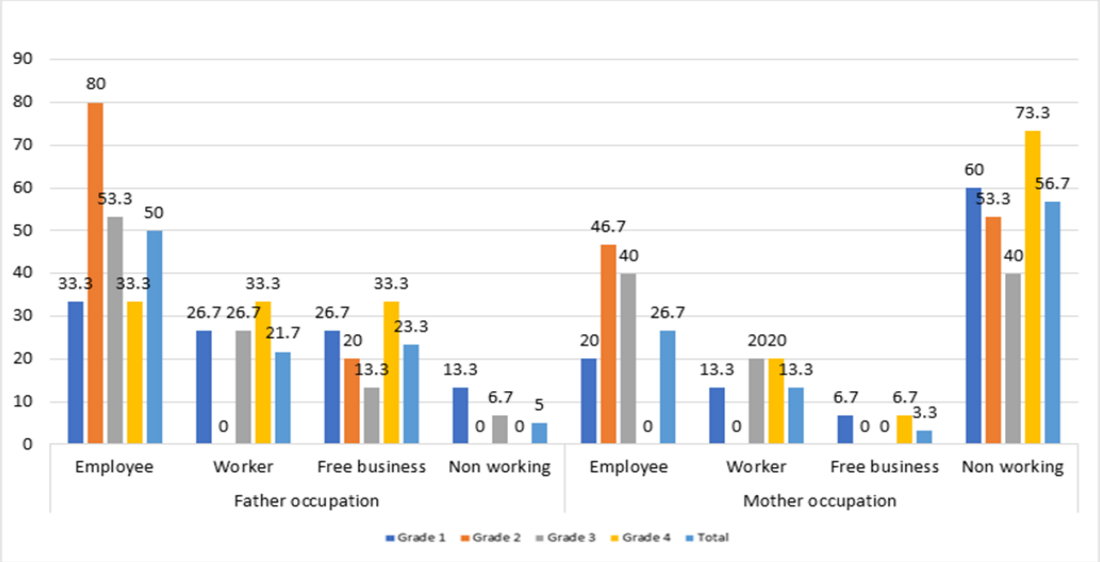

Figure (3): Percentages of father and mother occupation in the populations under the study

The statistical data collected from the anthropometric measurements demonstrated the distribution of the anthropometric measurements of the four grades. The results showed that the mean height measurements of grades 1, 2, 3, and 4 were 163.8 ± 4.2, 163.6 ± 3.9, 162.7 ± 3.3, and 165.8 ± 6.3 cm, respectively (P value = 0.294). The mean weight measurements of grades 1, 2, 3, and 4 were 58.9 ± 7.2, 60.9 ± 6.5, 60.3 ± 6.3, and 64.5 ± 7.4 kg, respectively (P value = 0.155). The mean BMI

values of grades 1-4 were 21.9 ± 2.3, 22.8 ± 2.3, 22.8 ± 2.2, and 23.4 ± 1.9, respectively (P value = 0.321) **(Table 4)**.

Table (4): Distribution of the anthropometric measurements of the four grades

Measurements	Grade 1	Grade 2	Grade 3	Grade 4	P value
Height	163.8 ± 4.2	163.6 ± 3.9	162.7 ± 3.3	165.8 ± 6.3	0.294
Weight	58.9 ± 7.2	60.9 ± 6.5	60.3 ± 6.3	64.5 ± 7.4	0.155
BMI	21.9 ± 2.3	22.8 ± 2.3	22.8 ± 2.2	23.4 ± 1.9	0.321

P-value < 0.05 was considered to be statistically significant.

The collected data revealed according to BMI measurements, the percentages of underweight (16 < 20) individuals were represented 26.7% in grade 1, 6.7% in grade 2 and 3, zero % in grade 4. Desirable weight (20 < 25) percentages were 66.7% in grade 1, 80.0% in grade 2, 66.7% in grade 3, 73.3% in grade 4. However, the percentages of grade I (25 < 30) were 6.7% in grade 1, 13.3% in grade 2, 26.7% in grade 3 and 4 **(Table 5)**.

Table (5): Distribution of the body mass index (BMI) classification of the four grades

BMI	Grade 1		Grade 2		Grade 3		Grade 4		P value
	No	%	No	%	No	%	No	%	
Underweight (16 < 20)	4	26.7	1	6.7	1	6.7	0	0.0	0.191
Desirable (20 < 25)	10	66.7	12	80.0	10	66.7	11	73.3	
Grade I (25 < 30)	1	6.7	2	13.3	4	26.7	4	26.7	

P-value < 0.05 was considered to be statistically significant.

As shown in table 6, the statistical results showed that the highest percentages of the brittle nails were recorded in grades 3 and 4. However, the highest percentages of the white pigmented nails were recorded in grades 2. The healthy nails were the most common among the four grades (P value = 0.517). Regarding the hair fall, the highest percentages were recorded in grade 4, and the healthy hair percentages were more than the falling of hair among the four grades.

Table (6): Distribution of clinical presentation of the four grades

	Grade 1		**Grade 2**		**Grade 3**		**Grade 4**		**P values**
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	
Nails									
Brittle		20.0		13.3		33.3		33.3	
White pigmentation	3	13.3	2	20.0	5	6.7	5	0.0	0.517
Healthy	2	66.7	3	66.7	1	60.0	0	66.7	
	10		10		9		10		
Hair									
Falling of hair		46.7		40.0		40.0		80.0	
Healthy	7	53.3	6	60.0	6	60.0	12	20.0	0.086
	8		9		9		3		

P-value < 0.05 was considered to be statistically significant.

The defective nutritional habits remain a serious problem of the students **(ABD-Elrahman et al., 2019)**. By analyzing the data of the food habits questionnaire of the populations under the study, the statistical results demonstrated that there were about 73.3% of all the population under the study consumed dairy products daily 26.6% did not. About 36.6% of the population under the study was answered yes about eating breakfast's meal daily, while 63.3% answered no. Approximately 33.3% of the students in all grades ate a lot of fatty foods, but 66.6% did not.

38.3% of the students have the habits of drinking a lot of carbonated beverages, and 61.6% were not. The percentages of the students who answered yes about consuming pickles were 78.3%, while 21.6% answered no. About 56.5% of the whole students consumed fruits and juices, 43.3% did not. Furthermore, the data showed that there were 66.6% of the students participated in this study eating stewed foods and 33.3% did not. 31.6% of the student's population considered consuming salads, while 68.3% did not **(Table 7)**. **Milosevic, et al., (2012)** showed that the food choice practices typically viewed as patterns of human activity or as a dynamic process that integrated within the social structures of these patterns. Bad eating habits, children's diet is rich in calories, at the same time being deficient in elements necessary for proper development such as: vitamins, macro- and microelements, fiber, and unsaturated fatty acids. The examples of such bad eating behaviors are eating in front of the TV, snacking between meals, most often highly processed and calorie-rich foods, skipping breakfasts, drinking sugar sweetened beverages **(Inadera, 2013)**.

Table (7): Food knowledge and habits of the populations under the study

Food habits	Choices	Frequency	Percentage
Do you consider consuming dairy products daily?	Yes	44	73.3
	No	16	26.6
Do you eat your breakfast meal daily?	Yes	22	36.6
	No	38	63.3
Do you eat a lot of fatty food?	Yes	20	33.3
	No	40	66.6
Do you drink or eat snacks between meals?	Yes	54	90.0
	No	6	10.0
Do you eat fast food?	Never	4	6.6
	Once	9	15.0
	Twice	12	20.0

	3 times	15	25.0
	More than 3 times	20	33.3
Do you drink a lot of carbonated beverages?	Yes	23	38.3
	No	37	61.6
Do you consider consuming pickles?	Yes	47	78.3
	No	13	21.6
Do you drink caffeinated beverages?	Never	19	31.6
	Once	14	23.3
	Twice	15	25.0
	3 times	9	15.0
	More than 3 times	3	5.0
Do you consume fruits and juices?	Yes	34	56.6
	No	26	43.3
Do you consider eating stewed food?	Yes	40	66.6
	No	20	33.3
Do you consider consuming salads?	Yes	19	31.6
	No	41	68.3

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