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Research Article

Investigation of Relationship between Body Mass Index and Breakfast Habits of University Students

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Abstract: Obesity has often been assessed based on self-reported Body Mass Index (BMI). If the 18-24 age group, known as the transitional period of adulthood, is thought to be university students, their proper nutrition habits have a social significance in terms of their own health. In this study, it was aimed to investigate the relationship between nutritional habits and body mass index (BMI) of 3rd and 4th grade girls in Private University Faculty of Health Sciences Department of Nutrition Diabetic. While study data were evaluated, variables without normal distribution in the comparison of descriptive statistical methods as well as quantitative data; Mann Whitney U test in two group comparisons; Pearson kikare test and Fisher Freeman Halton test have used in the comparison of quantitative data. p<0.05 has considered statistically significant. The BMI of the students varies between 16.3 and 25 kg / m2. The mean value was 19.91 ± 2.26 kg / m^2. It was observed that 30% of the students were weak and 70% were normal weight. When we look at the girls participating in the research; 53% of the girls did not have breakfast, 40% did not eat lunch, and 7% did not eat dinner. According to these results, it was determined that breakfast meal was the most skipped meal of the day. In this scope; 34% had not woken up to the school because of the late morning wake, 17% had no appetite in the morning, 6% fear of weight gain, 3% do not like breakfast, 2% do not care and 9% do not have breakfast for other reasons. In the answers given by the girls who participated in the research, 92% of the students answered that breakfast is the most important meal of the day and also 91% of the students said that breakfast is improving the performance of the individuals in the school. According to BMI levels; there was no statistically significant difference between the scores of the daily meal numbers of the students, the distribution of the main meal numbers, the distributions of the break meal numbers, the skipped meal distributions, the scores obtained from the questions about breakfast information, and the points they got about the adverse events during the day if they did not have breakfast (p> 0,05). Also according to what they have in their class, there was no statistically significant difference between the distributions of daily meal numbers of the students, the distributions of the main meal numbers, the distributions of the break meal numbers, the skipped meal distributions and the scores of breakfast related information questions (p> 0,05).). Institutions that mostly serve students need to prepare healthy, high quality, nutritious menus in their meals. At the same way, the students should eat breakfast regularly at breakfast and consume high nutrients for breakfast.

Keywords: Body mass index, university students, breakfast habits.

Introduction

Obesity is a chronic condition that develops as a result of excessive energy uptake and inadequate energy expenditure due to the sedentary lifestyle or low metabolic rate, or as a result of the long-term energy imbalance, which is caused by both, and complex interactions between the person's genes and their surroundings [1]. It is known that obesity has increased in the last 20 years during childhood and adulthood and reached remarkable dimensions. Today, urbanization, economic development and globalization, rapid changes in lifestyle and diet have caused significant health and nutritional problems such as obesity in both developed and developing countries [2]. While there were 200 million obese people in the world in 1995, it increased to 300 million in 2000. This increase is mostly in women. Despite the fact that most obesity is thought to be in modernized societies, it is estimated that there are 115 million obese people in developing countries. The prevalence of obesity in developing countries, urbanization, income level, education and other socio-economic conditions are associated with. The World Health Organization (WHO) reports that obesity has become an increasingly common public health problem in recent years. As of 2010, 150 million adults, 15 million children and adolescents are thought to be obese in Europe [3]. Early diagnosis and treatment approaches are important because obesity starting in childhood and adolescence poses an increased risk for obesity in adulthood and also causes respiratory, cardiovascular, hormonal, orthopedic and psychiatric disorders [4]. Amendments regarding adequate and balanced nutrition habits, leads to positive or negative effects on health throughout life, positive changes play a key role in the prevention of many chronic diseases such as cardiovascular diseases that may occur at a

later age, many cancers, obesity, hypertension, diabetes, allergic diseases, osteoporosis and dental caries, as well as maintaining the health status of individuals [5, 6]. Beginning a new day willingly and maintaining the day efficiently is also closely related to the amount and composition of the morning breakfast. In a study about the subject; it has been stated that having breakfast, by improving nutritional status, enhances development in learning and cognitive skills and has a positive influence on the education [7].

If the 18-24 age group, known as the transition period to adulthood, is considered to be university students, university students are the first group after childhood to be in the adult period stage. They have proper nutritional habits, are of social importance because of their health as well as the role of this group as an example model [8]. For this reason, individuals should be given the habit of regularly consuming main meals from the age of infancy and childhood. It is necessary to avoid health-damaging condition such as one-way nutrition, starvation, or over-nutrition [9]. In addition, students should be given the awareness that their health will be protected, away from diseases, physical and social peace will be ensured, quality of life will be increased by giving healthy nutritional habits to the students and in this subject nutrition education support should be given. In this context, it is very important to make breakfast and proper eating habits from childhood [10].

Eating behavior is central to the physical development, health and personality of the young. The increase in the interests of young people, self-determination authority, social life, and the concerns of integration with their peers leads them to spend most of their time outside. This leads to changes in eating habits and behaviors, excessive consumption of fast foods, inaccurate diet practices, skipping meals and break meals between meals [11]. In addition, genetic predisposition, the proportion of food items that constitute energy, malnutrition behaviors such as skipping meals, consuming high fat carbohydrate foods at the meal breaks, eating fast food, food preparation, cooking, storing methods, alcohol consumption, inadequate water and fibre consumption is effective in the formation of obesity[12,13].

The skipping of breakfast meals in adults is changing according to the countries In one study, it was reported that young adults, was the most skipped group breakfast among all age groups and breakfast was also the most skipped lunch [14].

Along with research made for thirty years on the importance of breakfast, the benefits of starting with breakfast to day are assessed for all age groups [15]. It is necessary for the individual to obtain daily energy and nutrient requirements adequately and balanced every meal and to have blood sugar in a certain level in order for the body to work regularly. The fact that the blood glucose level is lower or higher than normal values is bad for the body. If nutrition is adequate and regular, the blood glucose level in the body does not rise/fall, and the body works well [16]. If the breakfast has sufficient and balanced content in terms of carbohydrate, protein and fat, the starvation statement is delayed for a certain period of time, the blood sugar level normalizes and the body continues to produce the energy needed for daily life[15].

The relationship between breakfast and learning performance can be explained as follows: the breakfast improves the nutritional status of the student, meets the insufficient energy requirement in the case of hunger of the brain and increases the attendance to the course. Those who do not eat breakfast are less concentrated in the classroom, and the reminiscence performance later of given information falls [17].

However, breakfast prevents also to live adaptation problem by providing to start dynamic to day and to continue strong [18]. Other studies have also support that regular breakfasts have a positive effect on adequate and balanced nutrition [17]. One of the most important benefits of a breakfast meal is the reduction of break meals consumed during the day and as a result of this, unnecessary energy intake in the body has been prevented [19]. In a study conducted on adolescents, energy and nutrient intake in main and intermediate meals were compared. Accordingly, it has been found that breakfast is an important source of fibre, calcium and iron, which has an important role in preventing diseases [20].

In a study of the effect of breakfast on bone mineral density, the bone mineral density of women who have a habit of having breakfast was significantly better than those who did not. As a result; it is recommended to have breakfast for bone health [21]. In another study found that breakfast was an important source for vitamins, riboflavin and calcium. Along with that; it is noted that breakfast meets more than 25% of the daily intake of vitamins and minerals except vitamins and zinc [22]. In study on the students' having breakfast habits, was determined that those who did breakfast did better intake of micro and macro nutrients and higher nutritional qualities than those who did not breakfast [23].

This research was conducted to determine the effect of breakfast habits on body mass index (BMI) among 100 female students over the age of 18 who are studying at Private University, Faculty of Health Sciences, Department of Nutrition and Dietetics between April and May 2018.

Materials and Methods

The Universe of Research and Sampling: The study was carried out in March-April 2018. The universe of study was formed by the Faculty of Health Sciences within the Private University campus. Sampling; it consisted of 100 students who were randomly sampled from 3rd and 4th grade students in the Department of Nutrition and Dietetics. However, since the number of male students in the department was small, it was not included in the study because it was thought that it could negatively affect the comparison of anthropometric measurements.

Data Collection Tools: The data of the research were collected by the general information and data collection form prepared by the researcher. The general information and data collection form was prepared by the researchers by reviewing the relevant literature [24]. Body mass index (kg / m2) was calculated (sensitive to 100gr with the Fakir Hercules Body Analysis Weighbridge) by taking the participants' height (m) and their weight (kg).

Ethical Dimension of the Research: Approval of the

institution was taken. KAEK Resolution No: 842

Evaluation of Data: In the evaluation, the data are grouped first and then the necessary coding is done. NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) program was used for statistical analysis after obtaining the data for the sample group and the data collection forms and necessary data for the research. Mann-Whitney U test was used in two group comparisons of the variables that did not show normal distribution in the comparison of quantitative data, in addition to descriptive statistical methods (average, standard deviation, median, frequency, ratio, minimum and maximum). Pearson Chi-Square Test and Fisher-Freeman Halton Test were used for comparison of qualitative data. Significance was evaluated at p <0,05 level when evaluating inter-variable relations [24].

Results

The study was carried out between March and April 2018 with a total of 100 students aged between 20 and 24 years, with an average of 22,08 ± 1,20 years, from the 3rd and 4th grade female students of Private University Department of Nutrition and Dietetics, Faculty of Health Sciences. The distribution of demographic characteristics of students is given in Table 1.

Table 1. Distribution of Demographic Characteristics

Age	Min-Max (Median)	20-24 (22)
	Mean±SD	22,08±1,20
Length (cm)	Min-Max (Median)	150-183 (166)
	Mean+SD	166,19±6,21
Weight (kg)	Min-Max (Median)	42-84 (53)
	Mean+SD	55,39±8,52
BMI (kg/m2)	Min-Max (Median)	16,3-25,0 (19,42)
	Mean±SD	19,91±2,26
	Weak	30% (30,0)
	Normal Weight	70% (70,0)
Class	3rd	62% (62,0)
	4th	38% (38,0)

In Table 1, the length of the students ranged from 150 to 183 cm and the average was 166,19 ± 6,21 cm. The weight measurements of the students ranged from 42 to 84 kg, with average of 55,39 ± 8,52 kg. The BMI measures of the students ranged from 16.3 to 25 kg/m2 with average of 19,91 ± 2,26 kg / m2. It was observed that 30% of the students (n = 30) were weak and 70% (n = 70) were normal weight.

Table 2. Distributions Related to Nutritional Habits

Number of Daily Meals	≤2 meals	20 (20,0)
	3 meals	67 (67,0)
	≥4 meals	13 (13,0)
Number of Main Meals	1 meal	8 (8,0)
	2 meals	72 (72,0)
	≥3 meals	20 (20,0)
Break Meal	Not doing break meal.	28 (28,0)
	1 meal	57 (57,0)
	≥2 meals	15 (15,0)
Skipped Meal	Breakfast	53 (53,0)
	Lunch	40 (40,0)
	Dinner	7 (7,0)
If the Skipped Meal is Breakfast, What is the Reason?	Not getting to the school due to late morning wake-up	34 (34,0)
	Do not like to have breakfast	3 (3,0)
	Being without appetites in the morning	17 (17,0)
	Do not care	2 (2,0)
	Fear of weight gain	6 (6,0)
	Other	9 (9,0)
Where the Breakfast is Usually Done?	Do not breakfast	3 (3,0)
	At home	65 (65,0)
	At school	20 (20,0)
	On the way to school	9 (9,0)
	Other	3 (3,0)

As shown in Table 2, it was observed that 20% of the students participating in the study had a daily number of meals of 2 and below, 67% of the students had 3 meals and 13% had 4 and over meals.

Table 3. Distributions Related to Situations Encountered During the Day in Case of No-Breakfast

	Yes	**No**
	n (%)	**n (%)**
Tiredness	65 (65,0)	35 (35,0)
Weakness	68 (68,0)	32 (32,0)
Feel hungry	82 (82,0)	18 (18,0)
Dizziness	48 (48,0)	52 (52,0)
Decrease in attention	66 (66,0)	34 (34,0)
Blurred in the eyes	40 (40,0)	60 (60,0)
Palpitation	22 (22,0)	78 (78,0)
Restlessness	53 (53,0)	47 (47,0)
Chills	28 (28,0)	72 (72,0)
Headache	53 (53,0)	47 (47,0)

As shown in Table 3; when the problems that the students encounter if they do not eat breakfast analyzed, it observed that 65% of the students get tiredness, 68% get weakness, 82% feel hungry, 48% have dizziness, 66% decrease in attention, 40% blurred in the eyes, 22% have palpitation, 53% get restlessness, 28% have chills and 53% have headache cases.

There are 10 cases about the negativities situations encountered during the day in case of no-breakfast at Table 3. In the answers given to the situations, it was tried to measure the negativities experienced by the participants. The situation is evaluated as 'Yes' answer 1 point, 'No' answer 0 point. In our questionnaire, we got total points for the negativity of the day in 10 cases. In the questionnaire, the lowest score from 10 cases was accepted as 0, the highest score was 10. In order to make this point more clear, the total score of each case has been converted to a scale of hundreds. According to this; the resulting score ranges from 0 to 100.

The scores of the students who did not have breakfast during

the day vary from 0 to 100, with an average of 52.50 ± 27.90.

When the answers of the students who participated in the study to the information questions about breakfast were examined; in "Breakfast is the most important meal of the day" statement, 92% of the students agree, 4% do not agree and 4% have no idea. For "Breakfast does not help to weaken" statement, 11% of the students agree, 83% do not agree and 6% have no idea. In "Breakfast provides an energetic start to the day" statement, 95% of the students agree, 2% do not agree and 3% have no idea.

It was observed that in questionnaire; for "*Breakfast helps to regulate blood sugar*" statement, 95% of the students agree, 2% do not agree and 3% have no idea. In "*Do not have breakfast cause unrest*" statement, 73% of the students agree, 21% do not agree and 6% have no idea. For "*The work performance of the individuals who have breakfast increases*" statement, 91% of the students agree, 6% do not agree and 3% have no idea. In "*Breakfast is not effective in regulating blood pressure"* statement 8% of the students agree, 76% do not agree and 16% have no idea. In "*One of the reasons for headache is not having breakfast*" statement, 66% of the students agree, 17% do not agree and 17% have no idea.

For "*Breakfast is not effective in regulating body temperature*" statement 75% of the students agree, 7% do not agree and 18% have no idea. In "*Breakfast is an important factor in the concentration*" statement 89% of the students agree, 7% do not agree and 4% have no idea. And in the last question that "*Individuals who have breakfast are less stressed at work*" 71% of the students agree, 17% do not agree and 12% have no idea.

Distribution of Consumption Frequency of Consumed Beverages at Breakfast

19% of the students said they never consume milk at breakfast., 4% of the students are once a month, 12% are once in 15 days, 25% are 1-2 times a week, 15% are 3-4 times a week, 6% are 5-6 times a week and 19% gave the answer to every day. 7% of the students said they never consume tea at breakfast. Besides, 1% of the students are once a month, 11% are once in 15 days, 15% are 1-2 times a week, 11% are 3-4 times a week, 13% are 5-6 times a week and 42% gave the answer to every day. 24% of the students said they never consume herbal teas at breakfast. Besides, 13% of the students are once a month, 13% are once in 15 days, 21% are 1-2 times a week, 12% are 3-4 times a week, 8% are 5-6 times a week and 9% gave the answer to every day.36% of the students said they never consume Nescafe at breakfast. Besides, 5% of the students are once a month, 6% are once in 15 days, 12% are 1-2 times a week, 10% are 3-4 times a week, 10% are 5-6 times a week and 20% gave the answer to every day.33% of the students said they never consume Turkish coffee at breakfast. Besides, 8% of the students are once a month, 6% are once in 15 days, 12% are 1-2 times a week, 9% are 3-4 times a week, 14% are 5-6 times a week and 18% gave the answer to every day. 41% of the students said they never consume fresh fruit juice at breakfast. Besides, 28% of the students are once a month, 17% are once in 15 days, 11% are 1-2 times a week, 1% are 3-4 times a week, 1% are 5-6 times a week and 1% gave the answer to every day. 74% of the students said they never consume ready fruit juice at breakfast. Besides, 13% of the students are once a month, 6% are once in 15 days, 2% are 1-2 times a week, 2% are 3-4 times a week and 3% gave the answers to 5-6 times a week.

42% of the students said they never consume buttermilk at breakfast. Besides, 12% of the students are once a month, 13% are once in 15 days, 16% are 1-2 times a week, 12% are 3-4 times a week, 3% are 5-6 times a week and 2% gave the answer to every day. 54% of the students said they never consume acidic drinks at breakfast. Besides, 16% of the students are once a month, 14% are once in 15 days, 4% are 1-2 times a week, 5% are 3-4 times a week, 4% are 5-6 times a week and 3% gave the answer to every day.

Distribution of Consumption Frequency of Consumed Food at Breakfast

7% of the students said they never consume Full-Grain Bread at breakfast. In addition, 3% of the students are once a month, 4% are once in 15 days, 11% are 1-2 times a week, 16% are 3-4 times a week, 23% are 5-6 times a week and 36% gave the answer to every day. 42% of the students said they never consume Rye Bread at breakfast. In addition, 5% of the students are once a month, 16% are once in 15 days, 12% are 1-2 times a week, 10% are 3-4 times a week, 7% are 5-6 times a week and 8% gave the answer to every day. 45% of the students said they never consume Wholemeal Bread at breakfast. In addition, 6% of the students are once a month, 11% are once in 15 days, 16% are 1-2 times a week, 6% are 3-4 times a week, 10% are 5-6 times a week and 6% gave the answer to every day. 35% of the students said they never consume White Bread at breakfast. In addition, 13% of the students are once a month, 12% are once in 15 days, 16% are 1-2 times a week, 10% are 3-4 times a week, 6% are 5-6 times a week and 8% gave the answer to every day. 9% of the students said they never consume Feta Cheese at breakfast. In addition, 3% of the students are once a month, 3% are once in 15 days, 12% are 1-2 times a week, 19% are 3-4 times a week, 15% are 5-6 times a week and 39% gave the answer to every day. 18% of the students said they never consume Cheddar Cheese at breakfast. In addition, 12% of the students are once a month, 15% are once in 15 days, 25% are 1-2 times a week, 13% are 3-4 times a week, 6% are 5-6 times a week and 11% gave the answer to every day. 15% of the students said they never consume Jam/Honey at breakfast. In addition, 14% of the students are once a month, 17% are once in 15 days, 29% are 1-2 times a week, 11% are 3-4 times a week, 7% are 5-6 times a week and 7% gave the answer to every day.42% of the students said they never consume Molasses/Tahini at breakfast. In addition, 20% of the students are once a month, 15% are once in 15 days, 12% are 1-2 times a week, 8% are 3-4 times a week, 1% are 5-6 times a week and 2% gave the answer to every day.37% of the students said they never consume Butter at breakfast. In addition, 18% of the students are once a month, 9% are once in 15 days, 19% are 1-2 times a week, 9% are 3-4 times a week, 1% are 5-6 times a week and 7% gave the

answer to every day.24% of the students said they never consume Green olive at breakfast. In addition, 5% of the students are once a month, 12% are once in 15 days, 21% are 1-2 times a week, 17% are 3-4 times a week, 9% are 5-6 times a week and 12% gave the answer to every day.23% of the students said they never consume Black olive at breakfast. In addition, 7% of the students are once a month, 6% are once in 15 days, 19% are 1-2 times a week, 17% are 3-4 times a week, 11% are 5-6 times a week and 17% gave the answer to every day.1% of the students said they never consume Egg at breakfast. In addition, 3% of the students are once a month, 6% are once in 15 days, 18% are 1-2 times a week, 23% are 3-4 times a week, 19% are 5-6 times a week and 30% gave the answer to every day.3% of the students said they never consume Fresh Vegetables/Fruits at breakfast. In addition, 9% of the students are once a month, 3% are once in 15 days, 16% are 1-2 times a week, 17% are 3-4 times a week, 20% are 5-6 times a week and 32% gave the answer to every day.36% of the students said they never consume Salami/Sausage at breakfast. In addition, 22% of the students are once a month, 18% are once in 15 days, 12% are 1-2 times a week, 9% are 3-4 times a week, 20% are 5-6 times a week and 3% gave the answer to every day.36% of the students said they never consume Cereals at breakfast. In addition, 19% of the students are once a month, 16% are once in 15 days, 18% are 1-2 times a week, 7% are 3-4 times a week, 3% are 5-6 times a week and 1% gave the answer to every day.13% of the students said they never consume Pogaça/Bagel at breakfast. In addition, 27% of the students are once a month, 31% are once in 15 days, 12% are 1-2 times a week, 13% are 3-4 times a week, 3% are 5-6 times a week and 1% gave the answer to every day.6% of the students said they never consume Toast at breakfast. In addition, 17% of the students are once a month, 27% are once in 15 days, 26% are 1-2 times a week, 15% are 3-4 times a week, 6% are 5-6 times a week and 3% gave the answer to every day.28% of the students said they never consume Patty at breakfast. In addition, 32% of the students are once a month, 28% are once in 15 days, 6% are 1-2 times a week, 5% are 3-4 times a week and 1% gave the answer to 5-6 times a week.48% of the students said they never consume Biscuit at breakfast. In addition, 14% of the students are once a month, 16% are once in 15 days, 14% are 1-2 times a week, 4% are 3-4 times a week, 2% are 5-6 times a week and 2% gave the answer to every day.

Table 4. Comparisons of Meals According to BMI Levels

		BMI Level		Test Value
		Weak (n=30)	**Normal (n=70)**	***p***
Number of Daily Meals	**≤2 Meals**	7 (23,3)	13 (18,6)	χ2:2,536
	3 Meals	17 (56,7)	50 (71,4)	[a]***0,281***
	≥4 Meals	6 (20,0)	7 (10,0)	
Number of Main Meals	**1 Meal**	2 (6,7)	6 (8,6)	χ2:2,685
	2 Meals	19 (63,3)	53 (75,7)	[a]***0,261***
	≥3 Meals	9 (30,0)	11 (15,7)	
Number of Break Meals	**No meal**	11 (36,7)	17 (24,3)	χ2:5,307
	1 Meal	12 (40,0)	45 (64,3)	[a]***0,070***
	≥2 Meals	7 (23,3)	8 (11,4)	
Skipped Meals	**Breakfast**	16 (53,3)	37 (52,9)	χ2:0,096
	Lunch	12 (40,0)	28 (40,0)	[b]***1,000***
	Dinner	2 (6,7)	5 (7,1)	
Information Points About Breakfast	*Min-Max (Median) Average±SD*	45,45-100 (81,82) 81,52±16,28	27,27-100 (90,91) 82,73±19,34	Z:-0,717 [c]***0,473***
Negative Point in a Day	*Min-Max (Median) Average±SD*	0-100 (40) 51,33±27,26	0-100 (50) 53,00±28,35	Z:-0,565 [c]***0,572***

[a]Pearson Chi-Square Test [b]Fisher Freeman Halton Test [c]Mann Whitney U Test

As seen in Table 4; A significant difference statistically between the distributions of the daily meal numbers, the mean meal numbers, the break meal numbers, the skipping meal number, information point related breakfast of the students according to BMI levels has not been determined (p>0,05). A significant difference statistically between getting points about the adverse events they have experienced during the day of the students when they do not have breakfast according to BMI levels has not been determined (p>0,05).

Table 5. Comparisons of Meals According to Their Classes

		Class		Test Value
		3rd Class (n=62)	**4th Class (n=38)**	***p***
Number of Daily Meals	**≤2 Meals**	15 (24,2)	5 (13,2)	χ2:2,517
	3 Meals	38 (61,3)	29 (76,3)	[a]***0,284***
	≥4 Meals	9 (14,5)	4 (10,5)	
Number of Main Meals	**1 Meal**	6 (9,7)	2 (5,3)	χ2:1,833
	2 Meals	46 (74,2)	26 (68,4)	[b]***0,451***
	≥3 Meals	10 (16,1)	10 (26,3)	
Number of Break Meals	**No Meal**	18 (29,0)	10 (26,3)	χ2:5,338
	1 Meal	31 (50,0)	26 (68,4)	[a]***0,069***
	≥2 Meals	13 (21,0)	2 (5,3)	
Skipped Meals	**Breakfast**	32 (51,6)	21 (55,3)	χ2:0,315
	Lunch	25 (40,3)	15 (39,5)	[b]***0,949***
	Dinner	5 (8,1)	2 (5,3)	
Information Points About Breakfast	*Min-Max (Median)*	27,27-100 (90,91)	27,27-100 (90,91)	Z:-0,601
	Average± SD	82,99±18,59	81,34±18,30	[c]***0,548***

[a]Pearson Chi-Square Test [b]Fisher Freeman Halton Test[c]Mann Whitney U Test

As seen in Table 5; A significant difference statistically between the distributions of the daily meal numbers the mean meal numbers, the break meal numbers, the skipping meal numbers of the students according to the class they were in has not been determined (p>0,05)

Discussion and Conclusion

Breakfast is the most important among the meals. Adequate and balanced breakfast menu is extremely important to begin to be willing and able to spend conveniently. It has been determined that the nutritional information of the student is insufficient and therefore the inadequate information cannot turn into habits and behavior. Even if the available nutrients and economic resources are sufficient, the inadequacy of nutrition knowledge leads to the misuse of these resources. In formal and non-formal education programs; basic nutrition, food safety, health and similar issues, dissemination of programs for these issues, monitoring, evaluation and development of the implemented education programs are required. This will be useful in educating and raising awareness of healthy nutrition among individuals. Effective and sustained adequate-balanced nutrition education will help to change bad habits and behaviors, and turn the acquired knowledge into habituation [24]. A total of 100 female students from the 3rd and 4th classes of the Department of Nutrition and Dietetics between the ages of 20 and 24 participated in this research. The BMI measures of the female students ranged from 16.3 to 25 kg / m2 with a mean of 19,91 ± 2,26 kg / m2. This makes us think that girls are more careful about their physical appearance. In some studies related to university students, it was generally determined that girls were weaker than boys [25,26]. It was observed that 20% of the participants in this study had 2 or less daily meals, 67% of them had 3 meals, 13% of them were 4 or more. Also, it was observed that 8% of the students who participated in the study had 1 main meal, 72% of them had 2 meals and 20% of them had 3 or more. While 28% of the students stated that they did not have break meals, 57% of them stated that they had 1 break meal, 15% of them had 2 and more break meals. According to the survey, 53% of the students skipped 1 meal, 40% of them skipped 2 meal and 7% of them skipped all 3 meals. It was observed that 34% of the students participating in the study skipped the breakfast because of being late to the school due to late morning wake-up. Besides that 3% of the students don't like to have breakfast, 17% been without appetites in the morning, 2% do not care the breakfast, 6% have a fear of weight gain and 9% of the students have the others reasons. Skipping meals will lead to irregular feeding. Inadequate, unbalanced and unhealthy nutrition is one of the most important causes of diseases. Looking at the results, it can be said that the rate of skipping meals is increasing today. In one study, 36.8% of women participating in the study were reported to have always skipped meals, 34.2% sometimes skipped meals, and 29.0% had never skipped meals [27].. In another study done on women, these percentages are; 37,8% always, 40,5% sometimes and 21,7% never [28]. In the study conducted on a total of 401 university students aged 18-31, the majority of the students (72.5%) were in normal range of body weight. 50.1% of these students eat three meals a day, 84.5% of them skip main meals[29].

According to our study; 92% of the students agree with "Breakfast is the most important meal of the day" statement, 11% of the students agree with "Breakfast does not help to weaken" statement, 95% of the students agree with "Breakfast provides an energetic start to the day" statement, 95% of the students agree with "Breakfast helps to regulate blood sugar" statement, 73% of the students agree with "Do not have breakfast cause unrest." statement, 91% of the students agree with "The work performance of the individuals who have breakfast increases." statement, 8% of the students agree with "Breakfast is not effective in regulating blood pressure." statement, 66% of the students agree with "One of the reasons for headache is not having breakfast." statement, 75% of the students agree with "Breakfast is not effective in regulating body temperature" statement, 89% of the students agree with "Breakfast is an important factor in the concentration" statement and 71% of the students agree with "Individuals who have breakfast are less stressed at work" statement. According to the findings obtained from the research; it has indicated that;

- Increasing the nutritional possibilities of the places where the students live with inter-agency cooperation,
- Presentation of healthy food in the cafeteria and canteen in schools,
- It is important for the students to acquire the proper nutritional habits in order to protect their health in the later period of their life. For this, elimination of inadequacies in nutrition knowledge and habits with effective and continuous nutrition education,
- Organizing short-term conferences, panels and interviews on nutrition topics at universities regularly,
- Bringing into the habit of eating 3 meals a day in sufficient quantity According to the present-day living conditions of the people,
- İncreasing the quality of food and consuming less carbohydrate foods, at breakfast, because the presence of carbohydrate and fatty foods as well as proteins provides getting them hungry later, by slowing down the rate of blood sugar lowering,
- Encourage this students to create a healthy lifestyle and to have a healthy diet.

As a result; it has been evaluated that giving seminars and conferences to some basic subjects such as foods, nutritional values, and food items are important for the students.

References

[1] Trevino RP, Fogt DL, Wyatt J, Leal-Vasquez L, Sosa E, Woods, C. 2008. Diabetes risk, low fitness and energy insufficiency levels among children from poor families. J Am Diet Assoc., 108: 1846-1853.

[2] Eisenmann JC, Bartee RT, Wang MQ. 2002. Physical activity, TV viewing, and weight in US youth: 1999 Youth Risk Behavior 1 Survey. Obes Res., 10(5): 379-385.

[3] Uskun E,Oztürk M,Kisioglu A, Kirbiyik S. 2005. Risk factors of influencing the development of obesity in the primary education students. Medical Journal of Suleyman Demirel University. 12(2), 19-25

[4] Bastard JP, Jardel C, Delattre J, Hainque B, Bruckert E, Oberlin F. 1999. Evidence for a link between adipose tissue interleukin-6 content and serum C-reactive protein concentrations in obese subjects. Circulation, 1999; 99: 2221-2.

[5] Anon.1999. Diet, nutrient and prevention of chronic diseases. WHO (Report No:797), Geneva. WHO.

[6] Gubur, M., Demir, H. 2017. The Comparision of Healthy Eating Index Values of Female Patients 18-65 Years Applying to a Special Hospital Nutrition Diet Polyclinic. A Cross-Sectional Study. Int J Diabetes Complications. 1(4): 1-7.

[7] Ayaz S, Tezcan S, Akinci F. 2005. Health promption behavior of nursing school students. Cumhuriyet University School of Nursing, 9(2): 26-34.

[8] Ermis E, Dogan E, Erilli NA, Satici A. 2015. An examination of nutritional habits of university students: The model of Ondokuz Mayıs University. Journal of Sports and Performance Researches, 6(1): 30-40.

[9] Nutrition Guide for Turkey. Ministry of Health General Directorate of Primary Health Care Services, 2006, Ankara.

[10] Faydaoglu E, Energin E, Surucuoglu MS. 2013 Establishment of Ankara University Faculty of Health sciences students breakfast habits. Gumushane University Journal of Health Sciences, 2(3): 299-311.

[11] Kardas F, Orbak Z. 2002. Adolescent Nutrition. Sydrome Monthly actual Medical Journal, 90-96. 11)

[12] Yurttagul M. 1995. Attitudes and attitudes towards nutrition habits and weakness of mildly obese and obese women. Journal of Nutrition and Diet, 24(1): 59-65.

[13] Seidell J.1998. Dietary fat and obesity an epidemiologic perspective. American Journal of Clinical nutrition, 67(Supl): 546.

[14] O'Neil CE, Byrd-Bredbenner C, Hayes D, Jana L, Klinger SE, Stephenson-Martin S. 2014. The role of breakfast in health: definition and criteria for a quality breakfast. J Acad Nutr Diet. Journal of the Academy of Nutrition and Dietetics.114. doi:10.1016/j.jand.2014.08.022

[15] Yoshimura E, Hatamoto Y, Yonekura S, Tanaka H. 2017. Skipping breakfast reduces energy intake and physical activity in healthy women who are habitual breakfast eaters:A randomized crossover trial. Physiology Behavior, 174: 89-94 doi:10.1016/j.physbeh.2017.03.008

[16] Fregapane G, Asensio-Garcia C. 2000. Dietary assessment of an educated young Spanish population using a self-administered meal based food frequency questionnaire, Eur J Epidemiol. 2000; 16: 183-191. doi:10.1016/j.physbeh.2017.03.008

[17] Onay D. 2011.Evaluation of the Breakfast habits of university students: The example of Aksehir high school. The Journal of the Endustrial Arts Education Faculty of Gazi University.. 27:95-106

[18] Trevino RP, Fogt DL, Wyatt J, Leal-Vasquez L, Sosa E, Woods C. 2008. Diabetes risk, low fitness and energy insufficiency levels among children from poor families. J Am Diet Assoc., 108:1846-1853.

[19] Edefonti V, Rosato V, Parpinel M, Neddia G, Florica L, Ferraroni M, Decarli A, Agostoni C. 2014. The effect of breakfast composition and energy contribution on cognitive and academic performance:a systematic review. Am J Clin Nutr.,100(2):626-56.

[20] Williams P. 2005. Breakfast and the diets of Australian adults: an analysis of data from the 1995 National Nutrition Survey. Int J Food Sci Nutr., 56(1): 65-79.

[21] Kuruda T, Onoe Y, Yoshikata R, Ohta H. 2013. Relationship between skipping breakfast and bone mineral density in young Japanese women. Asia Pac J Clin Nutr., 22(4): 583-9.

[22] Williams PG. 2014. The benefits of breakfast cereal consumption:a systematic review of the evidence base. Adv Nutr., 5(5): 636S-673S.

[23] Ackuaku-Dogbe EM. 2014. Breakfast eating habits among medical students. Gulhane Med J., 48(2): 66-70.

[24] Kalayci S. SPSS Applied Multivariate Statistical Techniques. 2nd ed., Asil Publications, 2010: 45-70, Ankara.

[24] Sanlıer N, Konaklıoglu E, Gocer E. 2009. The relation between body mass indexes and nutritional knowkedge habit and behavior of youths. GU Journal of Gazi Educational Faculty., 29(2): 333-352.

[25] Ozdogan Y, Yardımcı H, Ozcelik AO, Surucuoglu MS. 2012. The meal consumption regularities of university students. The Journal of the Endustrial Arts Education Faculty of Gazi University, 29: 66-74.

[26] Akca SO, Selen F. 2015. The effect of skipping meals and daily activities of university students regarding the body mass index(BMI). TAF Preventive Medicine Bulletin. doi: 10.5455/pmb.1-1423989744

[27] Kilic E, Sanlier N. 2007. The comparition of three women's nutrition habits. Kastamonu University, Kastamonu Education Journal, 15(1): 31-44.

[28] Ozdogan Y, Ozcelik AO. 2010. Nutrition habits of students who attend sports academics. E- Journal of New World Sciences Academy Social Sciences, 5(3): 247-258.

[29] Gulec, Yabanci N, Gocgeldi E, Bakir B. 2008. Nutritional habits of students living in two female dormitories in Ankara. Gulhane Med J.,50. 2: 102-109.