

THE FACTORS AFFECTING DIETARY HABITS OF UNDERGRADUATE STUDENTS

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ABSTRACT

Background: This research has been carried out with 950 people who agreed to participate in the research among the students who attended Karabuk University. As a result of the examination, 830 surveys have been evaluated within the scope of the study.

Objective: This research has been planned to examine the level of consciousness on nutrition and dietary habits of undergraduate students at Karabuk University.

Results: The ratio of the students by gender who are involved is 42.9% female and 57.1% male. The average of male students body mass index has been calculated as 20.9 ± 2.9 ; the female students body mass index has been calculated as 22.9 ± 3.0 .

According to the results obtained more than half (63.6%) of the students stated that the number of daily meals are 3-4, and the most important meal is breakfast with 49.9%. This is followed by dinner at 35.9% in the second place. The most skipped meal is lunch (42.3%).

It was seen that the percentage of those who stated that they miss the opportunity to eat meals or that they do not have the opportunity to eat are high (40.0%), followed by those who skip lunches (30.8%), and do not get meal (14.7%).

Conclusion: For all reasons above, this research planned and conducted to determine the knowledge on nutrition and dietary habits of undergraduate students of Karabuk University and to determine the factors that affect this.

Keywords: nutrition, dietary habits, knowledge on nutrition, undergraduate students

INTRODUCTION

In every phase of life, it is possible to have and maintain good physical and mental health with well-balanced nutrition (1). In particular, it is necessary for the nutrition to be adequate and appropriate for the needs of the body during the youth period (2).

Nutrition, which is obligatory for the survival of every living thing (3), is to take and use the nutrients in the most economical manner without losing their nutritional value to provide enough energy and nutritional elements necessary for long-term growth, development, and healthy and fertile life (1, 2). If any of these nutritional elements are not taken or taken more or less than necessary, it may lead to problems such as retardation in growth and development, mental developmental disorders and mental retardation, difficulties in learning, behavioral disorders, and an unhealthy life by reducing the quality of life (4, 2).

Today, nutrition plays a key role in the prevention of cardiovascular diseases, many chronic diseases such as many types of cancer, obesity, hypertension, diabetes, allergic diseases, osteoporosis, and dental caries (5). On the other hand, it should not be forgotten that nutrition is a physiological concept as well as it is a sociological and psychological (3). Therefore, nutrition

(6, 7) is mostly significant since the prenatal period in terms of growth, development, and protection of health. Especially whether the nutrition is adequate and applicable to the needs of the body or not during the youth has a particular significance in terms of maintaining a healthy and quality life in the future and reducing the risk of diseases.

Many studies conducted in Turkey show that university students do not take adequate and well-balanced nourishment (2). The adolescence period is approximately 13 to 17 years in females and 15 to 21 for male. People may encounter various nutritional problems if the issue is not dealt carefully and consciously during this period (8). The first years of university education is parallel to the adolescence period. In this period, particular circumstances such as acceleration of physical growth and development, changes in lifestyle and dietary habits, continuous diet, the presence of chronic diseases, smoking, and exercise influence the need for energy and nutrients (9).

The university education period is an important phase for the formation of one's personality. The reason is that most of the students lives away from their families for the first time (10). Besides, the majority of university students are unemployed; hence, their income comes a variety of allowances from their parents, scholarships, and educational loans. Therefore, they should be able to meet all their needs and requirements with this limited income they have by using it carefully and consciously (11).

In this period, dietary habits also change due to the fact that these young people start to live separated from their familiar family environment, become more open to external influences, and make their own free choices (7, 12). An important factor affecting the nutrition of young people is the lack of knowledge on nutrition and heavy economic conditions, which can cause young people to be unable to get adequate and well-balanced nutrition (13, 14). Determining the nutritional tendencies of the students is significant in terms of prevention of possible disorders caused by malnutrition and regulation of nutrition habits in the adult period (15). Adequate and well-balanced dietary habits of undergraduate students have a social significance both for its own health and for their role as a model. It is crucial to determine the nutritional knowledge and habits of undergraduate students in a critical period that future dietary habits are made and to develop appropriate recommendations for the situation (16). It has been reported that studies about the dietary habits of the undergraduate students that conducted Turkey have determined very serious problems related to nutrition, students usually do not pay attention to their meals, and they consume foods such as bagels (simit) and tea often, and that eating regarded as equivalent to nutrition by young people (17,18).

For all reasons above, this research planned and conducted to determine the knowledge on nutrition and dietary habits of undergraduate students of Karabuk University and to determine the factors that affect this.

METHOD

Sample Size

The population of this research consists of students studying at Karabuk University (KBU) and differs in terms of socio-economic and demographic features. During the 2011-2012 academic year, 22.000 foundation degree students and undergraduate students were trained in the university (KBÜ Catalogue, 2012). The student list given by the Department of Student Affairs has been used to reach the students who will be included in the research. The research sample has consisted of 1st (freshmen year) and 2nd grade (sophomore year) students who continue their education.

Research data has been collected from 950 students in 4 weeks during April-May 2012 period. The survey has been conducted on a voluntary basis in the classroom environment. As a result of

the pre-assessment, 120 surveys have been found as incomplete and insufficiently filled, and a total of 830 surveys have been evaluated.

Data Collection Tools

Similar researches have been used in preparing the research form (2, 15, 19, 20, 21, 22). The research data has been compiled under two parts.

Part 1 includes demographic questions to obtain information about students and their families. Questions that deals with the demographic and socio-economic characteristics of students with different characteristics are departments where the students are studying, grade, gender, age, type of family, neighborhood they live in, residences they stay in the city, the educational status and profession of their parents, and the monthly income of the family. Also, in this part students have been asked about height and weight in order to calculate their body mass index (BMI).

Part 2 consists of questions that examine level of knowledge on nutrition and dietary habits of the students such as "How many meals do you have a day?", "Have you get any course on healthy nutrition?"

The questions of survey determined in accordance with the objectives of the research and pre-survey studies have been applied to 15 students in order to increase the clarity of the questions. As a result of the preliminary testing, the final version of the survey was prepared by making the necessary corrections according to the feedback from the students. The length of the survey was designed for not to allow students to distract their attentions.

Analysis of Data

The data has been evaluated by applying "SPSS for Windows 15.0" software according to the answers given by the students. As a criterion for examining dietary habits and the factors affect the dietary habits of students, crosstabs have been carried out which is based on the gender of the students and the grades they have. Independent variables in the study has been considered as gender (1=female and 2=male) and grade (1=1st, 2=2nd). Whether the difference between the questions and the independent variables is statistically significant has been tested by using chi-square analysis. Chi-square analysis has not been applied when the expected value in columns in the crosstabs are less than 5 ($BD < 5$). However, Fisher's exact chi-square test has been applied when the expected frequency in any of the values is less than 5. Yet in any of these values is smaller than 5 the chi-square test was applied. The statistical significance level for the analyses has been regarded as .05 (23).

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RESULTS

The mean age of female students in the study is calculated as 20 (19.9 ± 1.3) while the mean age of male students is 21 (20.8 ± 2.4). It has been observed that the average height of the male students are 176.4 ± 6.2 cm and weight is 71.5 ± 10.4 kg while it was 163.8 ± 8.6 and 56.3 ± 8.5 for the female students, which shows higher numbers for the male student than the females for both accounts As a result the BMI varies between male (20.9 ± 2.9) and female students (22.9 ± 3.0).

Among the participants, 42.9% (n=356) of 830 students are female and 57.1% (n=474) of total students are male. Again, 28.4% of the students still continue their education in the first grade and 71.6% in the second grade. Moreover, 80.2% of the students have stated that their families are in the form of nuclear families and 58.9% of the students that they live in provincial centers. It has been found that 50.4% of the students live alone at home, 35.5% live in the dormitory, 11.3% live with their families, while only 1.8% live share private houses with their friends, and 1.0% live with their relatives (Table 3).

Regarding their parents' employment status, 88.4% of the students have stated that their mothers are not employed and they are "housewives", 31.3% of them have stated that their fathers are retired, 23.3% of them freelancer, and 19.3% of them are workers. When educational situations of parents have been examined, it has been found that those who had got "primary education" among both mothers (51.4%) and fathers (35.5%) came first. 40.6% of their families are in the income group of "751 - 1250 TL" (Table 3).

The rate of students (74.1%) indicating that they do not smoke in the study is higher than the students (25.9%) who stated that they smoke cigarettes. The issue does not differ in terms of the gender of the students and the class/grade they are studying. Likewise, those who stated that they did not consume alcohol on a regular basis consists the majority (79.8%). High percentages of female students and male students (female: 92.1%, male: 70.5%) stated that they do not consume alcohol regularly (1st grade: 82.2%, 2nd grade: 73.7%). It has been determined that among the students, there is a high rate of students who do not exercise physically in a regular schedule (66.5%) and have regular nutrition (89.5%), yet, they do not get education on nutrition (88.0%) (Table 4).

When the relation between nutrition related habits of students and gender and the grade of education is examined statistically, it is found out that there is a meaningful correlation between regular smoking status ($X^2=72.576$, $sb=1$, $P < 0.05$), regular alcohol consumption status ($X^2=59.140$, $sb=1$, $P < 0.05$), regular exercise performance status ($X^2=92.609$, $sb=1$; $P < 0.05$), belief in healthy nutrition ($X^2=19.558$, $sb=1$, $P < 0.05$), and a nutritional education status ($X^2=2.891$, $sb=1$, $P < 0.05$). On the other hand, it was seen that there is a significant difference between the students' grade of their education and the smoking status ($X^2=10.981$, $sb=1$; $P < 0.05$) as well as regular alcohol consumption status ($X^2=7.428$; $sb=1$; $P < 0.05$).

Information on the dietary habits of university students was shown in Table 5. When Table 5 is examined, it is seen that more than half (63.6%) of the students stated that the number of daily meals are 3-4, and the most important meal is morning breakfast with 49.9%. This is followed by dinner at 35.9% in the second place. The most skipped meals are lunches (42.3%). It was seen that the percentage of those who stated that they miss the opportunity to eat meals or that they do not have the opportunity to eat are high (40.0%), followed by those who skip lunches (30.8%), and do not get meal (14.7%). Among the students, 48.4% of them stated that they cannot find the food they want to eat. This is followed by the fact that it is not cooked and served in a clean environment with 47.3% in the second place and students stated that the meal is not sufficient to feel satisfied with 37.5% in the third place. When the correlation between students' eating/nutrition habits and gender is statistically examined, gender and absence of preferred meal as a factor affecting meal preference ($X^2=7.022$, $sb=1$ $p < 0.05$), the quality of foods and materials in meal, and not cooking and serving in a clean environment ($X^2=15.741$, $p < 0.05$); $sb=1$; $p < 0.05$) has been found as meaningful.

It has been found out that there has been meaningful difference between the grade in which students continue to their education and the most favorite meal ($X^2=9.225$, $sb=2$, $p < 0.05$), skipped meals ($X^2=13.885$, $sb=4$, $p < 0.05$) feeling disinclined among the reasons behind skipping the meal ($X^2=19.658$; $sb=1$; $p < 0.05$), forgetting the meal or could not find an opportunity to eat the meal ($X^2 = 15.612$; $sb=1$; $p < 0.05$), cannot afford to get meal ($X^2=4.928$; $sb=1$; $p < 0.05$), absence of preferred meal as a factor affecting meal preference ($X^2=7.547$; $sb=1$; $p < 0.05$), not cooking and serving in a clean environment ($X^2=40.732$; $sb=1$; $p < 0.05$), and being easily cooked ($X^2=4.324$; $sb=1$; $p < 0.05$) (Table 5).

According to the results, 85.1% of the students have a habit of eating meals as a refreshment/snack, and 50.4% of the students who get meals as refreshments have reported that they eat snacks such as biscuits, chips, coke, and chocolate. The statistical analyses have shown that there is a meaningful difference between eating fresh fruit ($X^2=15.325$, $sb=1$; $p < 0.05$),

snack food ($X^2=13.009$, $sb=1$; $p < 0.05$), different kinds of sandwiches ($X^2=7.681$; $sb=1$; $p < 0.05$).

Among students, the rate of those who drink tea in the morning (87.1%) is high. Nearly half (48.0%) of the students have stated that they drink water with their meals. As a result of the statistical analyses, it has been found that there is a significant difference between gender and drinking water in the breakfast ($X^2=3.470$, $sb=1$; $p < 0.05$), also there is a significant difference between grades and drinking herbal tea ($X^2=11.103$; $sb=1$; $p < 0.05$). It has been determined that 33.1% of the students drink soda while having meals. Statistical analyses have shown that there is a meaningful correlation between the grade in which students continue their education with drinking water ($X^2=13.623$, $sb=1$; $p < 0.05$) and drinking acidic drinks ($X^2=7.974$, $sb=1$; $p < 0.05$) with the meal (Table 6).

Almost half of the students included in the survey have said when they are sad or tired, they are more likely to eat less than usual (47.5%), while the number of those who claimed there is no change in their eating habits when they are joyful or excited (52.4%) is high. In the study, 58.1% of the students have stated that they sometimes have constipation, 43.1% of them have once and 36.0% of them have more than once toilet usage habit per day. Table 7 has also shown the chi-square test results (Table 7).

DISCUSSION

Rapid growth and development during the youth increase nutritional requirements, and malnutrition during this era leads to pauses in growth. In addition, malnutrition habits make it easier for many diseases such as cardiovascular diseases, diabetes, some types of gout and arthritis, and obesity to occur in the coming years. It is possible to state that the riskiest group in terms of the prevalence of nutritional problems is youth in the higher education. When unconscious and unnecessary consumption of food and beverage, fast-food nutrition tendencies are added on the economic inefficiencies as well as difficulties in the efforts for adaptation with the school, environment, and the dormitory, nutrition problems, consequently, health problems of the students are increasing even more (21).

This study has been conducted in order to test the factors related to the dietary habits and levels of knowledge on nutrition of undergraduate students. With this aim, the study has been carried out with 830 undergraduate students who are studying at 1st and 2nd grades of Karabuk University during the 2011-2012 academic year.

During the research it was found that the percentage of those who have bad habits such as smoking and regular alcohol consumption is very low among the students. Besides, it has been determined that about 2/3 of the students regularly do exercise physically. It is possible to say that depending on the results obtained, the students give importance to healthy life. In addition to these results, the fact that they have not received training/course about nutrition (88.0%) indicates a need for adequate and well-balanced nutrition for healthy life and education. Hence, the results obtained in statistical analyses support education on nutrition is needed.

The average number of meals that students get per day is between 3 and 4, and 49.9% of students have stated that breakfast is the most important meal for them. The results of the studies conducted by Vancelik et al. (2007), Mazıcıoglu and Ozturk (2003), Karayormuk et al. (2002), Aytakin et al. (2000), Sağlam (1991), and Ozdogan et al. (2012) have supported the findings of this study. Ozyazıcıoglu et al. (2009) have indicated that 56.6% of the female students and 54.7% of the male students eat 3 meals per day. On the other hand, Sakamaki et al. (2005) have reported that 79% of the participants eat 3 meals in a day. However, Ozkurt et al. (2006) and Saglam and Yorukcu (1996) have obtained different results from their survey. Ozkurt et al. (2006) found that students in the Department of Nursing Education generally have just 1 meal

per day (28), while Saglam and Yorukçu (1996) found 46% of the students studying at Ankara University have 2 meals per day. When the literature is examined, it is determined that there are studies of both kinds, supporting and rejecting the results of this study. These similarities and differences between studies can be explained by the fact that researches have been conducted at different times, in different locations, with different participants, although there have been similar demographic characteristics. It has been indicated that the daily diet should consist of 3 equal meals for a well-balanced nutrition and that the daily diet with 2 meals or the meals in equal intervals would hinder the metabolism (29, 22).

The most skipped meal is lunch among the students. Ozdogan and his colleagues (2010) have found that the ratio of those who never consume lunch (64.5%) is higher than the ratio of students who do not eat breakfast. This may be due to the fact that students may not be able to eat lunch for as long as they continue to study. Among the reasons for skipping meals forgetting or missing meals are the main reasons (40%). The study of Acik et.al (2003) has also supported our study in those terms. In other studies that are conducted in Turkey, the reasons of the students who skip meals have been found similar (31, 20, 30, 32, 33).

Although in similar studies the most frequently skipped meal is breakfast, we found a 21.3% population skipping breakfast, while the least skipped meal is dinner (32, 15, 34, 28, 35, 36, 21). In addition, this result is an indicator that students cannot make a proper schedule for their days.

Nearly half of the students (48.4%) are choosy in eating. This result is due to the family environment in which the students live. The fact that half of the students have junk food habits indicates that they have previously not get education/course on nutrition. On the other hand, it can be said that by the first year of university education, the factors such as leaving family home, staying in dormitory, making their own decisions, and having a limited allowance, and not having enough education on nutrition have led young people to eat fast food and malnutrition. The findings of Karasu's study has also supported this result.

Residents of students can significantly affect the nutrition situation of them. Especially, several studies have determined that students who are staying with family members or relatives at home do not have nutrition problems in general (37). It has been seen that the nutrition of the students who stay at dormitory is more irregular than the ones staying at home (38). The fact that only 35.5% of the students stay at dormitory because of insufficient numbers of beds in both public and private dormitories. And also, these places do not provide ideal opportunities for students and most of them are full. It was found that psychological conditions of students participating in the research are also influential on their dietary habits. Particularly, students who indicated that they are sad or tired found to be the students who eat less. This result supports the literature on nutrition of young people.

One of the riskiest groups in terms of nutrition problems is young people in higher education. Baysal (2003) has indicated that nearly half of the students do not have breakfast regularly, and moreover, they do not eat adequate and well-balanced lunch and dinner. Malnutrition negatively affects students' health (39). According to Baysal (2003), the main cause of the malnutrition problem among students is ignorance and economic insufficiency. While some of the students do not even consume enough energy, most of them are fed unbalanced. Eating patterns are deteriorating because undergraduate students just moved away from their families by the first year at university. When they pass to 2nd grade, they are starting to gain dietary habits. In our study, it was seen that breakfast and lunch are more irregular than dinner. The studies that have carried out till now have shown that there are various findings that students have both irregular meals and not enough food at meals.

Our study has shown that a considerable part of undergraduate students is far from ideal dietary habits, and that further research is necessary to determine the cause of this situation. Measures have to be taken should be developed from these studies that should also take into account the

factors which prevent healthy nutrition. Because young people in universities have an importance in terms of healthy nutrition and healthy dietary habits for their own health as well as for the reason that they should be model for the next generations.

THANKS

This research was supported by Research Fund of the Karabuk University.

Project Number: KBÜBAP-17-BM-428

REFERENCES

- Tanır F., Şaşmaz T., Beyhan Y., Bilici S. Nutrition Status of Employees in a Textile Factory in Doğankent Town. Turkish Medical Association Journal of Occupational Health and Safety. 2001; July: 22-25.
- Vançelik S., Önal S.G., Güraksın A., Beyhun E. Related Factors with Nutrition Information and Habits of University Students. TSK Protective Medicine Bulletin. 2007; 6 (4): 242-248.
- Çalıştır B., Dereli F., Eksen M., Aktaş S. Determination Information Level on Nutrition Subject of Mugla University. International Human Sciences ISSN:1303-5134, 2005; 2 (2): 1-8.
- Baysal A. Nutrition Problems of Youth. 1993; Family and Society Journal. 3(1).
- Garibağaoğlu M., Budak N., Öner N., Sağlam Ö., Nişli K. Assessment of Nutritional Status and Body Weights of Girls Education at Three Different Universities. Journal of Health Sciences 2006;15(3):173-180.
- Baysal A. Nutrition. Hatipoğlu Publishing. 2004; 4-6.
- Açık Y., Çelik G., Ozan A.T., Oğuzöncül A.F., Devenci S.E., Gülbayrak C. (2003) Nutrition Habits of University Students. Health and Society. 13 (4): 74-80.
- Dwyer J., Nutritional Requirements of Adolescence. Nutrition Reviews. 1981; 39 (2): 56-72.
- Spear B.A. Adolescent, Growth and Development. J Am Diet Assoc 2002; 102: 23-29.
- Yeşilyaprak, B. 2007, Harmony to University in Metropolis is Harder. <http://ilef.ankara.edu.tr/netgorunum/yazi.php?yad=10534> (18.07.2010)
- Günay, G. (2012). Effects on Buy Tendency of New Technologies for Youth. Academic View Journal International Refereed Social Sciences E-Journal. 29:1-20. ISSN:1694-528X.
- Sakarya Ö., Ünver B. Nutrition Status of the Students Apply Ankara University Medico-Social Center. Health and Diet Journal. 1985; 14: 51-62.
- Aytekin F., Bulduk S. Analyzing Effects of Education Model on Behavioral Change for University Students. National Education. 2000; 148: 1-5.
- Yağmur C. A Research on Nutrition Status of Çukurova University Students. Nutrition and Diet Journal. 1995; 24(2): 239-251.
- Mazıcıoğlu M.M., Öztürk A. Nutrition Habits and Affecting Factors of 3rd and 4th Class University. Erciyes Medical Journal (Erciyes Medical Journal). 2003; 25 (4): 172-178.
- Erten, M. (2006). 'nvestigation of Nutrition Information and Habits of University Students in Adıyaman, T.C. Gazi University, Institute of Educational Sciences, Department of Family Economics and Nutrition Education, Graduate Thesis, Ankara.
- Yaman M. Yabancı N. Examining Nutrition Habits of University Students. I. International Home Economy Congress. Mart 2006, Ankara. Congress Summary Book, 214-223.
- Karaoğlu L, Pehlivan E, Genç M.F., Güneş G, Eğri M. Nutrition Habits and Physical Activity Levels of İnönü University 2nd Class Students. Health and Society. 2005; 15: 82-88.
- Yılmaz E., Özkan S. Examining Nutrition Habits of University Students. Fırat Health Sciences Journal. 2007; 2(6): 87-104 (proceeding).
- Orak S., Akgün S., Orhan H. Researching Nutrition Habits the Students of Süleyman Demirel University. S.D.Ü. Med Fac. Journal. 2006; 13 (2): 5-11.

- Özyazıcıoğlu N., Çınar H.G., Buran G., Ayverdi D. Nutrition Habits of Uludağ University Health College Students. Atatürk University Nursery College Journal 2009; 12 (2): 34-40.
- Arslan P., Karaağaoğlu N., Duyar İ., Güleç E. Evaluation Nutrition Habits of Graduate Students with Scoring Method. Nutrition and Diet Journal. 1994; 22(2): 195-208. Büyüköztürk, Ş. 2007, Data Analysis for Social Sciences Hand, 7.Edition, Ankara: Pegem A Publishing.
- Büyüköztürk, Ş. 2007, Data Analysis for Social Sciences Hand Book, 7.Baskı, Ankara: Pegem A Publishing.
- Özpinar Karayormuk N. A Research on Nutrition Information and Habits of Afyon Kocatepe University Career College Students. Gazi University Health Sciences Institute, Graduate Thesis, Ankara. 2002.
- Sağlam F, Yürükçü S. Food Consumption Status of Ankara University Education Sciences Faculty College Students, Determination of Nutrition Information. Nutrition and Diet Journal. 1996; 25: 16-23.
- Özdoğan Y., Yardımcı H., Özçelik A.Ö. Nutrition Habits of University Students Stay at Dorm. 2012 ; Year 4, Number 15.
- Sakamaki R, Toyama K, Amamoto R et al. Nutritional Knowledge, Food Habits and Health Attitude of Chinese University Students a Cross Sectional Study. Nutrition Journal. 2005; 4(1): 4
- Özkurt Ö, Nural N, Hintistan S. Determination of Nutritional Habits and Malnutrition Prevalence of Nursing Students in Trabzon Health School. 5. National Nursery Students Congress, Congress Book, Şanlıurfa. 2006; 20-21 April.
- Tai MM., Castillo PP., Sunyer FX. Meal size and frequency. Effect on the thermic effect of food. Am J Clin Nutr. 1992; 54: 783.
- Açıkgöz S. Relation of Self-efficacy and Optimism with Nutrition Habits of University Students. T.R. Ankara University Institute of Health Sciences, Department of Health Education. Thesis of Graduate, Ankara. 2006.
- Karasu Ö. ssesment of Nutrition Information and Situations of High School Students with and without Boarding. T. C. Gazi University Educational Sciences Institute, Educational Sciences AD, Yüksek Lisans Tezi, Ankara. 2006.
- Heşeminia T., Çalışkan D., Işık A. Nutrition Problems of Students in Higher Education Student Dormitories in Ankara. İbni Sina Medicine Journal. 2002;7: 155-167.
- Işıksoluğu MK. Nutrition Status and Effect Nutrition Education for This of Woman Graduate Students. Nutrition and Diet Journal. 1986; 15: 55-70.
- Adıgüzel M, Anıl Ü, Karaçanta S and ark. İnönü University Nutrition Habits of Students of Malatya Health College. IV. National Nursery Student Congress. Congress Book, Ordu. 2005.
- Topal S, Çetin N, Gümüş A and ark. Determination Nutrition Habits of Niğde University Lady Zübeyde Health College. 5. National Nursery Students Congress. Congress Book. 2006.
- Karadağ N, Koç G. Analyzing Nutrition Habits of Balıkesir University Health College Students with Scoring Method. 5. National Nursery Students Congress Congress Book. 2007.
- Köksal O. Nutrition Subject and Problems of University. III. People Health Days Congress Book. Kayseri 1993; 10-12.
- Kızıltan G. Nutrition Information Level and Affect of Nutrition Education on Nutrition Status of Students in Registered Başkent University Food Drink Business. Nutrition and Diet Journal. 2000; 29: 34-41.
- Baysal A. Effects of Social Inequality on Nutrition. C. Ü. Special Addition of Medicine Faculty Journal 2003; 25 (4): 66-72.

Table 1. Number of students to be included in the research

The units of Karabük University	Undergraduate Students	The Number of Students included in Sample
Faculty of Technical Education	1528	73
Faculty of Engineering	3843	222
Health College	164	49
Karabük Vocational School of Higher Education	1558	125
Safranbolu Vocational School of Higher Education	2399	123
Hasan Doğan School of Physical Education and Sports	209	80
Faculty of Literature	1672	132
Total	9492	830

Table 2. Personal Characteristics of Students by gender

	Female (n=356)			Male (n=474)		
	Min	Max	Avg(ss)	Min	Max	Avg (ss)
Age (year)	17	26	19.9± (1.3)	16	43	20.8(2.4)
Height (cm)	155.00	195.00	163.8±(8.6)	158.00	193.00	176.4 (6.2)
Weight (kg)	40.00	105.00	56.3±(8.5)	47.00	105.00	71.5 (10.4)
BMI	12.6	30.7	20.9±(2.9)	16.3	34.3	20.9 (2.9)

Table 3. Distribution of Socio-Demographic Characteristics of Students

Socio-demographic Characteristics	N	%	Socio-demographic Characteristics	N	%
Class			Father's level of education		
Freshman year (1 st grade)	594	71.6	Illiterate	22	2.7
Sophomore year (2 nd grade)	236	28.4	Literate	11	1.3
Gender			Primary School	295	35.5
Female	356	42.9	Elementary School	175	21.1
Male	474	57.1	High School	196	23.6
Type of family			University/Bachelor Degree	121	14.6
Nuclear Family	666	80.2	Master degree	10	1.2
Broken Family	23	2.8	Mother's level of education		

Extended Family	141	17.0	Illiterate	86	10.4
Previous residence			Literate	39	4.7
Province	489	58.9	Primary School	427	51.4
District	221	26.6	Elementary School	125	15.1
Town	32	3.9	High School	113	13.6
Village	88	10.6	University/Bachelor Degree	37	4.5
Current Residence			Master degree	3	4
With family	94	11.3	Father's occupation		
With relatives	8	1.0	Unemployed	27	3.3
With flat mates	15	1.8	Worker	160	19.3
Alone in a house	418	50.4	Civil Servant	124	14.9
In a dormitory	295	35.5	Freelancer	193	23.3
Monthly income of the family			Retired	260	31.3
< 750 TL	202	24.3	Self-employed	66	8.0
751 – 1250 TL	337	40.6	Mother's occupation		
1251 – 2500 TL	222	26.7	Housewife	734	88.4
>2501 TL	69	8.3	Worker	15	1.8
			Civil Servant	24	2.9
			Freelance	14	1.7
			Retired	43	5.2

Table 4. Distribution of students' habits related to nutrition according to gender and grade

Habits		Female (n=356)		Male (n=474)		1 st grade (n=594)		2 nd grade (n=236)		Total (n=830)	
		F	%	F	%	F	%	F	%	F	%
Smoking habit	Yes	39	11.0	176	37.1	135	22.7	80	33.9	215	25.9
	No	317	89.0	298	62.9	459	77.3	156	66.1	615	74.1
		$X^2=72.576; sb=1; 0.000^*$				$X^2=10.981; sb=1; 0.001^*$					
Using alcohol regularly	Yes	28	7.9	140	29.5	106	17.8	62	26.3	168	20.2
	No	328	92.1	334	70.5	488	82.2	174	73.7	662	79.8
		$X^2=59.140; sb=1; 0.000^*$				$X^2=7.428; sb=1; 0.006^*$					
Doing sport regularly	Yes	172	48.3	380	80.2	389	65.5	163	69.1	552	66.5
	No	184	51.7	94	19.8	205	34.5	73	30.9	278	33.5
		$X^2=92.609; sb=1; 0.000^*$				$X^2=0.972; sb=1; 0.183$					
Belief in healthy nutrition	Yes	338	94.9	405	85.4	537	90.4	206	87.3	743	89.5
	No	18	5.1	69	14.6	57	9.6	30	12.7	87	10.5
		$X^2=19.558; sb=1; 0.000^*$				$X^2=1.748; sb=1; 0.117$					
Getting education on nutrition	Yes	35	9.8	65	13.7	70	11.8	30	12.7	100	12.0
	No	321	90.2	409	86.3	524	88.2	206	87.3	730	88.0
		$X^2=2.891; sb=1; 0.000^*$				$X^2=0.137; sb=1; 0.396$					

*p<0.05

Table 5. Students' dietary/eating/nutrition habits according to gender and their grade

Dietary Habits	Total (n=830)		Gender	Grade
	F	%	Chi-Square Analysis	Chi-Square Analysis
The number of daily meal (n) %			$X^2=1.236$ sb=2; 0.539	$X^2=0.618$; sb=2;0.734
2 and below	264	31.8		
3-4	528	63.6		
5-6	38	4.6		
The most favorite meal			$X^2=5.352$; sb=2; 0.069	$X^2=9.225$; sb=2;0.010*
Breakfast	414	49.9		
Launch	118	14.2		
Dinner	298	35.9		
Skipped/Missed Meal			$X^2=3.863$; sb=4;0.425	$X^2=13.885$; sb=4;0.008*
I do not skip/miss meal	172	20.7		
Morning	177	21.3		
Noon	351	42.3		
Morning- noon	96	11.6		
Evening	34	4.1		
The reason behind skipping meal				
To lose weight	26	3.1	$X^2=1.004$; sb=1;0.559	$X^2=0.004$; sb=1;0.559
Not to want to eat	256	30.8	$X^2=0.637$; sb=1;0.238	$X^2=19.658$; sb=1;0.000*
Forget/ Miss	332	40.0	$X^2=4.430$; sb=1;0.021	$X^2=15.612$; sb=1;0.000*
No one prepares meal	122	14.7	$X^2=2.022$; sb=1;0.488	$X^2=2.721$; sb=1;0.060
Financial problem	88	10.6	$X^2=0.554$; sb=1;0.265	$X^2=4.928$; sb=1;0.017*
The factors affect your preference of meal				
Price of meal	254	30.6	$X^2=0.088$; sb=1;0.414	$X^2=1.853$; sb=1;0.099
Absence of desired food	402	48.4	$X^2=7.942$; sb=1;0.003*	$X^2=7.547$; sb=1;0.004*
Square meal	311	37.5	$X^2=1.395$; sb=1;0.135	$X^2=0.916$; sb=1;0.188
Quality of used food and ingredients in cooking	211	25.4	$X^2=7.022$; sb=1;0.005*	$X^2=0.785$; sb=1;0.210
Cooking and presenting in a clean environment	393	47.3	$X^2=15.741$; sb=1;0.000*	$X^2=40.732$; sb=1;0.000*

Easily cooked	89	10.7	$X^2 = 1.147$; sb=1;0.174	$X^2 = 4.324$; sb=1;0.024*
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* $p < 0.05$ **Table 6.** Dietary habits of students according to their gender and their grades

Dietary Habits	Total (n=830)		Gender Chi-Square Analyses	Grade Chi-Square Analyses
	F	%		
Eating habit in refreshment times				
Yes	706	85.1	$X^2 = 2.793$; sb=1;0.061	$X^2 = 2.793$; sb=1;0.061
No	124	14.9		
What do you eat as refreshment?				
Fresh fruits	205	24.7	$X^2 = 0.344$; sb=1;0.311	$X^2 = 15.325$; sb=1;0.000*
Dried fruits	53	6.4	$X^2 = 1.641$; sb=1;0.129	$X^2 = 0.044$; sb=1;0.476
Snack foods (such as biscuits, chips, cola, chocolate).	418	50.4	$X^2 = 2.790$; sb=1;0.056	$X^2 = 13.009$; sb=1;0.000*
Sandwiches (different kinds of it)	279	33.6	$X^2 = 0.754$; sb=1;0.216	$X^2 = 7.681$; sb=1;0.003*
What do you drink in the breakfast?				
Tea	723	87.1	$X^2 = 0.350$; sb=1;0.314	$X^2 = 1.633$; sb=1;0.121
Herbal tea	34	4.1	$X^2 = 0.067$; sb=1;0.484	$X^2 = 11.103$; sb=1;0.001*
Caffeinated drinks (like coffee)	51	6.1	$X^2 = 9.268$; sb=1;0.001	$X^2 = 0.108$; sb=1;0.425
Water	141	17.0	$X^2 = 3.470$; sb=1;0.037*	$X^2 = 0.008$; sb=1;0.503
Fruit-flavored drinks	177	21.3	$X^2 = 5.363$; sb=1;0.012	$X^2 = 1.403$; sb=1;0.136
Soda	29	3.5	$X^2 = 1.850$; sb=1;0.122	$X^2 = 8.071$; sb=1;0.003*
Milk	91	11.0	$X^2 = 2.867$; sb=1;0.055	$X^2 = 2.447$; sb=1;0.074
Ayran (Drink made of yoghurt and water)	14	1.7		$X^2 = 2.678$; sb=1;0.083
Energy drink	4	0.5		
Fresh-squeezed fruit juice	45	5.4	$X^2 = 1.663$; sb=1;0.130	$X^2 = 1.312$; sb=1;0.161
What do you usually drink while having meal?				
Tea	223	26.9	$X^2 = 0.389$; sb=1;0.294	$X^2 = .333$; sb=1;0.310
Herbal tea	8	1.0	$X^2 =$	$X^2 = 0.167$; sb=1;0.474
Caffeinated drinks (like coffee)	22	2.7	$X^2 = 0.698$; sb=1;0.269	$X^2 = 1.131$; sb=1;0.200
Water	398	48.0	$X^2 = 11.656$; sb=1;0.000*	$X^2 = 13.623$; sb=1;0.000*
Fruit-flavored drinks	200	24.1	$X^2 = 0.767$; sb=1;0.217	$X^2 = 5.436$; sb=1;0.012
Soda	275	33.1	$X^2 = 1.383$; sb=1;0.137	$X^2 = 7.974$; sb=1;0.003*
Milk	10	1.2	$X^2 =$	$X^2 = 2.165$; sb=1;0.124
Ayran (Drink made of yoghurt and water)	244	29.4	$X^2 = 0.004$; sb=1;0.510	$X^2 = 0.265$; sb=1;0.330
Energy drink	4	0.5		
Fresh-squeezed fruit juice	48	5.8	$X^2 = 0.762$; sb=1;0.243	$X^2 = 2.644$; sb=1;0.071

* p <0.05

Table 7. The Impact of Students' Psychological Conditions on Dietary Habits According to Gender and Grade

Dietary Habits	Total (n=830)		Gender Chi-Square Analysis	Grade Chi- Square Analysis
	F	%		
Sad or tired				
Never eat	154	18.6	X ² =5.113; sb=3;0.164	X ² =32.350; sb=3;0.000*
Less than ever	394	47.5		
More than ever and more frequent	77	9.3		
No change	205	24.7		
Joyful or excited				
Never eat	61	7.3	X ² =8.193; sb=3;0.042*	X ² =30.654; sb=3;0.000*
Less than ever	178	21.4		
More than ever and more frequent	156	18.8		
No change	435	52.4		
Do you suffer from constipation?				
Yes	309	37.2	X ² =9.980; sb=2;0.007*	X ² =87.892; sb=2;0.000*
No	39	4.7		
Sometimes	482	58.1		
Urinary frequency				
Once a day	358	43.1	X ² =1.581; sb=3;0.664	X ² =5.476; sb=3;0.000*
More than once in a day	299	36.0		
Once in two days	142	17.1		
Once in three days	31	3.7		

*p<0.05

THANKS

This research was supported by Research Fund of the Karabük University. Project Number: KBÜBAP-17-BM-428