T.C.

YEDITEPE UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF NUTRITION AND DIETETICS

COMPARISON OF MILK AND DAIRY PRODUCTS

CONSUMPTION HABITS OF STUDENTS WHO

RECEIVED / NOT RECEIVED NUTRITIONAL

EDUCATION AT YEDITEPE UNIVERSITY

MASTER THESIS

Burcu BİLİCİ

Istanbul–2020

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Istanbul–2020

APPROVAL

ii

DECLARATION

I declare that this thesis is my own work, I do not have any unethical behavior at any stage from planning to writing, I obtained all the information in the thesis in academic and ethical rules, I source all the information and interpretations that are not obtained by the thesis work, and I include these resources in the sources list, during the thesis work and writing and I do not have any infringement on patent and copyright.

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Burcu BİLİCİ

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF SYMBOLS AND ABBREVIATIONS

TNG   : Turkey Nutrition Guide 2015
FFQ   : Food Consumption Frequency Form
DASH   : Dietary Approaches to Stop Hypertension
IDF   : International Dairy Federation
WHO   : World Health Organization
TNHS   : Turkey Nutrition and Health Survey 2010
BMI   : Body Mass Index
EU   : European Union
TSI   : Turkish Statistical Institute
Min   : Smallest Value
Max   : Greatest Value
Avg   : Average
SD   : Standard Deviation
n   : Sample Number
p   : P Value

ABSTRACT

Bilici, B. (2020). Comparison of Milk and Dairy Products Consumption Habits of Students Who Received / Not Received Nutritional Education at Yeditepe University Yeditepe University Institute of Health Science, Department of Nutrition and Dietetics. Master Thesis, Istanbul.

This study, determined the amount of milk and dairy consumption of students receiving and not receiving nutritional education at Yeditepe University between March 15–April 15, 2018, detecting the differences between the knowledge levels of students about milk and its products, and the relationship among consumption of this nutrient group and individual's body mass indexes (BMI) were made for examination of the relationship among them. 45 male and 157 female students at the average age of 22.37±1,34 years from the 3rd and 4th grades of the Faculty of Health Sciences, Faculty of Arts and Sciences, and Faculty of Education are participated in the study. Distribution of students by departments; 67 Nutrition and Dietetics, 40 Nursing, 27 Psychological Counseling and Guidance, 24 Sociology, 18 History, 16 Teaching Mathematics. A questionnaire form containing 28 questions in total that interrogates social-demographic characteristics and milk and dairy products consumption habits of the participants as a data collection tool, and Food Frequency Questionnaire (FFQ) is used to interrogate milk and dairy products consumption frequency and its amount. Statistical Package for the Social Sciences (SPSS) 21.0 statistical package program was used to evaluate the data. In our study, according to the data obtained from the answers given to the questions asked to measure the level of knowledge of individuals about milk and dairy products, individuals who received nutrition education had more information about this food group compared to those who did not. When enough consumption status of dairy products was interrogated, it was concluded that individuals who received nutritional education (54.2%) consumed statistically more milk and products than those who did not receive nutritional education (10.5%). In addition, it was found that the participants who received nutritional education (80.4%) were statistically more in the normal weight class compared to those who did not (65.3%), and the difference between the educational status and the BMI grouping was statistically meaningful ($p < 0.05$). Based on these results, trainings and seminars can be organized, brochures can be distributed, and public spot advertisements can be prepared to explain the importance of milk and dairy products to individuals who have not received

nutrition education.

Key words: Nutrition, BMI, Milk, Dairy products, Calcium

ABSTRACT (Turkish)

Bilici, B. (2020). Yeditepe Üniversitesi'nde Beslenme Eğitimi Alan ve Almayan Öğrencilerin Süt ve Süt Ürünleri Tüketim Alışkanlıklarının Karşılaştırılması. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik ABD. Yüksek Lisans Tezi, İstanbul.

Bu çalışma, 15 Mart –15 Nisan 2018 tarihleri arasında Yeditepe Üniversitesi'nde okuyan beslenme eğitimi alan ve almayan öğrencilerinin süt ve süt ürünleri tüketim miktarının belirlenmesi, öğrencilerin süt ve ürünleri ile ilgili bilgi seviyeleri arasındaki farklılıkların saptanması, bu besin grubunu tüketimi ile bireylerin beden kütle indeksleri (BKI) arasındaki ilişkinin incelemesi amacıyla yapılmıştır. Sağlık Bilimleri Fakültesi, Fen Edebiyat Fakültesi ve Eğitim Fakültesi'nin 3. ve 4. sınıflarından yaş ortalaması 22.37±1,34 yıl olan 45 erkek ve 157 kadın öğrenci çalışmaya katılmıştır. Öğrencilerin bölümlere göre dağılımları; 67 Beslenme ve Diyetetik, 40 Hemşirelik, 37 Psikolojik Danışmanlık ve Rehberlik, 24 Sosyoloji, 18 Tarih, 16 Matematik Öğretmenliği şeklindedir. Veri toplama aracı olarak katılımcıların sosyo-demografik özelliklerini ve süt ve süt ürünleri tüketim alışkanlıklarını sorgulayan toplamda 28 soru içeren anket formu ve süt ve süt ürünleri tüketim sıklığı ve miktarını sorgulamak için ise Besin Tüketim Sıklığı Formu (FFQ) kullanılmıştır. Verilerin değerlendirilmesinde Statistical Package for the Social Sciences (SPSS) 21.0 istatistik paket programı kullanılmıştır. Çalışmamızda bireylerin süt ve süt ürünleri hakkında bilgi düzeylerini ölçmek için sorulan sorulara verdikleri yanıtlardan elde edilen verilere göre beslenme eğitimi alan bireylerin almayanlara kıyasla bu besin grubu hakkında daha fazla bilgi sahibi olduğu görülmüştür. Süt ve ürünlerinin yeterli tüketim durumu sorgulandığında ise beslenme eğitimi alan bireylerin (%54,2) beslenme eğitimi almayan (%10,5) bireylere kıyasla istatistiksel olarak daha fazla miktarda süt ve ürünü tükettikleri sonucuna ulaşılmıştır. Ayrıca beslenme eğitimi alan (%80,4) katılımcıların almayanlara (%65,3) kıyasla istatistiksel olarak daha çok normal kilolu sınıfında yer aldığı ve eğitim durumu ile BKI gruplaması arasındaki farkın istatistiksel olarak anlamlı olduğu bulunmuştur ($p<0.05$). Bu sonuçlara bakılarak beslenme eğitimi almayan bireylere süt ve süt ürünlerinin önemini anlatmak için eğitimler ve seminerler düzenlenebilir, broşürler dağıtılabilir ve kamu spotu reklamları hazırlanabilir.

Anahtar Kelimeler: Beslenme, BKİ, Süt, Süt ürünleri, Kalsiyum

1. INTRODUCTION AND PURPOSE

Nutrition is the process by which living things take readymade or processed foodstuffs in the nature starting from the mother's womb to death, and transform the nutrients absorbed from intestines to the blood by the cells into energy after the digestion process. For living beings to grow, develop, and reproduce, it is essential to have an enough and balanced diet for maintaining a quality life (1).

An adequate and balanced nutrition is the situation which every day each person consumes the needed amount of four basic foods, consisting of milk and dairy products group, meat-egg and legume group, bread and cereal group with vegetable and fruit group in accordance with their age, gender and health status. Milk and dairy products, which are among these 4 basic food groups, play an important role in maintaining normal growth and health with 15 essential nutrients (2). When it is considered worldwide, cow, buffalo, goat, sheep and camel are used mostly in milk production. The energy content of milk varies according to its animal's nutrition. 100 g cow's milk contains an average of 87.6% of water, 4.7 g of carbohydrates, 3.8 g of fat and 3.3 g protein. The main carbohydrate of milk is lactose. Milk is rich in essential amino acids and has quality protein content (3).

If we look at the milk consumption rates in the world, the average milk consumption per capita is 111.3 kg in 2015, when its population is estimated to be 7.3 billion. In the 10-year period from 2005 to 2015, milk consumption increased by 9.8 kg. When we examine the average milk consumption per capita in the distribution around the world, it is seen that while it is 270 kg in the European continent and 78 kg in the Asian continent, it is 50 kg in the African continent. According to 2016 data in our country, per capita milk consumption is about 231 kg. After milk goes through various processes, products such as yogurt, cheese, milk powder, cream, crema, and kefir are obtained. One of the most heavily consumed dairy products in our country after the milk is white cheese. The annual amount of white cheese consumption per person in 2016 is 15.2 kg /year. The 2016 consumption rates of other dairy products, which are obtained by processing milk and widely consumed in our country, are yogurt 30 kg /year and buttermilk drink 15.6 kg /year (4).

Milk is a nutrient that we all meet first after we are born, and its consumption is essential for health in every period of our lives. Milk and dairy products are rich in minerals such as B_1 (thiamine), B2 (riboflavin), B_6, B_{12}, niacin, and fat-soluble vitamins

such as A, D, E, and K, and minerals such as calcium, phosphorus, and zinc (3). Calcium, phosphorus and vitamin D are essential for bone development and health. Calcium is absorbed from the small intestine through proteins in milk. Inadequate consumption of milk and dairy products leads to decreased calcium stores that cause bone diseases such as osteoporosis. Calcium in milk and dairy products plays a role in many stages of the cascade necessary for blood clotting, nerve conduction, muscle contraction, heart muscle's work in normal rhythm, the passage of various substances through intracellular membranes and intracellular signaling mechanisms (5). In the epidemiological studies, the idea is defended that long-term regular consumption of milk and dairy products is associated with a decrease in body weight and fat mass (6,7,8).

Individuals who mostly moved away from the family environment during the university period are freer when choosing topics included nutrition, clothing, etc. The food choices generally made by families before the individual's preferences replace this period. Factors such as distancing from the family environment, economic inadequacies, and time congestion lead individuals to prefer easily prepared, cheap, and unhealthy foods. As in every stage of human life, regular consumption of milk and its products is very important in order also to provide adequate and balanced nutrition in this period. Nutrition-related training can be useful for university students to increase the consumption of this food group. As a matter of fact, in some studies, it is possible to see that students receiving nutritional education prefer healthier foods in general (9). However, the number of studies on the effectiveness of nutritional education in the consumption of milk and dairy products is insufficient. In this study, it was aimed to determine the milk amount and dairy consumption of university students who received and not received nutrition education, to determine the differences between student's knowledge about milk and products, and to examine the relationship between consumption of this food group and the body mass indexes of individuals.

2. LITERATURE REVIEW

2.1.Nutritional Content of Milk and Dairy Products

When it is considered worldwide, cow, buffalo, goat, sheep, and camel are mostly used in milk production. The energy content of milk varies according to the nutrition of the animal, seasonal change, physiological factors, and disease status. 100 g of cow milk contains an average of 87.9 % water, 4.7 g of carbohydrates, 3.3 g of fat and 3.3 g of protein.

The main carbohydrate of milk is lactose. Lactose, which has an essential place for brain and nerve development, is a disaccharide formed by the combination of glucose and galactose and is found only in milk. Milk fat is responsible for the appearance, taste, flavor, and durability of milk. Milk fat, the majority of are triglycerides, consists of free fatty acids, mono-diglycerides, phospholipids, and cholesterol. Milk has a quality protein content that is rich in essential amino acids. Milk protein consists of 80 % casein and 20 % whey protein. Vitamins A, D, E, and K, which are essential to the human body and are soluble in fat due to the fat amount in milk, as well as soluble vitamins, are all contained in milk. Milk and its products are also rich in minerals such as phosphorus, magnesium, zinc, potassium, and calcium. In Table 2.1, 100 grams of milk and dairy products are given nutritional values (5).

Table 2.1:Nutritional Values of Milk and Dairy Products in 100 Grams

NUTRITIONS	Water g	Energy kcal	Protein g	Oil g	Carbohydrate g	Calcium mg
MILK	87.9	61	3.3	3.3	4.7	119
YOGURT	88	62	3	3.4	4.9	111
WHITE CHEESE	58.8	23.5	15.4	18.2	0.8	437
CHEESE	35	404	27	31.7	1.4	700
BUTTER	15.9	717	0.9	81.1	0.1	24
ICE CREAM	63.2	193	4.5	10.6	20.8	148

2.2. Milk and Dairy Production and Consumption Rates in The World and Turkey

Milk and dairy products production and consumption in Turkey and worldwide date back to old times and it is not known precisely when it started to be used for the first time. Today, tons of milk and dairy products are produced and consumed worldwide every year to meet the demand of the growing population. Different organizations register these production, consumption, and trade statistics, and the International Dairy Federation (IDF) is one of these organizations. When 2015 data of IDF is analyzed, it is seen that world milk production is approximately 818 million tons. In this raise, India with 169.7 million tons, the USA with 90.2 million tons, Pakistan with 45.9 million tons, and Germany with 33.4 million tons are the counties that have a large share. When the production rates of dairy products in 2015 are analyzed; It is estimated that butter and plain oil production are 10.8 million tons, white cheese production is 23 million tons, milk powder production is 5.1 million tons, and whey powder production is 3.1 million tons (10). Considering production rates in our country, Turkey Statistical Institute (TSI), according to the data; In 2016, 1.43 million tons of drinking milk production, 657 thousand tons of white cheese production, 1.17 million tons of yogurt production, 684 thousand tons of butter production, 78 thousand tons of butter production, 124 thousand tons of milk powder, 476 thousand tons of whey and slider production is thought to be 31 thousand tons (11).

If we look at the milk consumption rates in the world, the average milk consumption per capita is 111.3 kg in 2015, when its population is estimated to be 7.3 billion. In the 10-year period from 2005 to 2015, milk consumption increased by 9.8 kg. When we examine the average milk consumption per capita in the distribution around the world, it is seen that while it is 270 kg in the European continent and 78 kg in the Asian continent, it is 50 kg in the African continent. When the import and export figures of milk and dairy products in Turkey are ignored, the consumption of drinking milk per person is approximately 231 kg per person, according to TSI data in 2016. One of the most intensely consumed dairy products in our country after the milk is white cheese. The annual amount of white cheese consumption per person in 2016 is 15.2 kg/year. The consumption rates of other dairy products, which are obtained by processing milk and

widely consumed in our country, are yogurt 30 kg /year and buttermilk drink 15.6 kg/year (4).

2.3.The Place of Milk and Dairy Products in Healthy Nutrition

Nutrition is the process by which living things digest the nutrients present in nature via taking them into their bodies and turn the nutrients absorbed in the blood into energy by the cells. While the nutrition of human beings, which were initially hunter-gatherers, consisted of eating the meat of the animals they hunted, various herbs, vegetables, and fruits were added to beside the meat along with the settled life and agriculture. Along with cities, empires, industrialization, mechanization and technology, there have been significant developments in the food sector, and human beings have expanded the diversity of nutrients considerably. However, this has negative consequences for the health of human beings as well as positive ones. Nowadays, malnutrition is the basis of many diseases, and again, many diseases can be treated with proper nutrition. Proper nutrition, that is, adequate and balanced nutrition, is the situation where every individual consumes appropriate the amount needed by age, gender, and health status every day from four basic food groups consisting of milk and dairy products, meat-egg and legume group, bread, and cereal group with vegetables and fruits (12,13).

The number of calories that should be taken daily varies according to the age, height, weight, and gender of the individual. For healthy nutrition, everyone should get as many calories from their nutrients as their daily needs. According to the data announced by the ministry of health from the meat-egg-legume group consisting of meat, chicken, fish, eggs, beans, chickpeas, lentils and oilseeds (walnuts, hazelnuts, peanuts, etc.); adults, teens, and children should consume 2 portions, pregnant and breastfeeding mothers 3 portions. For dairy and dairy products group consisting of milk, yogurt, white cheese, curd, kefir and milk desserts made with milk, it is enough for adults to consume 2 cups. In comparison, children-pregnant-lactating and post-menopausal individuals consume 3 cups. Bread group: wheat, rice, corn, rye, oats, etc. cereal grains such as flour, cracked wheat, cracked wheat, cereal, pasta, noodles, etc. includes products. For every age group individual with normal body mass index, 1-3 medium slices of whole-grain bread or 2-3 servings of pasta, rice, noodles, etc. should be consumed. For vegetables and fruit group, it will be enough to consume at least 5 portions daily. Individuals need to

comply with the daily recommended consumption amounts as the contribution of each food group to our health is different (3).

When we open our eyes to the world, milk and dairy products, which are the first food we meet and when it is examined chemically, consisting of carbohydrates, protein, fat, and vitamin-minerals, have a great contribution to our health. A significant part of milk protein, which is a source of quality protein, is used in bodybuilding activities. The milk, which is also rich in lysine from essential amino acids, has about 240 mg of calcium in 1 cup. Milk and dairy products with high calcium content are necessary for the development of bone and dental health and in the prevention of diseases such as osteoporosis, also known as bone-melting in advancing age. Another mineral, phosphorus, is almost equally present in milk and dairy products with calcium and contributes to bone and dental health along with calcium. Milk and dairy productions are also an important source in terms of amino acids such as B_2 (riboflavin), which plays a role in the formation of energy in cells, B_{12} that is responsible for the formation of red blood cells and vitamin A with magnesium that are effective in visual health, zinc minerals, thiamine, and niacin. (2.3). In Table 2.2, 1 portion equivalent of meat, milk, vegetable-fruit, and bread groups are given (3).

Table 2.2:1 Portion Equivalent of Bread-Meat-Milk-Vegetable and Fruit Groups

1 Portion Meat Group	1 Portion Milk Group	1 Portion Bread Group	1 Portion Vegetable Group	1 Portion Fruit Group
- Meat is lean, up to 2-3 meatballs (60-90 g) Meat substitutes: - 1 egg (half portion) - Legumes (cooked), 1 medium tea glass - Oil seeds (without peel): 30 g	- Semi skimmed milk; 1 medium water glass (200-240 ml) - Half fat yogurt; 1 medium water glass (150-200 ml) - White cheese; up to 2 matchboxes (40-60 g)	- Bread; 1 medium slice (25-50 g) - Flour soup; 1 medium scoop - Rice or pasta (cooked); 4 tablespoons	- Cauliflower, okra, eggplant, green beans, purslane, spinach, broccoli, peas, leek, broad beans (cooked); 1 medium scoop - Carrots, Tomatoes, Potatoes; 1 medium, (150 g) - Lettuce (salad); 1 medium, (200-250 g)	- Apple, Orange, Pear, Peach; 1 (medium) - Melon, watermelon; 1 small 3 cm slice - Strawberry; 6 (large) - Cherry, 10-12 - Kiwi, 1 (medium) - Apricot, 3-4 (medium) - Banana, 1 (medium) - Grape, 15 grains (big) - Dried apricots, 6 - Fig (fresh), 2 (small) - Erik (fresh), 5 (medium)

2.4. The Relationship of Milk and Dairy Products with Chronic Diseases

2.4.1. The Relationship of Milk and Dairy Products with Hypertension

Hypertension is a condition where arterial blood pressure is 140/90 mm / Hg and higher. The renin-angiotensin-aldosterone system controls blood pressure through the interaction between the kidneys, central nervous system, peripheral nervous system, vascular, endothelial, and adrenal gland. There are many causes of hypertension, from behavioral problems such as smoking, alcohol consumption, irregular nutrition, to

diseases such as obesity, diabetes, and heart failure. The importance of milk and dairy products in the fight against high blood pressure was mentioned for the first time after the 1980s. Thanks to the calcium and potassium content of milk and dairy products that lower the blood pressure. Many studies have been conducted and different ideas have been proposed for the treatment of hypertension, the most accepted one is "Dietary Approaches to Stop Hypertension" (DASH) study. According to the DASH diet, when we increase the daily calcium intake to 800 mg by consuming 3-4 servings of low-fat milk and dairy products per day, the blood pressure is decreased in individuals (14).

In a study conducted by Vaskonen (2003) with hypertensive mice, it was found that rats fed with high calcium increased sodium excretion in the urine and stabilized blood pressure by relaxing the smooth muscles (15). Similarly, also in another study, individuals who received 1200 mg/day calcium per day had a decrease in systolic blood pressure of 0.99 mmHg diastolic and 1.86 mmHg (16).

2.4.2. The Relationship of Milk and Dairy Products with Obesity

Obesity is an eating disorder that caused by the imbalance between the energy that the individual receives and spends daily. Every individual has a specific calorie value that needs daily. If the energy that an individual gets daily is more than it consumes, this excess energy is stored as fat in the body and the individual's body fat mass increases in proportion to the lean mass (16). The World Health Organization (WHO) has defined obesity as "Abnormal (hyperplastic) and excessive (hypertrophic) fat accumulation in adipose tissues to the extent that it impairs health" (18).

Obesity is a deadly disease that decreases a person's life quality and, if untreated, also brings about problems such as hypertension, coronary heart disease, type 2 diabetes, cancer, and stroke. It is seen that genetic, environmental, psychological, physiological, hormonal, social, and behavioral factors are effective in the formation of obesity in the individual. According to the studies, while the probability of obesity in individuals increases with age, if obesity has occurred in childhood and adolescence period, it is thought that these individuals are more likely to be obese in the following period. As women have a slower metabolism in comparison with men and are physically more inactive, obesity is seen as more prevalent than in proportion to men. However, men are at risk in terms obesity as well as women. The risk of men and women becoming obese

may vary with the effect of hormones in different phases of life. For example, the hormone estrogen increases fat accumulation in the body in adolescence phase in women and men (19).

When obesity data is analyzed in our country and in the world, it shows that obesity, which was a serious health problem for only developed countries until 50 years ago, is a serious health problem not only for developed countries today but also for developing countries in the same time. According to WHO 2016 statistics, 1.9 billion individuals aged 18 and over, 650 million of whom are obese, are overweight in the world. At the WHO obesity rankings Turkey, with 32.1 % in 1. order across Europe, it is on the 27. order worldwide (20). The same year, when the prepared data of Turkey Statistical Institute (TSI) are analyzed, 15.2% of individuals 15 and over are men and 23.9% of which are women shows that 19.9% were obese (21).

When the WHO definition of obesity is examined, the most critical factor in preventing and treating obesity is to increase the consumption of foods containing vitamins and minerals that play a preventive role in the storage of fat in the body. It is stated that calcium decreases adipose tissue in the body by affecting the digestive and absorption mechanisms of fats, and it does this in 2 ways. The mechanism by which calcium affects the digestion of oils is as follows; bile acids, which play an essential role in the digestion of fats, are bound by calcium, and therefore, lipolysis is suppressed. As for the mechanism that affects absorption is the suppression of absorption of fats as a result of the saponification reaction of calcium and fatty acids. In terms of the biochemical revealed option, by suppressing calcium lipolysis (digestion of fats), it increases lipogenesis (lipid synthesis), thereby reducing the amount of free fatty acid in adipose tissue (22). In a study with 780 women, 1000 mg/day calcium was given to the participants and 8 kg loss was observed as a result of the study (23). Also, in the study conducted by Azadbakht et al. in 2005 with 827 people between the ages of 18-74, 375 of whom were male and 470 of which were female with metabolic syndrome, it was emphasized that similarly, consumption of milk and dairy products prevented obesity (24).

2.4.3.   The Relationship of Milk and Dairy Products with Osteoporosis

Osteoporosis is a metabolic bone disease that is asymptomatic and more common, especially in elderly individuals. WHO described osteoporosis as follows; a disorder characterized by a result of low bone mass and disruption in the microstructure of bone tissue, with a predisposition to bone fragility and an increased risk of fractures (25). The main problem in osteoporosis is the reduction of bone mass.

Bone density in individuals reaches the highest level at the ages of 12-13 in girls, 16-17 in boys with the effect of exogenous and endogenous factors such as nutrition, genetic predisposition, physical activity, and gender. In this period, it is crucial to feed nutrients rich in calcium, phosphorus and vitamin D in daily nutrition (26,27). Bone tissue consists of 45 % inorganic, 30 % organic substances and water. 95 % of the inorganic part consists of calcium and phosphorus minerals. Milk and dairy products are an essential nutrient source for protection from osteoporosis with their rich calcium content and in reaching the maximum bone density (2). If we look at the amount of calcium contained in 100 grams of milk and dairy products, there are 119 mg of fat milk, 111 mg of fat yogurt, 162 mg of fat white cheese, 700 mg of cheese, and 56 mg of calcium in eggs. In addition to calcium, vitamin D of 400-600 units/day, both increase the reabsorption of calcium and reduces its excretion from the kidneys. Calcium rates that individuals should consume daily are as follows; 10-18 years old teens 1300 mg, 19-50 years old adults 1000 mg, 51-65 years 1200 mg and 65 years and above 1200 mg (28).

The bone mass, which is shaped in puberty and reaches the maximum level in the adolescent period, begins to decrease with aging, that is, the bone mass is continually changing, repairing the damage caused by the blows taken and renewing itself (29). According to a study conducted in Turkey in 2010, including 12.3 % of women and 7.5 % men, osteoporosis has been determined in 25 % of individuals aged 50 and over (30). In a study conducted by Schmitt et al. with individuals aged 50-84 in Europe and North America, the rates of osteoporosis were 6 % in men and 21 % in women (31).

2.5. Anthropometric Measurements in Determination of Nutritional Status

Anthropometric measurements are consulted to get information about the nutritional status of individuals. Anthropometric methods; should be economical, reliable, repeatable, and sensitive to changes. The most used anthropometric methods are

as follows; body mass index (BMI), skinfold thickness, body weight, height length, bioelectrical impedance analysis (BIA), diameter and circumference measurements with lean body mass determinations and body fat percentage (32).

2.5.1. Body Weight and Height

It presents the opportunity of evaluation according to weight and length standards. Respect to the normal value ranges based on age and gender and respect to the body weight, determined body mass percentage values are found. By taking these values as a guide while evaluating individuals such as thin-fat and short-long, an idea can also be had about their nutritional status. Body mass index of individuals can be calculated using body weight and height, so an easier and more practical interpretation can be made about the nutritional status of the individual (33).

2.5.2. Body Mass Index (BMI)

Body mass index (BMI), classification of obesity, determining the nutritional habits of the individual, it is used for the detection of obesity, etc. diseases and planning treatment methods. It is found dividing body weight in kg by square of the height (m^2) (BMI = Body weight (kg) / Height (m^2)) (34). Although BMI does not directly give the fat content in the body of the individual; it is the most used method (35).

WHO, individuals with BMI below 18.5 kg/m² are underweight, BMI individuals between 18.5-24.9 kg/m² are normal weight, individuals with BMI in the range of 25-29.9 kg/m² are overweight, individuals with BMI in the range of 30-34,9 kg/m² are class 1 obesity, BMI 's 35-39.9 kg/m² individuals are class 2 obesity and individuals over 40 kg/m² BKI are classified as class 3 or morbid obesity (Table 2.3) (36).

Table 2.3*:* Classification According to BMI

BMI	Classification
<16,0	Emaciation
16-18,5	Underweight
18,5-24,9	Normal weight
25-29,9	Overweight (Preobesity)
30-34,9	Severe obesity - Class I obesity
35-39,9	Obesity - Class II obesity
≥40	Morbid obesity (Class III obesity)

3. MATERIALS AND METHODS

3.1. Type of the Research

It is descriptive and cross-sectional research.

3.2. Researching Stage and Paradigm

Stage of the research, when the implementation of the research between 15 March –15 April 2018, is constituted by Yeditepe University: Faculty of Health Sciences, Education Faculty, and Faculty of Arts and Sciences. 3rd and 4th-grade students studying Nutrition and Dietetics, Nursing, Guidance and Psychological Counseling, Teaching Mathematics, Sociology and History departments at Yeditepe University are included in the paradigm. Nursing and Nutrition and Dietetics department's 3rd and 4th-grade students that receive nutritional education are involved directly to the research and between the faculties which do not receive nutritional education lots was drawn and resulting from this draw, 2. lots was drawn between the Education Faculty and the Faculty of Science and Arts, Guidance and Psychological Counseling, Teaching Mathematics, Sociology and History department's 3rd and 4th-grade students are involved to the study.

3.3. Inclusion and Non-Inclusion Criteria in the Research

Inclusion Criteria

- Having signed the informed consent form regarding the desire to participate in the research.
- Being a 3rd and 4th-grade student of Yeditepe University Nutrition and Dietetics, Nursing, Guidance and Psychological Counseling, Teaching Mathematics, Sociology, and History departments in the 2017-2018 academic year.

Non-Inclusion Criteria

- Not signing the informed consent form to participate in the research.
- Being out of the group determined for the research.
- To give incomplete answers to the survey questions and inconsistent answers to the conditional questions.

3.4.Data Collection Tools

The data of the study were collected with the General Information Form and Food Frequency Questionnaire (FFQ). General information form has 2 sections and 28 questions containing information on socio-demographic characteristics and consumption of milk and dairy products (37). Food Frequency Questionnaire (FFQ) consists of a total of eight sections: milk and dairy products, meat and meat products, legumes and oilseeds, bread and other seeds, vegetables and fruits, oils, sugar and sweets and beverages. In this study, by using the milk and dairy products section of the form, the frequency and amount of milk consumption of the participants were determined.

3.5.Evaluation of the Data

After obtaining the necessary data for the research with the data collection forms on the determined sample group, the data was grouped, and the database was created using the Statistical Package for the Social Sciences (SPSS) 21.0 statistical package program. Frequency distribution of variables was performed in the statistical analysis of the data, and the chi-square test was used to compare categorically defined parameters. Normalization was performed for all parameters and the Mann-Whitney U test, one of the parametric methods, was used in the materiality analysis of variables that didn't show normal distribution. $p<0.05$ with a confidence interval of 95 % was considered statistically significant in all analyses.

For evaluation of the data obtained from FFQ, Turkey Nutrition Guide 2015 (TNG) directory was used. According to TNG data, an adult is recommended to consume 3 servings of milk and dairy products (milk, yogurt, white cheese) daily. 1 portion sizes of milk and dairy products are defined by TNG as follows (3):

1 medium mug 240 ml milk,

1 cup of 200 ml yogurt,

2 matchboxes 60 g white cheese.

Based on the data obtained from the FFQ in the study, the daily milk and dairy products consumption of individuals consuming 3 portions, or more was calculated as

enough, and the consumption of individuals consuming less than 3 portions was considered insufficient.

3.6. Ethical Dimension of the Research

- With the decision of Yeditepe University Clinical Research Ethics Committee dated 02/15/2018 and numbered 37068608-6100-15-1445, it is ethically and scientifically appropriate to conduct our study titled "Comparison of Milk and Dairy Products Consumption Habits of Students Who Received / Not Received Nutritional Education at Yeditepe University".

- The voluntary participation of the individuals participating in the study was accepted as a basis, information about the voluntary consent form was given, their signatures were obtained, and it was explained that they could withdraw from the research without specifying the reason.

3.7. Limitations of the Study

The results to be obtained from the research will be limited to individuals who volunteer to participate in the study studying at Yeditepe University, Nutrition and Dietetics, Nursing, Guidance and Psychological Counseling, Teaching Mathematics, Sociology, and History. Therefore, the fact that the results can't be generalized to all university students in our country constitutes the limitation of the research.

3.8. Research Hypothesis

1. Consumption of milk and dairy products is below the recommended amounts among university students.

2. Consumption of milk and dairy products of students who receive nutritional education in university students is higher than those who do not receive nutritional education.

3. The knowledge level of university students about the importance of milk and dairy products in healthy nutrition differs according to the content of the education they receive.

3.9. Places and People to Collaborate in Project Conduction

This study was carried out in collaboration with Yeditepe University Faculty of Health Sciences, Education Faculty and Faculty of Arts and Sciences, Nutrition and

Dietetics, Nursing, Guidance and Psychological Counseling, Teaching Mathematics, Sociology, and History departments.

4. RESULTS

4.1. Demographical Findings

67 (33.2 %) from Nutrition and Dietetics, 40 (19.8 %) from Nursing, 37 (18.3 %) from Guidance and Psychological Counseling, 16 (7.9 %) from Teaching Mathematics, 24 (11.9 %) from Sociology and 18 (8.9 %) from History departments; 113 (55.9 %) students from 3rd grade and 89 (44.1 %) students from 4th grade, totally 202 students was attended to research. 107 (53 %) of the individuals participating in the study received nutritional education and as for 95 (47 %) did not receive. Of the participants with an average age of 22.37±1.34, 192 (95.0 %) of the participants were between 21-24 years old and 10 (5.0 %) were 25 years old or older. It is observed that the number of women was more than men (157 (77.7 %) of the participants were women and 45 (22.3 %) were men). When evaluated in terms of body mass index values, 28 (13.9 %) of the participants were underweight, 143 (70.8 %) were normal weight, 28 (13.9 %) were overweight and 3 (1.5 %) was determined as obesity. Only 14 (6.9 %) of the individuals work. When we asked where students live; while 97 (48 %) participants stated that they live at home with their family, 78 (38.6 %) of the individuals who don't live with their family life at home and 27 (13.4 %) live in the dormitory (Table 4.1).

Table 4.1: Distribution of Participants by Socio-Demographic Features

Socio-Demographic Features		n	%
Age Avg. Year±SD,	22.37±1.34		
	20-24	192	95.0
	25 and Over	10	5.0
Studied Department	Nutrition	67	33.2
	Nursing	40	19.8
	Psychological Counseling and Guidance	37	18.3
	Sociology	24	11.9
	History	18	8.9
	Teaching Mathematics	16	7.9
Education Status	Receive Nutritional Education	107	53
	Do Not Receive Nutritional Education	95	47
Grade	3rd Grade	113	55.9
	4th Grade	89	44.1
Gender	Woman	157	77.7
	Man	45	22.3
BMI Classification (kg/m2)	<18,5 Underweight	28	13.9
	18.5-24.5 Normal Weight	148	73.3
	≥25 Overweight	23	11.4
	≥30.0 Obesity	3	1.5
Working Status	Working	14	6.9
	Not Working	188	93.1
Place of Residence	With Family	97	48.0
	House	78	38.6
	Dormitory	27	13.4

In the table below, the participant's height, weight and BMI averages and distribution of minimum-maximum values are given.

Table 4.2: Height, Weight and BMI Averages and Distribution of Min-Max values

Measure	Min.-Max.	Avg±SD
Height (cm)	150.00-193.00	167.41±7.53
Kilogram (kg)	42.00-120.00	59.89±10.20
BMI	15.00-34.00	21.19±2.64

According to Table 4.2, the average height of the participants is 167.41±7.53, the average weight is 59.89±10.20, and the BMI average is 21.19±2.64.

4.2.Findings of Milk and Dairy Production Consumption Habits

It was determined that 126 (62.4 %) of the participants have the habit of drinking milk. When the reasons for consuming milk is asked, as 70 (34.6 %) thought it is nutritious, as 64 (31.7%) meet the daily protein, calcium and mineral needs, as 61 (30.2 %) like the taste and 7 (3.5 %) stated that they consume milk as a habit. 76 (37.6 %) of the participants stated that they don't have the milk consumption habit. When the reasons for individuals not consuming milk were investigated, 13 (17.1 %) stated that they don't drink milk due to disturbing, 13 (17.1 %) due to bad odor and 50 (65.8 %) have no habit.

When the participant's time to gain milk habit was examined, it was determined that 99 (49.0 %) are preschoolers, 14 (6.9 %) are in school term, 8 (4.0 %) is adulthood and 7 (3.5 %) had the drinking milk habit after receiving the nutritional education. 131 (64.9 %) of the participants stated that their milk consumption is lower than their childhood periods, 34 (16.8 %) is more and 37 (18.3 %) is the same. When the dairy products consumed except milk were questioned, respectively the most is yogurt (97.0 %), white cheese (96.5 %), ayran (89.1 %), ice cream (87.1 %), butter (56,9 %) and cream (37.6 %) were seen to be consumed.

While 192 (95.0 %) of the participants use pasteurized / UHT milk, 10 (5.0 %) consume street milk. While 117 (57.9 %) of individuals find the price of milk and dairy products appropriate, 60 (29.7 %) find expensive and 6 (3.0 %) find cheap, 19 (9.4 %) people have no idea about this issue. When the fat content of milk was examined, 101 (50.0 %) people preferred fully fat, 86 (42.6 %) preferred semi-skimmed and 15 (7.4 %) preferred skimmed. 117 (57.9 %) of the participants consume milk cold, 14 (6.9 %) consume boiled, 22 (10.9 %) consume slightly warmed and 49 (24.3 %) consume milk

cold in summer and warm in winter. While 138 (68.3 %) of the participants claim that there are additives in milk, 64 (31.7 %) people think there isn't any additive. To the question of 'Does milk is fattening?' 161 (79.7 %) participants answered no and 41 (20.3 %) participants answered yes. 180 (89.1 %) of individuals stated that milk should be consumed at any age, 21 (10.4 %) in childhood and 1 (0.5 %) in adulthood. To encourage milk consumption, 128 (63.4 %) people find the advertisement and propaganda efforts insufficient, 15 (7.4 %) people find it enough, while 59 (29.2 %) said they have no idea about this issue. The most effective tool to promote the milk consumption was determined as family and family habits by 187 (92.6 %) people, seminars and meetings by 5 (7.4 %) people and radio, TV and gazette by 10 (5.0 %) people.

Table 4.3: Distribution of Participants by Milk and Dairy Products Consumption

Features Related to Milk and Dairy Products Consumption		n	%
Habit of Drinking Milk	Yes	126	62.4
	No	76	37.6
Reasons of Not Drinking Milk	Disturbing	13	17.1
	Bad Obour	13	17.1
	Don't have habit	50	65.8
Time to Gain the Milk Drinking Habit	Preschool	99	49.0
	School Term	14	6.9
	Adulthood	8	4.0
	After the Nutritional Education	7	3.5
Amount of Drinking Milk Based on Childhood	Same	37	18.3
	More	34	16.8
	Less	131	64.9
Consumed Milk Product Except of Milk	Cheese	195	96.5
	Yogurt	196	97.0
	Butter	115	56.9
	Ayran	180	89.1
	Ice Cream	176	87.1
	Cream	76	37.6
Preferred Milk Kind	Pasteurized/UHT	192	95.0
	Street Milk	10	5.0
Information About the Cost of Milk	Cheap	6	3.0

and Dairy Products	Expensive	60	29.7
	Convenient	117	57.9
	I have no idea	19	9.4
Reason of Consuming Milk	As, it is Nutritious	70	34.6
	As, it meets some of the protein/calcium/mineral needs to be taken daily	64	31.7
	I don't like its taste	61	30.2
	Habit	7	3.5
Fat Rate of Consumed Milk	Fully fat	101	50.0
	Semi-skimmed	86	42.6
	Skimmed	15	7.4
Heat Treatment Applied to Milk	I Boil	14	6.9
	I Heat Slightly	22	10.9
	I Drink Cold	117	57.9
	Cold in Summer and Hot in Winter	49	24.3
Do you think there is Additive in milk?	Yes	138	68.3
	No	64	31.7
At What Age Should Milk be Consumed	Childhood	21	10.4
	Adulthood	1	0.5
	At any age	180	89.1
What is the Most Important Tool to Promote Milk Consumption?	Seminars and meetings	5	2.5
	Family and family habits	187	92.6
	Radio, TV and gazette	10	5.0
Are Advertising Studies Enough to Promote Milk Consumption?	Enough	15	7.4
	Not Enough	128	63.4
	I have no idea	59	29.2
Does Milk is Fattening?	Yes	41	20.3
	No	161	79.7

In the table below, the distribution of the participants according to their knowledge level about milk and dairy products is given. According to this, the nutritional value of milk and the calcium (Ca) amount in 1 glass of milk are known by 47.0 % of the participants, the calcium amount to be taken daily is known by 48.0 % people and the diseases that may occur with calcium deficiency are known by 64.9 % people (Table 4.4).

Table 4.4: Distribution of Participants by the Knowledge Level of Milk and Dairy Products

Knowledge Level of Participants About Milk and Dairy Products		n	%
Do You Know the Nutritional Value of Milk and the Calcium in 1 Glass of Milk?	Yes	95	47.0
	No	107	53.0
Do You Know the Amount of Calcium that an Adult Should Take Daily?	Yes	97	48.0
	No	105	52.0
Do You Know the Diseases that may Occur in Calcium Deficiency?	Yes	131	64.9
	No	71	35.1

In the table below, a comparison of the relationship between the nutritional education levels of the participants and the nutritional value of the milk and the calcium amount in 1 glass of milk are given. According to this, while 82.2 % of the individuals receiving nutritional education know the nutritional value of milk and the calcium in 1 glass of milk, 92.6 % of the individuals who don't receive nutritional education answered this question as I don't know (Table 4.5).

Table 4.5: Comparison of the Relationship Between the Nutritional Education Status of the Participants with the Nutritional Value of Milk and the Knowledge of Calcium in 1 Glass of Milk

Nutritional Education Status	Nutritional Value of Milk and Knowledge Status of the Calcium Amount in 1 Glass of Milk				Significance (p)
	Knows		Don't Know		
	n	%	n	%	
Who Received Nutritional Education	88	82.2	19	17.8	0.000*
Who Do Not Receive Nutritional Education	7	7.4	88	92.6	
Total	95	47	107	53	

*Significance analysis was carried out with Pearson chi-square test.

According to Table 4.5, the difference between the participant's nutritional education status with the nutritional value of milk and the calcium amount in 1 glass of milk is statistically highly significant ($p<0.05$; $\chi^2= 113.245$).

The table below gives a comparison of the relationship between the participant's nutritional education status and the knowledge of the amount of calcium an adult need to take daily. According to this, while 84.1 % of individuals who received nutritional education know the calcium amount that an adult person should take daily, 92.6 % of individuals who don't receive nutritional education answered this question as I don't know (Table 4.6).

Table 4.6: Comparison of the Relationship Between the Nutritional Education Status of the Participants and the Knowledge of the Calcium Amount Required by an Adult Person Daily

Nutritional Education Status	Knowledge Status of the Calcium Amount an Adult Need to Take Daily				Significance (p)
	Knows		Don't Know		
	n	%	n	%	
Who Received Nutritional Education	90	84.1	17	15.9	0.000*
Who Do Not Receive Nutritional Education	7	7.4	88	92.6	
Total	97	48	105	52	

*Significance analysis was carried out with Pearson chi-square test.

According to Table 4.6, the difference between the participant's nutritional education status with the knowledge of the calcium amount an adult need to take daily is statistically highly significant ($p < 0.05$; $\chi^2 = 118.736$).

In the table below, the comparison of the relationship between the participant's nutritional education status and their knowledge of diseases that may occur in calcium deficiency are given. According to this, while 96.3 % of individuals who received nutritional education know the diseases that may occur in calcium deficiency, 70.5 % of individuals who do not receive nutritional education answered this question as I don't know (Table 4.7).

Table 4.7: Comparison of the Relationship Between Participant's Nutritional Education Status and the Knowledge of Diseases that may Occur in Calcium Deficiency

Nutritional Education Status	Knowledge Status of Diseases That may Occur in the Calcium Deficiency				Significance (p)
	Knows		Don't Know		
	n	%	n	%	
Who Received Nutritional Education	103	96.3	4	3.7	0.000*
Who Do Not Receive Nutritional Education	28	29.5	67	70.5	
Total	131	64.9	71	35.1	

*Significance analysis was carried out with Pearson chi-square test.

According to Table 4.7, the difference between the participant's nutritional education status and their knowledge status of diseases that may occur in calcium deficiency are statistically highly significant ($p<0.05$; $\chi^2= 98.475$).

In the table below, according to the nutritional education status of the participants, "Do you think there is an additive in milk?" a comparison of the relationship between their answer to this question is given. According to this, 50.5 % of those who receive nutritional education think that there is no additive in milk, while this rate is 10.5 % for those who do not receive nutritional education (Table 4.8).

Table 4.8: A Comparison of the Relationship Between Their Answer to According to the Nutritional Education Status of the Participants "Do You Think There is an Additive in Milk?" Question

Nutritional Education Status	Do You Think There is an Additive in Milk and Dairy Products?				Significance (p)
	Yes		No		
	n	%	n	%	
Who Received Nutritional Education	53	49.5	54	50.5	0.000[*]
Who Do Not Receive Nutritional Education	85	89.5	10	10.5	
Total	138	68.3	64	31.7	

*Significance analysis was carried out with Pearson chi-square test.

According to Table 4.8, the difference between the participant's nutritional education status and the state of thinking whether there is an additive/ not additive in milk and dairy products are statistically highly significant ($p<0.05$; $\chi^2 = 37.088$).

In the table below, the portion size sufficiency status of milk and dairy products consumed daily by the participants and "Do you think there is an additive in milk and dairy products?" a comparison of the relationship between their answer to this question is given. Accordingly, 54.4 % of individuals who consume milk and dairy products above 3 portions and 75.4 % of individuals who consume milk and dairy products below 3 portions think that there are additives in milk (Table 4.9).

Table 4.9: A Comparison of the Relationship Between Adequacy of the Portion Amount of Milk and Dairy Products Consumed by the Participants and Their Answer to "Do You Think There is an Additive in Milk and Dairy Products?" Question

Adequacy of the Daily Consumed Milk and Dairy Products Portion Amount	Do You Think There is an Additive in Milk and Dairy Products?				Significance (p)
	Yes		No		
	n	%	n	%	
<3 portions	101	75.4	33	24.6	0.002[*]
≥ 3 portions	37	54.4	31	45.6	
Total	138	68.3	64	31.7	

*Significance analysis was carried out with Pearson chi-square test.

According to Table 4.9, the difference between the adequacy status of the portion amount of milk and dairy products consumed daily and the presence/absence of additives in milk and dairy products are statistically highly significant ($p<0.05$; $\chi^2= 9.157$).

In the table below, the comparison of the relationship between the participant's nutritional education status and the adequacy status of the portion amount of milk and dairy products consumed daily is given. According to this, while 54.2 % of individuals who received nutritional education consume 3 portions and more of milk and dairy products daily, this rate is 10.5 % for individuals who don't receive nutritional education (Table 4.10).

Table 4.10: Comparison of the Relationship Between the Nutritional Education Status of the Participants and the Sufficiency Status of the Milk and Dairy Products Consumed Daily

Nutritional Education Status	Adequacy of the Daily Consumed Milk and Dairy Products Portion Amount				Significance (p)
	<3 portions		≥ 3 portions		
	n	%	n	%	
Who Received Nutritional Education	49	45.8	58	54.2	0.000*
Who Do Not Receive Nutritional Education	85	89.5	10	10.5	
Total	134	66.3	68	33.7	

*Significance analysis was carried out with Pearson chi-square test

According to Table 4.10, the difference between the participant's nutritional education status and the adequacy status of the portion amount of milk and dairy products that consumed daily are statistically highly significant ($p<0.05$; $\chi^2= 42.993$).

In the table below, the evaluation of the amount of milk and dairy products consumed daily, and the number of portions consumed totally according to the nutritional education levels of the participants is given. While individuals who receive nutritional education consume an average of 410.55±307.59 ml of milk daily, the average daily consumption of individuals who don't receive nutritional education is 67.91±102.03 ml. While individuals who receive nutritional education consume 358.90±227.79 ml of yogurt on average, the daily consumption of individuals who don't receive nutritional education is 146.83±110.25 ml. While the individuals who receive nutritional education consume 76.78±48.86 g cheese on average, the daily consumption of individuals who don't receive nutritional education is 54.31±54.57 g. The average daily total milk and dairy product consumption of individuals receiving nutritional education is 3.08±1.55

portions and the daily consumption of individuals who don't receive nutritional education is 1.63±1.16 portions (Table 4.11).

Table 4.11: Evaluation of the Amount of Milk and Dairy Products Daily Consumption and the Number of Total Portion Used According to the Nutritional Education Status of the Participants

Nutritional Education Status	Daily Milk Consumption (ml)	Daily Yogurt Consumption (ml)	Daily Cheese Consumption (g)	Total Daily Milk-Dairy Product Portion
	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max
Who Received Nutritional Education	410.55±307.59 0.0-1049	358.90±227.79 0.0-800	76.78±48.86 0.0-300	3.08±1.55 0.14-6.72
Who Do Not Receive Nutritional Education	67.91±102.03 0.0-429	146.83±110.25 0.0-600	54.31±54.57 0.0-308	1.63±1.16 0.16-6.71
Significance (p)	0.000*	0.000*	0.000*	0.000*

*Significance analysis was carried out with Mann-Whitney U test.

According to Table 4.10, the difference between the participant's nutritional education status and the average amount of daily milk consumption is statistically highly significant ($p<0.05$). The difference between the nutritional education levels of the participants and the average amount of daily consumed yogurt is statistically highly significant ($p<0.05$). The difference between the nutritional education levels of the participants and the average amount of daily consumed cheese is statistically highly significant ($p<0.05$). The difference between the nutritional education levels of the participants and the average portion amount of daily consumed total milk and dairy products is statistically highly significant ($p<0.05$).

Distribution of the daily consumed milk and dairy products amount, and the number of total consumed portions are given in the table below. The daily milk consumption of the students in Nursing department varies between 0-942 ml and the average consumption is 384.85±309.61 ml, yogurt consumption varies between 20-685

ml and the average consumption is 308.30±220.52 ml. In contrast, cheese consumption varies between 0-300 g, and average consumption is 83.55±61.342 ml, the total number of portions consumed varies between 0.14-6.72 portions, with an average of 2.93±1.75 portions. The daily milk consumption of the students in nutrition and dietetics department varies between 0-1049 ml and the average consumption is 425.89±307.68 ml, yogurt consumption varies between 0-800 ml and the average consumption is 389.1±228.30 ml. In contrast, cheese consumption varies between 3-158 g and an average consumption is 72.74±39.58 ml. The total number of portions consumed varies between 0.19-5.93 portions, with an average of 3.16±1.42 portions (Table 4.12).

Table 4.12: Distribution of Daily Consumed Milk and Dairy Products Amounts and Total Number of Portions According to the Sections of the Participants

Department	Daily Milk Consumption (ml)	Daily Yogurt Consumption (ml)	Daily Cheese Consumption (g)	Total Daily Milk-Dairy Product Portion
	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max
Nurse	384.85±309.61 0.0-942	308.30±220.52 20-685	83.55±61.34 0.0-300	2.93±1.75 0.14-6.72
Dietitian	425.89±307.68 0.0-1049	389.11±228.30 0.0-800	72.74±39.58 3.0-158	3.16±1.42 0.19-5.93
PCG	64.90±92.57 0.0±428.50	141.89±108.46 0.0±400	49.36±35.60 0.0±180	1.53±0.79 0.28±3.43
Sociology	65.43±105.74 0.0-429	135.87±93.01 7.0-406	61.70±64.45 4.0-308	1.70±1.19 0.23-5.99
History	89.86±116.34 0.0-400	152.61±107.66 6.0-343	58.63±78.26 0.0-300	1.74±1.67 0.23-6.71
Teaching Mathematics	53.87±106.59 0.0±400	168.18±144.08 6.0±600	49.81±46.02 1.0±154	1.67±1.25 0.16±4.28

The evaluation of the daily consumed milk and dairy products amount, and the total number of portions consumed according to the nutritional education (Table 4.13).

Table 4.13: Evaluation of the Daily Consumed Milk and Dairy Products and Total Number of Portions According to Nutritional Education Status

Department	Daily Milk Consumption (ml)	Daily Yogurt Consumption (ml)	Daily Cheese Consumption (g)	Total Daily Milk-Dairy Product Portion
	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max
Nurse	384.85±309.61 0.0-942	308.30±220.52 20-685	83.55±61.34 0.0-300	2.93±1.75 0.14-6.72
Dietitian	425.89±307.68 0.0-1049	389.11±228.30 0.0-800	72.74±39.58 3.0-158	3.16±1.42 0.19-5.93
Significance (p)	0.723	0.082	0.652	0.443

*Significance analysis was carried out with Mann-Whitney U test.

According to Table 4.13, there is no statistically significant difference between the Nursing department and Nutrition and Dietetics department receiving nutritional education, the average daily consumed milk, yogurt, cheese amount and the average portion number of total daily consumed milk and dairy products ($p>0.05$).

A comparison of the relationship between the participant's nutritional education status and body mass index groupings are given in the table below. While there is no obese individual among people who receive nutritional education, the rate of obese individuals who don't receive nutritional education is 3.2 %. While the rate of normal-weight individuals who receive nutritional education is 80.4 %, the rate is 65.3 % among individuals who don't receive nutritional education (Table 4.14).

Table 4.14: Comparison of the Relationship Between Participant's Nutritional Education Status and Body Mass Index Groupings

Nutritional Education Status	BMI Group (kg/m^2)								Significance (p)
	Underweight		Normal Weight		Overweight		Obesity		
	n	%	n	%	n	%	n	%	
Who Received Nutritional Education	16	15	86	80.4	5	4.7	0	0.0	0.003[*]
Who Do Not Receive Nutritional Education	12	12.6	62	65.3	18	18.9	3	3.2	
Total	28	13.9	148	73.3	23	11.4	3	1.5	

*Significance analysis was carried out with Pearson chi-square test

According to Table 4.14, the difference between the participant's nutritional education status and the body mass index grouping is statistically significant ($p<0.05$; $\chi^2 = 23.949$).

Distribution of the body indexes according to the nutritional education levels of the participants is given in the table below. According to this, the BMI of individuals who receive nutritional education varies between 16-27, with an average of 20.77±2.14. The BMI individuals who don't receive nutritional education varies between 15-64, with an average of 21.67±3.06 (Table 4.15).

Table 4.15: Distribution of Body Mass Indexes According to Nutritional Education Status of the Participants

Nutritional Education Status	BMI (kg/m^2)			Significance (p)
	Minimum	Maximum	Avg±SD	
Who Received Nutritional Education	16	27	20.77±2.14	0.018[*]
Who Do Not Receive Nutritional Education	15	34	21.67±3.06	

*Significance analysis was carried out with Mann-Whitney U test.

According to Table 4.15, the difference between the participant's nutritional education and the distribution of body mass indexes are statistically significant ($p<0.05$).

The comparison of the relationship between the body mass index grouping of the participants and the adequacy status of the portion of milk and dairy products consumed daily is given in the table below. According to this, while the rate of overweight and obese individuals consuming 3 portions and below milk and dairy products is 16.4 %, the rate of obese and overweight individuals consuming 3 portions and above milk and dairy products is 5.9 % (Table 4.16).

Table 4.16: Comparison of the Relationship Between the Body Mass Index Groupings of the Participants and the Adequacy Status of the Daily Consumed Milk and Dairy Products Portion Amount

BMI Grouping (kg/m^2)	Adequacy of the Daily Consumed Milk and Dairy Products Portion Amount				Significance (p)
	<3 portions		≥ 3 portions		
	n	%	n	%	
Underweight	17	12.7	11	16.2	
Normal	95	70.9	53	77.9	
Overweight	19	14.2	4	5.9	0.175[*]
Obesity	3	2.2	0	0.0	
Total	134	66.3	68	33.7	

*Significance analysis was carried out with Pearson chi-square test

According to Table 4.16, there is no statistical difference between the body mass index groupings of the participants and the adequacy status of the portion of daily consumed milk and dairy products ($p>0.05$; $\chi^2= 5.51$).

Distribution of the amount of daily consumed milk and dairy products and the number of portions consumed according to the gender of the participants is given in the table below. The amount of yogurt consumed daily varies between 0-800 ml in women and the average is 277.51±217.82. The amount of yogurt consumed daily varies between 6-714 ml in men and the average is 195.14±169.69. The amount of total portion consumed daily varies between 0.19-6.71 ml in women and the average is 2.54±1.57. The amount of total portion consumed daily varies between 0.14-6.72 ml in men and the average is 1.92±1.14 (Table 4.17).

Table 4.17: Distribution of the Amount of Daily Consumed Milk and Dairy Products and the Number of Portions Consumed According to the Gender of the Participants

Gender	Daily Milk Consumption (ml)	Daily Yogurt Consumption (ml)	Daily Cheese Consumption (g)	Total Daily Milk-Dairy Product Portion
	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max	Avg±SD Min-Max
Women	266.94±292.23 0.0-971	277.51±217.82 0.0-800	68.95±51.64 0.0-308	2.54±1.57 0.19-6.71
Men	188.22±277 0.0-1049	195.14±169.69 6-714	56.67±55.82 0.0-300	1.92±1.41 0.14-6.72
Significance (p)	0.250*	0.032*	0.063*	0.015*

*Significance analysis was carried out with Mann-Whitney U test.

According to Table 4.17, there is no statistically significant difference between the genders of the participants and the amount of milk consumed daily ($p>0.05$). The difference between the gender of the individuals and the yogurt they consume daily is statistically significant ($p>0.05$). There is no statistical difference between the gender of the participants and the amount of cheese they consume daily ($p>0.05$). The difference between the gender of the individuals and the total portion amount of milk and dairy products they consumed daily is statistically significant ($p>0.05$).

The table below gives a comparison of the relationship between the participant's gender and the body mass index groupings. According to this, while 73.9 % of the women participants are in the normal weight category according to the BMI grouping, 71.1 % of the men are evaluated as normal weight (Table 4.18).

Table 4.18: Comparison of the Relationship Between Gender and Body Mass Index Groupings of the Participants

Gender	BMI Group (kg/m^2)								Significance (p)
	Underweight		Normal Fat		Overweight		Obesity		
	n	%	n	%	n	%	n	%	
Women	26	16.6	116	73.9	13	8.3	2	1.3	0.019[*]
Men	2	4.4	32	71.1	10	22.2	1	2.2	
Total	28	13.9	148	73.3	23	11.4	3	1.5	

*Significance analysis was carried out with Pearson chi-square test

According to Table 4.18, the difference between the participant's gender and body mass index groupings is statistically significant ($p<0.05$; $\chi^2 =16.945$).

A comparison of the relationship between the gender of the participants and the adequacy status of the portion of milk and dairy products consumed daily is given in the table below. According to this, while 37.6 % of women consume 3 portions and more milk-dairy products, 20 % of men consume this food group in enough (Table 4.19).

Table 4.19: Comparison of the Relationship Between the Gender of the Participants and the Adequacy status of the Portion Amount of Daily Consumed Milk and Dairy Products

Gender	Adequacy of the Daily Consumed Milk and Dairy Products Portion Amount				Significance (p)
	<3 portions		≥ 3 portions		
	n	%	n	%	
Women	98	62.4	59	37.6	0.028[*]
Men	36	80	9	20	
Total	134	66.3	68	33.7	

*Significance analysis was carried out with Pearson chi-square test

According to Table 4.19, the difference between the gender of the participants and the adequacy of the portion amount of milk and dairy products they consumed daily is statistically significant ($p<0.05$; $\chi^2 =4.84$).

5. DISCUSSION AND CONCLUSION

202 students whose ages ranged from 21-25 to an average of 22.37±1.34 participated in the study. Women consist of many of the participants who join the study (77.7 % women, 22.3 % men). The main reason for this is that the number of female students is higher than the male students in the departments participating in the study. The paradigm of the research of students who study at Yeditepe University Graduate School of Health Science, Education Faculty and Faculty of Arts and Sciences between March 15-April 15, 2018, in addition to the Nutrition and Dietetics department students containing the courses Nutrition in Diseases, Nutritional Biochemistry, Mother and Child Nutrition, etc. in the curriculum, and the Nursing department students containing the Principles of Nutrition and Practices courses, the curriculum consists of the students of the Guidance and Psychological Counseling (GPC), Teaching Mathematics, Sociology and History departments that don't contain any nutrition related courses. While 53 % of the participants received nutritional education, 47 % did not receive nutritional education. When the height, weight and BMI values of the students practicing in the research were examined, the average height was 167.41±7.53, while the average weight was 59.89±10.20. The body mass index average was 21.19±2.64. When the individual's BMI data were analyzed according to the World Health Organization (WHO) classifications, 13.9 % were underweight, 11.4 % were overweight and 1.5 % were obese.

Asked to measure the knowledge level of the participants about milk and its products, the answer to the question "Do you know about the nutritional value of milk and the amount of calcium in 1 glass of milk?" was 47.0 % yes. While the answer to the question "Do you know the daily amount of calcium that an adult should take?" was 48 % yes, the answer to the question "Do you have any information about diseases that may occur in calcium deficiency?" was 64.9 % yes.

The relationship between the nutritional education status and the knowledge level about milk and dairy products was also examined in our study. The nutritional value of milk and the amount of calcium in 1 glass of milk are known by 82.2 % of the students who received nutritional education and by very few numbers (7.4 %) of the students who didn't receive nutritional education. The amount of daily calcium that an adult person should get is known by 84.1 % of the participants who received nutritional education, and

by only 7.4 % of the students who didn't receive nutritional education. The diseases that may occur in calcium deficiency are known by almost all the students (96.3%) who received nutritional education, and by only 29.5% of the students who didn't receive nutritional education. In our study, when the nutritional value of milk, the calcium amount that should be taken daily, and the answers given to the questions about the diseases that may occur in calcium deficiency were examined, students who received nutritional education have more information about milk and its products than those who didn't. In the study conducted by Karagözlü et al. (2005) with 113 Engineering Faculty students studying at Celal Bayar University, the number of individuals who answered yes to these 3 questions was significantly higher compared to the general average of Yeditepe University students (37). While 94.95 % of the participants stated that they know the nutritional value of milk and the calcium content in 1 glass of milk, 70.54 % of the participants know about the amount of calcium that an adult should take daily.

In comparison, 100 % of the participants know about the diseases that may occur in calcium deficiency. When the data obtained from this study are compared with our study, there isn't a big difference between the knowledge levels of the individuals who received nutritional education and the students who study at Celal Bayar University. The difference between the knowledge level of the students who didn't receive nutritional education and those students is quite high in our study. The Departments of Engineering Faculty and the curriculum of these departments were examined to investigate the reason for the difference between the group who didn't receive nutritional education and the students who were considered to have no nutritional education in this university. According to this, the inclusion of students in the Food Engineering Department that includes courses such as Food Biochemistry and Dairy Technology in the curriculum of Celal Bayar University explains that these students have more information about milk and dairy products. Contrary to our study, in the study of Demir et al. (2018), there was no statistically significant difference when the information of the students who received and did not receive nutritional education about milk and its products was compared (38).

In this study, regardless of the difference in nutritional education, when student's habits of drinking milk were questioned, 62.4 % of students stated that they regularly consume milk and 37.6 % students stated that they don't have the habit of milk consumption. 37.6 % of the people who don't have a habit of consuming milk stated that

many people (65.8 %) don't consume milk, as they didn't get used to it. In the study conducted by Karagözlü et al. (2005) with 113 Engineering Faculty students, 63.7 % of the participants have the habit of drinking milk, similar to our study, the majority of that 67.5 % as they didn't have a habit of consuming milk, they don't consume milk (37). Furthermore, considering the general average, the number of students who know the questions that measure the knowledge level about milk is higher compared to our study, the milk consumption rates are close to the rates in our study. In the study of Şahinöz et al. (2017) with 120 students, 70 % of the participants stated that they have the habit of drinking milk and 22.5 % of those who don't drink milk showed the reason as they didn't have a habit of consuming milk (39). In order to reach the daily consumption of 3 portions of milk and dairy products, consumption of other dairy products is as important as milk in the nutrition table. The dairy products consumed by the participants rather than milk are yogurt (97 %), cheese (96.5 %), ayran (89.1 %), ice cream (87.1 %), butter (56.9 %) and cream (37.6 %). In the study of Şahinöz et al. (2017), in parallel with our study, yogurt (40.3 %) and cheese (22.7 %) are the first two most consumed dairy products rather than milk (39). Similarly, Turkey Nutrition and Health Survey (TBSA), also according to data 2010, yogurt, ayran and cheese, are the most preferred dairy products across Turkey by 20 and over the age of the individuals (40). When the results of both our study and other studies were examined, the university students generally have the habit of drinking milk and the most preferred dairy products after milk are yogurt and cheese.

According to TNG, individuals should consume 3 portions of milk, yogurt, and cheese daily for adequate and balanced nutrition (3). Consumption of the individuals who consume 3 portions or above of milk or dairy products per day is considered as enough. Although 62.4 % of the individuals in our study said that they have the habit of drinking milk, the number of individuals consuming enough milk is 54.2 %. The reason for this may be that individuals who receive more nutritional education consume 3 portions of milk or dairy products daily. In our study, when the relationship between nutritional education status and the adequacy of milk and dairy products consumption was examined; 54.2 % of the participants who receive nutritional education and only 10.5 % of the individuals who do not receive nutritional education consume 3 portions and above milk-yogurt-cheese in per day. It is assumed that individuals who don't receive nutritional

education consume milk and its products insufficiently, as they claim that there is an additive in milk at the rate of 89.5 %. Similarly, in the study conducted by Tekgül et al. (1992) to examine the nutritional and health status of 60 female students between 18-22 years old who received and did not receive nutritional education, it was observed that individuals who received nutritional education consumed more regular and sufficient milk and yogurt compare to the students who did not receive (41). Demir et al. (2018), also in a study conducted with 200 students between the ages of 22-24 in 2017, in parallel with our study, it was stated that students who received nutritional education consume milk and its products at a higher rate than those who didn't (38). Kowalcze et al. (2016), nutrition habits of the students of the Dietetics department of Sıedlce Natural Scıences and Humanities University were compared with the students in other academic units. In the study conducted with 100 students in total, contrary to our study, it was concluded that the students of the Nutrition department consumed less milk compared to the students in other departments (42). Contrary to our study, in the study of Işıksoluğu (1986) with a total of 320 female students, 163 of whom received nutritional education and 157 students who didn't receive nutritional education, there was no statistically significant difference between the milk consumption of individuals who received and didn't receive nutritional education (43). As it can be understood from the results obtained from our study and other studies, the consumption of individuals receiving nutritional education varies. However, it is high. The reason for the low consumption in some studies, although they receive health education are the factors such as economic factors that affect the milk consumption of individuals receiving nutritional education, personal habits, the odor, and taste of milk.

The amount of milk and dairy products consumed daily by individuals varies. Educational status can be considered as a factor in the differentiation of the milk and the consumption of its products individuals. In our study, the effects of nutritional education status on consumed milk, yogurt, cheese and the number of total daily consumed milk-yogurt-cheese portions by the participants were examined. According to this, individuals receiving nutritional education (410.55±307.59 ml milk, 358.90±227.79 ml yogurt, 76.78±48.86 g cheese and 3.08±1.55 portion milk-dairy product) do not receive nutritional education (67.91±102.03 ml milk, 146.83±110.25 ml yogurt, 54.31±54.57 g cheese and 1.63±1.16 portion milk-dairy product) are statistically highly significant compared to their average daily consumption. Although the difference between the

amount of milk and yogurt consumed daily by individuals with and without nutritional education is quite high, the difference between the consumption of cheese is lower. Sağlam et al. (1996) in a study conducted with 153 students studying at Ankara University Faculty of Education, the consumption of cheese was higher than milk and yogurt consumption, like the group who don't receive nutritional education in our study (44). Although this situation, milk and yogurt are offered as an additional option besides main / snacks, is thought to be caused by the consumption of cheese almost every day, which is indispensable for the breakfast culture in our society and has many varieties.

When the sections included in the study are examined one by one, there is not a big difference between the daily milk and dairy products consumption amounts of the Nursing and Nutrition and Dietetics departments receiving nutrition education. It is thought that this is due to the importance of emphasizing the importance of milk as the only food source for the first year of life in courses such as Women's Health and Children's Health. However, the students studying in the Nursing department do not receive intensive nutritional education as much as students of Nutrition and Dietetics.

When the BMI distributions of the individuals according to their nutritional education status were examined, the individuals who receive nutritional education have an average of 20.77±2.14, while this rate is 21.67±3.06 for the individuals who don't receive nutritional education. The difference of 1 unit between the mean body mass indexes of individuals who received / not receive nutritional education was found statistically significant. Considering the relationship between nutritional Education Status and BMI groups, while 80.4 % of individuals who receive nutritional education are normal weight and 4.7 % of those are overweight and obese, 65.3 % of individuals who don't receive nutritional education are normal weight and 22.1 % are overweight and obese. According to these data obtained from our study, individuals who received nutritional education had a statistically lower BMI than those who didn't, and that the number of individuals with normal weight was higher. This result is due to the awareness of high BMI and health problems caused by the high BMI of the individuals who received nutritional education. In the study of Işıksoluğu (1986), the number of obesities in the individuals who receive nutritional education is 17.2 %, while this ratio is 27.4 % in those who do not receive nutritional education, in parallel with our study, it was emphasized

that there is a statistically significant relationship between receiving nutritional education and low BMI. Like the study of Demir et al. (2018), the frequency of obesity was found to be low in students receiving nutritional education (38). In addition in our study, individuals who don't receive nutritional education consume more less milk and dairy product compared to those who receive and due to the higher rates of overweight and obesity, it is suggested that the weight gained by these individuals may be due to the consumption of more unhealthy carbohydrates instead of milk and dairy products that provides repletion. However, the fact that there wasn't a statistically significant relationship between BKI groups and adequate milk and dairy consumption status (3 portions and above / 1 day) in our study suggests that general nutritional information plays a role in individual's BMI rather than consuming milk and dairy products. Unlike our study, as a result of a study performed by Fıorıto et al. (2006) with 177 girls at the average age of 11.3±0.3 reported that the participants who consumed 3 portions and above milk and dairy products received more energy and being underweight and their body fat is lower compared to those who didn't consume (45). In contrast to our study also in another study, Scwingshockl et al. (2016) observed that the number of participants varied between 76 and 120.077 and the raised amount of yogurt consumed as a result of their work in North America and Europe, which was followed over a period of 9 months to 23 years, decreased the risk of obesity, waist circumference and body weight (46). Contrary to our study, Zemel et al. (2005) concluded that yogurt intake increased fat loss as a result of randomized control studies that they gave a 500-kcal diet for 12 weeks and divided into 2 groups (400-500 mg/day for 16 individuals and 1000 mg/day calcium for 18 individuals) (47).

When the male and female individuals were evaluated in terms of gender, the female (116) individuals who participated in our study were statistically more normal weight than the male (32). The rate of an overweight individual is 8.3 % in women and 22.2 % in men. TSI's "Turkey Health Research" studies that explain the context in obesity rates in individuals over age 15 are likewise observed that the male individuals in the overweight rate were slightly higher compared to women (48). The rate of obese individuals is 1.3 % in women and 2.2 % in men in our study. In our study, the reason why it is thought that men are more overweight and obese compared to women, the number of female participants is higher than men. Studies and results with the obesity

data of women and men in our country in chronological order are as follows; Satman et al. (1997-1998) realized with 24788 participants that 13708 women and 11080 men aged 20 years and over, when the data of Turkey Obesity and Hypertension Diabetes Epidemiology Study 1 (TURDEP-I) was examined obesity rates were 13 % in men and 30 % women (49), Yumuk et al. (1999-2000) realized with 23888 participants that 6969 women and 16919 men again aged 20 years and over, Turkey Adult Heart Disease and Hypertension Research and Risk Factors Study (TOHTA) with 24.3% of the women obesity data was 14.4 % in men (50), Onat et al. (2000-2003) Turkey Adult Heart Disease and Hypertension Research and Risk Factors Study (TEKHARF) is conducted with individuals age 30 and over with 44.2 % of the women obesity data was 25.2 % in men (51), and Satman et al. (2010) realized according to the results of TURDEP II with 26499 individuals that 16696 women and 9327 men, aged 20 years and over, the obesity data is 44 % in women and 27 % in men (52). These studies show that obesity data raises in both women and men in our country. When the studies conducted in our country are considered, unlike our study, the obesity rates in women are higher than men. The main reason can be shown that women live in a more sedentary life since women work mostly at desk jobs or be a housewife around our country, while men work in jobs that require more power and as men's metabolism works faster than women's.

Regardless of the nutritional education status, when the milk and dairy consumption habits of individuals were examined according to their gender, women (37.6 %) consumed more milk and dairy products than men (20 %). The reason may be the male individuals who participated in the study are less than females or females pay more attention to healthy nutrition. In our study, there wasn't any statistically significant difference found between the daily average milk consumption of women (266.94±292.239) and men (188.22±277). Similarly, in a 1000 people study that Onurlubaş et al. (2016) research the factors that affect the milk and the consumption of its products, there wasn't any significant difference between gender and milk consumption (53). Unlike our study, in a study conducted by Karagözlü et al. (2005), milk consumption of the male students is statistically higher compared to female students (37). Again, unlike our study, in a study conducted by Şahinöz et al. (2017), while adequate milk consumption rate of female and male students is close to each other, the milk consumption rate of female students is slightly higher (39). Unlike our study, in a

study conducted by Ayhan et al. (2018) with 588 university students who stay in a dormitory in Ankara, it is observed that female (60.7 %) students consumed more milk than male (51.7 %) students. When the relationship between gender and consumption rates of dairy products except milk was examined, the average daily yogurt consumption rate of women (277.51±217.82) compared to men (195.14±169.69) was statistically highly significant. The reason may be the number of female individuals who participate in our study is more compare to males and as females give more importance to their health. Similarly, also in a study conducted by Hasipek et al. (2002) with 200 students that 50 % of girls and 50 % of boys staying in the dormitory, girls (54 %) consumed more yogurt than boys (43 %) (55). In the study conducted by Onurlubaş et al. (2016), the yogurt consumption rate of women is 51.8 % and men are 48.2 %, unlike our study, there wasn't any significant relationship between the gender of individuals and yogurt consumption rate (53). Ayhan et al. in the study conducted by (2018) with 282 boys and 306 girls, it was concluded that girls had an average daily rate of 128.00 ml and boys were 96.00 ml, and contrary to our study, there was no significant relationship between gender and yogurt consumption (54). When the relationship between the consumption of cheese, which is another dairy product except for milk and yogurt, and the gender of individuals are examined; the difference between the participant's gender and the average daily cheese consumption rate was found to be statistically insignificant. Unlike our study, Hasipek et al. (2002) concluded that the difference between gender and cheese consumption was statistically significant (55).

According to the data obtained from our study, the knowledge level about the main nutrients such as carbohydrates, protein, fat, and milk and dairy products which have an important place in vitamins and minerals, and the consumption amount of this food group are higher than those who don't receive nutritional education.

Furthermore, individuals who receive nutritional education have a lower body mass index and more tend to be in normal weight.

To increase the consumption of milk and its products and to learn more about its importance for human health in departments that don't receive nutritional education, training can be organized, or various documents can be distributed. In order to see the consumption difference between milk and its products more clearly among these groups, it is necessary to strengthen the subject by reaching larger sample groups.

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7. APPENDICES

7.1. Appendice 1. Survey Used in Research

YEDITEPE UNIVERSITY

GRADUATE SCHOOL OF HEALTH SCIENCES

NUTRITION AND DIETETICS DEPARTMENT

Dear participant,

There are some questions below related to milk and dairy products consumption habit, as well as your personal characteristics. Answering the questions completely is very important for the reliability of the results. Your answers to the questions we asked will not be kept confidential and shared with anyone. Thank you in advance for your contribution and cooperation.

1) Your age:………………..

2) Your gender

    1) Woman   2) Man

3) Your length.....................

  Your weight........................

4) Your department: ....

5) What is your grade:…………………..

6) Do you work?

    1) Yes   2) No

7) If yes, your job is:…………………

8) How many hours a day do you work? ……………

9) Are you staying with your family?

    1) Yes 2) No

10) If no, are you staying at home or dormitory:........................

11) Do you have a habit of drinking milk? (If your answer is yes, go to question 13.)

1) Yes 2) No

12) what is the reason if you don't drink milk?

1) Disturbs

2) Smell bad

3) I have no habit

13) Why do you consume milk and its products?

1) I think it is nutritious

2) As the protein I need to take daily meets some of my calcium and mineral needs

3) I like its taste

4) Habit

5) Because it is cheap

14) When did you gain your habit of drinking milk?

1) Preschool

2) School term

3) Adulthood

4) After receiving nutritional education

15) Is the amount of milk you drink right now more compared to childhood?

1) Same 2) More 3) Less

16) What is the dairy product you consume except milk?

1) Cheese

2) Yogurt

3) Butter

4) Ayran

5) Ice cream

6) Cream

17) What is your preferred milk type?

1) Pasteurized /UHT 2) Street milk

18) How do you find the prices of milk and dairy products?

1) Cheap 2) Expensive 3) Convenient 4) I have no idea

19) In which fat do you prefer milk and its products?

1) 1) Fully-fat 2) Semi-skimmed 3) Skimmed

20) Do you apply any heat treatment before consuming milk?

1) I boil.   2) I heat slightly. 3) I drink cold. 4) Cold in summer, heat slightly in winter.

1) Do you think that there is an additive in milk and dairy products?

1) Yes 2) No

22) At what age should milk be consumed?

1) Childhood

2) Adulthood

3) At any age

23) What is the most important tool that promotes milk consumption for you?

1) Seminars and meetings

2) Family and family habits

3) Radio, TV and gazette

24) Are advertisements and propaganda work, which are one of the effective tools in promoting milk consumption, enough?

1) Adequate 2) Not enough 3) I have no idea

25) Do you think milk is fattening?

    1) Yes 2) No

26) Do you have any idea about the nutritional value of milk and the amount of calcium in 1 glass (200ml) milk?

    1) Yes

    2) No

27) Do you know the daily amount of calcium that an adult should take?

    1) Yes

    2) No

28) Do you have any information about diseases that may occur in calcium deficiency?

    1) Yes

    2) No

Food Frequency Questionnaire (FFQ)

NUTRIENTS	Code	Consumption		Consumption frequency								Amount	
		Yes	No	Every meal	Every day	Once a week	2-3 times a week	3-4 times a week	5-6 times a week	2-3 times a month	Once a month or less	Measure	Weight
Milk and dairy production													
Milk-fully fat													
Milk-semi skimmed													
Milk-skimmed													
Yogurt-fully fat													
Yogurt-semi skimmed													
White cheese (..........)													
Cheese (.............)													
White Cheese (.............)													
Ayran													

***INDICATE THE DIMENSION SECTION IN 1 SLICE, 1 GLASS, 1 BOWL.

1 slice = 60g

1 cup = 240ml

1 bowl = 200g

7.2. Appendice 2. Ethics Committee Approval Form

T.C. YEDİTEPE ÜNİVERSİTESİ

Sayı : 37068608-6100-15-1445   15/02/2018
Konu: Klinik Araştırmalar
Etik kurul Başvurusu hk.

İlgili Makama (Burcu Bilici)

Yeditepe Üniversitesi Hastanesi, Biyokimya Anabilim Dalı Prof. Dr. Serdar Öztezcan'ın sorumlu olduğu **"Yeditepe Üniversitesi'nde Beslenme Eğitimi Alan ve Almayan Öğrencilerin Süt ve Süt Ürünleri Tüketim Alışkanlıklarının Karşılaştırılması"** isimli araştırma projesine ait Klinik Araştırmalar Etik Kurulu (KAEK) Başvuru Dosyası (**1417** kayıt Numaralı KAEK Başvuru Dosyası), Yeditepe Üniversitesi Klinik Araştırmalar Etik Kurulu tarafından **14.02.2018** tarihli toplantıda incelenmiştir.

Kurul tarafından yapılan inceleme sonucu, yukarıdaki isimi belirtilen çalışmanın yapılmasının etik ve bilimsel açıdan uygun olduğuna karar verilmiştir (**KAEK Karar No: 806**).

Prof. Dr. Turgay ÇELİK
Yeditepe Üniversitesi
Klinik Araştırmalar Etik Kurulu Başkanı

7.3. Appendice 3. Curriculum Vıtae

Personal Information

Name	Burcu	Surname	SARA
Place of Birth	İstanbul	**Date of Birth**	04.13.1992
Nationality	T.C	**ID number**	25808549056
E-mail	dyt.burcu37@gmail.com	**Phone**	5423485812

Education Status

Degree	Area	Name of the Institution Graduated	Graduation Year
Postgraduate			
Master	Nutrition and Dietetics	Yeditepe University	
Bachelor	Nutrition and Dietetics	Yeditepe University	2015
High school		Başakşehir High school	2010

Known Foreign Languages	Foreign Language Exam Grade (#)
English	

#If there are more than one exam (KPDS, ÜDS, TOEFL; EELTS etc.), all results must be written.

Work Experience (Sort from now to past)

Task	Institute	Time (Year - Year)
Dietitian	Esenyurt Reyap Hospital	2016 October-2017 October
Dietitian	Adanur yemek	2016 February-2016 October

Computer knowledge

Program	Ability to use
Microsoft Office	Advanced

*Evaluate as advanced, good, medium, weak

Scientific Studies, Articles published in journals included in SCI, SSCI, AHCI indexes

Articles published in other journals

Papers presented at international scientific meetings and published in the proceedings book (*Proceedings*)

Publications in the proceedings of refereed conference/symposium

Other (Projects Served/Certificates/Awards)