T.C. YEDITEPE UNIVERSITY
INSTITUTE OF HEALTH SCIENCES
DEPARTMENT OF NUTRITION AND DIETETICS

DEFINING THE LEVEL OF NUTRITION KNOWLEDGE OF THE BANK EMPLOYEES WHO HAS NOT RECEIVED ANY NUTRITION EDUCATION BEFORE

MASTER THESIS

SİMGE ÇOLAKOĞLU

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ONAY

Bu tez Yeditepe Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğinin ilgili maddeleri uyarınca yukarıdaki jüri tarafından uygun görülmüş ve Enstitü Yönetim Kurulu'nun 31/08/2018 tarih ve 2018/15-04 sayılı kararı ile onaylanmıştır.

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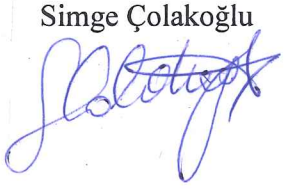
Sağlık Bilimleri Enstitüsü Müdürü

DECLARATION

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree except where due acknowledgment has been made in the text.

27.12.2018

Simge Çolakoğlu



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LIST OF ABBREVIATONS

WHO: World Health Organization

BMI: Body Mass Index

FAO: United Nations Food and Agriculture Organization

TURKSTAT: Turkish Statistic Institution

NHANES: National Health and Nutrition Examination Survey

EU: European Union

TEKHARF: Turkey Adult Cardiac Health and Hypertension Research and Risk Factors

DM: Diabetes Mellitus

TURDEP-I: Turkey Diabetes Epidemiology Study-1

TURDEP-II: Turkey Diabetes Epidemiology Study-2

GI: Glycemic Index

RDA: The Recommended Dietary Allowance

SPSS: Statistical Package for the Social Sciences

DRIs: Dietary Reference Intakes

NTD: Neural Tube Defects

TPP: Thiamine Pyrophosphate

PLP: Pyridoxal Phosphate

GNKQ: General Nutrition Knowledge Questionnaire

AIs: Adequate Intakes

EAR: Estimated Average Requirement

USDA: United States Department of Agriculture

ADA: American Dietetic Association

ABSTRACT

Çolakoğlu S., Defining The Level Of Nutrition Knowledge Of The Bank Employees Who Has Not Received Any Nutrition Education Before. Yeditepe University Health Sciences Institute, Department of Nutrition and Dietetics Master's Thesis, Istanbul, 2018.

Nutrition; the use of nutrients in the body for growth, the maintenance of life and the protection of health. For this reason, adequate and balanced supply of energy and nutrients is necessary for the health of the individual. It has been scientifically proved that growth and development are prevented and health is impaired if none of these items are taken or taken more or less as needed. Each individual has macro and micronutrient items he or she needs to take for their needs during the day. While these are protein, carbohydrate, fat as a macro nutrient; vitamins and minerals as micronutrient. There is a strong relationship between nutrition and some important diseases.

Metropolitan cities are based on ready-made meals in the form of nutrition of bank employees living in the cities. In terms of food environment, food consumption consists of high calorie and high fat and sugar ratio foods. The choice of food for the employees of the bank is influenced by age, gender and education levels, as well as the socio-economic status of the working hours. This study determines the nutritional knowledge levels of bank employees who have not received nutritional counseling in the general directorate of a private bank in Istanbul. Sixty-four men (n = 35) and women (n = 29) participated in the study.

The study was conducted between April 2017 and May 2017 with 64 bank employees, 35 (54,7%) men and 29 (45,3%) women. The average age of the bank employees is 30,25. 59,4% are married and 40,6% are unmarried. The majority of the participants (96,9%) received a university or postgraduate degree. Participants' body mass index (BMI) measurement was 26,613 kg/ m^2. 95,3% of participants are working full-time.

***Key words**: nutrition, nutrition knowledge, demographics, nutrition education*

ÖZET

Çolakoğlu S., Daha Önce Beslenme Eğitimi Almamış Banka Çalışanlarının Beslenme Bilgi Düzeylerinin Belirlenmesi. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Anabilim Dalı Yüksek Lisans Tezi, İstanbul, 2018.

Beslenme; büyüme, yaşamın sürdürülmesi ve sağlığın korunması için besin öğelerinin vücutta kullanılmasıdır. Bunun için de, enerji ve besin öğelerinin yeterli ve dengeli olarak sağlanması bireylerin sağlıklı olabilmeleri açısından gereklidir. Bu öğelerden herhangi biri alınmadığında ya da gereğinden az ya da çok alındığında büyüme ve gelişmenin engellendiği, sağlığın bozulduğu bilimsel olarak ortaya koyulmuştur. Her bireyin gün içerisinde kendi ihtiyaçları için alması gereken makro ve mikro besin öğeleri vardır. Bunlar makro besin öğesi olarak protein, karbonhidrat, yağ iken; mikro besin öğesi olarak vitaminler ve minerallerdir. Beslenme ve bazı önemli hastalıklar arasında güçlü bir ilişki bulunmaktadır.

Metropol şehirlerde yaşayan banka çalışanlarının beslenme şekli hazır gıdalara dayanmaktadır. Gıda çevresi bakımından, besin tüketimleri yüksek kalorili ve fazla yağ ve şeker oranına sahip gıdalardan oluşmaktadır. Banka çalışanlarının besin seçimi çalışma saatlerinin yoğunluğuna, sosyo-ekonomik durumuna bağlı olmanın yanında yaş, cinsiyet ve eğitim seviyelerinden etkilenmektedir. Bu çalışma İstanbul'da özel bir bankanın genel müdürlüğündeki daha önce beslenme danışmanlığı almamış banka çalışanlarının beslenme bilgi düzeylerinin belirlemektedir. Çalışmaya bankada çalışan erkek (n=35) ve kadın (n=29) toplamda 64 kişi katılmıştır.

Çalışma Nisan 2017 ve Mayıs 2017 arasında toplam 64 banka çalışanı, 35 (% 54,7) erkek ve 29 (% 45,3) kadın ile gerçekleştirilmiştir. Banka çalışanlarının yaş ortalaması 30,25'dir. % 59,4'ü evlidir ve evlenmeyenlerin yüzdesi % 40,6'dır. Katılımcıların çoğunluğu (% 96,9) bir üniversite veya yüksek lisans derecesi almıştır. Katılımcıların vücut kitle indeksi (BMI) ölçümü 26,613 kg/ m^{2}'dir. Katılımcıların %95,3'ü tam zamanlı çalışmaktadır.

Anahtar kelimeler: *beslenme, beslenme bilgisi, demografi, beslenme eğitimi.*

1.INTRODUCTION AND AIM

As it is known, inadequate and unbalanced diet leads to various diseases and many diseases and health problems have negative effects on nutrition. In order to reduce or eliminate these negative effects, it is necessary first to present the situation and problems with scientific evidence (1).

The healthy life of the individual and the society, the development of the economic direction depends on the health of the individuals who constitute itself. Health is based on adequate and balanced nutrition. Adequate and balanced nutrition is also defined as healthy nutrition. In this direction, it is necessary to aim at preserving, improving and developing the health of all individuals, increasing the quality of life and adopting the forms of healthy life (healthy eating and physical activity habits) throughout life. Additionally, it is important to minimize or eliminate nutrition problems (protein-energy deficiency, iron deficiency anemia, iodine deficiency diseases, rickets, tooth decay, obesity etc.) and nutritional problems that impair existing and quality of life, chronic diseases related to nutrition (coronary heart diseases, hypertension, some types of cancer, diabetes, osteoporosis, etc.), the improvement of the living conditions and the improvement and improvement of the environmental conditions are very important. The identification of the nutritional status of an individual is an indication of the extent to which nutritional requirements are met. Providing balance between nutrient intake and nutrient requirements is important for optimal health. The intake of nutrients is based on the individual's usual food consumption. The economic situation, eating habits, emotional state, climate, cultural structure, various diseases and appetite affect food intake. The nutritional requirement is determined by factors such as the maintenance of wellness, growth and development, pregnancy and lactation, stress, infections, chronic or acute illnesses, fever, etc (2).

It is necessary to find nutrition, food consumption and health data for that country in order to create national nutrition, nutrition plans and policies that will provide a sufficient and balanced nutrition of a society. For this purpose, regular "Nutrition, Health and Food Consumption Research" is very important for every country (1,2).

Improving dietary habits is a societal, not just an individual problem. Therefore it demands a population-based, multisectoral, multi-disciplinary, and culturally relevant approach (3). However, the widespread prevalence of obesity is poorly explained by individual-level psychological and social correlates of diet and physical activity behaviors (4).

When the changes in food consumption trends are examined over the years, consumption of bread, milk-yoghurt, meat and meat products, fresh vegetables and fruits decreases; legumes, eggs and sugar consumption increased. As a result, although there is no significant difference in the amount of total fat consumption, the consumption of vegetable oil is increased (1).

An unhealthy diet is one of the major risk factors for a range of chronic diseases, including cardiovascular diseases, cancer, diabetes and other conditions linked to obesity. Specific recommendations for a healthy diet include: eating more fruit, vegetables, legumes, nuts and grains; cutting down on salt, sugar and fats. It is also advisable to choose unsaturated fats, instead of saturated fats and towards the elimination of trans-fatty acids (3).

"By 2015, people in the community must adopt healthy lifestyles (Goal 11) and all sectors should adopt their health-related responsibilities by 2020" (Goal 14) in the World Health Organization's (WHO) 21st Century Health for All: 21 Goal Declaration (1).

Briefly, the aim of the study is to determine the average amount of energy and nutrient intake of the community, inadequate and excessive intake levels, according to demographic characteristics such as age and gender.

2. GENERAL INFORMATION

2.1. Nutrition and Importance

The word nutrition first appeared in 1551 and comes from the Latin word nutrire, meaning “to nourish.” It is defined as the sum of all processes involved in how organisms obtain nutrients and metabolize them. Also, the final process is to use organisms to support all the processes of life (6).

The meaning of nutrition is the intake of nutrients necessary for the body (7). Another definition of nutrition; it is necessary to consciously take in adequate quantities and at appropriate times the nutritional requirements of the body in order to maintain, develop and improve the quality of life. Healthy nutrition is the key point for protection of health and prevention of diseases (5).

Also nutrition, one of our most primary needs, the most basic need of us, is described as utilization of food by the body for the purpose of sustaining life and preserving health. Healthy nutrition, on the other hand, is adequate and balanced intake of all nutritional elements in accordance with one’s age group and physiological condition (8). Like healthy nutrition, good nutrition that is an adequate, well balanced diet combined with regular physical activity is a cornerstone of good health (7).

If nutrients are not consumed at the level of the body's needs, "poor nutrition" occurs due to the lack of sufficient energy for body tissues. Besides, due to the excessive intake of nutrients and fat accumulation because of the overfeeding, energy needs being met by unhealthy foods, or improper cooking methods lead to "unbalanced nutrition" (5). Poor or unbalanced nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity (7,9). Many metabolic disorders such as obesity, cardiovascular diseases, hypertension, hypercholesterolemia and diabetes occur in the organism (9). Therefore, human health is negatively affected as a whole as a result of insufficient and unbalanced nutrition(5).

As a result of this, nutrition by the World Health Organization (WHO) has been defined as the intake of nutrients according to what the body needs (7).

As well as providing a variety of nutrients in a healthy diet; it is also important to complete the percentages of energy from carbohydrates, proteins and fats. It is suggested that in healthy diets, 45-60% of daily calories must be from carbohydrates, 20-35% from fat, and 10-20% from proteins (5).

2.2. Obesity

According to the definition made by the World Health Organization (WHO), obesity is excessive or abnormal fat accumulation or excess body weight for height (10). T. C. The Ministry of Health "is defined as a chronic disease that is explained by the fact that the amount of energy consumed by the nutrients in the body is caused by the excess of the energy consumed and the body fat mass is increased compared to the lean body mass. Additionally; obesity is generally defined as the weight of an individual being 20% greater than the ideal body weight (11).

Obesity is a complex, multifactorial and preventable disease that leads to many metabolic diseases such as diabetes, hypertension, cardiovascular diseases and atherosclerosis(12). Otherwise, obesity can causes depression, disability, cancers and mortality. High calorie diet intake has increased obesity in the last 30 years due to urbanization, economic developments, mechanical transport, industrialization, increased sedenter life and increased processed foods(13). Otherwise, obesity occurs an imbalance of energy intake and expenditure (14,15).

Besides, severeal internal and external factors, including demographic, genetic, environmental, psychological and behavioral factors, have an impact on obesity. If both parents are obese, their chances of being obese are 80%; if only one of the parents is obese, it is 50% (16).

Eating habits such as eating fast, eating too much, chewing less are important factor to obesity (17). As a result of modern life, choice of nutrient-rich, low-fiber, fiber-rich food rich in fat, sodium, simple carbohydrates and refined sugar affects obesity (18).

Factors such as mechanization in business life, tools to facilitate domestic work, use of cars, and the introduction of TV and the internet into our lives lead to a decrease in physical activity (19). Surveys show that obese and non-obese individuals receive food in close quantities, but the physical activity of obese individuals is much less (20). As a result of the studies done, the duration of physical inactivity increases as the duration of TV watching increases. This condition considerably affects the weight gain of the person. In obese female individuals, the incidence of gall bladder cancer, uterus, breast and ovarian cancer is higher. In obese male individuals, the risk of colon, rectum and prostate cancer is higher (21).

It is now more obese than a third of the world population. In 2030, approximately 38% of the world is thought to be overweight and 20% obese. By 2030, about 3.3 billion people, or about 58% of the world's population, are expected to be obese (13).

While 1.4 billion adults are overweight in 2008, half a billion adults are also known to be obese (22). According to the National Health and Nutrition Examination Survey (NHANES) 2009-2010 data, 69.2% of adults aged 20 years and over are known to be overweight or obese in the US (23). Classify by NHANES 2005-2010 data, 34.6% of adults in America over 20 years old were obese while 7.2% of them showed depressive symptoms within the last two weeks (24).

According to the 2014 statistics, 1.9 billion of the world's population are overweight and 600 million of the world’s population are obese (25). In the European Union (EU) in every year, 300,000 people die due to disease caused by overweight and obesity (26).

The TURDEP-I study, which was conducted in 540 centers in 1997-98 and examined 24788 people over 20 years of age, reported that the prevalence of obesity was 30% in women, 13% in men, and 22,3% in general. 12 years after the TURDEP-I study, in the TURDEP-II study conducted with the participation of 26500 adults in the same centers, the obesity rate in women was 44%, 27% in males and 35% in the general population. Results of TURDEP-II were found to increase to 31,2% in the Turkish

population when the TURDEP-I population was adjusted to the age group and gender distribution, by 40% from 22,3% of the prevalence of obesity (27).

World Health Organization's obesity classification, body mass index (BMI) is widely and easily used to determine obesity. Body Mass Index (BMI) is a person's weight in kilograms divided by the square of height in meters (BMI = kg / m^2). BMI is used to estimate body weight according to height, does not give an information on adipose tissue distribution. In addition, anthropometric measurements such as waist / hip ratio, waist circumference measurement, skin fold thickness are also used in determining obesity (28).

Under the statistics published by TURKSTAT (Turkish Statistic Institution) in 2015 in Turkey, the obesity rate in 2014 has achieved 19,9%. This ratio is 24,5% for women and also, 15,3% for males. The proportion of overweight is 29,3% for females, 38,2% for males and 33,7% of the general population. Furthermore, the obesity rate is increasing day by day (29). According to a statement made by the Minister of Health on January 29, 2017, a third of the Turkish population is still obese and is among the 10 worst countries in the world in obesity rates in Turkey (30).

2.3. Diabetes Mellitus

Diabetes is as Diabetes Mellitus (DM), insufficient production of insulin by the pancreas with the shortest definition or resulting in the inability to use the body's insulin effectively and with a decrease in chronic and insulin-producing cells, resulting in an abnormal increase in blood sugar. Insulin hormones are not produced or affected in diabetic patients. Therefore, the sugar (glucose) can not be transported into the cell, it increases in blood and the blood sugar increases (hyperglycemia). This is called diabetes (31).

Diabetes is divided into two groups in scientific sources. The primary type 1 diabetes is the pancreatic beta cells responsible for insulin production are impaired and there is absolute insulin deficiency. Insulin deficiency needs to be met by daily injections. Type 1 diabetes insulin treatment is absolutely necessary from the very

beginning and these patients can not survive if they do not use insulin. Type 1 diabetes are 5-10% of diabetic patients. Type 2 diabetes is a result of decreasing insulin secretion over time and Type 2 diabetes covers more than 90% of total diabetes cases (31). Shortly, type 2 diabetes, which occurs when the body can't make enough insulin or can't properly use the insulin it makes (32).

Diabetes is a metabolic disease that can cause life-threatening dangers in all organ system, nerves, eyes, heart, kidney and decrease the quality of life. Diabetes, which is one of the most commonly diagnosed chronic diseases in many countries today, is becoming increasingly widespread. In Turkey, the prevalence of diabetes (over 20 years) was found to be 7,2% (TURDEP-I) (33).

In a cross-sectional and community-based study (TURDEP), the prevalence of diabetes was found to be 7,2% (male: 6,2%; female: 8%) in 24 788 individuals over twenty years of age (1).

In Turkey, 2 study were done which are known that TURDEP-I and TURDEP-II. TURDEP-I (1997-98); the age-standardized diabetes prevalence to the TURDEP-I population was 13.7%. TURDEP-II; The prevelance of diabetes was 16.5% (new 7.5) translating to 6.5 million adults with diabetes in Turkey. It was higher in women than men and it was higher in the urban than the rural population. TURDEP-II (January 2010- June 2010); compared to TURDEP-I, the rate of increase for diabetes 90%, obesity 40%, central obesity 35%, but hipertension decreased by 11% during the last 12 years. A low level of physical activity due to traditional and cultural attitudes may also contribute to a higher rate of obesity and diabetes in women than men in TURKEY.As a result, diabetes has rapidly become a major public health challenge in TURKEY (34).

About 8% of the population have diabetes and about 19% are in a pre-diabetic state. Diabetes is the 7th leading cause of death in the United States. Associated with diabetes are 2-4 fold higher risk of stroke and heart disease. Also, 75% of patients with diabetes show an elevated blood pressure. About 20,000 new cases of blindness are reported each year in USA due to diabetes. Diabetes also accounted for almost half of the kidney failures reported in 2005. Around 60-70% of the people with diabetes have

mild to severe nervous system damage. Another complication is amputation, more than 60% of nontraumatic amputations were due to diabetes (35).

Until the end of 2009, diabetes population in the world was 285 million. However, this number is expected to reach up to 438 million in 2030 (36). In 2007, there were 220 million diabetes patients in the world according to the estimations of World Health Organization (WHO). If not any precautions are taken, this number as informed is expected to be doubled in 2030 (37).

Turkey Adult Cardiac Health and Hypertension Research and Risk Factors (TEKHARF) and in the study prevalence of 8,4% (M: 8,1%; N: 8,9%) were found (Yumuk et al, 2005). According to TURDEP-II, the frequency of diabetes in Turkish adult population has reached to 13,7% (1).

2.4. Essential Nutrients or Nutritional Elements (Macronutrients, Micronutrients and Water)

Nutrients are that have two subgroup as essential or non-essential molecules or minerals derived from foods used by cells in the body to complete several function. An essential nutrient is a nutrient that the body cannot synthesize on its own. Also, sometimes essential nutrients are not to an adequate amount in the body and must be provided by the diet. In addition to this, if you do not ingest them, you will develop deficiencies. These nutrients are necessary for the body to function properly. The six essential nutrients include carbohydrates, proteins, fats, vitamins, minerals and water (38). In other words, the body's needs for macronutrients, micronutrients and water relate to metabolic requirements and the role these nutrients play in the forming compounds (39).

Macronutrients are called energy yielding nutrients because they are consumed in large amounts in the diet. Macronutrients are important energy yielding nutrients that are carbohydrates, lipids (in another name is fats) and proteins. They provide energy, nitrogen and amino acids. Also, they are really important for human tissues and metabolism (38). For example, when we eat food like bread, meat, butter etc. then we are providing our body with energy and nutrients. Every foods gives us energy and it is

measured by bomb calorimeter. Bomb calorimeter produces calories or kilocalories. The most energy rich of the nutrients is lipids, which contains 9 calories in each gram. However, proteins and carbohydrates contain 4 calories in a gram (38).

Micronutrients are nutrients that are represented by vitamins and minerals. They are required in small quantities for survival (40), so we must consume small amounts each day. Unlike macronutrients, micronutrients do not provide energy to the body (39). Also, vitamins and minerals are the fourth and fifth classes of nutrients (38). All vitamins and minerals are used as regulators and assist in all body processes. They are responsible for growing new tissues, digesting food, moving muscles and disposing of wastes. They help shore up bones, heal wounds and bolster your immune system. They also convert food like carbohydrate, fat and protein into energy, and repair cellular damage (38,40). In addition, some vitamin deficiencies can cause some diseases (40).

For example;

- Lack of vitamin C causes bleeding gums and scurvy. It occurs to eat less fresh vegetables and fruits.
- Some people become blind from vitamin A deficiency. Vitamin A sources is beta carotenoids such as carrot, apricot, peach, pumpkin, squash, orange.
- A deficiency in vitamin D can cause rickets, a condition marked by soft, weak bones that can lead to skeletal deformities such as bowed legs.

Water is also sixth nutrients in the essential nutrients.

2.4.1. Carbohydrates

Carbohydrates, organic compounds, are made of hydrogen, oxygen and carbon atoms held together by energy containing bonds. They are the most important source of energy for our body (9).

Carbohydrates are a type of macronutrient that are found in many foods and beverages. Carbohydrates have a rightful place in our diet because carbohydrates are one of the main types of nutrients (41). Also it is an important part of a healthy diet (42).

Carbohydrates are divided into two subgroups that are called simple carbohydrates and complex carbohydrates. This grouping depens on their chemical structures (43). Carbohydrates consist of sugars therefore simple carbohydrates include single sugar units which are referred to simple carbohydrates. The single sugar units that is a molecule containing six carbon atom, together oxygen and hydrogen atoms (43). Complex carbohydrates are made up of sugar molecules that are strung together in long, complex chains (44). In other words, long chain sugar units are called complex carbohydrates and they contains starch and fiber.

Separeting carbohydrates into simple and complex, however, does not account for the effect of carbohydrates on blood sugar and chronic diseases such as diabetes mellitus, hyperglicemia and hypoglicemia, insülin resistance etc... To clarify different kinds of carbohydrate-rich foods directly affect blood sugar, the glycemic index was developed and is considered a better way of categorizing carbohydrates, especially starchy foods.

GI (Glycemic Index), which is defined as the potential to raise blood sugar levels of carbohydrate foods, is expressed as a percentage of the blood glucose area produced by a test food containing 50 g carbohydrate consumed by the same individual within two hours compared to the blood glucose area produced by a reference food containing the same amount of carbohydrate (45).

Glycemic index; food is modified during preparation, cooking and storage of nutrients due to their natural properties such as starch structure, variety, maturity level, sugar and pulp content and acidity (46).

The World Health Organization (WHO) and the United Nations Food and Agriculture Organization (FAO) classify physiological effects of carbohydrates in nutrients in three groups as low, moderate and high glycemic index foods depending on the glycemic index of the food (47). While foods with high glycemic index are associated with some chronic diseases, foods with low glycemic index play a significant role in preventing many chronic diseases (46).

Table (2.4.1) Glycemic index (47)

	Glycemic Index
LOW	<55
MEDİUM	55-69
HİGH	>70

2.4.1.1. Simple Carbohydrates

Simple carbohydrates which are very quickly digested are the fastest energy sources (48,49). They are (50,51),

- Fruits (glucose and fructose)
- Milk (glucose and galactose)
- Milk products
- Candy
- Table sugar (glucose and glucose)
- White bread
- Soft drinks
- Packaged food.

2.4.1.2. Complex Carbohydrates

Complex carbohydrate foods provide vitamins, minerals, and fiber that are important to the health of an individual. The majority of carbohydrates should come from complex carbohydrates (starches) and naturally occurring sugars, rather than processed or refined sugars, which do not have the vitamins, minerals, and fiber found in complex and natural carbohydrates (52) . Refined sugars are often called "empty calories" because they have little to no nutritional value. Complex carbohydrates are commonly found in whole plant foods and, therefore, are also often high in vitamins and minerals (49).

2.4.2. Proteins

Proteins which known as building blocksof the human body consist of amino acids. Amino acids form polypeptide chains by linkage with peptide bonds and polypeptide chains form proteins by linkage. It has very crucial roles in the human body and in case of deficiency, be faced with health problems (53).

Proteins are used in the structural properties of the body. These properties are hormon functions, enzyme catalization ande reactions using enzymes, antibodies and immune system functions. The protein requirement is approved to be 0.8 grams per kilogram for adults. However, this value may change depending on the gender, age, physical activity, length, working style, health status of the person. The Recommended Dietary Allowance (RDA) for both men and women is 0.8 g of good quality protein/kg body weight/d and is based on careful analyses of available nitrogen balance studies. (54,55)

Amino acids are divided into two essential subgroups; essential and non-essential. 20 kinds of amino acids in nature and 8 of them are essential amino acids which can not be made by the body. These are lysine, threonine, leucine, isoleucine, methionine, phenylalanine, tryptophan and valine. The nutrients that contain these essential amino acids are called high quality nutrients. The high quality sources are animal origin such as meat, milk, egg, etc. Some of the essential amino acids in vegetable protein source are inadequate. For this reason; some grain products and some legumes are consumed together to raise the quality of the proteins (9,53).

2.4.3. Lipids (Fats)

Lipids, the other name is fats, are qualified by their insolubility in water. While 95% of fats in nutrition consist of triglycerides, the remaining small part consist of cholesterol, phospholipids, sterols and carotenoids (9,55,56).

Lipids are used as important energy sources in our diet because one gram of fat provides more energy than carbohydrates and proteins. While some lipids are incorporated into cell structures, some lipids are converted to steroid hormones, prostaglandin, interleukin and play an important role in the body. Also, they help

absorption of fat soluable vitamins from the intestines. In addition to this, fats or lipids that support the saturation from foods (55,56).

Fats are straight-chain fatty acids containing a single carboxyl group. There are different fatty acids depending on the number of carbon atoms in the molecule and whether or not double bonds exist between the carbons. Those with less than 6 in the molecular are defined as short, those with 6 to 10 carbons are called moderate, and those with more than 12 are called long chain fatty acids. They are also classified as saturated and unsaturated fatty acids based on a hydrogen molecule in the content of carbon atoms contained in fats (9).

Saturated fats that are found in a solid form at room temperature, melt high temperatures. The reason for this, there is no bond between carbon chains of saturated fats. Fats with animal origin such as meat, milk, butter, cheese, etc. contain a high amount of saturated fat. Coconut oil and palm oil which are vegetable origin fats and saturated fats are also available in foods with vegetable origins. Extreme saturated fats consumption like very large portions give rise to increase of blood fats such as plasma lipid & LDL, triglyceride and cholesterol.

In contrast to saturated fats, unsaturated fats are commonly of vegetable origin and are in a liquid form at room temperature (57). They have double bonds between fatty acids in their contents; in other words, carbon atoms are not saturated with hydrogen. Moreover, unsaturated fatty acids are classified as Omega3, Omega6 and Omega9. Omega3 and Omega 6 are known as essential fatty acids for they cannot be synthesized (56). To be healthier, the body needs to be supplemented with Omega fatty acids together with a diet (53).

Trans fats occur in the rumen of some cows and lambs and lamb, beef, butter, milk and cheese are available. For this reason, they rarely found in nature. However, they are the trans fats occurred by conversion of the most frequently encountered vegetable oils in human diet into solid for by being saturated with hydrogenation procedure. They are often used by food companies in cream, margarine and packaged food (53).

2.4.4. Vitamins

Vitamins are organic substances that are necessary for normal growth and survival, apart from previously known nutrients (ie carbohydrates, proteins and fat) (9,53).

Vitamins, help build up the biochemical processes needed to generate energy from fat, carbohydrates and proteins, including in the structure of certain enzymes in the body and turn them into a regular style and are organic, essential compounds that are not needed in the body that are required for the normal metabolic processes of the body to be maintained and to be maintained in a healthy manner (9,55).

Also, they are required in very small amounts to realize specific functions that promote growth, reproduction or the continuation of health and life. They are vital to life, organic and available from foods because they look like the other energy yielding nutrients (55).

Furthermore, vitamins work together with to other nutrients. This is why, vitamins work together with nerve, skeletal and digestive systems in cell work and help other nutritients for muscle and mucosa health (58).

Depending on the vitamin deficiency in the body, some diseases or biochemical functions are seen. For this reason, it is very important to give reinforcement in the right amount from the outside. In the body, the amount that prevents changes that can occur in investigated vitamin deficiency is the daily requirement of that group. However, when collecting findings on small groups, individual benefits or needs must be considered. For this reason, to community, the standards of consumption for various vitamins are stated. Consumption standards are made by adding to individual needs the needs of the community and taking into account the nutritional habits of the community (9).

The distribution of vitamins in foods varies. Some foods contain high levels of one or more vitamins, some of which may or may not be present in some foods. For this reason, the vitamins contained in foods are divided into water soluble vitamins and fat

soluble vitamins, depending on their effectiveness and bioavailability (9). While fat-soluble vitamins are stored in the body, an excess of watersoluble vitamins is eliminated from the body with urine. According the all these, B vitamin groups and C vitamin are water-soluble vitamins and A, D, E, K vitamins are fat- soluble vitamins. The need of vitamins of the individuals as to their gender and age range are provided in Table:2.4.4.1 (59).

2.4.4.1. Vitamin B1 (Thiamin)

Thiamin helps in the energy metabolism that is the vitamin part of the coenzyme TPP (thiamine pyrophosphate). Also, it occupies a special site on the membranes of nerve cells. B1 vitamins are mostly found in whole grains, walnuts, nuts and eggs, dry legumes, cereals (wheat, corn, rice) and liver and other organ meats, meat, milk. Long term vitamin B1 deficiency causes the disease “beriberi” which is described as wet-edema or dry-muscle wasting (9,55).

2.4.4.2. Vitamin B2 (Riboflavin)

Riboflavin acts as a coenzyme in biochemical reactions, especially in the release of energy from nutrients in all body cells. Vitamin B2 plays a crucial role in the reactions like a coenzyme. Lack of the thiamin occurs inflammation of the membranes of the skin, gastrointestinal tract, eyes, mouth. Milk and milk products, legumes, whole grains, green leafy vegetables, eggs, liver and kidney are the main sources of Riboflavin (9,55).

2.4.4.3. Vitamin B3 (Niacin)

Like thiamine and riboflavin, the vitamin niacin participates in the energy metabolism of all body cells. Lack of vitamin B3 causes serious illness. The niacin deficiency disease is “pellagra”. Its symptoms are known as the four “Ds”: dermatitis, dementia, diarrhea and death. Milk, eggs, meat, fish, poultry, nuts, grains, legumes, mushrooms, potatoes and green leafy vegetables are the sources of Niacin (9,55).

2.4.4.4. Vitamin B4 (Choline)

Choline is mainly found in many foods as part of the lecithin. It needs for the synthesis of the neurotransmitter acetylcholine and the phospholipid lecithin. The deficiency of choline is liver damage. The significant sources of vitamin B4 are milk, peanut, liver, eggs (55).

2.4.4.5. Vitamin B5 (Pantothenic Acid)

Pantothenic acid is a component of a key coenzyme that is important in energy metabolism. Its deficiency is rare. Pantothenic acid sources are chicken, beef, oats, broccoli, egg yolk, liver and whole grains (55).

2.4.4.6. Vitamin B6 (Pyridoxine)

Vitamin B6 has three shapes as pyridoxal, pyridoxine and pyridoxamine. All shapes can be transformed pyridoxal phosphate (PLP) that is active in amino acid metabolism. Vitamin B6 are mostly founds in meats, fish, poultry, potatoes and starchy vegetables, legumes, fruits with no citrus, liver and soy products (9,55).

2.4.4.7. Vitamin B7 (Biotin)

Biotin plays a significant role in metabolism as a coenzyme and transports activated carbon dioxide. Biotin deficiencies is rarely observed. Liver, soy beans, fish, whole grains and egg yolks contain a high amount of Biotin. Because of the avidin which is found in the egg whites, may cause biotin deficiency due to the antivitamin effect (9).

2.4.4.8. Vitamin B9 (Folate, Folic Acid)

Folate acts as part of a coenzyme significant in the manufacture of new cells. This coenzyme is used in DNA synthesis. Folic acid is a form in the foods. Folate has

demonstrated to be significant in reducing the risks of “neural tube defects (NTD)”. Sources of vitamin B9 are leafy grain vegetables, legumes, seeds, liver, eggs (9,55).

2.4.4.9. Vitamin B12 (Cobalamin)

Vitamin B12, which can only be taken from animal-derived foods; in the nervous system, in the immune system, in the production of blood cells in bone marrow, and in protein metabolism. Therefore, vitamin B12 deficiency causes irreversible damage to the nervous system and causes anemia. Most commonly found in meat, milk, poultry, cheese, eggs and fish (9,55).

2.4.4.10. Vitamin C (Ascorbic Acid)

Vitamin C plays a role as a cofactor and it is also known as ascorbic acid. The major function is to protect the body from infection and bacterial toxins. Vitamins C are being non-resistant to heat which are soluble in water, with a sour taste, easy to be oxidized when contact with air (58). It prevents eye cataract formation. Vitamin C, make it easier for iron and folic acid to pass into the blood. Vitamin C has a role in strengthening the immune system. It is the most well known an antioxidant vitamin.

Vegetables and fruits have plenty of Vitamin C. It is mostly found in dark green leafy vegetables such as strawberries, blackberries, rosehips, tomatoes, cabbage, potatoes, lemons, oranges, tangerines and green pepper vine leaves, spinach and lettuce. The deficiency disease is scury that is shown that bleeding gums, abnormal bone growth, joint pain, hemorrhages (9,55).

2.4.4.11. Vitamin A

A vitamin serves as a visual function in epithelial tissue structure. It is essential to bone growth and reproduction. The most important sources of active vitamin A are fish oil and liver. Vitamin A deficiency that is a primary problem creates blindness, sickness and death (43,55).

2.4.4.12. Vitamin D

Single source of Vitamin D is solar rays and is converted into an active form in the body and serves as hormone function. In addition, it is used in mineralization of bones. A deficiency creates rickets in childhood and osteomalacia later life. Vitamin D fortified source are milk and milk products (43).

2.4.4.13. Vitamin E

As vitamin E is easily oxidized with especially dark green leafy vegetables in nutrition, it is found mostly in vegetable (liquid) oils. Vitamin E primer function is antioxidant capacity. Thanks to antioxidant capacity, protection of polyunsaturated fatty acids and vitamin A, stabilization of cell membranes, regulation of oxidation reactions work perfectly (55). Egg yolks, nuts, wheat germ, safflower oil, canola oil, margarine and salad dressing are sources of vitamin E (43).

2.4.4.14. Vitamin K

The most important function of K vitamin is to help blood clot. Deficiency causes uncontrolled bleeding which is known hemorhagic disease. Dry legumes and fish, clover, spinach, etc. green leafy vegetables are the richest sources (43).

Table:2.4.4.1 Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Vitamins (59).

Life Stage Group	Vitamin A (µg/d)	Vitamin C (mg/d)	Vitamin D (µg/d)	Vitamin E (mg/d)	Vitamin K (µg/d)	Thiamin (mg/d)	Riboflavin (mg/d)	Niacin (mg/d)	Vitamin B6 (mg/d)	Folate (µg/d)	Vitamin B12 (µg/d)	Pantothenic Acid (mg/d)	Biotin (µg/d)	Choline (mg/d)
Infants														
0–6 mo	400*	40*	10*	4*	2.0*	0.2*	0.3*	2*	0.1*	65*	0.4*	1.7*	5*	125*
6–12 mo	500*	50*	10*	5*	2.5*	0.3*	0.4*	4*	0.3*	80*	0.5*	1.8*	6*	150*
Children														
1–3 y	**300**	**15**	**15**	**6**	30*	**0,5**	**0,5**	**6**	**0,5**	**150**	**0,9**	2*	8*	200*
4–8 y	**400**	**25**	**15**	**7**	55*	**0,6**	**0,6**	**8**	**0,6**	**200**	**1,2**	3*	12*	250*
Males														
9–13 y	**600**	**45**	**15**	**11**	60*	**0,9**	**0,9**	**12**	**1**	**300**	**1,8**	4*	20*	375*
14–18 y	**900**	**75**	**15**	**15**	75*	**1,2**	**1,3**	**16**	**1,3**	**400**	**2,4**	5*	25*	550*
19–30 y	**900**	**90**	**15**	**15**	120*	**1,2**	**1,3**	**16**	**1,3**	**400**	**2,4**	5*	30*	550*
31–50 y	**900**	**90**	**15**	**15**	120*	**1,2**	**1,3**	**16**	**1,3**	**400**	**2,4**	5*	30*	550*
51–70 y	**900**	**90**	**15**	**15**	120*	**1,2**	**1,3**	**16**	**1,7**	**400**	2.4h	5*	30*	550*
> 70 y	**900**	**90**	**20**	**15**	120*	**1,2**	**1,3**	**16**	**1,7**	**400**	2.4h	5*	30*	550*
Females														
9–13 y	**600**	**45**	**15**	**11**	60*	**0,9**	**0,9**	**12**	**1**	**300**	**1,8**	4*	20*	375*
14–18 y	**700**	**65**	**15**	**15**	75*	**1**	**1**	**14**	**1,2**	400i	**2,4**	5*	25*	400*
19–30 y	**700**	**75**	**15**	**15**	90*	**1,1**	**1,1**	**14**	**1,3**	400i	**2,4**	5*	30*	425*
31–50 y	**700**	**75**	**15**	**15**	90*	**1,1**	**1,1**	**14**	**1,3**	400i	**2,4**	5*	30*	425*
51–70 y	**700**	**75**	**15**	**15**	90*	**1,1**	**1,1**	**14**	**1,5**	**400**	2.4h	5*	30*	425*
> 70 y	**700**	**75**	**20**	**15**	90*	**1,1**	**1,1**	**14**	**1,5**	**400**	2.4h	5*	30*	425*
Pregnancy														
14–18 y	**750**	**80**	**15**	**15**	75*	**1,4**	**1,4**	**18**	**1,9**	600j	**2,6**	6*	30*	450*
19–30 y	**770**	**85**	**15**	**15**	90*	**1,4**	**1,4**	**18**	**1,9**	600j	**2,6**	6*	30*	450*
31–50 y	**770**	**85**	**15**	**15**	90*	**1,4**	**1,4**	**18**	**1,9**	600j	**2,6**	6*	30*	450*
Lactation														
14–18 y	**1,2**	**115**	**15**	**19**	75*	**1,4**	**1,6**	**17**	**2**	**500**	**2,8**	7*	35*	550*
19–30 y	**1,3**	**120**	**15**	**19**	90*	**1,4**	**1,6**	**17**	**2**	**500**	**2,8**	7*	35*	550*
31–50 y	**1,3**	**120**	**15**	**19**	90*	**1,4**	**1,6**	**17**	**2**	**500**	**2,8**	7*	35*	550*

This table 2.4.4.1 presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). An **RDA** is the average daily dietary intake level sufficient to meet the nutrient requirements of nearly all (97–98 percent) healthy individuals in a group.

2.4.5. Minerals

The major minerals are found in larger quantities in the body, but the trace minerals which are known that minor minerals occur in smaller amounts in the body (55)**.** Minerals are inorganic elements occurred as a result of reaction by way of burning thenutrient (9). Major minerals essential for humans are: calcium, phosphorus, potassium, magnesium, sulfate, sodium and chloride; trace minerals are iron, zinc, selenium, molybdenum, iodine, cobalt, copper, manganese, fluoride and chromium(43,57).

Minerals are essential compounds for growth and survival (9). Calcium, phosphorus and magnesium are used in bones and teeth structures. Sodium, potassium and chloride affect the body's fluid balance. Also, sodium, potassium, calcium, chloride and magnesium are responsible for muscle contraction and nevre impulse transmission. In addition, these minerals are importat to regulate blood pressure (55).Sodium which is known a positive chief ion outside the body's cells. Like sodium, potassiun is the principal positively charged ion. But, it takes the role inside the cells (43). Magnesium and phosphorus help in amino acid, fatty acids, glucose and vitamin reactions (55). Zinc is essential for growth and development together with strengthening the immune function (43,53).

Otherwise, essential mineral intake needs of the individuals per day as to gender and age range are provided in Table 2.4.5.1 (9,59).

Table: 2.4.5.1 Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes, Elements (9,59)

Life Stage	Calcium	Chromium	Copper	Fluoride	Iodine	Iron	Magnesium	Manganese	Molybdenum	Phosphorus	Selenium	Zinc	Potassium	Sodium	Chloride
Group	**(mg/d)**	**(µg/d)**	**(µg/d)**	**(mg/d)**	**(µg/d)**	**(mg/d)**	**(mg/d)**	**(mg/d)**	**(µg/d)**	**(mg/d)**	**(µg/d)**	**(mg/d)**	**(g/d)**	**(g/d)**	**(g/d)**
Infants															
0–6 mo	200*	0.2*	200*	0.01*	110*	0.27*	30*	0.003*	2*	100*	15*	2*	0.4*	0.12*	0.18*
6–12 mo	260*	5.5*	220*	0.5*	130*	**11**	75*	0.6*	3*	275*	20*	**3**	0.7*	0.37*	0.57*
Children															
1–3 y	**700**	11*	**340**	0.7*	**90**	**7**	**80**	1.2*	**17**	**460**	**20**	**3**	3.0*	1.0*	1.5*
4–8 y	**1**	15*	**440**	1*	**90**	**10**	**130**	1.5*	**22**	**500**	**30**	**5**	3.8*	1.2*	1.9*
Males															
9–13 y	**1,3**	25*	**700**	2*	**120**	**8**	**240**	1.9*	**34**	**1,25**	**40**	**8**	4.5*	1.5*	2.3*
14–18 y	**1,3**	35*	**890**	3*	**150**	**11**	**410**	2.2*	**43**	**1,25**	**55**	**11**	4.7*	1.5*	2.3*
19–30 y	**1**	35*	**900**	4*	**150**	**8**	**400**	2.3*	**45**	**700**	**55**	**11**	4.7*	1.5*	2.3*
31–50 y	**1**	35*	**900**	4*	**150**	**8**	**420**	2.3*	**45**	**700**	**55**	**11**	4.7*	1.5*	2.3*
51–70 y	**1**	30*	**900**	4*	**150**	**8**	**420**	2.3*	**45**	**700**	**55**	**11**	4.7*	1.3*	2.0*
> 70 y	**1,2**	30*	**900**	4*	**150**	**8**	**420**	2.3*	**45**	**700**	**55**	**11**	4.7*	1.2*	1.8*
Females															
9–13 y	**1,3**	21*	**700**	2*	**120**	**8**	**240**	1.6*	**34**	**1,25**	**40**	**8**	4.5*	1.5*	2.3*
14–18 y	**1,3**	24*	**890**	3*	**150**	**15**	**360**	1.6*	**43**	**1,25**	**55**	**9**	4.7*	1.5*	2.3*
19–30 y	**1**	25*	**900**	3*	**150**	**18**	**310**	1.8*	**45**	**700**	**55**	**8**	4.7*	1.5*	2.3*
31–50 y	**1**	25*	**900**	3*	**150**	**18**	**320**	1.8*	**45**	**700**	**55**	**8**	4.7*	1.5*	2.3*
51–70 y	**1,2**	20*	**900**	3*	**150**	**8**	**320**	1.8*	**45**	**700**	**55**	**8**	4.7*	1.3*	2.0*
> 70 y	**1,2**	20*	**900**	3*	**150**	**8**	**320**	1.8*	**45**	**700**	**55**	**8**	4.7*	1.2*	1.8*
Pregnancy															
14–18 y	**1,3**	29*	**1**	3*	**220**	**27**	**400**	2.0*	**50**	**1,25**	**60**	**12**	4.7*	1.5*	2.3*
19–30 y	**1**	30*	**1**	3*	**220**	**27**	**350**	2.0*	**50**	**700**	**60**	**11**	4.7*	1.5*	2.3*
31–50 y	**1**	30*	**1**	3*	**220**	**27**	**360**	2.0*	**50**	**700**	**60**	**11**	4.7*	1.5*	2.3*
Lactation															
14–18 y	**1,3**	44*	**1,3**	3*	**290**	**10**	**360**	2.6*	**50**	**1,25**	**70**	**13**	5.1*	1.5*	2.3*
19–30 y	**1**	45*	**1,3**	3*	**290**	**9**	**310**	2.6*	**50**	**700**	**70**	**12**	5.1*	1.5*	2.3*
31–50 y	**1**	45*	**1,3**	3*	**290**	**9**	**320**	2.6*	**50**	**700**	**70**	**12**	5.1*	1.5*	2.3*

This table 2.4.5.1 presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). An RDA is the average daily dietary intake level sufficient to meet the nutrient requirements of nearly all (97–98 percent) healthy individuals in a group. It is calculated from an Estimated Average Requirement (EAR). If sufficient scientific evidence is not available to establish an EAR, and thus calculate an RDA, an AI is usually developed.

2.4.6. Water

Water is one of the most basic requirement of all nutrients, such as oxygen, which enables an average 70% of the human body to grow and maintain its vital activities. All reactions in human body occur in water. Also, water bridges the spaces and between cells and helps form structures of large molecules such as protein and glycogen. Otherwise, it is required for digestion, absorption, transportation, dissolving nutrients, elimination of waste products and thermoregulation (60). Adults need to drink an average of eight to twelve glasses of water every day and may live for up to five to six days without drinking or consuming water, but they may continue their lives for weeks without nutrition (61). In addition, The National Academies of Sciences, Engineering, and Medicine determined that an adequate daily fluid intake is approximately 2.7 liters of fluids for women and 3.7 liters of fluids for men. Generally, About 80 percent of people's total water intake comes from drinking water and beverages and the other 20 percent of daily fluid intake usually comes from food (62).

In inadequate consumption of water in human body, several health problems occur such as, increasing in heart rate, changing body temperature, decreasing in the plasma total volume etc… For this reason, adequate water intake is a very important issue (63).

Moreover, your body needs more water when you are (64) :

- In hot climates
- high performance physical activity
- Running a fever

- Diarrhea
- Vomiting

2.5. Food Groups

Each nutrient is different according to the nutrients it contains. However, some foods are similar in content to each other. The American Center for Food and Nutrition collects nutrients in four groups (65). The shape of these four food groups is called clover with four leaves. The 4-leaf clover indicating food groups is shown in Figure 2.5.1 (66).

Figure 2.5.1: 4-Leaf Clover Nutrition Model (66)

Nutrients can be examined in 4 different groups according to the proximity of the food items they contain (66):

• Milk and milk products
• Meat, eggs and legumes
• Vegetables and fruits
• Bread and cereals

2.5.1. Milk and Milk Product Group

Milk, yoghurt and cheese are included in this group. It contains calcium, phosphorus, B vitamins and protein (65). From the milk and milk group, adults are asked to consume 3 servings a day (66).

2.5.2. Meat, Eggs and Legumes Group

In this group, there are foods such as meat, chicken, fish, eggs, dried beans, chickpeas, lentils. Oil seeds such as walnuts, nuts, peanuts, almonds are also present in this group. This group is rich in fiber with minerals such as iron, zinc, phosphorus, magnesium, B6, B12, B1 and A vitamins, protein and recommended daily serving of 2,5-3 portion (66) in adults and over 65 years old.

2.5.3. Vegetable and Fruit Group

The vegetable and fruit group is a protector against obesity due to their rich fiber and water, low energetic nature (66). Besides, it is rich in folic acid, betacarotene, E, C, B12 vitamins, calcium, potassium, iron, magnesium, fiber and antioxidant in terms of minerals and vitamins (65). The daily consumption amount should be at least 5 servings. It is recommended that at least two portions of everyday consumed vegetables and fruit be green leafy vegetables / citrus / tomatoes (66).

2.5.4. Bread and Cereals Group

This group of cereal grains, such as wheat, rice, corn, rye and oats, is the main food group (66). Food made from whole grains is rich in vitamins, minerals and fiber. Whole grain foods also regulate intestine movements because of high fiber content (65). 8 portions of adult men and 7 portions of whole grain cereal are recommended for adult women (66).

2.6. Body Mass Index (BMI)

Body Mass Index (BMI), is one of the most practical measurement which is used to determine the level of obesity in the society, classification of obesity, obesity and etc. By definition, BMI is obtained by dividing the height of the body weight in kg by the height (m2) (67). Although BMI can not directly measure fat in the body, it is widely preferred because of its ease of use (68). It is the most commonly used and practical measurement method in everyday life and outpatient services (69).

The result of the measurement is that the BMI is less than 18,5, the individual is underweight and the value between 18,5- 24,9 kg / m² is normal weight. In addition, body mass index value; 25-29,9 kg / m² preobesity, 30-34,9 kg / m² first degree obesity, 35-39,9 kg / m² second degree obesity and 40 kg / m² over third degree or over obesity type are categorized. BMI = Weight (kg) / Length² (m²) is used by this formula. Classification of BMI according to WHO data is shown in Table 2.6.1 (70).

Table 2.6.1: Classification by BMI (70)

BMI	Classification
<16,0	Severe weakness
16-18,5	Weakness
18,5-24,9	Normal weight
25-29,9	Overweight (Preobese)
30-34,9	Overweight -Class 1 obesity
35-39,9	Overweight -Class 2 obesity
≥40	Extreme overweight -Class 3 obesity

In order to achieve optimal health, the target BMI should be in the range of 18,5-24,9 kg/m², while the median BMI for the adult population should be in the range of 21-23 kg/m². While BMI is in the range of 25,0- 29,9 kg/m², the risk for the comorbidities increases; This risk increases more when the BMI is 30 kg/m² and above (71).

BMI values have a positive relationship with factors such as age, total number of pregnancies, number of live births, number of living children, intentionally miscarriage number and duration of marriage. The increase in these factors also increases the BMI values (70).

2.7. Nutrition Education

Behavioral change is thought to be related to the amount of nutrition education. This is why nutrition education is very important in gaining healthy eating habits. Also, nutrition education observes every detail between noncredible and credible sources of nutrition education (72). Nutrition education programs, has been defined as the process by the science of nutrition. And, nutrition education should be feasible to an individual and families or all groups (70).

In briefly, the nutrition education is coming from extrinsic rather than as intrinsic that means self-directed learning (72). Thus, nutrition education must be an ongoing process throughout the whole life as new research produces additional knowledge (73).

According to USDA (United States Department of Agriculture) (2012), nutrition education helps individuals, families, and communities make informed choices about food and lifestyles that support their physiological health, economic, and social well-being. Eat Well (2011) also defines nutrition education as enabling people to recognize what a healthy diet is and how to improve their lifestyles. ADA (American Dietetic Association) (2011) says that nutrition education is related to individuals' nutrition knowledge and nutrition skills (72).

3. MATERIAL AND METHOD

3.1. Material

This study was carried out in order to determine the nutrition knowledge levels of bank employees who have not received any nutrition education before in the general directorate of a private bank in Istanbul. Permission from the general directorate is in this section and added to the thesis.

The sample size of the study will be determined by 64 bank employees who have received nutrition and dietary counseling for the first time between 01.04.2017 - 31.05.2017. Participants were selected as 335 (45 women, 290 men) who have not received any nutrition education before (29 women, 35 men) on dates selected from the bank's general directorate.

First assessment of the bank's employees for length measurement and body analysis was performed. Tanita SC-330 (Japan) was used for body analysis. After the data obtained, the questionnaires (General Nutrition Knowledge Questionnaire-GNKQ) were applied to the bank employees in the form of multiple choice and open ended questionnaire face to face. After the body analysis by the participant, the questionnaire was filled in neutrally before being subjected to nutrition education.

The 54,7% of the people participating in the study are male, 45,3% are female Graphic 3.1. Gender) and also 40,6% are single and 59,4% are married (Graphic 3.2. Marital Status). Additionally, the 3,1% are high school graduates, 64,1% are university graduates and 32,8% have master degrees (Graphic 3.3. Educational Status). Only 4,7% of participants work part-time, 95,3% work full-time(Graphic 3.4. Work Time).

This Gender figure shows the distribution of men and women in percentages.

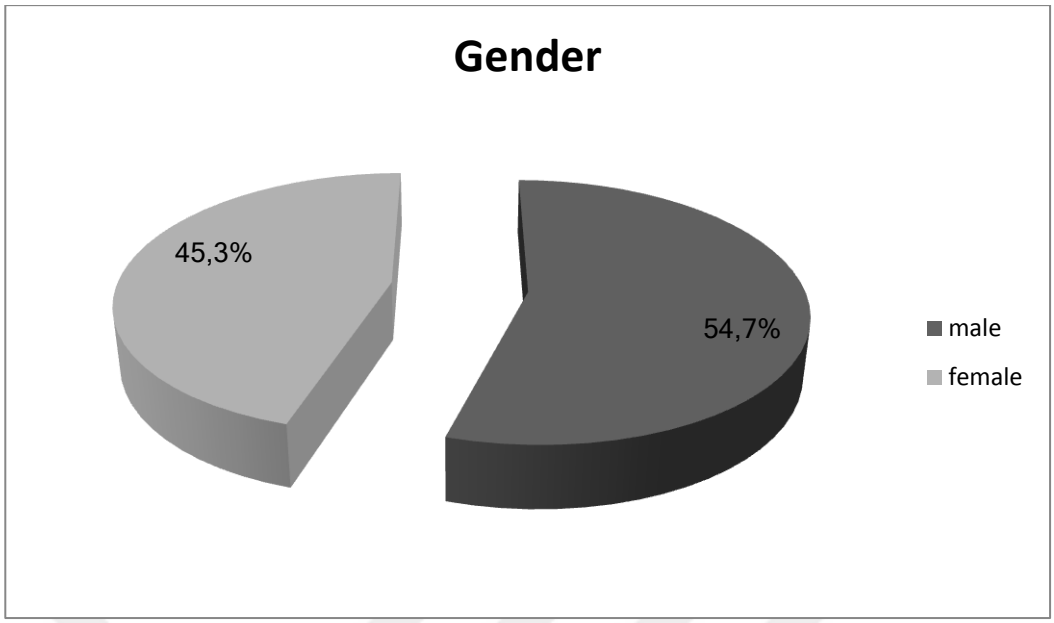

Figure 3.1: Gender

Marital Status figure is shown that the majority of participants are married.

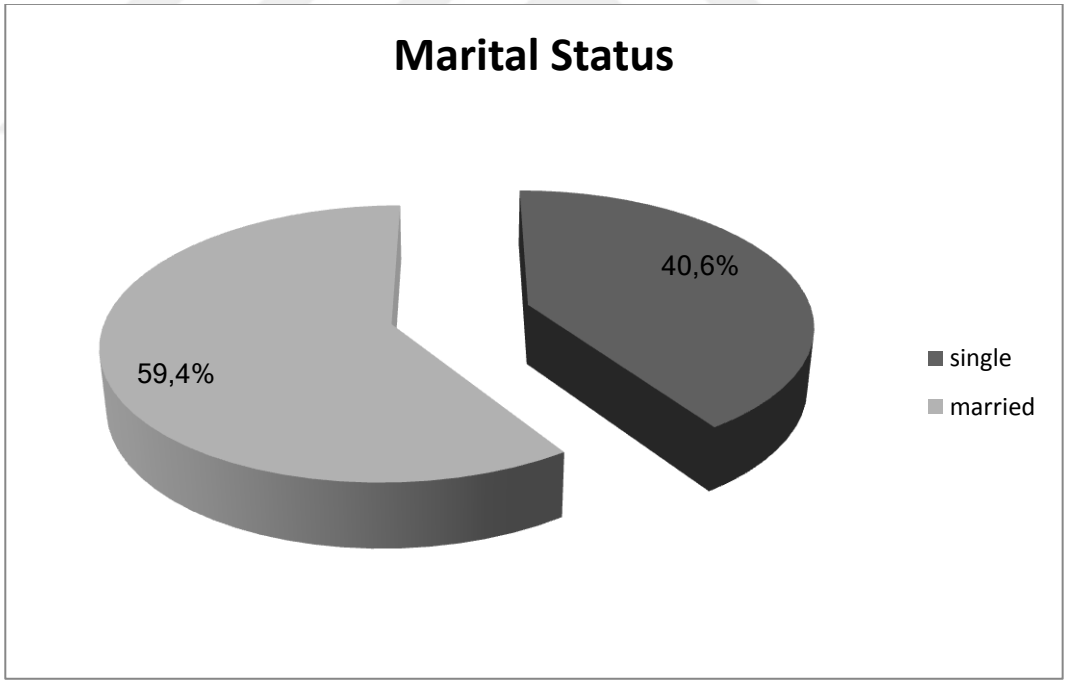

Figure 3.2: Marital Status

In this study, more than half of the participants are university graduates. Only 3,1% of participants are high school graduates. However, the level of education high as there are no primary or secondary school graduates.

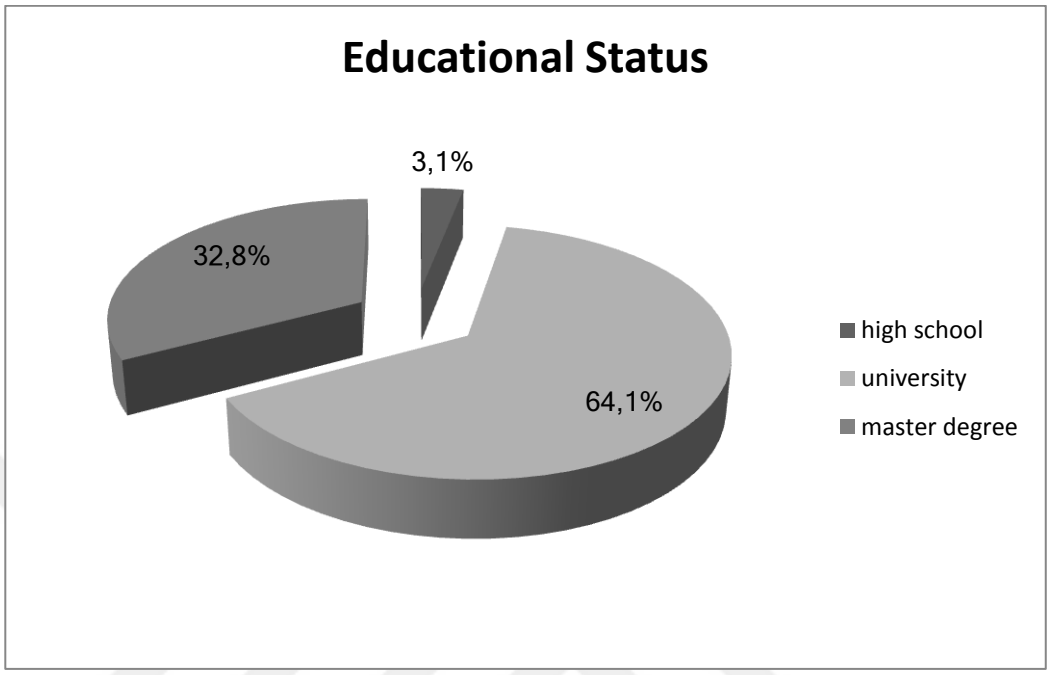

Figure 3.3: Educational Status

Full-time employees are more than part-time employees.

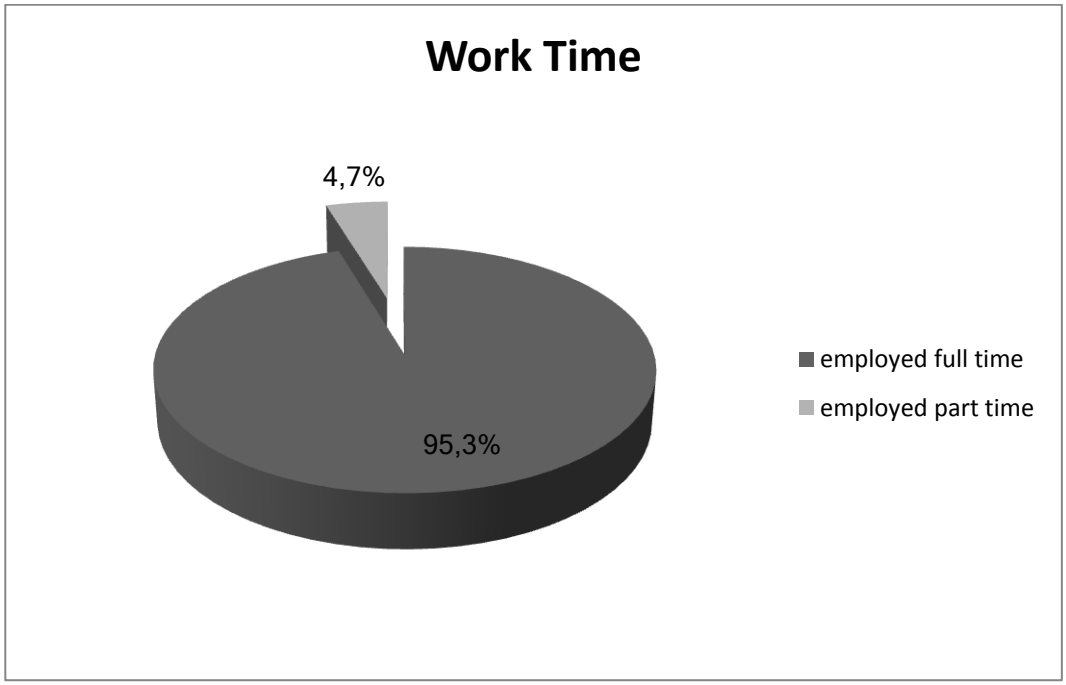

Figure 3.4:Work Time

3.2. Method

The "General Nutrition Knowledge Questionnaire (GNKQ)" (Parmenter and Wardle, 1999) was used to confirm the purpose of the thesis presented in the study. This questionnaire was translated into Turkish by ALSAFFAR A.A. in 2011 and used in its studies. The correct and complete version of the questionnaire was obtained from ALSAFFAR A. A.

The General Nutrition Information Questionnaire in which Turkish validity and reliability were obtained aimed to evaluate the nutrition knowledge of the bank employees and the relationship of nutrients with diseases in this study. It is the primary goal to demonstrate the difference of nutrition knowledge levels according to age, gender.

The questionnaire consists of 50 questions in total from 5 main sub-headings: dietary recommendation, nutrient knowledge, everyday food choices, nutrition-related diseases and demographic characteristics.

3.3. Statistical Method

For the prospective cohort study, data were collected using a questionnaire that provided information on the general characteristics of the bank employees, their eating habits, and their knowledge of the contents of foods. Data analysis was done using the Statistical Package for Social Sciences (SPSS) program.

Percent distribution and mean ± standard deviation (or median (min-max)) were used in descriptive statistics. Chi-square test was used for analysis of categorical data and Kruskal Wallis test was used for continuous data analysis. post hoc Bonferroni corrected Mann Whitney U test was used to determine significance in groups that were significant in the kruskal wallis test performed on continuous numerical data. $p < 0.05$ was considered significant.

3.4. Ethical Aproval

For the research, approval was obtained from Bahçeşehir University Clinical Research Ethics Committee on 04.04.2017 that it is ethically and scientifically appropriate to conduct the study. Ethics committee approval number is 22481095-020-490.

4.RESULTS

Demographic Differences

The study was carried out between April 2017 and May 2017 with a total of 64 bank employees, 35 (54,7%) male and 29 (45,3%) female. The average age of bank employees is 30,25. The percentage of people who did not married was 40,6% (Table 4.1.). The majority of the participants (96,9%) had a university or a post graduate degree. The measurement of participants' body mass index (BMI) is 26,613 kg/ m² (Table 4.2.).

Table 4.1. Socio Demographic Features

Socio-Demographic Features	Min.-Max	Ave±SS
Age	21-43	30,25±5,136
Gender n,%		
Male	35	45,3
Female	29	54,7
Marital status n,%		
Married	38	59,4
Single	26	40,6
Educational status n,%		
High school	2	3,1
University	41	64,1
Master degree	21	32,8

Table 4.2. Body Mass Index and Work Time

Socio-Demographic Features	Min.-Max	Ave±SS
BMI	17,1-30	26,61±4,41
Work time n,%		
Part-time	3	4,7
Full-time	61	95,3

The majority of the participants (95,3%) are full-time worker and only the 4,7% are part time worker. Therefore, the work time was not considered in the evaluation of the results.

Section 1. Dietary recommendation

Table 4.3. Consumption Amount of Various Foods

Consumption amount of various foods					
%	**More**	**Same**	**Less**	**Not sure**	**Total**
Vegetable	**75**	**3,1**	**20,3**	**1,6**	**100**
Sugary food	**0**	**95,3**	**4,7**	**0**	**100**
Meat	**25**	**45,3**	**23,4**	**6,3**	**100**
Starchy food	**0**	**9,4**	**78,1**	**12,5**	**100**
Fatty foods	**0**	**7,8**	**90,6**	**1,6**	**100**
High fibre foods	**68,75**	**18,8**	**1,6**	**10,9**	**100**
Fruits	**40,625**	**43,8**	**14,1**	**1,6**	**100**
Salty foods	**1,5625**	**4,7**	**90,6**	**3,1**	**100**

Participants stated that the consumption of vegetables (75%) and high proportion of fibers containing foods (68,75%) should be more, while starchy foods (78,1%), fatty foods (90,6%) and salted foods (90,6 %) stated that it should be consumed less. Meat (45,3%), fruit (43,8%) and sugary foods (45,3%) have to be consumed in the same amount compared to the past.

The majority of the participants (64,1%) said that 3 portions of the vegetables and fruit portion recommended to be consumed by the experts.

39,1% of the participants said that the consumption of saturated fat should be reduced while 48,4% of the participants said i am not sure.

46,9% of the participants should not exceed 3 grams of salt should be consumed, 23,4% of the participants should not exceed 6 grams of salt should be consumed, 29,7% of participants said I am not sure.

Section 2. Nutrient Knowledge

Table 4.4. Sugar Content of Foods

Sugar content of foods				
%	**High**	**Low**	**Not sure**	**Total**
Pomegranate sauce (ready-made)	**48,4375**	**23,4**	**28,1**	**100**
Fruit yoghurt	**54,6875**	**28,1**	**17,2**	**100**
Ice cream	**67,1875**	**26,6**	**6,3**	**100**
Fruit juice(processed, concentrated)	**93,75**	**3,1**	**3,1**	**100**
Tomato ketchup	**56,25**	**25**	**18,8**	**100**
Hazelnut-based sweet spread	**90,625**	**3,1**	**6,3**	**100**

The participants indicated that all foods had a high sugar content. In general, participants did not know that the sugar content of prepared fruit yogurt, ice cream and hazelnut paste was low.

Table 4.5. Fat Content of Foods

Fat content of foods				
%	**High**	**Low**	**Not sure**	**Total**
Pasta (without sause)	**31,25**	**62,5**	**6,3**	**100**
Low fat spread	**78,125**	**7,8**	**14,1**	**100**
Simit (type of a bagel with sesame seeds)	**59,375**	**31,3**	**9,4**	**100**
Salami	**75**	**9,4**	**15,6**	**100**
Honey	**14,0625**	**70,3**	**15,6**	**100**
Egg fried bread (french toast)	**87,5**	**7,8**	**4,7**	**100**
Nuts	**62,5**	**29,7**	**7,8**	**100**
Bread	**21,875**	**64,1**	**14,1**	**100**
Curd cheese	**14,0625**	**73,4**	**12,5**	**100**
Sunflower oil	**87,5**	**6,3**	**6,3**	**100**

Participants stated that while the fat content was low for pasta (without sause) (31,3%), honey (70,3%), bread (64,1%) and curd cheese (73,4%), they stated that other nutrients were high in fat. Although the fat content of the bagels was low, 59,4% of the participants said that the bagel had a high fat content. They do not know that the fat content of bagels is low.

Table 4.6. Starch Content of Foods

Starch content of foods				
%	**Yes**	**No**	**Not sure**	**Total**
Cheese	**0**	**79,7**	**20,3**	**100**
Pasta	**81,25**	**6,3**	**12,5**	**100**
Butter	**9,375**	**60,9**	**29,7**	**100**
Nuts	**15,625**	**62,5**	**21,9**	**100**
Rice	**89,0625**	**1,6**	**9,4**	**100**
Rice pudding	**87,5**	**6,3**	**6,3**	**100**

Participants have accepted the pasta (81,3%), rice (89,1%) and rice pudding (87,5%) as starchy food, and have known it correctly. Also, no one said that the cheese is starchy. Only 15,625% of the participants said that the nuts are starchy but, more than half of the participants reported that nuts were not starchy. Although close to thirty

percent of the participants are not sure whether the butter contains starch, the percentage of participants who know that butter does not contain starch is sixty one percent.

Table 4.7. Salt Content of Foods

Salt content of foods				
%	**High**	**Low**	**Not sure**	**Total**
Sausages	**60,9375**	**23,4**	**15,6**	**100**
Pasta	**28,125**	**59,4**	**12,5**	**100**
Kipper	**31,25**	**50**	**18,8**	**100**
Red meat	**14,0625**	**76,6**	**9,4**	**100**
Frozen vegetables	**14,0625**	**71,9**	**14,1**	**100**
Cheese in brine	**89,0625**	**3,1**	**7,8**	**100**

Participants signed that sausages (61%) and cheese in brine (89,1%) were high salt content. However, the salt content of the sausage is not high than the smoked fish. Participants said that pasta, red meat and frozen vegetables had low salt content and they were right.

Table 4.8. Protein Content of Foods

Protein content of foods				
%	**High**	**Low**	**Not sure**	**Total**
Chicken	**89,0625**	**6,3**	**4,7**	**100**
Cheese	**78,125**	**17,2**	**4,7**	**100**
Fruit	**17,1875**	**71,9**	**30,9**	**100**
Bean salad	**37,5**	**40,6**	**21,9**	**100**
Butter	**31,25**	**48,4**	**20,3**	**100**
Soybeans	**54,6875**	**18,8**	**26,6**	**100**
Mushrooms	**60,9375**	**25**	**14,1**	**100**

Participants indicated that the protein content of chicken, cheese, soybeans and mushrooms was high. It is true that the protein content of chicken, cheese, egg and soybeans was higher than butter and fruits. However, 62,5% of the participants did not know that the bean salad had high protein content. In addition, mushrooms have a lower protein content than other foods in this group.

Table 4.9. Trans Fat Content of Foods

Trans fat content of foods				
%	**Yes**	**No**	**Not sure**	**Total**
Margarine	**81,25**	**6,3**	**12,5**	**100**
Cheddar cheese	**25**	**43,8**	**31,3**	**100**
Savoury biscuits	**78,125**	**4,7**	**17,2**	**100**
Sunflower seeds	**15,625**	**54,7**	**29,7**	**100**
Olive oil	**7,8125**	**76,6**	**15,6**	**100**
Crisps	**90,625**	**3,1**	**6,3**	**100**

The participants indicated that margarine, savory biscuits and crisps contain trans fat. The participants also stated that cheddar cheese, sunflower seeds and olive oil did not contain trans fat. They who are 64 clients knew the trans fat content of all the foods in this group.

Table 4.10. Fiber Content of Foods

Fiber content of foods				
%	**High**	**Low**	**Not sure**	**Total**
Corn flakes	**89,0625**	**3,1**	**7,8**	**100**
Eggs	**25**	**48,4**	**26,6**	**100**
Red meat	**26,5625**	**46,9**	**26,6**	**100**
Brussels sprouts	**68,75**	**10,9**	**20,3**	**100**
Fish	**28,125**	**40,6**	**31,3**	**100**
Dried apricots	**81,25**	**6,3**	**12,5**	**100**
Chicken	**4,6875**	**64,1**	**31,3**	**100**
Bean salad	**31,25**	**34,4**	**34,4**	**100**

The participants stated that corn flakes (89,1%), brussels sprouts (68,8%) and dried apricots (81,3%) had high content of fiber. They who are bank employees were aware of the foods with high fiber content. Only 31,25% of the participants knew that bean salad contained higher amounts of fiber. Participants expressed that the fiber content for egg, red meat, fish, chicken and bean salad was low.

Table 4.11. Saturated Fat Content of Foods

Saturated fat content of foods				
%	**High**	**Low**	**Not sure**	**Total**
Mackerel	**17,1875**	**50**	**32,8**	**100**
Minced meat	**53,125**	**17,2**	**29,7**	**100**
Olive oil	**17,1875**	**50**	**32,8**	**100**
Cheddar cheese	**54,6875**	**15,6**	**29,7**	**100**
Sunflower margarine	**56,25**	**12,5**	**31,3**	**100**
Almond, hazelnuts	**18,75**	**53,1**	**28,1**	**100**
Clotted cream	**51,5625**	**20,3**	**28,1**	**100**

The participants also stated that the content of saturated fat was high in minced meat, cheddar cheese, sunflower margarine and clotted cream. One half of the participants knew that mackerel had a low saturated fat content but, mackerel has a high saturated fat content. Contrary to it is believed, sunflower margarine has low saturated fat content, not high. Only 53,1% of the participants knew that nuts (almond and hazelnut) contained lower amounts of saturated fat.

Table 4.12. Alternative Foods In Terms of Protein Content Instead of Red Meat

Alternative foods in terms of protein content instead of red meat				
%	**Yes**	**No**	**Not sure**	**Total**
Liver stew	**51,5625**	**25**	**23,4**	**100**
Salami	**3,125**	**87,5**	**9,4**	**100**
Bean salad	**57,8125**	**25**	**17,2**	**100**
Nuts	**31,25**	**42,2**	**26,6**	**100**
Low fat cheese	**56,25**	**26,6**	**17,2**	**100**
Puff pastry/quiche	**1,5625**	**78,1**	**20,3**	**100**

The participants expressed liver stew, bean salad and low fat cheese as an alternative to red meat instead of protein content. Only 25% of the participants knew that liver stew contained lower amounts of protein. Also, most of the participants know that salami (87,5%), nuts (42,2%) and puff pastry (78,1%) had a low protein content.

46,9% percent believed that every foods with a high fat content had not contain cholesterol. Most of the participants (46,9%) who said that the foods did not contain cholesterol were men and university graduates. 34,4% of the participants participated in a tea cup when freshly squeezed fruit juice was equal to one serving of fruit. These participants are men and university graduates. More than half of the participants who are women and university graduates did not accept this situation. Only 48,4% of participants knew that iron in spinach was not as useful (bioavailable) as red meat. Thirty six percent believed that brown sugar was a healthier alternative to white sugar. Hovewer, 46,9 % of the participants knew that brown sugar is not a healthier alternative. 51,6% of the participants did not agree with the idea that they are more protein than half fat milk in whole milk. Women and university graduates are the majority in those who say “disagree“. The participants who say “I'm not sure (29,7%)” are more than the participants who say “I agree (18,8%)”. 54,7% of the participants thought that red meat and chicken were not the source of omega-3 and they were right. Only 26,6% of participants chose that red meat and chicken are omega-3 sources. 48,4% of the participants did not agree with the idea that there is more calcium than semi-skimmed milk in whole milk. In those who say disagree, male and university graduates are majority. 21,9% of the participants said “I'm not sure” and 29,7% said “I agree”. 56,3% of the participants said that solid fats contain more saturated fatty acids than other types of fat. Approximately thirty percent of the participants said “I’m not sure”.

Section 3. Everyday Food Choices

93,75% of the participants selected raisin as a food that contains low-fat and high fibre. 44% of the participants selected grilled chicken as a food that contains low-fat and high fibre instead of lentil and bulgur patties. 42,19% of the participants selected grilled steak as a food that contains low-fat instead of grilled turkey. Only 39,06% of the participants selected grilled turkey. 93,75% of the participants selected apricots with plain yoghurt as a food that contains low sugar. 54,68% of the participants believed that baked apple had low energy content than the other food choices. 71,87% of the participants selected curd cheese as a food that contains low-fat. 85,94% of the participants who wants to reduce salt consumption in the diet selected mushroom

omelette. 93,75 % of the participants who wants to take in more vitamin and mineral selected whole grain bread. More than half of the participants (60,9%) thought that butter and sunflower oil provided the same amount of calories. 53% of he participants opted for sugar instead of fat as the correct answer. More than three-quarters of participants (78,125%) thought that reducing animal fats consumption decreases blood cholesterol level.

Section 4. Nutrition-Related Diseases

The participants were mostly aware of the relationship between low fruit consumption and constipation (68,75%) and common cold (65,625%). More than half of the participants thought that there was no relationship between low fruit consumption and allergy/asthma, tooth decay and cirrhosis.

Table 4.13. Problems Encountered In The Low Fruit Consumption

Problems encountered in the low fruit consumption				
%	**Yes**	**No**	**Not sure**	**Total**
Constipation	**68,75**	**17,2**	**14,1**	**100**
Allergy /asthma	**3,125**	**75**	**21,9**	**100**
Common cold	**65,625**	**21,9**	**12,5**	**100**
Tooth decay	**23,4375**	**51,6**	**25**	**100**
Cirrhosis	**4,6875**	**50**	**45,3**	**100**

When it comes the effects of sugar intake on health, 51 to 89% of the participants thought that diabetes and heart disease were linked to sugar consumption. More than half of the participants thought that there was no relationship between sugar consumption and cataract, anaemia and hair loss.

Table 4.14. Diseases Related To Sugar Consumption

Diseases related to sugar consumption				
%	**Yes**	**No**	**Not sure**	**Total**
Diabetes	**89,0625**	**4,7**	**6,3**	**100**
Cataract	**23,4375**	**54,7**	**21,9**	**100**
Anaemia	**10,9375**	**51,6**	**37,5**	**100**
Heart disease	**51,5625**	**28,1**	**20,3**	**100**
Hair loss	**10,9375**	**51,6**	**37,5**	**100**

Hypertension and kidney disease was correctly associated with salt or sodium consumption by the majority of the participants (89%). There was no differences between salt or sodium consumption and diarrhea and hepatitis. Only 35,9% of yhe participants were unsure about the link between salt or sodium consumption and night blindness.

Table 4.15. Diseases Related To Salt or Sodium Consumption

Diseases related to salt or sodium consumption				
%	**Yes**	**No**	**Not sure**	**Total**
Hypertension	**89,0625**	**1,6**	**9,4**	**100**
Diarrhea	**17,1875**	**54,7**	**28,1**	**100**
Night blindless	**31,25**	**32,8**	**35,9**	**100**
Hepatitis	**4,6875**	**51,6**	**43,8**	**100**
Kidney disease	**89,0625**	**3,1**	**7,8**	**100**

All of the participants were aware of the relationship between high fat intake or consumption and obesity. Also, almost all participants thought that hypertension and heart disease were linked to fat consumption.

Table 4.16. Diseases Related To Fat Consumption

Diseases related to fat consumption				
%	**Yes**	**No**	**Not sure**	**Total**
Obesity	**100**	**0**	**0**	**100**
Hypertension	**96,875**	**3,1**	**0**	**100**
Migraine	**7,8125**	**64,1**	**28,1**	**100**
Constipation	**28,125**	**45,3**	**26,6**	**100**
Heart disease	**89,0625**	**6,3**	**4,7**	**100**

70% of the participants believed that eating more fibre would help reduce the risk of cancer. As man as 80% of the participants believed that eating more fruit and vegetables help minimise the risk of cancer. The participants were mostly aware of the relationship between cancer risks and eating less salt and eating less sugar.

Table 4.17. Cancer Risks

Cancer risks				
%	**Yes**	**No**	**Not sure**	**Total**
Eating more fibre	**70,3125**	**10,9**	**18,8**	**100**
Eating more fruit and vegetables	**79,6875**	**12,5**	**7,8**	**100**
Eating less fruit	**17,1875**	**64,1**	**18,8**	**100**
Eating less salt	**81,25**	**7,8**	**10,9**	**100**
Eating less sugar	**84,375**	**9,4**	**6,3**	**100**

62,5 % of the participants thought that eating more fibre were linked to heart disease prevention. As many as 66% of the participants believed that eating more fruit and vegetables would help prevent the risk of heart diseases. Almost all participants thought that eating less salt and eating less saturated fat were prevent heart diseases.

Table 4.18. Heart Diseases Prevention

Heart diseases prevention				
%	**Yes**	**No**	**Not sure**	**Total**
Eating more fibre	**62,5**	**12,5**	**25**	**100**
Eating more fruit and vegetables	**65,625**	**12,5**	**21,9**	**100**
Eating less salt	**89,0625**	**4,7**	**6,3**	**100**
Eating less saturated fat	**87,5**	**6,3**	**6,3**	**100**

The most poorly answered question in this section concerned the antioxidant activity of vitamins. The portion of participants who were unsure about the antioxidant vitamins ranged from 60,9 to 76,6%. The participants who were able to identify vitamin A, C and E to have antioxidant properties were 17,2%, 30% and 23,4%, respectively.

Table 4.19. Antioxidant Vitamins

Antioxidant vitamins				
%	**Yes**	**No**	**Not sure**	**Total**
Vitamin A	**17,1875**	**10,9**	**71,9**	**100**
B complex vitamins	**12,5**	**10,9**	**76,6**	**100**
Vitamin C	**29,6875**	**9,4**	**60,9**	**100**
Vitamin D	**14,0625**	**9,4**	**76,6**	**100**
Vitamin E	**23,4375**	**7,8**	**68,8**	**100**
Vitamin K	**10,9375**	**14,1**	**75**	**100**

Dietary Recommendation

Questions about the nutritional advice asked to the participants; In the question about consumption of foods, vegetables, sugary foods, red meat-offal, starchy foods, fatty foods, high proportion of foods containing foods, fruits and salty foods were not significantly different according to gender and age. There was no significant difference between gender and age in the questions about the amount of fruit and vegetables, the types of fat to be used and the amount of salt consumed per day.

Nutrition Knowledge

In the questions related to the food grouping of the participants, a statistically significant difference was found in the amount of fat in fried egg bread by gender ($p = 0,023$). Although all of the males know that fried egg bread have low-fat content, fried egg bread has a high fat content.

According to age, statistically significant difference was found in nuts ($p = 0,010$). The age of the participants who said that the nuts are starchy food is bigger ($p=0,024$). The age of the participants who said that the nuts are not starchy food is smaller. although it is thought that nuts are not starchy food. In the starchy food

question, a difference was found between rice and age (p = 0,026). Those who answered yes were significantly smaller than those who gave the answer, no (p=0,034) and not sure (p=0,030). In accordance with the protein content of foods, statistical difference was found in butter according to age (p=0,022). The age of the participants who said that the protein content of butter is high is higher than the participants who said low (p=0,027). According to the dietary fiber content of the foods, statistical difference was determined according to age in dried apricots (p=0,038). The age of those who said low in dietary fiber content is higher than those who said high (p=0,027).

Everyday Food Choices

A statistical difference was found in the food related question with lower energy content (p=0,029). In the baked apple group, BMI was significantly higher than ice cream group (p=0,010). The oven-baked apple and body mass index are inversely proportional. Those with a high body mass index knew that ice cream is low-energy food. They also thought that the oven-baked apple had high energy.

Nutrition-Related Diseases

Problems with less fruit consumption, An important difference was found in constipation according to gender (p=0,018). Not sure the answer is more in men. In constipation caused by less fruit consumption, males were abstained. A statistically difference was established in cataracts according to gender (p=0,045). Most of the participants who thought that sugar consumption is associated with cataract disease are women.

In the question of risk of developing cancer, there was a statistically significant difference in salt consumption compared to body mass index (p=0,022). Some of the participants who say that consuming less salt reduces the risk of developing cancer have a higher body mass index (p=0,004). In addition, In the question of risk of developing cancer, there was a statistically significant difference in sugar consumption compared to body mass index (p=0,007). Some of the participants who say that consuming less sugar decrease the risk of developing cancer have a higher body mass index(p=0,001). In this situation is a inversely proportional.

In the question of heart disease, there was a difference in less saturated fat consumption compared to body mass index (p=0,020). The participants who say “yes” has the low body mass index than the participants who say “ not sure” (p=0,012).

5. DISCUSSION AND CONCLUSION

In other nutritional studies conducted in the Bank's employees, determining the nutrition and physical activity conditions and developing solutions to the current problems were planned and conducted as the main objective. In order to determine the daily energy intake and nutrient consumption levels of the employees, one-day individual food consumption method (24-hour reminder method and also frequency of food consumption) was applied. Physical activity levels were calculated. Anthropometric measurement methods were used to determine body components. In the results, the relationship between nutrition and physical activity is emphasized.

Unlike the studies carried out, "General Nutrition Information Questionnaire (GNKQ) was used in this study. General nutrition information was determined according to age, gender and educational status of employees. Considering the fact that bank employees are ready and unhealthy food consumption, the questions related to fat, protein and carbohydrates are evaluated and the information about the foods is evaluated and it is related to obesity and overweight.

The difference in the study is to determine the nutritional status by using GNKQ (General Nutrition Knowledge Questionnaire) which is an unused questionnaire used in bank employees instead of getting information about the standard nutrient consumption frequency and nutritional information and levels.

The level of nutrition information was determined by age, education level and gender; nutritional information, as well as the association of nutrients with diseases were also evaluated. As a result of this study, the results of the nutrition knowledge levels (in percentages) of the bank employees who had not received nutritional counseling before were put forward. Nutritional information will be increased and increased in line with the results of the bank employees who consumed fast food and unhealthy food. In the questionnaire, the age, sex and educational status of each food group were determined. It has been determined whether the consumption of external and unhealthy food will depend on gender, age and education. These factors were observed to be overweight or obesity. Due to the high level of education as a result of

the research, the educational status was not taken into consideration. This is indicated as limitation. Also, another limitation of the study is a relatively small sample size (n=64).

In this study, the participants were found to have a BMI> 25 kg / m2. Struggling with Turkey Obesity and Control Programs according to the data in our country, the prevalence of obesity than 20 years increases linearly up to the age of 45, is plateau between 45-65 years old and is a significant decrease in older age groups from 65 years of age (14- basic health services general manager. Turkey obesity (74). In this study, it is thought that among the reasons for this value (26,613 kg / m2) to be higher, desk employees are more immobile than other occupational branches, most of their work is spent at desk and the research group is the age group of the universe as the majority of the population is between 20-50.

Although the participants who are bank employees were aware of the main dietary guidelines on healthy eating and the answers to specific questions in the same section were poor. For instance, the participants knew about the significance of increasing the consumption of fruits and vegetables but they did not know how many portions they need to use daily. In the Turkish Dietary Guidelines (75) this suggestions is given but it is likely that the participants in this study did not acquire such knowledge.

In contrast to what was observed in the previous studies (76,77,78,79,80), the level of nutrition knowledge of males and females did not differ especially in this study. Contrary to other studies, Aylin Alsaffar's study showed no significant difference between men and women (81).

Another question that was poorly answered in section 4 was about the daily consumption of salt. The greater part of the participants were unaware of the maximum recommendation for salt intake in daily consumption. 46,9% of the participants said that the amount of salt to be consumed should not exceed 3 grams, 23,4% did not exceed 6 grams, 29,7% were not sure. Only 23,4% of participants knew salt consumption correctly. The amount of salt consumed daily by Turkish people (18 g) exceeds the recommended amount by three times. The Ministry of Health initiated a programme in 2011 to decrease the salt consumption and the first act in the programme was to decrease the amount of salt in bread, which is a fundamental food in Turkey and

provides 44% of the daily energy intake (82). It seems that more working are needed to provide that the message of the program to reach wider public.

Margarine, savoury cookies and crisps that also known as saturated fatty foods are identified in this study by the significant part of the participants. Balance with the Turkish Codex Alimentarius and EU Legislation requires food companies to list the trans fatty acid or trans fat content of the packaged foods (83). If the trans fatty acid content of a food is less than 1% of total fat, companies can make a claim that 'The prackaged food does not contain trans fatty acids' on the package. Also, this information which is used to explain which foods are healthy.

In Turkey's diet profile, we usually use legumes as a source of protein. lentil, chickpeas, dried beans are the main sources of legumes (2,9,84). Although widely consumed in Turkey, beans salad as a food that were not known much about in this study. Only 37,5% participants knew that beans had high protein content and approximately one-third knew that they had high dietary fibre content.

The items that the participants had the least of knowledge in section 4 (nutrition-related diseases) of the questionnaire were related to the antioxidant vitamins. This was similar to the results achieved in England (76) and Turkey(81).

In briefly, in the study of determination of these nutrition knowledge levels made in bank employees, it was observed that the participants did not apply or care about knowing the contents of the foods. In the same food group, there are similar foods that they know and do not know about. The lack of nutrition education and the limitation of working conditions prevent participants from eating healthy. It was thought that the participants who did not know what to consume and how much they would consume had no healthy diet. Healthy nutrition education was found to be insufficient in the participants.

6. SUGGESTION

In an attempt to improve the nutrition knowledge of the Turkish people, clear and simple messages derived from the dietary guidelines need to be disseminated to the public through a variety of channels (such as articles, brochures, radio announcement or paid advertising.

The findings then can be used to develop food and nutrition policies, which would constitute the themes of various health and nutrition campaigns. There are some efforts from the government, particularly from the Ministry of Health to improve the nutrition knowledge and to promote changing dietary habits of the public but, new studies indicated that an unacceptable number of people were still unaware of the general dietary recommendations. The last Turkish Dietary Guidelines was published in 2006 however these guidelines should be developed. Any nutrition and health promotion strategy need to be applicable, inexpensive, and widely accessible to most of the population.

Lastly, nutrition education should be progressively part of the school curricula for all ages. It is necessary for children to gain nutrition awareness at an early age.

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8. APPENDIX

8.1. Ethical Approval

T.C.
BAHÇEŞEHİR ÜNİVERSİTESİ REKTÖRLÜĞÜ
Klinik Araştırmalar Etik Kurulu

Sayı : 22481095-020-490 04/04/2017

Konu : Karar Örneği

SAYIN SİMGE ÇOLAKOĞLU

Sorumlu araştırmacısı olduğunuz "Daha Önce Beslenme Danışmanılığı Almamış Banka Çalışanlarının Beslenme Bilgi Düzeylerinin Belirlenmesi" isimli çalışmanız ile ilgili Klinik Araştırmalar Etik Kurulu karar örneği ektedir.

Gereğini bilgilerinize rica ederim.

Prof.Dr. Nazire Efser Yeşim AFŞAR
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8.2. Survey

Anket no:

BESLENME BİLGİSİ ANKETİ

Değerli Katılımcı,

Bu genel beslenme bilginizi ölçen bir ankettir; bir sınav değildir. Verilen cevaplar ülkemizdeki beslenme eğitiminin değerlendirilmesi açısından yol gösterici olacaktır.

1. Anketi kendi başınıza, başkalarından ya da yazılı kaynaklardan yardım almadan tamamlamanız gereklidir.
2. Yanıtlarınız gizli kalacak, başka hiç bir amaçla kullanılmayacaktır.
3. Eğer bir sorunun yanıtını bilmiyorsanız lütfen tahmin etmek yerine 'Emin değilim' seçeneğini işaretleyiniz.

Anlayışınız ve zaman ayırdığınız için çok teşekkür ederim.

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A. İlk bir kaç soru uzmanların bize verdiği bilgiler ile ilgili olarak ne düşündüğünüz üzerinedir.

A1. Sizce sağlıkla ilgili konularda uzman olan kişiler aşağıdaki gıdaları eskiye oranla daha çok mu, aynı miktarda mı ya da daha az miktarlarda mı tüketmemizi önermektedir? (Her bir gıda için lütfen bir kutucuk işaretleyiniz)

	Daha çok	**Aynı miktarda**	**Daha az**	**Emin değilim**
Sebzeler				
Şekerli gıdalar				
Kırmızı et, sakatat				
Nişastalı gıdalar				
Yağlı gıdalar				
Yüksek oranda posa (diyet lifi) içeren gıdalar				
Meyveler				
Tuzlu gıdalar				

A2. Uzmanlar günde kaç porsiyon sebze ve meyve tüketmemizi önermektedir? Örneğin bir porsiyon meyve 1 orta boy elma, bir porsiyon sebze 1 orta boy havuçtur.

a) 3 b) 4 c) 5 d) Emin değilim

A3. Uzmanlar hangi tip yağların kullanımının azaltılmasının sağlığımız için önemli olduğunu söylemektedir? (Seçeneklerden birini işaretleyiniz)

a) Tekli doymamış
b) Çoklu doymamış
c) Doymuş
d) Emin değilim

A4. Tuz gıdaların yapısında bulunabilir ya da bizler tarafından sonradan gıdalara eklenebilir. Uzmanlar bir günde tükettiğimiz toplam tuz miktarının ne kadardan fazla olmaması gerektiğini söylemektedirler? (Seçeneklerden birini işaretleyiniz)

a) Bir çay kaşığından (3 g) fazla olmamalı
b) Bir tatlı kaşığından fazla (6 g) olmamalı
c) Bir yemek kaşığından fazla (10 g) olmamalı
d) Emin değilim

B. Uzmanlar gıdaları gruplara ayırmışlardır. Bu bölümde, bu gruplarda hangi gıdaların yer aldığının bilinip bilinmediğini belirlemek istiyoruz.

B1. Aşağıdaki şeker eklenmiş gıdaları şeker içeriklerine göre yüksek ya da düşük olarak sınıflandırınız (Her bir gıda için tek bir kutucuk işaretleyiniz).

	Yüksek	**Düşük**	**Emin değilim**
Hazır nar ekşisi sosları			
Hazır meyveli yoğurt			
Dondurma			
Konsantre meyve suyu			
Ketçap			
Fındık ezmesi (Sarelle vs.)			

B2. Sizce aşağıdakilerden hangisi yüksek ya da düşük miktarda yağ içerir? (Her bir gıda için tek bir kutucuk işaretleyiniz).

	Yüksek	Düşük	Emin değilim
Makarna (pişmiş, sade)			
Düşük yağlı margarin			
Simit			
Salam			
Bal			
Kızarmış yumurtalı ekmek			
Kuruyemiş			
Ekmek			
Lor peyniri			
Ayçiçek yağı			

B3. Sizce uzmanlar aşağıdakilerden hangisini '<u>nişastalı gıda</u>' olarak kabul etmektedir? (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Peynir			
Makarna			
Tereyağı			
Kuruyemiş			
Pilav			
İrmik muhallebisi			

B4. Aşağıdaki gıdaların <u>tuz</u> içeriğini yüksek ya da düşük olarak belirtiniz. (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Yüksek	Düşük	Emin değilim
Sosis			
Makarna			
Füme balık / çiroz			
Kırmızı et			
Donmuş sebze			
Salamura peynir			

B5. Aşağıdaki gıdaların <u>protein</u> içeriğini yüksek ya da düşük olarak belirtiniz. (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Yüksek	Düşük	Emin değilim
Tavuk			
Peynir			
Meyve			
Piyaz			
Tereyağı			
Soya fasulyesi			
Mantar			

B6. Aşağıdaki gıdalar <u>trans yağ asidi</u> içerir mi? (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Margarin			
Kaşar peyniri			
Hazır kuru pasta			
Ay çekirdeği			
Zeytin yağı			
Cipsler			

B7. Aşağıdaki gıdaların <u>posa (diyet lifi)</u> içeriğini yüksek ya da düşük olarak belirtiniz. (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Yüksek	Düşük	Emin değilim
Tam tahıllı kahvaltı gevreği			
Yumurta			
Kırmızı et			
Brüksel lahanası			
Balık			
Kuru kayısı			
Peynir			
Piyaz			

B8. Aşağıdaki gıdaların doymuş yağ içeriğini yüksek ya da düşük olarak belirtiniz. (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Yüksek	**Düşük**	**Emin değilim**
Uskumru			
Dana kıyması (tam yağlı)			
Zeytin yağı			
Kaşar peyniri			
Ayçiçek yağlı margarin			
Badem / fındık			
Kaymak			

B9. Sizce uzmanlar aşağıdaki gıdaları kırmızı etin yerine **protein alımı/içeriği açısından** bir alternatif olarak önermekte midir? (Her bir gıda için tek bir kutucuk işaretleyiniz)

	Evet	**Hayır**	**Emin değilim**
Ciğer sote			
Salam			
Piyaz (kuru fasulye)			
Kuruyemiş			
Düşük yağlı peynir			
Milföy böreği / kiş			

B10. Bazı gıdaların yağ içeriği yüksektir ancak bu gıdalar kolesterol içermeyebilirler. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B11. Bir çay bardağı şeker katılmamış meyve suyu (taze sıkılmış ve bekletilmemiş) **enerji ve vitamin içeriği açısından** bir porsiyon meyve yerine geçer. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B12. Ispanakta bulunan demir kırmızı ette bulunan demir kadar faydalıdır. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B13. Kahverengi şeker beyaz şekerin sağlıklı bir alternatifidir. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B14. Bir bardak **tam yağlı sütte** bir bardak **yarım yağlı sütten** daha çok protein vardır. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B15. Kırmızı et ve tavuk omega-3 yağ asitlerinin önemli kaynaklarıdır. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B16. Bir bardak **tam yağlı sütte** bir bardak **yarım yağlı sütten** daha çok kalsiyum vardır. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

B17. Katı olan yağlar diğer yağlardan daha fazla doymuş yağ asidi içerir. (Bir tanesini işaretleyiniz)

a) Katılıyorum
b) Katılmıyorum
c) Emin değilim

C. Bu bölümdeki sorular diyetimizde yer alan gıdalarla ilgilidir.

Bu bölümdeki soruları lütfen neyi sevip neyi sevmediğinize göre **yanıtlamayınız**. Sadece sorunun doğru yanıtı olduğunu düşündüğünüz seçeneği işaretleyiniz.

Örnek soru. *Gıdalarla aldığı yağı azaltmak isteyen bir kişinin aşağıdaki yumurta çeşitlerinden hangisinin tüketilmesi en uygundur?*

a) Haşlanmış yumurta
b) Yağda yumurta
c) Patatesli yumurta
d) Sucuklu yumurta

Haşlanmış yumurtayı sevmiyor olsanız dahi, buradaki doğru yanıt olduğu için "haşlanmış yumurta" seçeneğini işaretlemeniz gerekmektedir.

C1. Düşük yağ ve yüksek posa (diyet lifi) içeriğine sahip olan gıdayı seçiniz. (Bir tanesini işaretleyiniz)

a) Muhallebi
b) Kuru üzüm
c) Diyet çikolata
d) Simit ve ayran

C2. Düşük yağ ve yüksek posa (diyet lifi) içeriğine sahip olan hafif bir öğün aşağıdakilerden hangisi olabilir? (Bir tanesini işaretleyiniz)

a) Izgara tavuk
b) Beyaz ekmek ile yapılmış sucuklu tost
c) Mercimek köftesi
d) Tavuklu milföy böreği

C3. Gıdalarla aldığı yağı azaltmak isteyen bir kişi aşağıdakilerden hangisini seçmelidir? (Bir tanesini işaretleyiniz)

a) Izgara biftek
b) Izgara sosis
c) Izgara hindi
d) Izgara köfte

C4. Tatlı yeme isteği duyan ancak aldığı şeker miktarını kısıtlamak isteyen bir kişinin aşağıdakilerden hangisini tüketmesi en uygundur? (Birini işaretleyiniz)

a) Üzerine bal sürülmüş tost ekmeği
b) Meyveli gofret
c) Bisküvi
d) Kayısı (kuru ya da taze) eklenmiş yoğurt

C5. Aşağıdakilerden hangisinin enerji içeriği daha düşüktür? (Birini işaretleyiniz)

a) Fırında pişirilmiş sade elma
b) Hazır çilekli yoğurt
c) Simit ve ayran
d) Sade dondurma

C6. Aşağıdakilerden hangisi düşük yağlıdır? (Birini işaretleyiniz)

a) Sade krem peynir
b) Koyun peyniri
c) Eski kaşar
d) Lor peyniri

C7. Diyetle aldığı tuzu azaltmak isteyen biri için hangisinin tüketilmesi en uygundur? (Birini işaretleyiniz)

a) Hazır pizza
b) Et suyu tableti eklenerek hazırlanmış pilav
c) Hazır çorba
d) Mantarlı omlet

C8. Daha fazla miktarda vitamin ve mineral almak isteyen bir kişi aşağıdakilerden hangisini seçmelidir? (Bir tanesini işaretleyiniz)

a) Beyaz ekmek
b) Kepekli ekmek
c) Tam tahıllı ekmek
d) Emin değilim

C9. Diyetinin yağdan gelen enerjisini azaltmak isteyen bir kişi, aşağıdakilerden hangisini azaltmalıdır? (Bir tanesini işaretleyiniz)

a) Tereyağı
b) Ayçicek yağı
c) İkisi de aynı
d) Emin değilim

C10. Enerji alımını azaltmak isteyen bir kişi aşağıdakilerden hangisinden en fazla kaçınmalıdır? (Bir tanesini işaretleyiniz)

a) Şeker
b) Patates
c) Yağ
d) Emin değilim

C11. Diyetle kolesterol alımını düşürmek isteyen bir kişi aşağıdakilerden hangisini tüketmemelidir? (Birini işaretleyiniz)

a) Tahıllar
b) Hayvansal yağlar
c) Bitkisel yağlar
d) Emin değilim

D. Bu bölümdeki sorular hastalıklar ya da sağlık sorunları ile ilgilidir.

D1. Aşağıdakilerden hangisi **az miktarda meyve** tüketiminin neden olduğu hastalık ya da sağlık sorunudur? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	**Hayır**	**Emin değilim**
Kabızlık			
Astım			
Soğuk algınlığı			
Diş çürüğü			
Siroz			

D2. Aşağıdakilerden hangisi **şeker** tüketimine bağlı olarak gelişen hastalık ya da sağlık sorunudur? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Şeker hastalığı			
Katarakt			
Anemi			
Kalp hastalığı			
Saç dökülmesi			

D3. Aşağıdakilerden hangisi **tuz ya da sodyum** tüketimine bağlı olarak gelişen hastalık ya da sağlık sorunudur? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Yüksek tansiyon			
İshal			
Gece körlüğü			
Hepatit			
Böbrek hastalığı			

D4. Aşağıdakilerden hangisi **yağ** tüketimine bağlı olarak gelişen hastalık ya da sağlık sorunudur? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Şişmanlık			
Yüksek kolesterol			
Migren			
Kabızlık			
Kalp hastalığı			

D5. Sizce aşağıdakiler bazı kanser türlerine yakalanma riskini azaltabilir mi? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Daha fazla posa (diyet lifi) tüketmek			
Daha fazla meyve ve sebze yemek			
Daha az meyve yemek			
Daha az tuz tüketmek			
Daha az şeker tüketmek			

D6. Sizce aşağıdakiler kalp hastalıklarını önleyebilir mi? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
Daha fazla posa (diyet lifi) tüketmek			
Daha fazla meyve ve sebze yemek			
Daha az tuz tüketmek			
Daha az doymuş yağ tüketmek			

D7. Sizce aşağıdakilerden hangisi antioksidan vitamin sınıfına girer? (Lütfen her biri için bir kutucuk işaretleyiniz)

	Evet	Hayır	Emin değilim
A vitamini			
B vitaminleri			
C vitamini			
D vitamini			
E vitamini			
K vitamini			

E. Son olarak sizinle ilgili bir kaç soru sormak istiyoruz.

E1. Cinsiyetiniz a) Erkek b) Kadın

E2. Kaç yaşındasınız? .....

E3. Boyunuz .....

E4. Kilonuz .....

E5. Medeni durumunuz

a) Bekar b) Evli c) Dul

E6. Çocuğunuz var mı? Varsa lütfen sayısını belirtiniz.

a) Hayır b) 1 c) 2 d) 3 e) 4

f) 4'ten fazla

E7. Öğrenim durumunuz

a) Okur-yazar değil

b) Okur-yazar

c) İlköğretim

d) Lise

e) Üniversite

f) Yüksek lisans

E8. Mesleğiniz nedir? (Lütfen belirtiniz.....)

E9. Eğer sizden başka evi geçindiren biri varsa, bu kişinin mesleği nedir? (Lütfen belirtiniz.....)

E10. İş durumunuzla ilgili olarak lütfen birini işaretleyiniz.

a) Tam zamanlı çalışıyorum

b) Yarı-zamanlı çalışıyorum

c) Çalışmıyorum

d) Ev kadını

e) Emekli

f) Öğrenci

g) Özürlü ya da çalışamayacak kadar hasta

E11. Daha önce sağlık ya da beslenme ile ilgili herhangi bir eğitim aldınız mı?

a) Evet (Lütfen belirtiniz.....)

b) Hayır

E12. Şu anda herhangi bir nedenle diyet veya rejim yapıyor musunuz?

a) Evet

b) Hayır

Eğer cevabınız Evet ise;

1) Niçin yaptığınızı belirtiniz

.....
.....

2) Diyet listenizi nereden edindiğinizi belirtiniz

.....
.....

E13. Sağlık ve beslenme ile ilgili bilgileri nereden edinirsiniz? (Lütfen sadece en uygun olan **bir** yanıt işaretleyiniz)

a) Kitaplar

b) Gazete-dergi

c) Internet

d) Televizyon ve / veya radyo

e) Doktor / hemşire

f) Diyetisyen

g) Okulda öğretmenden

h) Diğer.....

Bu anketi doldurduğunuz için çok teşekkür ederiz. Eğer anketle ilgili yapmak istediğiniz yorumlar varsa lütfen belirtiniz.

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9.3. Cirruculum Vitae

Kişisel Bilgiler

Adı	**Simge**	**Soyadı**	**ÇOLAKOĞLU**
Doğum Yeri	Tekirdağ	Doğum Tarihi	29.07.1992
Uyruğu	TC	TC Kimlik No	37877108652
E-mail	smgcolakoglu@gmail.com	Tel	0537 555 02 01

Öğrenim Durumu

Derece	**Alan**	**Mezun Olduğu Kurumun Adı**	**Mezuniyet Yılı**
Doktora	-	-	-
Yüksek Lisans	Beslenme ve Diyetetik	Yeditepe Üniversitesi	2015-halen
Lisans	Beslenme ve Diyetetik	Yeditepe Üniversitesi	2015
Lise	Fen	Tekirdağ Anadolu Lisesi	2010

Bildiği Yabancı Dilleri	**Yabancı Dil Sınav Notu (#)**
İngilizce	Çok iyi
İspanyolca	Temel

Başarılmış birden fazla sınav varsa(KPDS, ÜDS, TOEFL; EELTS vs), tüm sonuçlar yazılmalıdır

İş Deneyimi (Sondan geçmişe doğru sıralayın)

Görevi	**Kurum**	**Süre (Yıl - Yıl)**
Beslenme ve Diyet Uzmanı	Simge Çolakoğlu Sağlıklı Beslenme ve Diyet Danışmanlığı	06.2018- halen
Diyetisyen	Gebze Medicalpark Hastanesi / Diyetiko	2016- 03.2018

Bilgisayar Bilgisi

Program	**Kullanma becerisi**
Microsoft Office	İyi
SPSS	Orta
BEBİS	Orta

*****Çok iyi, iyi, orta, zayıf olarak değerlendirin