T.C.

YEDITEPE UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF NUTRITION AND DIETETICS

DETERMINATION OF CORPORATE COMPANY EMPLOYEES' NUTRITION STATUS

MASTER'S THESIS

Dyt.Esra İNCE

İstanbul, 2019

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SUPERVISOR

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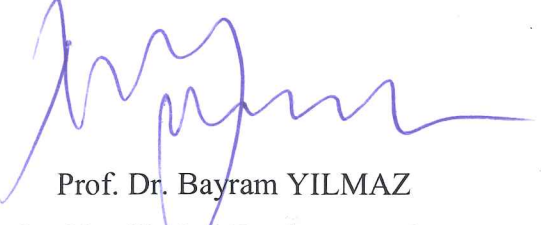İstanbul,2019

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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 07./02./2020 tarih ve 2020/02..07. sayılı kararı ile onaylanmıştır.

Prof. Dr. Bayram YILMAZ

Sağlık Bilimleri Enstitüsü Müdürü

DECLARATION

I hereby declare that; this thesis is my own work, I did not show unethical behaviour throughout the whole process from planning to writing, I obtained all knowledge in the thesis staying within academic and ethical rules, I cited and included all content that was not obtained by thesis work in the bibliography and I made no patent or copyright infringements.

17/09/2019

Esra İNCE

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I would like to thank my supervisor Assist. Prof. Dr. Hülya Demir who has supported and helped me at every stage of my work and my family who brought me up, and whose presence and support I have always felt by my side.

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LIST OF SYMBOLS AND ABBREVIATIONS

DASH   Dietary Approaches to Stop Hypertension

WHO   World Health Organization

Kg   Kilogram

LDL   Low Density Lipoprotein

MS   Metabolic Syndrome

RisC   Risk Factor Collebration

OGTT   Oral Glucose Tolerance Test

DBP   Diastolic Blood Pressure

TEKHARF   Heart Diseases and Risk Factors in Turkish Adults

ABSTRACT

İnce, E. (2020) Determination of Corporate Company Employees' Nutrition Status. Yeditepe University, Institute of Health Sciences, Department of Nutrition and Dietetics, MSc Thesis. İstanbul

Aim of the study is researching corporate company employes' nutrional habits. The research is applied to three companies: Saha Bilgi Teknolojileri, Yılmaz Makine and Hleks Sanayi. The survey covers the dates January - February 2019. Participants' personal characteristics and nutritional habits are determined by a questionnaire form. Statistical analysis are made with SPSS 21 programme. Analysis of sigficance is evaluated in p<0,05 value. As a result of the analysis; employes' always keep meat and chicken in their nutrional habits. Egg and cheese are not consumed every day but several days a week. Employes' prefer their lunch as home made meals. However, the conclusion is fried food consumption is high. In addition, employes indicate; they do not skip their breakfast. Yet they sometimes make healthy choices, other times eat unhealthy food as ready poğaça and börek. When we review physical activity prevelance with nutritional habits. %51,4 of the employes are rarely attending to any physical acitivity and their rate is higher. Employes spend their 8-9 hours sitting. Adverse health affects as smoking and alcohol consumption rates are also high. %33 of men and are smoking 1-20 cigarettes a day. % 15 of women are smoking 1-20 cigarettes a day. Alcohol comsumption is %65. Generally, all of the participants' nutrional habits are not good enough. In some situations there are significant differences between men and women. However similar results were found in some cases. Based on these findings it is important that studies should be carried out to increase the nutrition knowledge level of office workers. Every company should have a dietitian, to hold nutritional trainings time to time, to make nutrional inverntion programs. In that way it is clear that it will contribute to nutritional knowledge levels of employes.

Key Words: Office Nutrition, Phisical Activiy In Office Employee's

ÖZET

İnce. E. (2020). Kurumsal Şirket Çalışanlarının Beslenme Durumunun Saptanması. Yeditepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Ana Bilim Dalı, Master Tezi. İstanbul

Kurumsal şirket çalışanlarının beslenme alışkanlıkların incelemeyi amaçlayan bu araştırma Ocak-Şubat 2019 tarihleri arasında Saha Bilgi Teknolojileri, Yılmaz Makine ve Hleks Sanayi olmak üzere 3 şirket üzerinde uygulanmıştır. Katılımcıların kişisel özellikleri, beslenme alışkanlıkları uygulanan anket formu ile belirlenmiştir. İstatistiksel analizler SPSS 21 programı ile yapılmıştır. Anlamlılık $p<0,05$ değerinde değerlendirilmiştir. Analizler sonucunda çalışanların genelde et, tavuğu beslenme rutinlerinde her zaman bulundurdukları, yumurta ve peyniri her gün olmamakla birlikte haftada brikaç gün tükettikleri, öğlen yemeklerini ev yemeği olarak tercih ettikleri, fakat kızartılmış yiyecek tüketimlerinin yüksek olduğu sonucuna ulaşılmıştır. Bununla birlikte çalışanların kahvaltı öğünlerini genel olarak aksatmadıkları fakat kahvaltıyı kimi zaman sağlıklı kimi zaman hazır poğaça börek gibi sağlıksız gıdalarla yaptıkları belirlenmiştir. Beslenme alışkanlıklarıyla birlikte incelenen fiziksel aktivite prevalansına bakıldığında, fiziksel aktiviteyi nadiren yapan kesim %51,4 lük oranla fazladır ve çalışanlar günün 8-9 saatini oturarak geçirmektedir. Sağlığı negatif yönde etkileyen sigara ve alkol tüketiminde de oranlar yüksek bulunmuştur. Günde 1-20 adet sigara kullanan erkeklerin oranı %33 iken, kadınlar %15 dir. Alkol tüketimi ise toplamda %65 dir. Genel olarak tüm katılımcıların beslenme alışkanlıklarının yeterince iyi olmadığı, kadınlar ve erkekler arasında bazı gıdalar ve durumlarda anlamlı bir farklılık gözlemlenirken, bazı durumlarda ise benzer sonuçlar bulunmuştur. Bu bulgulardan hareketle, ofis çalışanlarının beslenme bilgi düzeylerini artırmak için çalışmalar yapılması gerektiği önem taşımaktadır. Her şirkette mutlaka bir diyetisyen bulunmasının, zaman zaman düzenlenecek olan beslenme eğitimlerinin ve yapılacak olan beslenme müdahale programlarının çalışanların beslenme bilgi düzeylerine katkı sağlayacağı açıkça görülmektedir.

Anahtar Kelimeler: Ofis Beslenmesi, Ofis Çalışanlarında Fiziksel Aktivite

1.INTRODUCTION AND AIM

Infectious and non-infectious diseases causing death to people in the world in order: According to World Health Organization reports; 230 per hundred thousand and 573 per hundred thousand (1). According to reports in 2005; 35 million deaths of 58 million death are from cronic diseases. Death rates are twice as much of the following infectious diseases: HIV, AIDS, tuberculosis, malaria. Furthermore in low income group countries: death rate of non-infectious diseases are %80 meanwhile death rate of infectious diseases are %20 (2). Non- infectious diseases such as cardiovascular diseases, diabetes, cancer and chronic respiratory diseases are increasing in both developing and developed countries affecting every age group. These diseases caused more than 34 million deaths in 2004. In 2008 deaths are increased to 36 million. The main cause are known as; unhealthy nutrition, smoking, excessive alcohol consumption, not enough physical activity and overweight (1). In 2005 4,9 million of the deaths are caused by smoking, 2,6 million of the deaths are caused by over weight, 4,4 million deaths are caused by high cholesterol, 7,1 million caused by high blood pressure (2). Obesity with its increasing rate raches to infectious diseases death rate of 57 per thousand and responsible for the %71 of the whole death rate (3). According to 2016 data obesity induces 2,8 million deaths every year. Also, thought to be cause of %4 of diabetes burden, %23 of ischemic heart diseases, between %7 and %41 of cancer burden(3). Obesity risk factors are: High blood pressure 13.5%, high cholesterol 6.9%, low fruit and vegetable consumption 4.7%, overweight and obesity 4.2% (4). High blood sugar, high blood pressure and over weight notions are concurrents of metabolic syndrome (MS). Especially, it is knowm that abdominal obesity, diabetes, MS and KDH all have strong relations in between (3).

Generally obesity has affect on every country. Spesificlly, North America, England South West Europe have increasing rate of over weight and obese children. In addition; more than every 1 in 4 children in Malta and ABD are over weight. Between 1995 and 2003, the prevalence of obesity between 2-10 years in the United Kingdom increased from 23% to 28% (2). Turkey's case is: according to statistics in 2011 %22,8 of 20 years or older men, %35,6 of women (4). %80 percent of cronic death rates are seen in low income countries (2). In Europe though people live under same political and social environment, there are significant health differences between different social groups and geographic regions. For example; in France the life expectancy of an

academic is 9 times more than a same age unskilled worker. Likewise, in the same country there are significant mortality rate differences between city and rural areas. For instance; in 1987 death rate of Russia: %0,20 in cities and %0,31 in rural areas (5). In this aspect people who are educated and living in cities are luckier. However, after 20th Century with the transition to modern life people begin to work in office spaces which lead them to immotility. It is observed obesity and related problems appeared. Besides, switch in nutrional habits is seen. High consumption of hamburger, pizza, sausage, high sugar drinks fast food products raised MS, weight gain, type 2 diabetes. (6,7,8) These parameters induced us to question corporate employes' nutrional habits. Turkey is introduced to community based practices related to obesity in recent years. T.C. Ministry of Health has been prepared an intervention program for obesity in which improvement measures are taken for the people at work and in the institution and for the people at risk(9). In programme corporate employes' life styles and nutrional habits are questioned. Moreover rate of obesity and related cronic diseases are tried to be determined. Aim is to educate and awake epmloyes' about healthy nutrion, obesity and dynamic life. Accordingly, nutrition intervention trainings are approved.

2. GENERAL INFORMATION

2.1.The Importance of Employe Nutrition

Nutrition is an indispensable and foremost basic necessity of human. Unless employes' needs are understood and fully repaired they cannot peacefull and happy. At the same time employes' cannot be productive and creative. The food and number of meals, ingiridients of the meals employes' have affect on their daily productivity, concentration durations, working hours, physical strengths, resistance against illnesses and frequency of work accidents (10). For this reason employes' problems must be defined, causes must be surveyed. Adequate and balanced nutrition practices should be connected to the legislation. In Turkish Work Legislations there is no provision about giving meals to employe. However with collective bargaining agreement employes can find a solution. Apart from the doctor a dietitian in a work place working and educating other employes will benefit helping their knowledge about nutrition (11) In developed countries establishments with big work forces give importance serving tasty and healthy food in comfortable environment to achieve quality work force. Single meal serving establishments (generally lunch) should meet the half of the employe's daily nutritional requirements. The meal should not only based on energy. But also meet the needs of protein, fat, vitamin and mineral comparative with energy (12)

Insufficient and malnutrition can cause weakness in immune system. Cronic disease as infection, diabetes, hypertension, cardiovascular diseases, obesity, metabolic syndrome may accure. Especially office workers'; work stress lack of physical acitivy smoking habits might raise the risk of metabolic syndrome. Also as a result of malnutrition;
- Not getting enough energy,
- Not getting enough glucose to the brain,
- Nutriotional anemias,
- Vitamin A deciency, seeing and immune system problems
- Blood sugar disorders and fatigue related to excess consumption of simple carbohydrates before work,
- Over eatin before or after work
- Anemia due to iron and folic acid deficiency
- Insufficiency of group B vitamins and MSS relation might accure.

2.2.Requirements of Nutritional Elements

Nutrition should be provided to meet the energy and nutrients of each line of business. Employe's energy need varies and depends on his or her age, gender, working status. When we make classification according to activity level we can separate it to three. They are light labour, medium labour and heavy labour. Office employes belong to light labour group. Another factor effecting energy need is temperature of work place.

Every 10 0C below 10-14C, energy requirement increases by 5-10%

Each time 1 degree rises above 30 0C, the energy requirement increases by 5% (13).

2.3. Office Employes' Nutritional Habbits

Health preservation and development, healthy life and healthy nutrition have been the subjects of the transition to modern life after the 20th century. Nutrition status is a very important determiner one's life.

Healthy nutrition is associated with growth and development, health protection, maintenance, treatment of many chronic diseases. In unhealthy and malnutrioned society's education and health expenses increase, production and creativity decrease. Country economy is affected negatively. For this reason employes nutrional status are highly critical because they are playing a very important role in country economy (14).

During 1980s and 1990s with life and nutrition styles work environments has changed too. Office jobs become more common also with the change in energy balance. Getting surplus energy begin to cause obesity. This showed office empolyes' nutrions should be studied (15).

Rise of the obesity causes decline in productivity. Diabetes, hypertension, coronary heart disease diffuse for this reason health expenses increase. The rate of absenteeism in obese workers is 1.7 times higher. Medical leave, injury and disability raises. Neither men nor women life quality in means of health and productivity declines. %55-60 of

energy from carbohydrates, %12-15 of energy from proteins, %25-30 of energy must be supplied from fats (13).

2.3.1.Proteins:

*Essential for growth and development.

* Forms the building block of cells and is the basic component of muscles.

* Enzyme, hormones and antibodies are involved in the structure.

An increasing need for young workers, pregnant and lactating workers. In developed countries animal based protein is seen more widespread. In low income social economic groups of our country there is insufficient protein consumption. As a result of long time protein deficient diet , rebuilding and repairing body proteins slow down. Skeletal muscles, blood proteins and vital organs such as the liver and heart are reduced in size.Only brain has resistancy against protein disruption. Negative protein balance accures when there is insufficient protein consumption or Yetersiz protein tüketimi veya if the desire to eat declines as a result of illness (16,13).

2.3.2.Carbohydrates:

* It is the first fuel source of our body.

* Brain tissue uses only carbohydrate for energy requirements, other tissues including protein and fat use carbohydrat.

* Causes water and electrolyte retention.

* Due to carbohydrates, proteins are not used for energy.

*Daily 100-125 gr carbohydrates should in diet. In relation getting less than 50 gr can cause ketosis.

* Stored as glycogen in liver (17).

With increase of glycogen storage in tissues work force increases too. Carbohydrate amount should be increased as working power increases. However because office employes work sitting there is no need to increase carbohydrate in their diet. Besides, type of them carbohydrates in diet is important. Causes blood sugar to rise too quickly, causes it to fall again in a short time. For this reason has negative affect on the work performance (18).

2.3.3.Fats:

 * Oils affect working performance due to their high energy content and fat-soluble vitamins as carriers.

*Increasing the level of LDL cholesterol, total cholesterol and triglycerides and increasing the risk of heart disease, saturated fats such as butter, margarine and tail fat should be maximum 7% in the diet.

*Un saturated fat froms such as omega3, omega6, omega9 helps brain development, strengthen the immune system and prevent coronary heart diseaseformları.

* Fats are the most satisfying nutrients that come after proteins. The feeling of saturation decreases as a result of insufficient oil consumption. Causes some fat-soluble vitamins to be insoluble

* Unsaturated fats such as olive oil and hazelnut oil should be consumed instead of unsaturated fats. Oilly seeds should be added to the nutrition program. (18).

A survey conducted in 2019 suggests that office workers skip any meals at 74.73%. the most skipped meal was determined to be lunch with 27.22%. Office workers consume lunch and breakfast mostly in workplace and consume dinner their houses. Between meals office workers consume chocolate, wafers, fruit and bagel. Sitting is one of the main causes of obesity in office workers; women are at higher risk of obesity than men. To protect office works from the risk of obesity: studies should be carried out for the transition from sedentary life to a more active life. Other disease histories should be considered in obesity evaluations.

A study to determine the nutritional information and habits of white-collar employees working in the same way as office workers was conducted using a questionnaire with 130 white-collar employees working at Istanbul University central campus. While there is a significant difference between gender and smoking and nutritional habits in average regular alcohol use and regular sports habits are not significantly affective (19).

2.4. Factors Affecting Health Behavior Employes'

In the study planned to systematically examine the works investigating the factors affecting the health behaviors of employees such as nutrition, physical activity and smoking: smoking rate of employees 27.8% -47%, overweight rate is between 36% - 56% and 35% of the food choices were found to be fatty and carbohydrate foods and their preferences. It was determined that 42.5% of the employees had insufficient physical activity levels. Studies made on healt behavior show that; age, working hours, economic inadequacies, marital status, health perception and gender might be effective. As a result, the health behavior levels of individuals working in different business lines differed and the factors related to individual and working conditions affecting health behaviors are similar.

Inadequate and unbalanced macronutrients, an inactive life, packaged products and excessive fast food consumption invites many chronic diseases such as obesity cancer, diabetes, hypertension, coronary heart disease (20).

2.5. Obesity

Obesity is a cronic disease which is increase in body fat mass compared to the lean body mass since the energy taken into the body is more than the energy expended. Obesity causes dysfunction in all organs and systems of the body, especially the cardiovascular and endocrine system further more is an important health problem that can lead to death (22). Normal ranges of fat tissue should be on average 15-20 percent of body weight in men and 25-30 percent in women. The fact that the rate of adipose tissue in men is above 25 percent and in women above 30 percent indicates the presence of obesity. (21). In 1998 World Health Organisation (WHO) declared that obesity is going to be the most important health problem of 21th Centry (23).

Over weight and obesity are health problems that ruin individuals life quality. Also cause cronics several diseases and shorter life span. Obesity has become a public health issue that concerns all children, young people, adults and the elderly. Today the leading reasons of raise in obesity are; increase in welfare, increase in consumption of ready food, change in bussines conditions and entertainment habits, decrease in physical mobility due to the time spend on electrical devices (11).

2.5.1. Obesity Epidemiology

Obesity is a worldwide health problem. According to estimates made by NCD-RisC (NCD Risk Factor Collabration) worlwide age-standardized obesity prevalence in adult populations 18 and over , was 3.2% for men and 6.4% for women in 1975; this rate increased to 10.8% and 14.8% respectively in 2014. According to this data %0,6 of men, %1,6 women are morbid obese (23).

According to Global Burden of Disease: GBD's Obestiy Collabration Group's 2015 report, obese population in the world is 711.4 million (107,7 million children ve 603,7 million adult) According to WHO estimates, in 2016, 39% of adults were overweight and 13% were obese worldwide (23).

Frequency of obesity in adults in Europe varies between 5-23% in men, 7-36% in women. The countries where overweight individuals are seen the most are Albania, Bosnia-Herzegovina and England. According to World Health Organization parameters over weight and obesity might cause, 80 percent of diabetes cases in adults in Europe, 35 percent of heart diseases and 55 percent of hypertension cases Overweight and obesity can directly and indirectly cause deaths of more than one million people every year. When we look at children and adolescents, In United States of America(USA), NHANES study shows between 2003-2006 16.3 percent of children and adolescents aged 2-19 are obese (21). Estimates predict that by 2030, the frequency of obesity will reach 50% in many states. (23).

If you look at the work done in Turkey. Between the years1997-98 20788 people aged 20 and over, conducted in 540 centers. Turkey Diabetes Epidomology (TURDEP-I) data, %22,3 (women %30, man %13) are diagnosed with obesity. In TEKHARF survey conduceted in 2000, 43% of the obesity prevalence in adult women and %21,1 in men; in 2003 raised to %44,2 in women and %25,2 men. 12 years after TURDEP-1 TURDEP-2 was conducted. According to data %44 women, %27 men reported (23). WHO parameters show in 2016 yılında there are 16.092.644 obese individuals in Turkey. Morevover with %29,5 ratio obesity is most often seen in Turkey among European countries (23).

Raise in waist circumference or raise hip ratio is described as central (visseral or abdominal) obesity. WHO confirms over 88 cm in women, over 102 cm in men waist

circumference is obesity. Central obesity prevalence is raised from %34 in TURDEP 1 to %54 to in TURDEP 2 (23).

2.5.2. Factors Causing Obesity

2.5.2.1. Nutritional Regulation Disorder as Patalogical Cause

Normally, the speed of eating is proportional to the fat and carbohydrate stores in the body. When these stores exceed the optimal level in a normal individual, the feeding rate is reduced to prevent over-storage. However, this does not happen in obese people unless food intake exceeds weight (22).

2.5.2.2. Psychogenic Obesity

Although healthy eating is perceived by many as 3 meals a day, in fact, it is supporting 3 meals with a light snack, avoiding exaggeration. In addition, eating is considered a remedy in situations such as stress or depression (22).

2.5.2.3. Neurogenic Disorders

Progressive obesity develops in most people with pituitary adenoma that extends into the hypothalamus. Which shows that humans may develop a tendency to become fat as a result of hypothalamus lesions. These lesions cause over weight by over eating. However, almost no hypothalamic damage is observed in obese people. Proves that the functional organization of the hypothalamus may change with increasing weight (22).

Another center that affects appetite is the amygdala and prefrontal cortex, which are closely related to the hippocampus. Lesions of the amygdala show that some areas increase nutrition and some areas decrease nutrition. The most important effect of the bilateral damage of the amygdala are problems the that arise in relation to the choice of food. So, animals and perhaps humans exposed to amygdala destruction, may not be able to distinguish the type and quality of food they eat (22).

2.5.2.4. Genetic Orders

Genes from the family affect the degree of nutrition in a variety of ways. These are;

* Abnormalities in the regulation of the energy store of the feeding center

* Abnormal and hereditary psychological factors that cause appetite as a relaxation mechanism or drive person to eat

* Genetic disorders related to carbohydrate and fat storage

Some researchers working on the genetic aspect of obesity, have identified an OB gene that is known to cause obesity. It was observed that mice became fat by showing symptoms of type2 diabetes and their feeling of saturation decreased. If this gene also exists in humans, can be a good target for drugs used in obesity treatment (22).

2.5.3. Obesity Treatment

Medical nutrition treatment of obesity, the individual's daily energy requirement should be reduced to provide 0.5-1 kg of weight loss per week. It is is extremely important that daily calories must not be below basal metabolic rate. The aim is long-term weight loss.

Considering protein, fat and carbohydrates; proteins should meet 12-15% of the daily energy and proteins of animal origin (good quality) should be included. Fats must meet 25-30% of the calories that must be taken daily and should not drop below 20% to ensure the use of vitamins (A, D, E, K), which are called fat-soluble vitamins. The ratio of energy from saturated fatty acid should be 10%, polyunsaturated fatty acid ratio should be 7-8%, monounsaturated fatty acid ratio should be 10-5%. Carbohydrates should meet 55-60% of the daily energy. While reducing the consumption of simple carbohydrates with high glycemic index such as honey, jam, tea sugar, packaged products. Consumption of complex carbohydrates with low glycemic index, such as whole grains, barley, rye, legumes, should be increased. Pulp intake should be 25-35 grams daily and should be provided from vegetables, fruits, legumes, whole grain products. (23).

Vitamin and mineral deficiencies are not observed in diets with sufficient calories. However, iron, zinc, B vitamins and calcium deficiency can be observed in very low calorie diets.

Fluid intake is an important consideration for patients with weight loss. It should be consumed as 30-35 ml per person's weight. (23).

2.6. Diabetes Mellitus

Diabetes Mellitus is a disease orginates from pankreas that occurs as a result of complete or partial deficiency of insulin hormone secretion that regulates the use of blood sugar. (24). Rapid increase of blood sugar as a result of insulin deficiency or ineffectiveness (hyperglycemia), causes short and long-term complications in diabetics and abnormalities in carbohydrate, protein and fat metabolism (26). Early symptoms of hyperglycaemia; while polydipsia, polyuria and polyphagia; late complications are vascular diseases, peripheral neuropathy, and susceptibility to infection. Although Diabetes Mellitus (DM) is actually a disease that increases mortality and morbidity. These can be prevented by early diagnosis and treatment (25).

Between 980 and 1037, Ibn Sina used the word diabetic for the first time that the disease may be neural. In 1813-1878, Clau-de Berbard showed that sugar production increased in the diabetic patients and the central nervous system was impaired. Since 1921, insulin, which Frederick Banting and Charles Best found, started to be used in diabetes treatment. And studies on this subject are still ongoing. (27).

2.6.1. Type 2 Diabetes Epidemiology

Diabetes Mellitus is more common in men, and the incidence increases with age. (24). Acoording to TURDEP-1 and TURDEP-2 surveys conducted in Turkey between 1997 and 2000 while the prevalence of diabetes increased from 7.2% to 13.7% in 12 years; Impaired Glucose Tolerance increased from 6.7% to 7.1 According to the World Health Organization, there were 171 million diabetes patients in the world in 2000 and this figure would increase to 366 million by 2030. However, according to statistics in 2011, it was stated that the number reached 346 million. (25). In Turkey, in 2000 there were 3 million diabetes patients and it was estimated to reach 6.5 million by 2030. However, in 2014 it reached over 7 million. Diabetes affects quality of life negatively and stands out as the most important cause of early deaths. Since 2015, 1 adult dies every 6 seconds from diabetes (23). With this increasing incidence of diabetes, it will probably continue to be the most important cause of morbidity and mortality in the future. (25).

2.6.2. Classification

Diabetes Mellitus is classified in five groups.

2.6.2.1. Type 1 Diabetes: An absolute insulin deficiency as a result of damage in pancreatic cells and an insulin dependent disease (24).

2.6.2.2. Type 2 Diabetes: Insulin deficiency and insulin resistance lie in the background (25).

2.6.2.3. Prediabetes (24)

2.6.2.4. Gestational Diabetes: Diabetes type that occurs during pregnancy (25).

2.6.2.5. Other Specific Types: genetic defects in cell functions, genetic defects insülin activity, exocrine pancreatic diseases, diabetes developing due to drugs and chemicals are among other specific types. (25).

2.6.3. Diagnosis Criteria

According to the criteria of the American Diabetes Society and the World Health Organization; higher fasting plasma glucose than 126 mg / dL, randomly measured plasma glucose exceeding 200 mg / dL, plasma glucose level higher than 200 mg / dL 2 hours after the meal determined by the test Oral Glucose Tolerance Test (OGTT) and HbA1C value more than 6.5% is called diabetes diagnosis (26).

2.6.4. Compliacations Of Diabetes

Complications related to diabetes are divided into 2 groups. These are acute metabolic complications and chronic complications. Chronic complications are also classified into 2 groups among themselves. Damage to the eyes that can lead to blindness. Retinopathy, kidney failure; nephropathy, damage to nerves leading to diabetic foot diseases, neuropathy are macrovascular complications. Heart attack and stroke and insufficient blood flow in the legs are among the macrovascular complications (26). All these are due to the high concentration of glucose in the blood. Diabetic ketoacidosis from acute metabolic complications are; failure to use carbohydrates as a result of insulin deficiency or as a result of inadequate daily carbohydrate intake (25).

2.6.5. Nutritional Treatment Of Diabetes

Nutritional intervention is the most important part of treatment. A nutrition program is organized taking into consideration individual needs, nutritional habits, the lifestyle. (26)

With medical nutrition therapy (MNT), HbA1C levels can decrease about 1% (within the range of 0.3-1%) in type 1 diabetics and around 0.5-2% (within the range of 0.5-2.6%) of type 2 diabetics. By means of MNT the reduction of fat intake by 5-8%, saturated fat intake by 2-4% and energy intake by 232-710 kcal in individuals with hyperlipidemia, triglyceride levels decrease by 11-31%, LDL- cholesterol levels by 7-22%, and total cholesterol levels by 7-21%. In prediabetes indivuals, through MNT diabetes risk score and HbA1C levels decrease with weight loss after 12 weeks. (26).

In the nutritional treatment of diabetes, 250-500 calories should be less than the energy calculated and at least 5-7% weight loss must be achievedcomplex carbohydrates should be used, 20-25 g of pulp should be consumed per day, 20% of energy should be provided from proteins, a diet rich in monounsaturated fats should be followed, LDL cholesterol should be kept below 100 mg / dL, daily sodium intake should be restricted to 1.5 g / day (24).

Vitamin E medicine reduces protein glycolysis in individuals with 2 diabetes, regulates the physical structure and insulin sensitivity of the plasma membrane. Vitamin D lowers insulin secretion (24).

Alcohol consumption should be 1 cup for adult women and 2 cups for men. The number of meals should be distributed throughout the day at 4-5 hour intervals. (24).

Physical activity is also a very important factor in terms of weight loss and lowering insulin resistance. (26).

2.7. Hypertansion

Hypertension means blood pressure is greater than 140/90 mmHg in repeated office measurements. It is a health problem that causes serious complications and is very common in the society which is continuously manifested by high blood pressure. Untreated hypertension increases coronary heart disease, kidney failure, peripheral artery disease, hemorrhagic and thrombotic stroke, aortic dissection and mortality (28). In individuals aged between 40-70 years, within the limits of 115/75 and 185/115 mmHg, every 20 mmHg increase in systolic blood pressure (SBP) or every 10 mmHg increase in diastolic blood pressure (DBP) doubles the risk of CVD. (29).

Primary hypertension constitutes 80-90% of all hypertension cases. Seronder hypertension causes the 10-20%. Seronder hypertension occurs due to a cause such as

excessive aldosterone release, pheochromocytoma, hyperthyroidism, cushing, hyperparathyroidism, hypothyroidism, acromegaly, sleep apnea, parenchymal kidney disease, renal artery stenosis and aortic coarctation. (28).

2.7.1. Hypertansion Epidemiology

Hypertension affects about 1 billion people worldwide today (29). In 2000, 26.4% of the adult population suffered from hypertension. This rate is 26.6% for men and 26.1% for women. It is stated that this figure will be 29.2% in 2025. In other words, it will exceed 1.5 billion (29,25). In some of the studies in Turkey; The prevalence of hypertension in the adult age group changes as; 33%Turkish Cardiology Association (TKD), %35.9 Turkish Endocrinology and Metabolism Association (TEMD) and %30.3 Turkish Hypertension and Kidney Disease Association (THBHD). The first comprehensive study on hypertension prevalence in our country is "Heart Diseases and Risk Factors in Turkish Adults (TEKHARF)". This study found that the prevalence of hypertension was 33.7% and the prevalence increased with age (31). The more recent Turkish Hypertension Prevelance Study found that the prevalence of hypertension in the adult age group was 31.8%. This rate was reported as 36.1% in women and 27.7 in men. In addition, it was determined that 40.7% were aware of the disease, and only 20.7% of the blood pressure was kept under control (30). According to the World Health Organization, hypertension is one of every eight deaths in the world and is the third most lethal disease. (25).

2.7.2. Blood Pressure Measurement

The BP measured in the office is still used as the standard measurement method in the diagnosis of hypertension. While measuring approved auscultatory or oscillometric semi-automatic sphygmomanometer devices should be used. Their periodic control calibrations should be done. During the measurement phase, measurements should be made from both arms of the patient. If there is more than 2 mmHg difference between both arms, the higher one should be used. At the time of diagnosis, at least two visits in a sitting position should be taken at least two BP measurements with an interval of 1 min. If the difference between the two is high averages should be taken. In the definition of hypertension, systolic is 140 mmHg, diastolic is above 90 mmHg. Systolic over 150 mmHg for over 80 years old only in ASH / ISH-2014 HT Guide (30).

2.7.3. Blood Pressure Measurement While Out Of Office

The problems such as white apron effect, blood pressure changes during the day and rounding of the number while measuring are created in the external office BP measurements. For this reason, home and ambulatory BP measurements should be used. Out of office blood pressure measurement is preferred in such circumstances; suspicion of white apron HT, masked HT suspicion, identification of the effect of white apron in hypertensive patients, serious variations in office blood pressure, suspicion of drug-induced hypotension, suspicion of high and preeclampsia in pregnant women, identification of true and false resistant HT. Home BP measurement should be requested if there is suspicion of white coat effect or masked hypertension. Ölçüm değerleri ortalaması ≥130/80 mmHg ise hipertansiyon tanısı konulmaktadır (28). It is a simple and inexpensive method, allows for many measurements and long-term follow-up. There is the possibility of evaluating the effectiveness and long-term effectiveness of the treatment at different times of the day. The lack of a white coat effect, its repeatability are among the advantages of BP measurement at home. The disadvantages are; the need of patient education, the risk of inaccurate device use, measurement errors, the risk of misprinting the BP values measured by the patient, anxiety that may be caused by frequent blood pressure measurement, drug change without consulting the doctor, inability to measure during sleep, frequent early beat or AF in the presence of oscillometric devices are not performing well (30). Ambulatory BP measurements are used in cases where there is a marked discrepancy between the BP measured at home and during physical examination. It is investigating the presence of dipping (normally falling BP during sleep), suspicion of nocturnal hypertension, and detecting BP variations. Hypertension diagnosis should be considered if the value of this measurement performed during the awake times of the individual is ≥130 / 80mmHg on average. (28).

2.7.4. White Apron Hypertansion And Masked Hypertansion

A- White Apron Hypertansion

Although ambulatory measurement results are normal at home and during the day, office measurements are high. People with white coat hypertension have a lower cardiovascular risk rate. When the 24-hour mean and daytime blood pressure values are within the normal range and when blood pressure ≥ 140 / 90 mmHg in at least three

office blood pressure measurements, white coat hypertension is diagnosed. After the diagnosis of hypertension, metabolic risk factors and organ damage should be investigated. When these are detected, drug treatment should be initiated. (28).

B- Masked Hypertansion

In masked hypertension, although blood pressure is normal in office conditions, it is high in daily life. As numerical values, it is below 140/90 mmHg in BP office conditions, and above 130/80 mmHg ambulatory BP measurements. Compared to individuals with normal BP, these individuals have higher metabolic risk factor and organ damage prevalence and have similar cardiovascular risk with office hypertension (28).

2.7.5. Nutritional Treatment Of Hypertansion

One of the most important points in the treatment of hypertension is weight loss. Average 5.1 kg weight loss reduces systolic BP by 4.4 mmHg and diastolic BP by 3.6 mmHg. In a study, the BP interval with the lowest mortality is 22.5-25 (19).

Another important point is the restriction of salt intake. In a meta-analysis, systolic BP and diastolic BP decreased by 2 and 1 mmHg in nonhypertensives, and 5 and 2.7mmHg in hypertensives, with a decrease of urinary sodium excretion by 1.8g / day. In patients with resistant HT, the reduction of sodium intake by 4.5 g / day reduced the systolic / diastolic KBn by 22.7 / 9.1 mmHg. CV deaths and heart failure are reduced by restricting salt intake. For this reason, sodium intake should be consumed as 2.3 g / day in non-hypertensive patients, and 1.5 g / day in the risky group. (31). In the DASH (Dietary Approaches to Stop Hypertension) study, which was originally published in 1998, show that reducing sodium intake causes a decrease in blood pressure. Finally, the study Turkish Hypertension and Kidney Diseases Association's SALTÜRK (Salt Consumption and Blood Pressure Study in Turkish Society) says the average salt consumption in Turkey is above 18 grams. According to the treatment plan of the Dietary Approaches to Stop Hypertension (DASH) diet, this figure should be 6 grams. (25).

The high rate of potassium in the diet is another factor for lowering blood pressure. It has been stated that high potassium protects endothelial cells from the

effects of high BP, thereby preventing brain bleeding and failure. 4700 mg of potassium can be met with the DASH diet which contains mostly vegetables and fruits. (25).

Another mineral that plays an important role in blood pressure is magnesium. There is an inverse relationship between serum magnesium level and blood pressure. The DASH diet includes foods high in magnesium, such as green leafy vegetables, nuts, whole grain bread and cereals. It has been suggested that consuming foods rich in magnesium better protects them from hypertension compared to using magnesium as a supplement. (25).

Physical activity helps to reduce systolic / diastolic BP in 3.0 / 2.4 mmHg in non-hypertensive patients and 6.9 / 4.9 mmHg in hypertensive patients. Hypertensive patients are recommended to do at least 30 minutes of moderate-intensive dynamic exercise (walking, cycling, swimming, etc.) 5 to 7 days a week (30).

Excessive alcohol consumption has negative effects. Drinking 30 grams of alcohol 3 times a day causes an increase of 3 mmHg in systolic blood pressure. It can also cause important diseases such as cirrhosis, stroke, pancreatitis. (25).

2.8. Coronary Heart Disease

Coronary artery disease is a blockage of coronary arteries due to atherosclerosis. Atherosclerosis is the formation of cholesterol and fat deposits in the inner wall of the arteries. This may limit blood flow to the heart muscle. If there is not enough blood flow, heart functions become unable to work properly. This results in chest pain called angina and myocardial infarction (31,25). If the blood going to the heart muscle is completely cut or the energy needs of the heart exceed the amount of blood flow, a heart attack may occur. (31).

Coronary heart disease usually begins at a young age. First, fat lines form on the blood vessel walls. Fat lines formed as the age progresses into fat and begin to damage the blood vessel walls (29). White blood cells, waste products and calcium in the blood vessels adhere to the vessel walls. Oil and other substances come together to form what is called plaque. (31,32).

As the age progresses, different sized plaques can form in the arteries and then break apart. In this case, the blood flow of the vessels are provided again. In some

cases, they can lead to complete occlusion of the vessels and acute coronary syndromes (32). These are divided into 3.

a) Unstable Angina Pectoris: Occurs more frequently in stationary situations. Chest pain can be felt for a long time at frequent intervals. Complaints may decrease with oral medications, but can also cause a heart attack because of chest pain.(31,32).

b) Myocardial Infarction Without ST Segment Elevation (NSTEMI): Blood values indicate that the heart muscle is damaged, but there are no significant changes in ECG. Clogging can be partial or relative, so the size of the damage is usually smaller (31).

c) ST Segment Elevation Myocardial Infarction (STEMI): In this case, blood flow is blocked for a long time. It copes with significant changes in both ECG and blood values. (32).

2.8.1. Signs Of Coronary Heart Disease

The most common symptom of coronary artery disease is angina, that is chest pain. It can also be felt on the left shoulder, arms, neck, back, or chin. Other symptoms are shortness of breath, faster heartbeat, dizziness, nausea, extreme weakness, sweating, palpitations (irregular heartbeat, skipped beats, or a feeling of somersault on the chest) (31).

2.8.2. Risk Factors

Risk factors of coronary artery disease can be corrected. Risk factors can be classified in 2 groups as non-correctable.

2.8.2.1. Recoverable Risk Factors

a- Smoking cigarettes – 25% of deaths from coronary artery disease are due to smoking. Toxic elements in cigarettes increase the risk of disease by triggering inflammation in blood vessels (25).

b- Being a patient of hypertansion– Individuals with hypertension are twice as high as those without risk of having a heart attack. 1 mmHg drop in diastolic blood pressure reduces the risk of heart disease by %2-3(25).

c- Consumption of saturated fat and salt (32)

d- Being a patient of diabetes– The risk of getting heart disease in 10 years is about %15-25 in diabetic individuals. (25)

e- Cholesterol and fatty acids – Most serum cholesterol is transported by LDL, and fats rich in saturated fatty acids raise cholesterol. Fat and cholesterol rich in saturated fatty acids have been found to cause atherosclerosis in experimental animals.

f- n-3 fatty acids It helps to lower serum triglyceride levels by reducing VLDL synthesis.

g- n-6 fatty acids accelerate thrombosis formation, while n-3 has antithrombotic effect.

h- Alcohol Consumption (32)

ı- Reactive Protein – A high level of CRP in the blood is a sign of atherosclerosis. Obese people have a high CRP level. Above 3 mg / dl is considered as a risk factor.

j- Homocysteine – In recent studies, although the blood homocysteine level was decreased by giving vitamins B2, B6, B12, there was no significant change in the risk of CHD. However, a diet lowering homocysteine is said to be important for heart health.

k- Calcium – Calcium from low-fat dairy products helps regulate blood pressure and reduce the risk of CHD.

l- Fibrinogen – Since clotting is the last event occluding the arteries, elevation of fibrinogen, which is involved in the blood clotting process, is a risk factor for CHD. To reduce the risk of coagulation, regular exercise, non-smoking environment, low dose aspirin intake, and increased fish consumption are important.

m- Kidney Disease – Most kidney injuries are caused by diabetes and hypertension. Since these problems are the main risk factors for CHD, there is interaction between kidney and heart disease.

n- Oxidation Stress – Reactive oxygen species or free radicals formed as a result of metabolism increase the oxidation of LDL. With the oxidation of LDL, macrophages are drawn into the inner layer of the arterial wall, forming the oily plaque.

o- Exercise – Exercise reduces HDL cholesterol by decreasing hepatic lipase activity. Inactivity increases the risk of CHD.

p- Fatness – Obesity increases the risk of hypertension, type 2 diabetes, sleep apnea and abdominal fat, and reduces the risk of HDL cholesterol. In obese individuals, VLDL and LDL cholesterol levels are generally high and HDL cholesterol is low. In addition, fat people produce 20% more intra body induced cholesterol per unit of body weight.

r- Dietary Fiber – Dietary pulp reduces the risk of disease by preventing the passage of cholesterol precursor bile acids into the blood.

s- Serum Lipits – Kandaki LDL kolesterolü artırırken, HDL ise koruyucu görev yapmaktadır. HDL' nin 1 mg/dl artması KKH' dan %1,8 oranında korumaktadır. TEKHARF çalışmasındaki verilere göre, HDL kolesterol erkekleri KKH dan korurken, kadınlarda ilişkili bulunmamıştır. Bununla birlikte kadınlarda HDL kolesterolün 40-60 aralığında olması diyabetten koruyucudur.

t- Faztors that are effective in elevating LDL cholesterol are saturated and trans fatty acids These fats suppress the activity of recipients in the liver, thereby removing LDL cholesterol from the blood.

u- Another factor that increases the risk of CHD is an extra glycoprotein bound lipoprotein. Lp (a) level above 20 mg / dl increases heart attack 3 times.

v- Stressful life – Some studies have shown that people with depression have a 71-73% higher risk of heart disease (33).

2.8.2.2.Unrecoverable Risk Factors

a- Advanced age - 80% of those who died from heart disease are over 60 years old.

b- Male gender – High estrogen hormone in women reduces the risk of having heart disease. But with menopause, this situation disappears. Male hormones increase LDL and decrease HDL.

c- History of heart disease in family – Framingham Kalp Araştırması verilerine göre aile geçmişinde kalp hastalığı bulunuyor olması, bireyin kalp hastalığı geçirme riskini %25 artırmaktadır. Genetik farklılıklardan ötürü bazı kişilerin HDL kolesterol düzeyleri daha düşüktür, veya bazı insanlar kolesterol düşürücü diyete karşı daha dirençlidir (32,25)

2.8.3. Epidemiology

At the beginning of the 20th century, cardiovascular diseases accounted for %10 of diseases worldwide. Now it is responsible for about half of the deaths. Besides, %25 of the deaths in developing countries. It is stated that it will cause 25.000.000 deaths in 2020. (33).

In our country, in 1990, there were 1,860,000 heart patients among 29.5 million of the adult population aged 20 and over. %35 of deaths in 1990 and %43 in 1993 were due to CHD (33).

Although the risk of the disease increases from the age of 35, it is higher in males than in females than in low socioeconomic groups. (25).

2.4.4. Nutritional Treatment of Coronary Heart Disease

* The type of fat is very important in nutritional therapy.

* Saturated fat upper limit should be 10%.

* 1 egg per day is a good choice for dietary cholesterol.

* More than 2300 mg of sodium should not be consumed per day.

* Sugar added products in the nutrition program should contain maximum 10% of calories.

* Coffee and tea consumption should be sugar-free but should not exceed 3-4 cups a day..

* Low fat or no fat dairy should be preferred.

* At least 5 servings of vegetables and fruits should be consumed per day.

* More legumes should be included in nutrition (34).

2.9. Metabolic Syndrome

Metabolic syndrome that starts with insulin resistance is a fatal endocrinopathy in which systemic disorders such as abdominal obesity, glucose intolerance or diabetes mellitus, dyslipidemia, hypertension, and coronary artery disease (CAD) are combined. (14). It can also be named in different terms such as insulin resistance syndrome, syndrome X, polymetabolic syndrome, deadly quad and civilization syndrome (25).

For the first time in 1998, Reaven pointed out that various risk factors often coexist. Reaven stated that this association, which is called syndrome X, increases the risk of developing cardiovascular diseases. The main components of metabolic syndrome are abdominal obesity, insulin resistance, high blood pressure and lipid disorders. Insulin resistance plays a central role in this table. (35). Factors that increase insulin resistance are; insufficient physical activity, advanced age, endocrine and genetic factors.

2.9.1. Pathogenesis

The etiology of the metabolic syndrome is examined in 3 groups; obesity / adipose tissue disorders, insulin resistance, independent factors. The sedentar lifestyle and unbalanced diet brought by urban life increases the risk of metabolic syndrome. In addition, postmenopausal period, smoking, low income level, high carbohydrate nutrition, physical inactivity are other reasons that increase the frequency of the syndrome. (35).

2.9.2. Prevelance

Metabolic syndrome prevalence is 22% in adults. It is observed %6.7 in 20-29 age group and %43.5 in 60-69 age group. According to TEKHARF, as of 2000, 9.2 million people in Turkey were found to be over 30 years old and have metabolic syndrome. 53% of individuals who develop CAD are also metabolic syndrome patients (32). According to Turkey Metabolic Syndrome Research (METSTAR) made in 2004 prevalence of metabolic syndrome in adults aged 20 years and over are expressed as %35. The frequency of metabolic syndrome in women was higher than in men (% 41.1 in females, % 28.8 males) (35).

2.9.3. Diagnosis Criteria

Turkey Endocrinology Metabolism Association, According to the Metabolic Syndrome Diagnostic Criteria suggested by the Metabolic Syndrome Study Group (2005);

* If you have diabetes mellitus, impaired glucose tolerance, or insulin resistance,

Or

* Using hypertension (systolic blood pressure> 130, diastolic blood pressure> 85 mmHg or antihypertensive)

* Dyslipidemia (triglyceride level> 150 mg / dl or HDL level <40 mg / dl in male, <50 mg / dl in female)

* Abdominal obesity (BMI> 30 kg / m2 or waist circumference:> 94 cm in men,> 80 cm in women) can be diagnosed with metabolic syndrome. If one has any of these disorders (25,23).

In the definition of the National Diabetes Federation;

* Abdominal obesity: waist circumference> 94 (or> 102) cm in men,> 80 (or> 88) cm in women,

* Triglyceride height (≥150 mg/dl),

* Low HDL cholesterol (<40 mg / dl in men, <50mg / dl in women,

* Blood sugar (fasting plasma glucose ≥100 mg / dl,

*High blood pressure 135/80 mmHg

The presence of any three of these criteria in a person is an indicator of metabolic syndrome. (25,35).

2.9.4. Metabolic Syndrome Components

2.9.4.1. Obesity

Abdominal obesity is the basis for dyslipidemia, hyperglycemia, hypertension and related cardiovascular diseases. Besides, It is said that the increase in insulin resistance caused by metabolically active molecules such as leptin, resistin, interleukin (IL) -6, tumor necrosis factor-alpha (TNF-α) and plasminogen activator inhibitor-1 secreted from visceral adipocytes is the most important pathogenetic factor in this process. (35). According to the results of the TURDEP study, 34% of people aged 20 and over have abdominal obesity. The most important indicator of insulin resistance is abdominal obesity (3). Every obese patient should be screened for metabolic syndrome. Also, waist circumference measurement should be checked as an indicator of visceral adiposity. (35).

2.9.4.2. Insülin Resistance

Genetic factors, insufficient physical activity, obesity and advanced age insulin resistance are among the causes of fetal malnutrition. While insulin resistance is generally seen with hyperinsulinemia, it may not progress with hyperglycemia. Insulin resistance is observed as %25 in healthy population, as %60 in impaired glucose tolerance and as %60-75 in those with type 2 DM. The diagnostic method used in the clinic is HOMA. The normal values are 2.7, the values above reflect the insulin resistance (23).

2.9.4.3. Diabetes Mellitus

The presence of DM or impaired glucose tolerance determines the first step of the diagnostic criteria of metabolic syndrome. People with impaired fasting glucose and impaired glucose tolerance have an increased risk of developing obvious diabetes mellitus. These individuals are defined in the category of "pre-diabetes". In addition, satiety hyperglycemia is an independent cardiovascular risk factor (25).

2.9.4.4. Hypertension

Insulin resistance lies behind essential hypertension (36). The expected hypertensive effect of insulin by increasing central sympathetic activity and stimulating water and salt retention from the kidney is balanced with its hypotensive effect due to peripheral vasodilation under normal physiological conditions. In the presence of insulin resistance, resistance develops to the peripheral vasodilator effect and hypertension may occur due to an unbalanced vasopressor effect (23). Turkish Hypertension and Prevalence study is a study examining the frequency, awareness, treatment and control rates of hypertension in our country. In 2003, the frequency of hypertension in our country was %31.8, awareness was %40, treatment was %31, control rate was %8, and those receiving antihypertensive treatment were %20. (36).

2.9.4.5. Hyperlipidemia

In dyslipidemia that develops with visceral obesity and insulin resistance, HDL cholesterol decrease and TG elevation are experienced. Although LDL cholesterol is usually at normal levels, atherogenic and small dense LDL subgroups are high (36). As insulin resistance progresses, TG level increases, HDL cholesterol level decreases (23). This increases the risk of cardiovascular disease. In order to reveal the frequency of

metabolic syndrome in our country, total cholesterol values measured in METSAR study conducted on 4259 people are; 173.6 mgr / dl in males and 179.6 mgr / dl in females. Triglyceride level was determined as 148.3 mgr / dl in men and 129.7 mgr / dl in women. LDL-cholesterol is 98.5 mgr / dl in men and 100.5 mgr / dl in women; HDL-cholesterol level was determined as 46.3 mgr / dl in men, 52 mgr / dl in women and the overall average was 49.2 mgr / dl. (36).

2.9.4.6. Risk of Crdiovascular Disease

Metabolic syndrome is a risk factor for premature atherosclerosis. The risk of CAD is 3 times higher in these patients. Cardiovascular mortality rate is %12 in patients with metabolic syndrome and % 2.2in patients without metabolic syndrome (3 In a metaanalysis involving 87 clinical studies and 951,083 patients using the National Cholesterol Education Program (NCEP) and revised NCEP definitions It has been stated that metabolic syndrome increases the risk of cardiovascular disease by 2.35, cardiovascular mortality by 2.40, all cause mortality by 1.58, myocardial infarction by 1.99 and stroke risk by 2.27 times. Another important result in the study is that women with metabolic syndrome have higher cardiovascular risk than men.The reason is; higher susceptibility of postmenopausal women to abdominal obesity than men and women have a different cholesterol profile than men. Besides higher triglyceride levels associated with more coronary artery disease in women than in men and polycystic ovary syndrome. Additionally, it has been reported that women-specific risk factors such as hormone replacement therapy and gestational diabetes may play a role. (36).

2.9.4.7. Other Clinical Tables

The risk of developing fatty liver disease, steatohepatitis, fibrosis, cirrhosis is high in metabolic syndrome (36). Hepatosteatosis is observed in %75 of obese people, steatohepatitis in %20, cirrhosis in %2 (23). Polycystic ovary syndrome, gout and hyperuricemia are also higher (25). 40% of patients with PCOS have impaired glucose tolerance or overt DM and an increased risk of cardiovascular disease at an early age (23).

Another picture seen in patients with metabolic syndrome is subclinical inflammation. In these patients, C-reactive protein levels are associated with metabolic

syndrome components such as abdominal obesity, high triglyceride, low HDL and blood glucose. Increased CRP level also increases cardiovascular risk. This process is progressively responsible for the development of DM and atherosclerosis, and even plaque rupture (23).

Another problem seen before the clinical symptoms of metabolic syndrome occur is endothelial dysfunction. Endothelial dysfunction is:Loss of balance between the two functions of vascular endothelium, an active endocrine organ that releases vasodilatory are factors that balance each other under normal conditions (23).

2.9.5. Metabolic Syndrome Treatment

The primary treatment of Mets is weight loss, increasing physical activity and lifestyle change. If necessary, the patient can also use antihypertensive, antilipidemic, antidiabetic drugs with the lifestyle change. In a study conducted in our country, about patients diagnosed with MetS: %84.9 did not lose weight, % 66.3 smoked, %6.8 consumed alcohol, %38.4 did not restrict salt, only %2.1 had a sufficient amount of potassium, calcium magnesium in their diets, %84.2 did not restrict saturated fat and cholesterol and %91.8 did not perform physical activity. (25).

2.5.5.1. Weight Loss

%5-10 weight loss allows to control all components of the metabolic syndrome (23). Weight loss should not exceed 7-10% of the person's initial weight within first 6-12 months. (5). The risk of developing Type 2 DM is reduced %50 with %7 weight loss and regular physical activity (23).

2.9.5.2. Physical Activity

The aim is to force the cells to use more glucose and to lose weight. (25). Regular physical activity provides glucose, lipid and blood pressure control and helps to improve cardiovascular functions (23). Exercising at least 5 days a week or every day at least 30 minutes reduces cardiovascular risk by preventing weight gain. (25).

2.9.5.3. Nutrition Therapy

Types of carbohydrates and fats are important in the treatment of metabolic syndrome nutrition. Simple sugar should be reduced. Unrefined, high pulp and low glycemic index carbohydrates should be preferred. Instead of trans and saturated fats,

unsaturated fats should be consumed. A nutrition program containing low sodium, high potassium, magnesium, vitamin D should be applied (36). Traditional Mediterranean diet is the most important treatment option in the prevention of coronary heart disease and metabolic syndrome. Consumption of fish, vegetables and fruits, legumes, purified grains rich in omega 3 fatty acids and antioxidants should be increased (36). Servings should be small and meals should be frequent. Smoking and alcohol should be avoided. (25).

3. MATERIAL AND METHOD

3.1. Reason and Timing of the Survey

This research investigates the effect of having a dietitian in Saha Bilgi Teknolojileri, Yılmaz Makine and Hlek Sanayi. It is held in 3 corporate companies in Istanbul between January 2019 and February 2019 on the nutritional knowledge levels of employees. It is carried out with the aim of encouraging employees to live healthy with the subsequent nutrition intervention programs.

3.2. Sample Survey

The research sample is composed of 153 employees. 65 people from Saha Bilgi Teknolojileri, 53 people from Yılmaz Makine, 35 people from Hleks Industry.

Written permission is obtained from all companies for the research. Also their consent is obtained from the participants in accordance with the research. In addition, permission was obtained by Yeditepe University Clinical Research Ethics Committee. (KAEK Karar No: 960)

3.3. Data Collection Tools

Questionnaire is used as a data collection tool.

The questionnaire form applied within the scope of the research consists of 27 questions in total.

3.4. Evaluation of Data

Body weights and height of employees are taken as anthropometric measures. Body Mass Index (BMI) is calculated based on the evaluation ranges specified by the World Health Organization. Accordingly, the BMI value is classified as "18.5 and below thin", "18.5-24.9 normal", "25-29.99 fat" and "30 and above obese"..

The answers to all questions were examined one by one to determine the differences between companies with and without dieticians.

3.5. Statistical Evaluation of Data

Statistical calculation of all data obtained is done using IBM SPSS Statistics 21 (IBM Corp. Released 2012.IBM SPSS Statistics for Windows, Version 21.0. Armonk,

NY: IBM Corp.). The statistical evaluation of the results of the survey is made with the χ^2 test and the statistical significance value is accepted as $p < 0.05$

4.FINDINGS

4.1. Demographic Properties

There are 3 companies in this survey. The company named as Workplace 1 is Yılmaz Makine A.Ş., the company named as Workplace 2 Hleks Sanayi, the company named as Workplace 3 is Saha Bilgi Teknolojileri.

According to the order above; 58, 30, 64 employees are included in the study While it is observed that female employees are at the rate of 7.2%, 14.5% and 19.7% in the first, second and third workplaces, respectively; male employees are found to be 30.9%, 5.3%, 22.4%.

Table 4.1.1. Employes' Gender Distribution in Workplaces

	Woman n (%)	Man n (%)	Total n (%)
Workplace 1	11 (7,2)	47 (30,9)	58 (38,2)
Workplace 2	22 (14,5)	8 (5,3)	30 (19,7)
Workplace 3	30 (19,7)	34 (22,4)	64 (42,1)
Total	63 (41,4)	89 (58,6)	152 (100)

4.2. Age Averages

According to Tablo 4.2.1 the general age average, 28.3 +/- 4 in women and 34.2 +/- 9.4 in men.

Table 4.2.1. Age Avarages According To Gender

Gender	n	Avarage	Std. Deviation	Least	Most
Woman	63	28,3492	4,04076	19	41
Man	89	34,2472	9,49794	23	65

4.3. Food Consumption in Workplaces

In the scope of the research following consumption frequencies of women and men in companies were questioned. meat chicken, seafood, milk, yogurt, cheese, products made from whole wheat flour, foods made from white flour, legumes, fruits

and vegetables, fried foods and fast food, instant juices and carbonated drinks, delicatessen products, eggs, oilseeds (nuts), breakfast cereal, packaged products, sweets, vegetable and fat.

Table 4.3.1. Meat/Chicken Consumption Frequency In Companies According To Gender

		Gender		
		Woman n (%)	Man n (%)	*p
Red meat-Meatball	**1 a month**	3 (2)	6 (3.9)	0.160
	2-3 a month	11 (7.2)	16 (10.5)	
	1-3 a week	40 (26.30)	45 (29.6)	
	4-6 a week	6 (3.9)	14 (9.2)	
	1 a day	0 (0)	6 (3.9)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	3 (2)	1 (0.7)	
	Never	0 (0)	0 (0)	
Chicken-Turkey	**1 a month**	6 (3.9)	5 (3.3)	0.006
	2-3 a month	7 (4.6)	18 (11.8)	
	1-3 a week	40 (26.3)	40 (26.3)	
	4-6 a week	5 (3.3)	19 (12.5)	
	1 a day	0 (0)	6 (3.9)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	2 (1.3)	0 (0)	
	Never	3 (2)	1 (0.7)	
Giblet	**1 a month**	18 (11.9)	41 (27.2)	<0.0001
	2-3 a month	5 (3.3)	17 (11.3)	
	1-3 a week	1 (0.7)	6 (4)	
	4-6 a week	0 (0)	0 (0)	
	1 a day	0 (0)	1 (0.7)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	39 (25.8)	23 (15.2)	

According to Table 4.3.1, the frequency of red meat-meatball consumption was not significantConsidering the frequency of consumption 1-3 times a week. The rate is %29.6 in men and %26.30 in women. Even if men have a much higher consumption than women, consumption rates are close to each other.

Chicken, turkey consumption is determined to be significant and consumption rates are generally close to each other. Frequency of consumption 1-3 times a week and is found to be %26.3 the same rate among men and women. A significant difference was determined in offal consumption. While the incidence of offal consumption once a month is 27.2% for men and 11.9% for women. the segment that never consumes is also quite high. The rate for women is %25.8, much higher than that for men, which is %15.2.

**Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

Table 4.3.2. Sea Food Consumption Frequency In Companies According To Gender

| | | Gender | | |
		Woman n (%)	Man n (%)	*p
Fish	1 a month	28 (18.4)	40 (26.3)	0.334
	2-3 a month	14 (9.2)	29 (19.1)	
	1-3 a week	16 (10.5)	14 (9.2)	
	4-6 a week	0 (0)	0 (0)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	1 (0.7)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	4 (2.6)	6 (3.9)	
Sea Food	1 a month	28 (18.4)	45 (29.6)	0.391
	2-3 a month	14 (9.2)	24 (15.8)	
	1-3 a week	3 (2)	5 (3.3)	
	4-6 a week	0 (0)	0 (0)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	18 (11.8)	15 (9.9)	

**Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.2. , no important significance value is found in fish and seafood. Because consumption values are generally close for men and women.

Considering fish consumption 1-3 times a week, it is %10.5 for women and %9.2 for men, and is %19.7 in total. Similarly, considering the frequency of consumption of seafood 1-3 times a week, the value is %3.3 in women and %2 in men.

Table 4.3.3. Milk Consumption Frequency Of Men And Women In Companies According to Gender

		Gender		
		Woman	**Man**	***p**
		n (%)	**n (%)**	
High Fat Milk	**1 a month**	12 (7.9)	13 (8.6)	0.228
	2-3 a month	9 (6)	18 (11.9)	
	1-3 a week	17 (11.3)	20 (13.2)	
	4-6 a week	6 (4)	6 (4)	
	1 a day	4 (2.6)	4 (2.6)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	3 (2)	0 (0)	
	Never	12 (7.9)	27 (17.9)	
Low Fat Milk	**1 a month**	8 (5.3)	15 (9.9)	0.340
	2-3 a month	6 (4)	16 (10.6)	
	1-3 a week	15 (9.9)	13 (8.6)	
	4-6 a week	2 (1.3)	7 (4.6)	
	1 a day	4 (2.6)	4 (2.6)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	1 (0.7)	3 (2)	
	Never	27 (17.9)	30 (19.9)	

**Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as $p < 0.05$.

According to Table 4.3.3, milk consumption is low, regardless of whether it is full-fat or low-fat. There was no significant difference between the consumption in women and men. With a rate of %4 consumption of whole milk 4-6 times a week is equal in both women and men. Besides, the rate of women who say they would never drink is lower than men. Rates are : %7.9 in women, %17.9 in men.

While the frequency of consumption of low-fat milk once a day is equal in men and women with %2.6, 1-3 times a week consumption is very close. Rates in women are as %9.9, and in men %8.6.

Table 4.3.4. Yogurt Consumption Frequnecy Of Men And Women According To Gender

| | | Gender | | |
		Woman n (%)	Man n (%)	*p
Full Fat Yogurt	**1 a month**	4 (2.6)	9 (6)	0.390
	2-3 a month	7 (4.6)	15 (9.9)	
	1-3 a week	16 (10.6)	29 (19.2)	
	4-6 a week	15 (9.9)	16 (10.6)	
	1 a day	8 (5.3)	7 (4.6)	
	2-3 a day	1 (0.7)	4 (2.6)	
	Everyday	8 (5.3)	5 (3.3)	
	Never	4 (2.6)	3 (2)	
Low Fat Light Yogurt	**1 a month**	6 (4)	15 (9.9)	0.710
	2-3 a month	6 (4)	9 (6)	
	1-3 a week	9 (6)	7 (4.6)	
	4-6 a week	2 (1.3)	2 (1.3)	
	1 a day	3 (2)	4 (2.6)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	1 (0.7)	
	Never	37 (24.5)	50 (33.1)	
Kefir	**1 a month**	7 (4.6)	12 (7.9)	0.183
	2-3 a month	5 (3.3)	9 (6)	
	1-3 a week	6 (4)	1 (0.7)	
	4-6 a week	1 (0.7)	2 (1.3)	
	1 a day	1 (0.7)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	43 (28.5)	64 (42.4)	
Ayran	**1 a month**	6 (4)	14 (9.3)	<mark>0.035</mark>
	2-3 a month	13 (8.6)	20 (13.2)	
	1-3 a week	19 (12.6)	38 (25.2)	
	4-6 a week	13 (8.6)	7 (4.6)	
	1 a day	4 (2.6)	6 (4)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	4 (2.6)	3 (2)	
	Never	4 (2.6)	0 (0)	

** Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.4., no significant difference is found in full-fat yogurt. The rate of consuming 4-6 times a week is %9.9 in women and %10.6 in men. In a similer way when we check the consumption of yogurt once week rates are %5.3 in women and %4.6 in men which is lower.

There was no analysis of significnce in low-fat yoghurt consumption, and the portion that never consumes is at very high rates. The rates are %24.5 in women, %33.1 in men. However, the rates are generally determined close to each other. The frequency of consumption 4-6 times a week, is %1.3 for women, found at the same rate for men. The frequency of consumption once a day is %2 in women and %2.6 in men. The rate is lower in women as full-fat yogurt.

Kefir consumption seems to be the least consumed food among all dairy products. The rate of the women employes who never consume kefir is %28.5, in men %42.4. In general, the rates are close to each other and no significance can be determined.

It is determined that there is a important significance in Ayran consumption. Frequency of consumption 1-3 times a week in women is %12.6, %25.2 in men. The frequency of consumption 2-3 times a month is %8.6 for women and %13.2 for men.

Table 4.3.5. Cheese Consumption Frequency Of Men And Women According To Gender

		Gender		
		Woman	Man	*p
		n (%)	n (%)	
Hight Fat Cheese	**1 a month**	1 (0.7)	5 (3.3)	0.062
	2-3 a month	5 (3.3)	15 (9.9)	
	1-3 a week	17 (11.3)	35 (23.2)	
	4-6 a week	12 (7.9)	14 (9.3)	
	1 a day	11 (7.3)	7 (4.6)	
	2-3 a day	1 (0.7)	0 (0)	
	Everyday	14 (9.3)	9 (6)	
	Never	2 (1.3)	3 (2)	
Low Fat Light Cheese	**1 a month**	8 (5.3)	14 (9.3)	0.326
	2-3 a month	6 (4)	8 (5.3)	
	1-3 a week	5 (3.3)	12 (7.9)	
	4-6 a week	1 (0.7)	3 (2)	
	1 a day	3 (2)	2 (1.3)	
	2-3 a day	1 (0.7)	0 (0)	
	Everyday	3 (2)	0 (0)	
	Never	36 (23.8)	49 (32.5)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.5, no significance was found in full-fat cheese consumption, but it was very close to the significance value. While the consumption of 2-3 times a month and 1-3 times a week is much higher in men than in women, it is much higher in females every day. Considering the consumption 1-3 times a week, the rate is %11.3 in women and %23.2 in men. Considering its consumption every day, the rate is % 9.3 for women %6 for men. In addition, the frequency of consumption in general is average.

Low-fat cheese consumption is generally much less than full-fat cheese. So much so that when the segment that never consumes is examined, the rate is %23.8 in women, %32.5 in men. However, no important significance has been identified and consumption values are very close to each other. The frequency of consumption 2-3 times a month is found to be %4 in women and %5.3 in men.

Table 4.3.6. Whole Grain Consumption Frequency Of Men And Women According To Gender

		Gender		
		Woman	Man	*p
		n (%)	n (%)	
Whole Grain Black Bread	1 a month	9 (6)	21 (13.9)	0.019
	2-3 a month	11 (7.3)	17 (11.3)	
	1-3 a week	12 (7.9)	20 (13.2)	
	4-6 a week	13 (8.6)	6 (4)	
	1 a day	7 (4.6)	4 (2.6)	
	2-3 a day	1 (0.7)	2 (1.3)	
	Everyday	9 (6)	7 (4.6)	
	Never	1 (0.7)	11 (7.3)	
Wholewheat rice Wholewheat pasta	1 a month	5 (3.3)	9 (6)	0.634
	2-3 a month	8 (5.3)	9 (6)	
	1-3 a week	4 (2.6)	11 (7.3)	
	4-6 a week	3 (2)	2 (1.3)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	43 (28.5)	57 (37.7)	
Oat	1 a month	12 (7.9)	13 (8.6)	0.640
	2-3 a month	8 (5.3)	15 (9.9)	
	1-3 a week	7 (4.6)	4 (2.6)	
	4-6 a week	2 (1.3)	3 (2)	
	1 a day	1 (0.7)	1 (0.7)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	33 (21.9)	52 (34.4)	
Bulgur	1 a month	6 (4)	8 (5.3)	0.915
	2-3 a month	24 (15.9)	33 (21.9)	
	1-3 a week	27 (17.9)	33 (21.9)	
	4-6 a week	3 (2)	8 (5.3)	
	1 a day	2 (1.3)	4 (2.6)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	1 (0.7)	2 (1.3)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.6, bulgur consumption is generally high. Its consumption 1-3 times a week is %17.9 for women and %21.9 for men.

Theresi in no significance observed in bran pasta. Consumption rates are quite low in both men and women. Never consuming rates %28.5 in women, %37.7 in men. %2 of women, and %1.3 of men are consuming 4-6 times a week.

A significant difference is observed in the consumption of whole grain bread. M who never consume are %7.3 and women are %0.7. In consumption 4-6 times a week, women are %8.6 and men are %4.

Oats are also among the rare consumed foods and there is no significance between men and women. The rates are %7.9 and %8.6. for consumption once a month.

Table 4.3.7. Food Made From White Floor Consumption Frequency Of Men And Women

		Gender		
		Woman	**Man**	***p**
		n (%)	**n (%)**	
White bread	1 a month	6 (3.9)	7 (4.6)	0.157
	2-3 a month	6 (3.9)	11 (7.2)	
	1-3 a week	16 (10.5)	12 (7.9)	
	4-6 a week	1 (0.7)	7 (4.6)	
	1 a day	8 (5.3)	10 (6.6)	
	2-3 a day	3 (2)	7 (4.6)	
	Everyday	7 (4.6)	20 (13.2)	
	Never	16 (10.5)	15 (9.9)	
Poğaça	1 a month	15 (9.9)	18 (11.8)	0.616
Börek	2-3 a month	23 (15.2)	22 (14.6)	
	1-3 a week	14 (9.3)	27 (17.9)	
	4-6 a week	3 (2)	4 (2.6)	
	1 a day	0 (0)	1 (0.7)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	1 (0.7)	1 (0.7)	
	Never	7 (4.6)	15 (9.9)	
White pasta White rice	1 a month	4 (2.6)	8 (5.3)	0.118
	2-3 a month	17 (11.3)	25 (16.6)	
	1-3 a week	26 (17.2)	36 (23.8)	
	4-6 a week	7 (4.6)	9 (6)	
	1 a day	0 (0)	3 (2)	
	2-3 a day	1 (0.7)	1 (0.7)	
	Everyday	0 (0)	4 (2.6)	
	Never	8 (5.3)	2 (1.3)	
Bagel	1 a month	8 (5.3)	16 (10.6)	0.250
	2-3 a month	22 (14.6)	25 (16.6)	
	1-3 a week	22 (14.6)	33 (21.9)	
	4-6 a week	4 (2.6)	5 (3.3)	
	1 a day	2 (1.3)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	3 (2)	1 (0.7)	
	Never	2 (1.3)	8 (5.3)	

According to Table 4.3.7, the rate of the group that never consumed white bread and the group that consumes every day, the group that consumes 1-3 times a week are very similar. When we observe the never consumers' the rate %10.5 in women and %9.9 in men. Everday consumers' rates are %5.3 in women, in %6.6 men. For this reason there is significance.

There is significance observed in Poğaça, börek consumption. However men's consumption rates are higher. The rate of 1-3 times a weeks consumers are %9.3 in women and %17.3 in men . Moreover there is a %1.4 decline in everyday consumers. White pasta and of white rice are the foods with high consumption. The frequency of consumption 1-3 times a week is respectively %17.2 and %23.8. Once a mont consumption is %2.6, %5.3.

Table 4.3.8. Leguma Family and Soy Consumption Frequency Of Men And Women

		Gender		
		Woman n (%)	Man n (%)	*p
Legume Bean Chickpea	1 a month	4 (2.6)	5 (3.3)	0.378
	2-3 a month	20 (13.2)	24 (15.8)	
	1-3 a week	28 (18.4)	50 (32.9)	
	4-6 a week	7 (4.6)	7 (4.6)	
	1 a day	1 (0.7)	3 (2)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	2 (1.3)	0 (0)	
	Never	1 (0.7)	0 (0)	
Soy and products	1 a month	14 (9.3)	18 (11.9)	0.034
	2-3 a month	5 (3.3)	19 (12.6)	
	1-3 a week	3 (2)	11 (7.3)	
	4-6 a week	0 (0)	1 (0.7)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	41 (27.2)	39 (25.8)	

According to table 4.3.8 the consumption rates in legume consumption are very close and high. Consumption 1-3 times a week was found to be 18.4% and 32.9%, respectively. There is no segment that says never consume. While soy and its products are generally identified as a food group that is not consumed, it is determined that men are higher than women when they consume 1 or 2-3 times a month. The frequency of consumption 2-3 times a month is 3.3% for women and 12.6% for men.

Table 4.3.9. Fresh Fruit And Vegetable Consumption Frequency Of Men And Women

		Gender		
		Woman n (%)	Man n (%)	*p
Fresh and Dried Fruit	1 a month	5 (3.3)	14 (9.3)	0.001
	2-3 a month	18 (11.9)	10 (6.6)	
	1-3 a week	10 (6.6)	30 (19.9)	
	4-6 a week	18 (11.9)	9 (6)	
	1 a day	1 (0.7)	11 (7.3)	
	2-3 a day	1 (0.7)	3 (2)	
	Everyday	7 (4.6)	8 (5.3)	
	Never	3 (2)	3 (2)	
Fresh Vegatable	1 a month	1 (0.7)	7 (4.6)	0.192
	2-3 a month	13 (8.6)	19 (12.6)	
	1-3 a week	19 (12.6)	30 (19.9)	
	4-6 a week	16 (10.6)	16 (10.6)	
	1 a day	5 (3.3)	9 (6)	
	2-3 a day	1 (0.7)	4 (2.6)	
	Everyday	7 (4.6)	2 (1.3)	
	Never	1 (0.7)	1 (0.7)	
Potato	1 a month	2 (1.3)	6 (4)	0.296
	2-3 a month	16 (10.6)	24 (15.9)	
	1-3 a week	31 (20.5)	38 (25.2)	
	4-6 a week	9 (6)	19 (12.6)	
	1 a day	2 (1.3)	1 (0.7)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	1 (0.7)	0 (0)	
	Never	2 (1.3)	0 (0)	
Corn	1 a month	23 (15.2)	31 (20.5)	0.694
	2-3 a month	16 (10.6)	27 (17.9)	
	1-3 a week	7 (4.6)	13 (8.6)	
	4-6 a week	4 (2.6)	3 (2)	
	1 a day	1 (0.7)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	12 (7.9)	14 (9.3)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Tablo 4.3.9 a göre, dried and fresh fruit rates are very different in men and women. Higher in men. When we observe the everyday consumers rates are as %4.6 in women, %5.3 in men.

The frequency of consumption of fresh vegetables 4-6 times a week is found equally in men and women and no overall significance was found. However, when look at the consumption of every day, the rates are quite low like fruits and respectively %4.6 and %1.3. Potato consumption is very high in both men and women, consumption 1-3 times a week is %20.5 and %25.2. Finally, the p value in corn consumption is very close to the significance value and the consumption in men is higher. 3-4 per month is %10.6 in women, %17.9 in men.

Table 4.3.10. Fried Food And Fast Food Consumption Frequency Of Men And Women

		Gender		
		Gender n (%)	Man n (%)	*p
Fried Food	1 a month	8 (5.3)	14 (9.3)	0.149
	2-3 a month	22 (14.6)	24 (15.9)	
	1-3 a week	22 (14.6)	26 (17.2)	
	4-6 a week	1 (0.7)	12 (7.9)	
	1 a day	3 (2)	1 (0.7)	
	2-3 a day	1 (0.7)	1 (0.7)	
	Everyday	2 (1.3)	1 (0.7)	
	Never	4 (2.6)	9 (6)	
Fast Food	1 a month	15 (9.9)	24 (15.9)	0.045
	2-3 a month	21 (13.9)	15 (9.9)	
	1-3 a week	12 (7.9)	16 (10.6)	
	4-6 a week	2 (1.3)	4 (2.6)	
	1 a day	1 (0.7)	2 (1.3)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	3 (2)	0 (0)	
	Never	9 (6)	27 (17.9)	
Cips	1 a month	23 (15.2)	30 (19.9)	0.489
	2-3 a month	16 (10.6)	14 (9.3)	
	1-3 a week	5 (3.3)	8 (5.3)	
	4-6 a week	1 (0.7)	4 (2.6)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	18 (11.9)	32 (21.2)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.10, very large differences are observed in the consumption of fast foods and the consumption in men is higher in general. The frequency of consumption once a month is %9.9 for women and %15.9 for men. The frequency of consumption 4-6 times a week is %1.3 for women and %2.6 for men.

Fried foods, like fast food products, have a higher consumption rate in men than in women. The frequency of consumption 1-3 times a week is %14.6 in women and %17.2 in men. The frequency of consumption 2-3 times a month is very close, with %14.6 for women and %15.9 for men. Considering the consumption rate of chips on a monthly, weekly and daily basis, very variable results have occurred. The group that never consumes is as much as the group that consumes 2-3 times a month.

Table 4.3.11. Ready Juice And Carbonated Beverage Consumption Frequency Of Men And Women

		Gender		
		Woman	Man	*p
		n (%)	n (%)	
Ready Fruit Juices	**1 a month**	13 (8.6)	25 (16.6)	0.597
	2-3 a month	10 (6.6)	13 (8.6)	
	1-3 a week	6 (4)	8 (5.3)	
	4-6 a week	2 (1.3)	3 (2)	
	1 a day	2 (1.3)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	1 (0.7)	
	Never	30 (19.9)	38 (25.2)	
Carbonated Drinks	**1 a month**	13 (8.6)	27 (17.9)	0.656
	2-3 a month	14 (9.3)	15 (9.9)	
	1-3 a week	12 (7.9)	20 (13.2)	
	4-6 a week	3 (2)	3 (2)	
	1 a day	1 (0.7)	0 (0)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	1 (0.7)	1 (0.7)	
	Never	19 (12.6)	21 (13.9)	
%100	**1 a month**	15 (9.9)	22 (14.5)	0.764
Fruit and Vegetable Juice	**2-3 a month**	17 (11.2)	21 (13.8)	
	1-3 a week	9 (5.9)	12 (7.9)	
	4-6 a week	5 (3.3)	5 (3.3)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	0 (0)	2 (1.3)	
	Everyday	0 (0)	2 (1.3)	
	Never	17 (11.2)	25 (16.4)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.11, no significance is found in the consumption of ready fruit juices. Whereas the rates of never sonsumers are %19.9 and %25.2. Although no significance can be found in the consumption of carbonated drinks, the frequency of consumption in men is higher than in women. The rates of 1-3 times consumers per week are %7.9 in women, %13.2 in men. Likewise, once a month consumpters' rates for males is %17.9 and %8.6% for females. Men's rates are higher. Overall, there is not much consumption compared to other foods. The frequency of consumption of %100 juice 4-6 times a week is the same   among men and women with %3.3.

Table 4.3.12. Egg And Deli Products Frequency Of Men And Women

		Gender		
		Woman	Man	*p*
		n (%)	n (%)	
Deli Products	**1 a month**	18 (11.8)	30 (19.7)	0.853
(Salami-Sausage)	**2-3 a month**	15 (9.9)	15 (9.9)	
	1-3 a week	10 (6.6)	14 (9.2)	
	4-6 a week	2 (1.3)	3 (2)	
	1 a day	0 (0)	1 (0.7)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	1 (0.7)	
	Never	18 (11.8)	25 (16.4)	
Egg	**1 a month**	0 (0)	2 (1.3)	0.309
	2-3 a month	7 (4.6)	14 (9.2)	
	1-3 a week	31 (20.4)	47 (30.9)	
	4-6 a week	10 (6.6)	10 (6.6)	
	1 a day	2 (1.3)	6 (3.9)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	9 (5.9)	8 (5.3)	
	Never	4 (2.6)	1 (0.7)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.12, the highest consumption of egg is 1-3 times a weekThis rate is %20.4 for women and %30.9 for men. Considering its consumption 4-6 times a week, its equal in both genders with %6.6

Deli products are consumed less once a month or 2-3 times a month. Both men and women consume it %9.9 3-4 times for a month. The segment that never consumes is also high and the rates are %11.8 and %16.4 respectively.

Table 4.3.13. Oill Seed Consumption Frequency Of Men And Women

		Gender		
		Woman **n (%)**	**Man** **n (%)**	***p**
Oilly seeds **(Walnut, Almund)**	**1 a month**	5 (3.3)	10 (6.6)	0.823
	2-3 a month	18 (11.9)	24 (15.9)	
	1-3 a week	17 (11.3)	28 (18.5)	
	4-6 a week	7 (4.6)	7 (4.6)	
	1 a day	4 (2.6)	8 (5.3)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	8 (5.3)	6 (4)	
	Never	4 (2.6)	5 (3.3)	
Nut **Peanut/Nut Butter**	**1 a month**	15 (9.9)	18 (11.9)	0.425
	2-3 a month	15 (9.9)	21 (13.9)	
	1-3 a week	14 (9.3)	22 (14.6)	
	4-6 a week	1 (0.7)	6 (4)	
	1 a day	2 (1.3)	2 (1.3)	
	2-3 a day	0 (0)	2 (1.3)	
	Everyday	2 (1.3)	6 (4)	
	Never	14 (9.3)	11 (7.3)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as $p < 0.05$.

According to Table 4.3.13, the highest consumption in oilseeds is 1-3 times a week. The rate is %11.3 in women and %18.5 in men. The group consuming 2-3 times a month is also high with %11.9 and %15.9. The group consuming 2-3 times a month is also high with %11.9 and %15.9.

Table 4.3.14. Cereal, Packaged Product, Dessert Consumption Frequency Of Men And Women

		Gender		
		Woman n (%)	Man n (%)	*p*
Breakfast Cereal	**1 a month**	13 (8.6)	14 (9.3)	0.182
	2-3 a month	1 (0.7)	8 (5.3)	
	1-3 a week	7 (4.6)	4 (2.6)	
	4-6 a week	1 (0.7)	2 (1.3)	
	1 a day	0 (0)	0 (0)	
	2-3 a day	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	
	Never	41 (27.2)	60 (39.7)	
Packaged Products **Biscuit and Cake**	**1 a month**	11 (7.3)	20 (13.2)	0.077
	2-3 a month	14 (9.3)	19 (12.6)	
	1-3 a week	14 (9.3)	33 (21.9)	
	4-6 a week	8 (5.3)	4 (2.6)	
	1 a day	3 (2)	0 (0)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	3 (2)	3 (2)	
	Never	10 (6.6)	8 (5.3)	
Dessert **Cake, Baklava**	**1 a month**	9 (6)	17 (11.3)	0.533
	2-3 a month	21 (13.9)	36 (23.8)	
	1-3 a week	21 (13.9)	26 (17.2)	
	4-6 a week	6 (4)	3 (2)	
	1 a day	2 (1.3)	2 (1.3)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	0 (0)	0 (0)	
	Never	4 (2.6)	3 (2)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.3.14, when looking at desserts, the frequency of consumption per week or month is similar in men and women. The rate is in women %13.9 and %17.2 in men. In contrast, consumption rates are very low in both 2-3 a day, or daily.

Although no significant relationship can be found in breakfast cereal, it is one of the rarely consumed foods in general. The number of those who never consume is %27.2 and %39.7 respectively. In addition, the amount consumed by women in 1 week was higher than that of men. Consumption of packaged products is found very close to p significance value of 0.077. In addition, consumption in men is generally higher than

women. Their highest consumption is %9.3 in women and %21.9 in men, 1-3 times a week.

Table 4.3.15. Oil Saturated Fat, Tahini Consumption Frequency Of Men And Women

According to Table 4.3.15, vegetable oil is found to be significant. It is observed that there is a significant difference between the consumption rates of women and men. Generally, men consume lower oil consumptionConsidering the frequency of consumption every day, it is found that women consume %10.6 and men consume %7.9. On the other hand, the total consumption is %18.5 every day. Considering solid oils, the frequency of consumption 1-3 times a week is %33.1 in total. This rate, which is not very high, is almost the same for men and women. The same situation was valid for the fats in tahini / tahini halva and the rates were found higher in the non-dietician company. The frequency of consumption 2-3 times a month is %13.2 in the non-dietician company and %9.9 in the dietician company.

		Gender		
		Woman	**Man**	*$*p$*
		n (%)	**n (%)**	
Vegetable Oil	**1 a month**	2 (1.3)	18 (11.9)	0.048
	2-3 a month	4 (2.6)	8 (5.3)	
	1-3 a week	17 (11.3)	26 (17.2)	
	4-6 a week	8 (5.3)	7 (4.6)	
	1 a day	3 (2)	6 (4)	
	2-3 a day	3 (2)	2 (1.3)	
	Everyday	16 (10.6)	12 (7.9)	
	Never	10 (6.6)	9 (6)	
Saturated/ Half Saturated Oils (Butter)	**1 a month**	8 (5.3)	12 (7.9)	0.581
	2-3 a month	13 (8.6)	18 (11.9)	
	1-3 a week	23 (15.2)	27 (17.9)	
	4-6 a week	7 (4.6)	6 (4)	
	1 a day	1 (0.7)	5 (3.3)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	5 (3.3)	4 (2.6)	
	Never	6 (4)	15 (9.9)	
Tahini/Tahini Halva	**1 a month**	16 (10.6)	26 (17.2)	0.825
	2-3 a month	17 (11.3)	18 (11.9)	
	1-3 a week	8 (5.3)	16 (10.6)	
	4-6 a week	1 (0.7)	3 (2)	
	1 a day	1 (0.7)	2 (1.3)	
	2-3 a day	0 (0)	1 (0.7)	
	Everyday	2 (1.3)	3 (2)	
	Never	18 (11.9)	19 (12.6)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

Table 4.4. Life Style Characteristics In Companies

		Gender		
		Woman n (%)	Man n (%)	*p*
Snack Status	Not doing	25 (16.4)	57 (37.5)	*0.005
	Several times	38 (25)	32 (21.1)	
Alcohol Consumption	1-2 days a week	9 (5.9)	7 (4.6)	**0.123
	Rarely	28 (18.4)	31 (20.4)	
	Not using	26 (17.1)	51 (33.6)	
Physical Activity	Every day	1 (0.7)	1 (0.7)	**0.458
	3-4 days a week	15 (9.9)	32 (21.1)	
	Rarely	36 (23.7)	42 (27.6)	
	Not doing	11 (7.2)	14 (9.2)	
Cigarette	1-20 pcs/day	15 (9.9)	33 (21.7)	**0.091
	+20 pcs/day	0 (0)	2 (1.3)	
	Not doing	48 (31.6)	54 (35.5)	

*Statisticly analysed by Fisher's Exact Test.

** Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

The rate of making snacks, which is found to be significant according to Table 4.4, is higher in women than in men. When this ratio was hit to the total, it was determined that %46.1 of them made snacks.

There is no significance found in case of physical activity. Men who do not perform physical activity were found to be higher than men who do 3-4 days a week. In total, it was observed that only %31 of the participants were active several days a week.

Tablo 4.5. Body Mass Index Prevalance According to Companies

	Body Mass Index (BMI) n (%)				Total n (%)
	Thin (<18,5 kg/m^2)	Normal Weight (18,5-24,9 kg/m^2)	Over Weight (25-29,9 kg/m^2)	Obese (30-39,9 kg/m^2)	
Workplace 1	0 (0)	20 (13,2)	31 (20,4)	7 (4,6)	58 (38,2)
Workplace 2	2 (1,3)	20 (13,2)	7 (4,6)	1 (0,7)	30 (19,7)
Workplace 3	1 (0,7)	42 (27,6)	16 (10,5)	5 (3,3)	64 (42,1)
Total	3 (2)	82 (53,9)	54 (35,5)	13 (8,6)	152 (100)

According to Table 4.5, the percentage of normal weight workers in companies is %53, the percentage of obese workers is %8.6, and overweight workers is %35.5.

Table 4.6. Body Mass Index Prevalence According to the Status of Women and Men in Companies

		Gender		
		Woman n (%)	Man n (%)	*p
Body Mass Index (BMI)	Thin (<18,5 kg/m^2)	3 (2)	0 (0)	<0.0001
	Normal Weight (18,5-24,9 kg/m^2)	51 (33.6)	31 (20.4)	
	Over Weight (25-29,9 kg/m^2)	8 (5.3)	46 (30.3)	
	Obese (30-39,9 kg/m^2)	1 (0.7)	12 (7.9)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to table 4.6. It is determined that there is a significant difference in BMI values of women and men. It is seen that overweight men are %30.3 and women are %5.3. When we look at the obese group, obesity rate is %7.9 in men and %0.7 in women. Obesity is is higher in men than in women.

Table 4.7. Body Mass Index by Protein, Carbohydrate, Fat Consumption Frequency

| | | Body Mass Index (BMI) n (%) | | | | |
		Thin (<18,5 kg/m²)	Normal Weight (18,5-24,9 kg/m²)	Over Weight (25-29,9 kg/m²)	Obese (30-39,9 kg/m²)	*p
Protein	1 a month	0 (0)	0 (0)	0 (0)	0 (0)	0,321
	2-3 a month	1 (0,7)	6 (3,9)	3 (2)	0 (0)	
	1-3 a week	1 (0,7)	10 (6,6)	13 (8,6)	4 (2,6)	
	4-6 a week	1 (0,7)	37 (24,3)	27 (17,8)	6 (3,9)	
	1 a day	0 (0)	26 (17,1)	11 (7,2)	3 (2)	
	2-3 a day	0 (0)	3 (2)	0 (0)	0 (0)	
	Everyday	0 (0)	0 (0)	0 (0)	0 (0)	
	Never	0 (0)	0 (0)	0 (0)	0 (0)	
Carbohydrate	1 a month	0 (0)	0 (0)	0 (0)	0 (0)	0,614
	2-3 a month	1 (0,7)	4 (2,6)	3 (2)	0 (0)	
	1-3 a week	1 (0,7)	28 (18,4)	14 (9,2)	3 (2)	
	4-6 a week	1 (0,7)	34 (22,4)	25 (16,4)	9 (5,9)	
	1 a day	0 (0)	11 (7,2)	11 (7,2)	1 (0,7)	
	2-3 a day	0 (0)	3 (2)	1 (0,7)	0 (0)	
	Everyday	0 (0)	2 (1,3)	0 (0)	0 (0)	
	Never	0 (0)	0 (0)	0 (0)	0 (0)	
Fat	1 a month	0 (0)	4 (2,6)	2 (1,3)	1 (0,7)	0,990
	2-3 a month	1 (0,7)	11 (7,3)	6 (4)	1 (0,7)	
	1-3 a week	0 (0)	21 (13,9)	15 (9,9)	3 (2)	
	4-6 a week	2 (1,3)	24 (15,9)	19 (12,6)	5 (3,3)	
	1 a day	0 (0)	14 (9,3)	8 (5,3)	3 (2)	
	2-3 a day	0 (0)	4 (2,6)	3 (2)	0 (0)	
	Everyday	0 (0)	3 (2)	1 (0,7)	0 (0)	
	Never	0 (0)	0 (0)	0 (0)	0 (0)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

The frequency of protein, carbohydrate, and fat consumption does not have a significant relationship with BMI values.

According to Table 4.7, among those who consume protein 4-6 times a week, those with normal weight are %24.3, while those who are obese are %2. When looking at carbohydrate consumption 4-6 times a week, normal weight people are %22.4, while overweight people are %16.4.

Tablo 4.8. BKI and Metabolic Syndrome Relationship

		Metabolic Syndrome n (%)				
		Diabetes	Hypertansion	Coronary Heart Disease	Obesity	*p
BMI	Thin	0 (0)	0 (0)	0 (0)	0 (0)	p<0,001
	Normal Weight	0 (0)	1 (6,3)	0 (0)	0 (0)	
	Over Weight	2 (12,5)	0 (0)	0 (0)	0 (0)	
	Obese	0 (0)	0 (0)	0 (0)	13 (81,3)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.8, there is a significant relationship between BMI and metabolic syndrome. It is observed that metabolic syndrome increases with increasing BMI.

Table 4.9. Carbohydrate, Protein and Fat Consumption Frequency According to the Status of Women and Men in Companies

		Gender		
		Woman n (%)	Man n (%)	*p
Protein	1 a month	0 (0)	0 (0)	0.031
	2-3 a month	2 (1.3)	8 (5.3)	
	1-3 a week	8 (5.3)	20 (13.2)	
	4-6 a week	27 (17.8)	44 (28.9)	
	1 a day	24 (15.8)	16 (10.5)	
	2-3 a day	2 (1.3)	1 (0.7)	
	Everyday	0 (0)	0 (0)	
	Never	0 (0)	0 (0)	
Carbohydrate	1 a month	0 (0)	0 (0)	0.611
	2-3 a month	2 (1.3)	6 (3.9)	
	1-3 a week	21 (13.8)	25 (16.4)	
	4-6 a week	26 (17.1)	43 (28.3)	
	1 a day	10 (6.6)	13 (8.6)	
	2-3 a day	3 (2)	1 (0.7)	
	Everyday	1 (0.7)	1 (0.7)	
	Never	0 (0)	0 (0)	
Fat	1 a month	2 (1.3)	5 (3.3)	0.927
	2-3 a month	9 (6)	10 (6.6)	
	1-3 a week	17 (11.3)	22 (14.6)	
	4-6 a week	19 (12.6)	31 (20.5)	
	1 a day	10 (6.6)	15 (9.9)	
	2-3 a day	4 (2.6)	3 (2)	
	Everyday	2 (1.3)	2 (1.3)	
	Never	0 (0)	0 (0)	

According to Table 4.9, significance is determined in protein consumption and important differences are observed between the consumption of women and men. Ever day protein consumption is %15.8 in women and %10.5 in men.

Carbohydrate consumption is generally higher in males than females. Looking at the every day consumption, the rate are %8.6 for men and %6.6 for women.

Fat consumption is also higher in men. Daily consumption rate is %9.9 for men and %6.6 for women.

Table 4.10. Having Breakfast According to the Status of Women and Men in Companies

	Breakfast Status n (%)			*p
	Several days a week	Every day	Never	
Woman	44 (28.9)	18 (11.8)	1 (0.7)	0.093
Man	47 (30.9)	41 (27)	1 (0.7)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.10, the group that had breakfast a few days a week in total is %69.8, while the group that never had breakfast is %1.4. The percentage of men who eat breakfast every day is higher.

Table 4.11. Lunch Consumption Frequency According to the Status of Women and Men in Companies

	Lunch Choice n (%)			*p
	Home Cook Meal	Fast Food	Geçiştiren	
Woman	50 (32.9)	10 (6.6)	3 (2)	0.200
Man	79 (52)	9 (5.9)	1 (0.7)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as p <0.05.

According to Table 4.11, the choice of lunch is questioned in three groups as home-made, fast food or fudge. The group that consumes home food is higher in the table than the group that consumes snacks and fast food.

Table 4.12. Tea, Coffee and Water Consumption Frequency According to the Status of Women and Men in Companies

		Gender		
		Woman **n (%)**	**Man** **n (%)**	***p**
Tea Consumption	**0-3 Glasses**	36 (23.7)	34 (22.4)	0.066
	4-10 Glasses	26 (17.1)	52 (34.2)	
	+10 Glasses	1 (0.7)	3 (2)	
Coffee Consumption	**0-3 Glasses**	58 (38.2)	83 (54.6)	0.602
	4-10 Glasses	5 (3.3)	5 (3.3)	
	+10 Glasses	0 (0)	1 (0.7)	
Water Consumption	**0-1,5 L**	28 (18.4)	44 (28.9)	0.243
	1,5-3 L	35 (23)	42 (27.6)	
	+3 L	0 (0)	3 (2)	

* Statistical analysis are made with Chi-Square Test. Statistical significance value is accepted as $p < 0.05$.

According to Table 4.12, 1.5-3 L water consumption per day is %50.6 in total, which is 23% for women and 27.6% for men..

Tea consumption is maximum 0-3 cups a day. This rate is %23.7 for women and %22.4 for men. Likewise, the maximum drinking amount of coffee is 0-3 cups per day. The rate is %38.2 for women and %54.6 for men.

5. RESULTS AND DISCUSSION

In our study, it are determined that the nutrition patterns of corporate company employees are not healthy enough. Some diffirences and similerities are observed in men and women consumtion. It has been determined that the employees consume enough meat and chicken while they do not consume enough fish and seafood. Milk, yogurt and ayran are among low cosnumed foods. Besides kefir is almost never sonsumed. The breakfast rate of the emploes aare high but their cheese and egg consumption is very low. Daily egg consumption rate is %11.2 and daily cheese consumption rate is %9.9. When we consider consumption rates of pastry as bagel and pogaca we see that most of the employes are having their breakfasts with pastries. However cereal consumption is very low. The rate of never consumers is %66.9. Tme emplyes who never consume deli and offal are very high. Likewise once a month sonsumers and rarely consumers like 1-2 times a month. When the rice and bulgur consumption is compared, the percentage of employees who consume bulgur 1-3 times a week is %39.8, while the percentage of employees consuming rice is %41. Potatoes are among the most consumed foods, and the frequency of consumption 1-3 times a week is %45.7. The frequency of fried food and fast food consumption is higher in males than females. The consumption rates of fried products 1-3 times a week and 2-3 times a month are very similar and are %31.8 and %30.5 respectively. The consumption of fast food 1-3 times a week is lower with a rate of %18.5. Besides the fast good food consumption of the employees, it was questioned what they prefer as lunch home food or fast food. As a result, %32.9 of women and %52 of men prefer home cook meals. Fresh fruits and vegetables are among the foods that should be consumed every day but the results of this study showed that the rate of fruit and vegetable consumption is very low. Daily consumption of fresh fruit is %9.9, and of fresh vegetables is %5.9. On the other hand, considering the consumption of packaged products, it is much higher than fruits and it is %31.2. Likewise, in terms of the importance of a healthy diet, the daily consumption rate of oilseeds, which should be consumed every day, is very low with %9.4. Considering solid oils, the frequency of consumption 1-3 times a week is %33.1 in total. This rate int that high and almost similer in both men and women.

A study to determine the nutritional status of employees is carried out in a workplace operating in the metal industry. The study was carried out to determine the

nutritional habits, anthropometric measurements, blood lipids and fasting blood glucose levels of workers with whom metabolic syndrome may be considered, and to make recommendations regarding dietary habits and lifestyles. 278 (all men) people are participated and the data is obtained through a questionnaire and measurements (37). According to the body mass index evaluation in the results of the study: %52,5 of men are slightly over weight, %18,3 of men are overweight, % 20,9 has waist circumference larger than 102 cm. It has been observed that at least 16 of the people whose waist circumference is more than 102 cm have metabolic syndrome signs. Participants were found to be malnourished in terms of vegetables, fruits, dairy products, meat, eggs, legumes. Workers' most skipped meal is breakfast. Workers are found to consume an average of 6.59 glasses of water per day (37). Compared to this study, similar results have been found, and it is seen that the milk, dairy products and eggs consumption is insufficient.

Another survey performed on construction workers is about the the nutrition of workers in the construction industry living in. João Pessoa, PB. The survey is made cross-sectional to evaluate anthropometric measurements and food safety. 59 people attended to study. The workers were given the Brazilian Scale to Measure Food Insecurity and Nutrition, anthropometric measures were taken and the diet quality index was completed. As a result of the study, Food Insecurity, %71.2 and %69.5 of employees were reported to be overweight. Statistically significant inverse relationships were found among Healthy Nutrition Index and Body Mass Index, waist circumference, percent of total fat and cholesterol. The values obtained reveal that food safety is combined with high weight and dietary deficiencies and these workers are at risk for health problems (38).

While this study shows that office workers have the habit of having breakfast, sometimes they have a healthy breakfast made with eggs and cheese, and sometimes they have an unhealthy breakfast made with bagels and pogaca. However, in 2015, a research was conducted with white collar employees and it was emphasized that breakfast had an impact on satiety. As a result, the higher the quality of the breakfast, the higher the saturation (39). Another study was done to examine the effect of breakfast on cognitive function in white collar Chinese workers. The participants were divided into three groups as nutritionally rich, inadequate and not having breakfast. Cognitive tests were taken 120 minutes after breakfast and their was blood glucose

measured 2 hours before and 2 hours after breakfast. Participients results were; a nutritionally adequate breakfast compared to an inadequate breakfast and no breakfast, conclusion that short term cognitive function significantly increases (40).

In another study of Hacettepe University Faculty of Medicine, which is in the literature emphasizes , the most missed meal is breakfast and one of the four workers does not have breakfast (41). These results show how important breakfast is on both satiety and cognitive function.

Conditions such as irregular nutrition, long sitting hours and fast food consumption in office workers cause obesity. The degree of obesity was questioned by looking at the BMI values in the study and %35.5 of the total employees in the three companies in the study were overweight, %53.9 of them were in normal weight and %8.6 of them were in obese group. (Table 4.5.). In addition, data from a study using the 2010 National Health Interview Questionnaire showed very similar results with this study. %27.7 of US employees were found to be overweight. (42). Similarly, %69.5 of the employees were reported to be overweight in the study conducted on the workers in the construction industry living in PB. (43). According to the TURDEP 2 study, 2/3 of adults are overweight or obese (25). According to TURDEP 1 it is determined that obesity prevalence of Turkey is %22.3 (25). According to various studies on adults in Europe; over weight prevelance is between %32-79 in men, between %28-78 in women. Obesity prevelance is between %5-23 in men, between %7-36 in women. According to these studies, the countries with the highest overweight status are Albania, Bosnia and Herzegovina and England (Scotland). Turkmenistan and Uzbekistan are the countries with the lowest prevalence (44). In the TEKHARF study conducted by the Turkish Cardiology Association (TKD) and covering 3681 people. BMI was defined as 30 kg / m2 obesity and obesity was detected in one fourth of Turkish men over 30 years old (%25.2) and almost half of women (%44.2). When considered separately in middle-aged (31-49 years old) and elderly (50 years old and older) groups, it was reported that this prevalence did not significantly change in men (%24.8 and %25.7), while it increased significantly in women (%38 and %50.2, respectively). It has been stated that the prevalence of obesity increased over time. In 1990, it increased twice from %12.5 in men of similar age, and in women aged 50 and over. The prevalence increased from %40 to %50. (45). This study shows that overweight men are %30.3, women are %5.3,

normal weight men are %20.4 and women are %33.6 according to their BMI percentages.

TURDEP study was conducted on 24.788 individuals over 20 years of age. According to the study results, the prevalence of obesity (BKI 30 kg / m2) was %29.9 in women and %12.9 in men. In the same study, when evaluating is made in terms of central obesity (waist circumference: 88 cm in women, 102 cm in men): obesity prevalence is %34.3 (%48.4 in women and %16.9 in men) (46). The rate of obese employees in this study is %7.9 for males and %0.7 for females.

Turkey Obesity Research conducted by the Turkey Obesity Association is named "Turkey Obesity Profile". It is a a study of 13,878 individuals over 20 years of age. The study was held between 2000-2005 in 6 provinces (Istanbul, Konya, Denizli, Gaziantep, Kastamonu and Kırklareli). It was determined that 30.9% of the participants were 30 kg / m2 of BMI. 7306 individuals in the study were evaluated according to waist circumference (central obesity) and the average waist circumference in women is 79.8 cm, in men it is 98.5 cm (47).

TEKHARF study's original and new cohort of 2445 people (average age 51 ±14) body mass index (BMI), waist circumference and waist hip ratio (W / H) were evaluated cross-sectionally in 2000 by layering of sex and age groups. In addition, changes in the last 10 years of BMI in 910 men and 955 women were evaluated. The diagnosis of CHD was made based on the presence of angina in the anamnesis and 12-lead resting ECG's Minnesota coding. In the context of clear changes that purify without aging, the average BMI was calculated to increase by 1.29 and 1.26 kg / m in men and women in 10 years. (which corresponds to an average of 4 and 3 kg of fat). In the last screening, BMI in males and females is 26.8 and 29.2 kg / m2 in order, waist circumference was also 91.8 to 89.4 cm; the prevalence of obesity was found to be %21 and %43 in those 30 and older. (48). The data obtained in this study determine the average body mass index of women as 22 +/- 3,2 ; men as 26 +/- 3,2.

A study in which the effects of physical activity and nutrition program was observed in middle-aged male Japanese, white collar employees showed significant improvements in body mass index and body weight.

Inadequate physical activity is known to be an important cause of obesity among corporate employees. In the study, it is seen that a total of %16.5 do not exercise, only

%31 do 3-4 days a week. The studies in the literature overlap with this study. Another study for the examination of physical activity prevalence is conducted on healthcare workers from a regional health office in Lima. The working group included 172 healthcare professionals working in a regional health office in Lima (DIRESA), based on the participation criteria and the acceptance of the offer. Workers who have some form of physical limitation with physical exercise are excluded. Physical activity levels are determined using the International Physical Activity Survey (IPAQ), which measures following physical activity areas: work, home, transportation and leisure time. SPSS-19 was used to process the data and nutritional status was evaluated using the body mass index (BMI) according to the WHO classification. As a result of the study, %88.0 of DIRESA employees had low physical activity and %64.0 were overweight. %4.7 diabetes, %15.6 hypertension, %32.6 dyslipidemia are among the most common non-infectious diseases and %15.0 of the participanst are smoking. DIRESA employees were over weight and low physical activity so, it is recommended to implement healthy policies that help and improve health (49).

Another study is made to characterize levels of professional physical activity (OPA) between active and established workers Two types of activity trackers (Fitbit Charge HRTM and Hexoskin) among employees on a full job shift were used to evaluate activity measurements (steps, heart rate and energy expenditure) among employees. The first aim of the study was to evaluate the agreement between the professional physical activity criteria of two types of accelerometer based activity trackers. The second aim of this study was to evaluate the differences in OPA measurements among those working in physically active (pub) and sedentary (office) work environments in general. Occupational physical activity data were collected from 50 workers in beer brewing and from 51 office workers. 101 subjects were taken from a beer production service, a call center and an engineering office in a production facility. Two-factor repeated measurement variance analysis to evaluate two activity testers (ANOVA), two sample t tests were used to compare two study groups. There were statistically significant differences in total steps and average heart rate between the two devices. When comparing two groups of workers, there were statistically significant differences in step, average heart rate, and energy expenditure measurements. The results of this study provide quantitative evidence that OPA levels should be determined with different study groups. (50).

Low physical activity levels and permanent sitting of employees invite many chronic diseases, especially obesity. One of the studies describing the relationship between physical activity and obesity is as follows;

A study was conducted among Saudi women working in office-based jobs in Riyadh to assess the level of physical activity, inactivity and body mass index and to determine correlations for overweight, obesity and low physical activity. 420 Saudi women aged 18 to 58 who worked in office-based jobs in eight workplaces in the Riyadh region of Saudi Arabia participated in the study. Body mass index was determined using weight and height measurements and physical activity was evaluated according to a validated questionnaire applied to them. According to the results of the study, the majority of cases were found to be overweight or obese (% 58.3). Overweight / obesity was associated with employees in the public sector versus increasing age, low income, and the private sector. More than half (%52.1) of the sample was physically inadequate. Participants working in the private sector and in the public sector who worked seven hours or more per day were significantly associated with low physical activity. This study identified Saudi women working in office-based jobs as a high risk group for overweight, obesity and physical inactivity. Since sedentary jobs can combine the risk of obesity and physical inactivity, it can support the use of workplace health programs to reduce this sitting time and support physical activity as a vibrant public health initiative. (51).

Another study to is investigate the relationship between physical activity (PA) and stratified obesity and carotid intima media thickness (CIMT) in Korean office workers. Data from 914 office workers (347 women) aged 21-60 were used. At rest, blood pressure, body mass index (BMI) and waist-to-height ratio (WHtR) were measured. PA was evaluated using an international physical activity survey, and CIMT was evaluated by carotid artery ultrasonography. Logistic regression analysis was used to estimate the odds ratio (OR) and %95 confidence interval (CI) of obesity stratified by weekly PA for abnormally increased CIMT. According to the results of the study, logistic regression analyzes are (OR = 2.50,% 95 CI = 1.60-3.91, P <0.001) or central obese (OR = 2.08,% 95 CI = 1.29-3.40, P = 0.003) showed a significantly higher risk of having an abnormally increased CIMT, even after age, gender, smoking, alcohol consumption, a history of resting blood pressure and hypertension, diabetes and hyperlipidemia, compared to those who are not general or centrally obese. Current

findings indicate that the risk of obesity for abnormally increased CIMT is significantly modulated by demographic features and lifestyle-related risk factors such as smoking and physical inactivity in Korean office workers. (52).

When the studies in the literature are compared with this study, it is clearly seen that office workers do not have sufficient physical activity and their overweight rates are increasing.

An inactive lifestyle is also closely related to coronary heart disease. In a study that questioned the relationship between physical activity and coronary heart disease, could not be found as a specific risk factor, but the relationships between exercise and CVD when stratified with BMI were found statistically significant for ideal weight and overweight subgroups. (53). In contrast, in this study, there are no individuals with coronary heart disease. In other words, it coincides with the result that there is no difference between CVD and exercise. However, it should not be forgotten that the number of obese in the BMI values in the study is small.

A study in the literature has shown that office workers spend most of their working hours sitting 7.2 hours. (54). In another study conducted among healthcare workers in Lima proves %64 of 172 wokrers are over weight and %88 of them are not doing enough physical activity (55). While the percentage of employees who do not do physical activity in this study is much higher than in our study, shows that the society has become conscious over the years. It is thought that half of the hundred people still exercise very rarely, because office workers can not find time. Because they usually stay in their workplaces longer than their normal working hours.

Another situation that will affect the health of corporate company employees in their lifestyles has been determined as the absence of snacks. Besler said in his 2006 study that %42.9 of women are fed regularly (56). Küçükerdönmez stated that %45.7 of women make snacks (57). According to the data in this study, this rates are close with %25 for women and %21.1 for men. In other words, similar results are obtained when compared to the study in the literature.

Smoking is another aspect of lifestyle that affects health negatively among office workers. This study found that smoking rate in the range of 1-20 pieces per day was %33 for men and %15 for women. %35 of 10.2 million workers use any tobacco product in a study conducted by analyzing national health interview questionnaire in US

employees. (58). In the TEKHARF study conducted in 1990, smoking rates of 30-39 age group men are %66,8 and %25. According to the calculations for the 2000s, it is stated that almost half of the men over the age of 30 are smoking and %17.6 of the women are smoking. (59). In addition, according to WHO data, the rate of smoking is %51.3 in men and %19.6 in women. (60). According to the study conducted in TURDEP I, smoking rate is expressed as %50.9 in men and %10.9 in women(61). When the rates in this study are compared with the studies in the literature, similar results were found, and it was concluded that men consume much more cigarettes than women.

Lastly, in the lifestyle features, there is the consumption of alcohol, which is harmful if not drank consciously. In the study, the rate of alcohol consumption 1-2 days a week is %5.9 for women and %4.6 for men. According to the Journal of Food and Health Science study, the lowest per capita consumption in our country between 2004 and 2015 was 1.31 liters of pure alcohol in 2005; the highest consumption was in 2012 with 1.55 liters of pure alcohol. In 2015, consumption per capita was 1.39 liters of pure alcohol. The population over the age of 15 constantly increased from 2006 to 2015, while the supply to the drink market increased continuously from 2007 to 2012 (62). As a result of face-to-face questions asked to 42.754 households aged 15 to 64 years, between December 2017 and March 2018 using the model survey of the European Monitoring Center for Drugs and Drug Addiction, while alcohol consumption rate is %22.1. This rate is %10.7 in women and %34.3 in men. (63). Compared with the studies in the literature, it was found that the rate of alcohol use of women was higher than that of men.

6. RECOMANDATIONS

In the study, the nutritional status, lifestyles, physical activity rates of corporate company employees were examined separately for men and women. It was determined that the general diet of the participants was not proper except for snacks, breakfast and consumption of a few healthy foods.

Corporate company employees do not have enough physical activity because they work sitting 8-9 hours a day, do not have time for breakfast because they get up early in the morning, eat dinner too late due to the fact that they go home late at the end of working hours, There are problems such as insufficient water consumption due to the intensity or mindfulness during the day.

For this reason, they need activities that will teach company employees to eat healthy and promote a healthy lifestyle. First of all, there must be a dietician in each company and should organize employees nutrition programs by following their anthropometric measurements weekly or monthly. Later, it will be beneficial for the dietitian to train on a subject in the form of weekly or monthly periods. For example, providing diabetes education for patients with diabetes may contribute to decrease in blood sugar levels over time. There is a study on this. Community health workers (CHWs) were mobilized in Spanish to offer diabetes education to LEP Latino diabetes patients. Intensive Spanish language education and cultural competence workshops were offered to healthcare students and providers. Positive results were obtained for the patients. There was a significant decrease in HbA1c.

Apart from these types of nutrition intervention programs, programs encouraging physical activity should also be used.

A study for these programs has been done to increase stair climbing. Aim of the study is, 1) to evaluate the short and long term effectiveness of stair climbing intervention with objective measurement of stair climbing and controlled design; and 2) To make the process evaluation of the intervention. A study was carried out before and after control. The study was conducted in two corporate buildings of the same company in Paris (France) between September 2013 and September 2014. The researchers were given the status of "intervention area" or "control area". Participants were on-site employees (intervention site: n = 783; control field: n = 545 at baseline). Increasing a two-month intervention phase and stairwell aesthetics (intervention phase 2) using signs

(intervention phase 1). The main result was stair climbing, change measured by automatic counters and expressed by absolute count / day / 100 employees, and change percentage change by baseline. Qualitative results were used to describe the intervention process. As a result of the study, stair climbing increased significantly in the intervention area (+ 18.7%), but decreased in the control area (-13.3%) in the second intervention stage (difference between areas: +4.6 counts / day / 100 employees, p <0.001). After the intervention and in the long term, stair climbing has returned to the starting levels in the intervention area, but there was a significant difference between the sites (intervention area and control area: +2.9 counts / day / 100 employees, p <0.05). Some important aspects of the intervention were implemented as intended, but other aspects should be adapted. The main difficulty reported by the company staff lay in matching internal communication rules with critical intervention criteria. The program was held at the setting level after the end of the study. This study shows a successful stair-climbing intervention at the construction site (64).

Another study is as following; In 2012, 111 employees from 55 organizations online quationares that were conducted in the study. Survey guides to identify barriers to physical activity and nutrition, as well as intervention strategies for health promotion in office-based workplaces in the Metropolitan area of Perth, Western Australia. The online survey investigated demographic, individual and workplace characteristics, barriers, and their intervention-strategy preferences, physical activity and nutritional behavior. We used the statistics of χ (2) and Mann-Whitney U to test the differences between age and gender groups for barriers and healers, intervention-strategy preferences, physical activity and nutritional behavior. Step-by-step multiple regression analysis identified factors affecting physical activity and nutritional behavior. We identified the most common barriers ("very tired" and "access to unhealthy food") and various factors that affect their physical activity and nutritional behaviors (such as "enjoying physical activity" and "nutritional information"). Response strategy choices showed employee support for health promotion at the workplace. Findings provide useful information on employee preferences for interventions; They can be used to develop comprehensive programs for evidence-based workplace health promotion that takes into account individuals as well as environmental and political impacts (65).

Thanks to these intervention programs, it is possible to improve the nutrition levels of the employees and improve their lifestyle. Dieticians should be more involved

in corporate companies, trainings should be provided and employees should be encouraged to eat healthily.

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8.APPENDIX

EK 1.Survey Form

1- Name Surname:

2- Age:

3- Gender:

4- Education Status:

5- Occupation:

6- Marital Status:

7-What is the name of the company you are working?

7- Anthropometric Measurements:

a)Body Weight:

b)Height Measurement:

c)BMI:

8- Nutrition Habbits

a) Number of daily meals

c)What is the meal you skip the most?

9- What is your frequency of breakfast?

a)Every day

b)Several days a week

c)Never

10- If the meal you skip is breakfast what is the reason ?

a)Do not like breakfast

b)Inappatent

c)Do not have time in the morning

d)Fear of weight gain

e)Do not care

f)None of the above

Do you have snack during the day?

a)Several times

b)No I do not

What do you prefer in lunch?

Home cook meal

Fast food

I pass the lunch

12- Mark the diseases you have

a) Diabetes	ı)Gallbladder stone
b) Hypertansion	j)Anemia
c)Coronary heart disease	k)Gut
d)Tiroid Hipertiroid… Hipotiroid….	l)Cancer
e)Steatorrhoeic hepatosis	m)Chronic Diarrhea
f)Kronik karaciğer yetmezliği	n)Gastrit
g)Cronic kidney failure	o)Ulser
h)Kidney stone	p)None

13- Mark medicine you use.

a)Blood Pressure b)Insulin c)Cholesterol d)Heart Disease e)None

14- Mark the cases you have.

a) Frequent and fast hunger	e) düzensizliği
b)Getting sleepy after eating	f) Heartthrob

c)Tendency of easy weight gain

d) Dizziness when hungry, hand, foot tremor, irritability

ı)Sweet craving

sleep

j) Frequent toilet

k)Getting up and eating during sleep

l)Waking up tired

m)High or low blood pressure

g) Shortness of breath

h) Snorring

n)Stop breathing during

o)Hair loss

p) Excessive chill

r)Joint pain

s) Excessive gas

t)None

15- Tea-Coffie consumption

Daily drinking …….. cups of tea

Daily drinking …….. cups of coffie

16- Water consumption

Daily drinking …….. L water

17- Smoking

Daily …… piece

18-Alcohol

a)Every day

b)1 or 2 days a week

c)Drinking rarely

d)Never   drinking

FOOD	1 Time a Month	2-3 Times	1-3 Times a Week	4-6 Times a Week	Once a Day	Günde kez	2-3 Günde en az 4 kez
HIGH PROTEIN FOOD							
Red meat, meatball							
Chicken, turkey							
Fish							
Sea food							
Egg							
Giblets (liver, kidney etc,etc….)							
Deli (salami, sausage etc,etc….)							
Legume(chickpea, bean etc,etc….)							
Soya and soy products							
STARCH PRODUCTS CONTAINING CARBOHYDRATE							
White bread							
Bagel							
Poğaça, börek							
Whoel wheat, whole grain, black bread							
White rice, pasta							
Bulgur							
Corn							
Potato							

Wholewheat rice, wholewheat pasta
Oat
Breakfast cereal
Packaged products(biscuit, cake)
Dessert (cake, baklava)
Ready fruit juice
Carbonated drink
%100 fruit juice, vegetable juice
Fresh fruit, dry fruit
Fresh vegetable
DAIRY PRODUCTS
Full-fat milk
Low-fat milk
Full-fat yogurt
Low fat, light yogurt
Kefir
Ayran
Full-fat cheese
Low fat, light cheese
FATTY PRODUCTS

Vegatable oil
Saturated and half saturated fat
Cream
Oil fried food
Fatty seed
Oil fried fast food
Chips
Tahina/ tahin havla
Nut/ Peanut buttet

20- Does anyone has the diseases below in your family? (mother,father, sister,brother children)
a)Over weight
b)Diabetes
c)Hypertansion
d)Coronary heart disease
e)None of them
21- Physical activity frequency
a)Every day
b)3-4 days a week
c)Rarely
d)Never

ADD. 2.Ethics Comitte Commision

T.C. YEDİTEPE ÜNİVERSİTESİ

Sayı : 37068608-6100-15- 1608   14/02/2019
Konu: Klinik Araştırmalar
Etik kurul Başvurusu hk.

İlgili Makama (Esra İnce)

Yeditepe Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü Dr. Öğr. Üyesi Hülya Demir'in sorumlu olduğu **"Kurumsal Şirket Çalışanlarının Beslenme Durumunun Saptanması ve Beslenme Müdahale Programlarının Oluşturulması"** isimli araştırma projesine ait Klinik Araştırmalar Etik Kurulu (KAEK) Başvuru Dosyası (**1578 kayıt Numaralı KAEK Başvuru Dosyası),** Yeditepe Üniversitesi Klinik Araştırmalar Etik Kurulu tarafından **13.02.2019** tarihli toplantıda incelenmiştir.

Kurul tarafından yapılan inceleme sonucu, yukarıdaki isimi belirtilen çalışmanın yapılmasının etik ve bilimsel açıdan uygun olduğuna karar verilmiştir (**KAEK Karar No: 960**).

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

Yeditepe Üniversitesi 26 Ağustos Yerleşimi, İnönü Mahallesi Kayışdağı Caddesi 34755 Ataşehir / İstanbul
T. 0216 578 00 00   www.yeditepe.edu.tr   F. 0216 578 02 99

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9.CIRRICULUM VITAE

NAME SURNAME

Personal Information

Date of Birth   : 16/10/1993

Nationality   : T.C.

Marital Status   : Single

Gender   : Woman

Military Obligations   : Give a date if deffared

Driving Licence   : B

Address   :Koza Sokak Ortaç Apt. No:17/ 5

Telephone   : (0531)3038338

E-mail   :esra.ince hotmail.com

Work Experience

09.2018 – Cont.   Maltepe Belediyesi Yalçın Kızılay Gym - Dietitian

                     Nutrition counseling for gym members

11.2018 - Cont.   La Delmare Ataşehir Gym - Dietitian

                      Nutrition counseling for gym members

03.2019 -07.2019   MFC Ataşehir - Dietitian

                     Nutrition counseling for gym members

01.2018 /11.2018   My Studio Ataşehir - Dietitian

Nutrition counseling for gym members

09.2017 /12.2017   B-Fit Şahinbey Çekmeköy - Dietitian

Nutrition counseling for gym members

Internship Experience

*3 hafta - Özel Academi Hospital – Adult Diseases and Nutrition, Clinical Nutrition

*3 hafta Yeditepe Üniversitesi - Polyclinic - Adult Diseases and Nutrition, Popular Plants Presentation

*3 hafta - Baltalimanı Kemik Hastalıkları Hast. – Adult Diseases and Nutrition, Menu Planning

*3 hafta - Fatih Sultan Mehmet Eğitim Ve Araştırma Hast.- Child Diseases and Nutrition, Clinical Nutrition

*3 hafta - Özel Maltepe Bölge Hast.- Adult Diseases and Nutrition, Institutional Internship, Thyroid Diseases and Nutrition Presentation, Menu Planning

*3 hafta - Bahçelievler Devlet Hast.- Adult Diseases and Nutrition, Mass Nutrition Systems, Diabetes Disease and Treatment Presentation, Menu Planning, Diabetes Education

*3 hafta - Yakacık Kadın Doğum Ve Çocuk Hastalıkları Hast. - Adult Diseases and Nutrition, Child Diseases and Nutrition, Institutional Internship

*3 hafta - Erenköy Ruh ve Sinir Hastalıkları Eğitim ve Araştırma Hast.- Corporate Internship, Menu Planning

*1,5 ay – Dyt.Emre Uzun – Healthy dessert, soup, recipes Studies, detox recipe studies Healthy dessert, soup, recipes Studies, detox recipe studies

Article: 3-6 Age Nutrition, Emotional Hunger, Pregnancy and Lactation Nutrition, Hashimato Disease, Effect of Banana on Diabetes, Muscle Building in Sports Nutrition, Articles about Sports Drinks

Menu Planning Studies in Collective Nutrition Area

Education Information

Degree   Yeditepe Üniversitesi – İstanbul - 09/2012 – 05/2017

Post Graduate Yeditepe Üniversitesi – İstanbul – 09/2017 –

Thesis: Determination of Corparate Company Employes' Nutrion Status

High School   Çamlıca Kız Lisesi – İstanbul - Sayısal - 09/2008-06/2011

Courses and Certificates

Courses

*30/07/2019 – 09/08/2019 - Pilates 1st Level Coaching Course - İstanbul

*25/05/2017 - 6th National Healthy Life Symposium Athlete's Dietician Course

*26/05/2017 - 6th National Healthy Living Symposium Obesity Dietitian Course

*05/05/2017 - Nutrition and Sports Education Workshop

*13/03/2016 - 5th National Healthy Living Symposium Bariatric Surgery Dietitian Course

*12/03/2016 - 5th National Healthy Living Symposium Carbohydrate Counting Course

Certificates

05/2017 -6th National Healthy Living Symposium 1st Life Nutrition and Sports Congress10/2016 - Dietician Career Summit

03/2016 - 5th National Healthy Living Symposium

04/2015 - 1st Istanbul National Nutrition and Dietetics Congress

12/2014 - Nutrition Academy

10/2014 - Nutrition, Food and Culinary Culture in Anatolia

05/2014 - 4th Science Days Congress

Computer Knowledge

Word: Upper Intermediate   Excel: Upper Intermediate   Powerpoint:
Upper Intermediate   Outlook: Upper Intermediate

Foreign Languages

* Rate your foreign language level according to the table below.

Beginner	Elementery	Intermediate	Upper Intermediate	Advanced

English   Reading: Upper Intermediate Writing: Upper Intermediate
        Speaking: Upper Intermediate

Hobbies

Pilates, fitness, swimming, dance

Association and Club Memberships

Author on Young Dietitians and Real Nutritionists Web Sites