T.C. YEDITEPE UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF NUTRITION AND DIETEICS

EFFECT OF BREAKFAST OPTIONS CONTAINING DIFFERENT RATES OF PROTEIN AND OATMEAL ON SATIETY, BODY MASS INDEX (BMI) AND BODY FAT PERCENTAGE DURING THE DAY IN THE INDIVIDUALS UNDER WEIGHT CONTROL

MASTER THESIS

İREM GÜMÜŞER

İstanbul - 2018

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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 06/07/2018 tarih ve 2018/12-85 sayılı kararı ile onaylanmıştır.

Prof. Dr. Bayram YILMAZ
Sağlık Bilimleri Enstitüsü Müdürü

DECLARATION

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

29.06.2018

Signature

İrem GÜMÜŞER

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF SYMBOLS AND ABBREVIATIONS

BMI: Body Mass Index

SPSS: Statistical Package for Social Sciences

WHO: World Health Organization

RDA: Recommended Daily Allowance

NHANES: National Health and Nutrition Examination Survey

IF: Intermitten Fasting

SD: Standard Deviation

ABSTRACT

Gümüşer İ., Effect of breakfast options containing different rates of protein and oatmeal on satiety, body mass index (BMI) and body fat percentage during the day in the individuals under weight control. Yeditepe University, Health Sciences Institute, Department of Nutrition and Dietetics, Master's Thesis, Istanbul, 2018.

In this work, starting the day with breakfast options that include different protein and oatmeal rates for a total of 146 men 20 and women 126 with age range of 18-55 who applied to Istanbul Ataşehir Avicenna Hospital Nutrition and Diet Department was conducted between March and December 2017 in order to determine the effects on satiety status, body mass index (BMI) and body fat percentage in individuals during the day. A questionnaire consisting of 30 questions was prepared by using the literature and similar studies by the researcher. Questionnaire applied to obtain personal information, eating habits, breakfast preferences (with protein and / or oatmeal), BMI status, satiety status during the day, and 2-week food consumption record. Daily energy and nutrients were analyzed using "Computer Aided Nutrition Program for Turkey, Nutrition Package Information Systems Program (BEBIS 6.1)". The data were analyzed using SPSS Statistics 23 program.

At the end of study; body mass index (BMI) distributions of the participants in the study were statistically significant ($p<0.001$). It was found that women had more regular breakfast than men and found statistically significant ($p<0.05$). It was found that men preferred breakfast with protein more than women and the difference between the groups was statistically significant ($p<0.05$). There was no statistically significant difference between breakfast type preferences and anthropometric measurements ($p>0,05$). As a result, a more detailed examination could be done to show the effect of breakfast types on satiety during the day or the effect of protein-based breakfast and oatmeal-based breakfast types on weight control.

Key Words: Breakfast, Protein, Satiety, BMI (Body Mass Index), Oatmeal.

ÖZET

Gümüşer İ., Kilo Kontrolü Altındaki Kişilerde Farklı Protein ve Yulaf Oranları İçeren Kahvaltı Seçeneklerinin; Gün İçerisindeki Tokluk Durumu, Vücut Kitle İndeksi (VKİ) ve Vücut Yağ Oranı Değerlerine Etkisi. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Anabilim Dalı Yüksek Lisans Tezi, İstanbul, 2018.

Bu çalışma; farklı protein ve yulaf oranları içeren kahvaltı seçenekleriyle güne başlamanın; bireylerin gün içerisindeki tokluk durumu, vücut kütle indeksi (VKİ) ve vücut yağ oranı değerlerine etkisini belirlemek amacıyla Mart-Aralık 2017 tarihleri arasında yapılmıştır. Çalışma, İstanbul Ataşehir Avicenna Hastanesi Beslenme ve Diyet Bölümü'ne başvuran, yaş aralığı 18-55 olan 20 erkek ve 126 kadın toplam 146 birey ile gerçekleştirilmiştir. Literatürde yer alan benzer çalışmalardan yararlanılarak hazırlanan toplam 30 sorudan oluşan veri formu ile çalışmaya katılan bireylerden bilgi edinilmiştir. Uygulanan veri formu; kişisel bilgiler, beslenme alışkanlıkları, kahvaltı tercihlerini (protein içerikli ve/veya yulaf içerikli), VKİ durumu, gün içerisindeki tokluk durumu ve 2 haftalık besin tüketim kaydından oluşmaktadır. Günlük alınan enerji ve besin öğeleri, Türkiye için geliştirilen "Bilgisayar Destekli Beslenme Programı, Beslenme Bilgi Sistemleri Paket Programı (BEBİS 6.1)" kullanılarak analiz edilmiştir. Araştırma sonucu elde edilen bulguların istatistiksel analizleri SPSS istatistik 23 programı ile yapılmıştır.

Çalışmanın sonucunda; kadınların erkeklerden daha düzenli kahvaltı yaptıkları ve erkeklerin kadınlardan daha çok protein içerikli kahvaltı tercih ettikleri tespit edilmiştir. Kahvaltı türü tercihleri değerlendirildiğinde istatiksel olarak anlamlı sonuç bulunmamaktadır. Sonuç olarak kahvaltı tipleriyle gün içerisindeki tokluk durumuna ilişkin veya protein içerikli kahvaltı ve yulaf içerikli kahvaltı türlerinin kilo kontrolü üzerine etkisine ilişkin daha detaylı çalışmalar yapılmalıdır.

Anahtar Kelimeler: Kahvaltı, Protein, Tokluk, VKİ (Vücut Kütle İndeksi), Yulaf.

1. INTRODUCTION AND AIM

World Health Organization (WHO) describes the health as human having "a state of complete well-being from the physical, mental and social aspects". Health status of individuals is affected by the combinaton of many social and cultural factors such as nutritional status, age, genetic characteristics, lifestyle, stress, working conditions and family support (1).

Adequate and balanced nutrition means that individuals take each of energy and nutrients (macro-micro) needed to live healthily and strongly in a sufficient quantity and in a balanced manner and use them in their body. Nutrition is a synthesis of such sciences as chemistry, biochemistry, physics, microbiology, agriculture, and medicine. It is influenced by the cultural, economic, social and technological events that societies experience because it is interested closely in human health and development (2).

Nutrition has been developing as a discipline via researches having carried out since 20th century. It examines;

I. Types, quantities and properties of nutrient elements essential to the nutrition and their functions in the body,

II. The composition of nutrients and their physical and chemical properties, and the effects of all of the processes from production to consumption on the nutrient quality,

III. Preparing appropriatenutrition plans for individuals and groups of different age, gender, working and special circumstances (2).

Individuals should receive daily energy and nutritional requirements adequately and balancedly. Breakfast is defined as the most important meal among these meals Skipping breakfast meal causes insufficient nutrient intake and is usually not compansated during the remaining meals of the day (3, 4). Researches support the notion that the regular breakfast meal affects positively the adequate and balanced nutrition (5, 6). One of the most important benefits of breakfast provides a reduction in the snacks consumed during the day and, consequently, lowers the ratio of the energy and fat to be taken to the body (7).

There are very few studies regarding the effect of breakfast types on satiety during the day or of protein-based breakfast and oatmeal-based breakfast types on the weight control. This study was carried out between March and December 2017 on the people of total of 146 including men (n: 20) and women (n: 126) with age range of 18-55 who applied to Istanbul Ataşehir Avicenna Hospital Nutrition and Diets Department, begining the day with breakfast options that include different protein and oatmeal rates for a body mass index (BMI), body fat percentage values and the effect of the individuals on the daytime satiety status.

2. GENERAL INFORMATION

2.1. Nutrition and Health

"Nutrition is defined as breaking the nutrients taken outside for the purpose of growth, survival and health into components such as carbohydrate, fat, protein, vitamins and minerals via a series of chemical reactions and as their use in the body" (8). The purpose of nutrition is to meet the sufficient amount of daily energy and nutrient items needed by the individuals according to age, sex, special circumstances and working conditions (2).

It is necessary for individuals to gain the habit of a good eating and, most importantly, to obtain good nutritional habits, adequate and balanced nutrition for a healthy life (9, 10). Each society has its own eating habits, manners and customs, opportunities, practices and nutritional culture. The dietary habits guided by various socio-economic, cultural and educational activities are gained in the early stages of life (9).

Nutrition is the sufficient intake of energy, nutrients, and other bioactive substances required by the body. However, healthy nutrition can be summarized as appropriate selection and use of the methods without being harmful to the health while foods are consumed (11). Scientific researches have shown that individuals need nearly 50 macro-micro nutrients for a healthy lifestyle, healthy growth and development (12).

The World Health Organization (WHO) has developed strategies on healthy nutrition to treat common diseases (diabetes, cardiovascular diseases, etc.). The most important of these strategies are to reduce saturated fat, simple sugar use and salt intake, and to increase daily physical activity, vegetable and fruit consumption (2,13).

Healthy and balanced nutrition tips:

1. Base your meals with carbohydrate foods.
2. Consume fruit and vegetables.
3. Consume more fish.
4. Reduce saturated fat and sugar.
5. Try to consume less salt - not more than 6g per day.

6. Be active and try to be a healthy weight.

7. Drink plenty of water.

8. Do not skip breakfast (14).

2.1.1. Nutrition and Nutritional Elements

Dietary guidelines for Turkey describes as “Food: nutrients are plant and animal tissues that are found in a daily feeding pattern, are edible and contain nutrient elements essential for life when consumed." Nutrients are found in foods that are essential for the body (14). Nutrient is an organic and inorganic substance that is responsible for tissue formation, tissue regeneration, regulates the life process of the human body, and is required by the body (15).

The nutrients found in the food structure are divided into two large groups. Those that are taken more via the daily diet are called as "Macro nutrients", while those which are taken in small quantities although they perform crucial bodily functions in the body are called as "micronutrients". Carbohydrates, lipids and proteins constitute macro nutrients. Carbohydrates, proteins and lipids are composed of monosaccharides, amino acids, and fatty acids, respectively. The main benefit of macro nutrients is to provide energy to the body. Micronutrients help to generate energy. Vitamins and minerals are micronutrients. Water is essential for life and is regarded as a nutrient (14).

As the amount of daily carbohydrate is low during feeding, the free fatty acids are increased in the plasma. As the amount of carbohydrates is reduced, the proteins are converted to glucose, which in turn disrupts carbohydrate metabolism. Care should therefore be taken for the ratio of energy from carbohydrates, proteins and fats, and the daily intake of energy should be provided from carbohydrates (55-60%), proteins (10-15%) and lipids (25-30%) (1, 16).

2.1.1.1. Macro Nutritional Elements

Carbohydrates

Carbohydrates are one of the nutritional elements that provide energy to the body. The total amount of carbohydrates in the adult human body is below 1%. It is the most common nutritional element in our food. In adults eating a normal diet, 55-60% of daily energy is derived from carbohydrates (2, 17).

Carbohydrates are found in various forms in foods, including monosaccharides, disaccharides, oligosaccharides and polysaccharides. In a daily diet, more polysaccharide-containing foods and less mono and disaccharide-containing foods are preferred because this combination provides feeling of satiety and and regulates blood sugar (1).

In the human body, carbohydrates are stored in very small amounts as glycogen and are released in the circulation as glucose if necessary. Glycogen is most commonly found in the liver. The glycogen in the form of a reservoir is necessary for being kept a blood glucose providing the continuous energy for body tissues at a certain level (1).

Carbohydrates provide a large portion of the energy that the body spends. It helps balance water and electrodes in the body. It prevents the proteins from turning into energy and allows them to be used for their own tasks (2). For this reason, inadequate intake of carbohydrates, which are an important source of energy, causes protein and fat not to be effectively used in the body.

Proteins

Proteins are essential for the growth and development of the body, cell renewal, immune system, some hormones and enzymes. Approximately 16% of the adult human body is composed of proteins. Proteins in the body are found in the form of cells and cell components with specific tasks, not in the form of depots. Proteins are broken into amino acids, which are their building blocks, in the digestive tract, enter into the blood circulation and are transported to the liver. Body tissue proteins are produced from the amino acids in the liver. Proteins form the main structure of cells. Certain cells combine to form body tissues and organs. Many cells die over time and new ones are produced.

Therefore; protein is the most important nutrient for growth and development. Proteins constitute the building blocks of the body's defense system, of the enzymes that regulate bodily functions, and of some hormones. Proteins can also be used as an energy source in the case that energy requirement cannot be provided from carbohydrates and lipids. The source for the formation of body proteins is the proteins found in foods. Since it is impossible for the body to build proteins from carbohydrates or lipids, it is needed being taken exogenous proteins. It is recommended that 10-15% of the energy in our daily diet come from proteins (3).

The adequate amount of protein in the morning breakfast should be at least 1/5 of the amount consumed per day and should not fall below it. Adequate protein consumption has many bodily benefits, all of which regulate blood sugar, help to relieve feelings like fatigue and fasting. When breakfast is skipped, the power of understanding and comprehension is diminished. Inadequate protein intake at breakfast meals causes blood sugar level to lower the below fasting level. When taken in enough amount, blood sugar improves and rises above fasting level, in this way, it has not been experienced any feeling of hungry (3, 12).

Lipids

An average of 15-20% of the adult human organism is made up of lipids. The lipids are absorbed by breaking into fatty acids that form building blocks in the digestive system. Some are used for energy, some are stored as the lipid, and the remaining is used to build some hormones and cholesterol needed to function body regularly. Lipids help to being taken essential fatty acids and fat-soluble vitamins into the body and to be used them by body. Adipose tissue (subcutaneous adipose tissue) prevents the loss of body heat. It protects the organs from external effects by wrapping around them. It exists in the composition of the cell membrane (2, 15).

Lipids have nutritional ingredient that provide the most energy to our body. They give two times more energy than the same amount of protein and carbohydrate do. It gives a feeling of fullness to the stomach and delays its emptying (15)

However, since it is reported that its more dietary intake may be associated with heart disease, it is not recommended that it should be greater than 30% of daily energy (1).

2.1.1.2. Micro Nutritional Elements

Vitamins

Vitamins are defined as "organic elements that are necessary for normal growth and survival, different from previously known nutrients". Although vitamins are taken in very small quantities, they are nutritional elemenst having vital action. Vitamins are divided into fat-soluble vitamins (A, D, E and K) and water-soluble vitamins (B group and C).

The most important effects of vitamins on human health (18) are growth (19), the formation of healthy generations (20), the correct functioning of the digestive system and maintenance of body resistance.

The high fiber in the fruit or the vegetables consumed at breakfast increases the absorption, which in turn, lasts the feeling of satiety longer. In addition to the consumption of fruit or vegetables, it provides breakfast meal rich in vitamin C and increases iron absorption (14).

Minerals

An average of 6% of the human body consists of minerals. The first most important (calcium, phosphorus, magnesium) minerals are found in skeleton and tooth structure. Other minerals (iron, cobalt) are important in blood production, while zinc is required to build a robust immune system (2).

According to the nutrition quality index, it was observed in a study of nutritional habits of adults aged 21 and older that only 27% of the students could meet the values determining for recommended daily amount (RDA) of calcium (16).

In another study of effect of eating out, it was reported that level of calcium derived from foods when young adults ate out was very low (16).

In the United States, it has also been found that the daily intake of iron in young adult women was inadequate and far below the recommendations (14). In another study,

young adults in the United States were found to have very low levels of iron from foods eating out (16).

2.1.1.3. Fluid Intake

Visible / invisible water found in the beverages and foods, notably water, is defined as "liquid" and the daily fluid requirement of the individual is provided from water she/he drank and from water she/he ate foods (3).

Water essential for life cannot be included in food groups because they do not contain energy and nutrients. However, it is absolutely necessary to consume it for a healthy life. Adults should be consumed around 6-8 glass of water (2-2.5 liters) per a day (1).

Apart from that water is the most essential fluid for life, it possesses the most important properties for the body;

1. Digestion of foods,
2. The transportation of food items into tissues,
3. Removal of harmful substances from the body,
4. Regulation of body heat

Since all the chemical events in the body occur in solution, sufficient amount of fluid in the organism is necessary for life.

Tannins and caffeine in liquids such as tea and coffee bind iron and reduce iron absorption. Tea and coffee have beneficial or harmful effects depending on the indiviual situation. They may increase risk of cardioplegia, anemia, ulcer pain, and osteoporosis (2).

In another study, iron absorption was found to be 0.07, 0.16 and 0.40 mg, respectively, in individuals consuming 150 ml of black tea, coffee and orange juice at breakfast. In another study on twelve volunteers, effect on consumption of the same meal with different beverages on iron absorption was investigated. Addition of milk to the tea was found to be inhibited some of the iron absorption (21). In another study, tea, coffee and acidic drinks (consuming especially with meals) reported that both iron and calcium would be prevented from being used in the body (22).

In our country, it has been found that the liquids consumed more daily by young adults were water, tea and soft drinks and they drank liquids at a lower rate than the daily minimum values (23, 24, 25). In another study on beverage consumption, the highest tea consumption was determined with 98,1%. The most important reason for preferring tea consumption at breakfast seems to be a habit from the past (26). Similar data have been reported in studies in our country (27).

2.1.2. Physical Activity

Nutritional status of individuals is one of the important factors affecting their physical and conscious performance. In well-fed individuals, many health risks can be removed with regular exercise. The importance of physical activity is also important for healthy life as much as nutrition (2).

Energy expenditure and energy requirements differ according to the types, frequency, duration and intensity of exercises. If energy intake is insufficient or more for a long time, it causes changes in body weight. For this reason, body weight should be monitored at regular intervals. For those exercising, healthy weight should be sustainable weight, and this weight should not adversely affect exercise performance, and lead to injury or chronic disease risk. 0.5-1 kg per week should be targeted to gain or lose weight, ideal and appropriate body weight and duration should be determined (2).

It is also important to do regular physical activity (exercise) as much as a balanced and balanced diet in order to be healthy. Physical activity enables individulas to be energetic and keep fit, to maintain a healthy body weight and appropriate body composition, and to reduce the risk of developing chronic diseases (1).

In a study of the relationship between physical activity and body weight in adults in the United States, a high level of physical activity was found to be associated with low BMI and watching television less time (28). In a study on the relationship between sedentary habits and obesity, it was also found that watching long-term television and consuming foods during this period increased the risk of obesity (29). Another study reported that BMI also increased as the duration of watching television increased (30).

In a study on breakfast skipping and factors affecting health in young adults, it was determined that breakfast is a habit that affects health and young adults skipping

breakfast do less regular physical activity than the ones who have breakfast (31). Kerver and his colleagues also support these results (32).

2.2. Breakfast

The amount and content of morning breakfast is crucial to start the day willingly and to maintain it in a favorable manner. It takes about 12 hours between dinner and morning, during that time the body uses the whole food. If morning breakfast is skipped, enough energy cannot be generated in the brain, resulting in fatigue, headache, lack of attention (16).

The fact that blood sugar is high or low is an important factor for our body and allows our body to function a certain level. Adequate nutrition prevents the irregularities of blood sugar and enables our body to function in a balanced manner (14).

The breakfast meal, which is rich in carbohydrates, protein and lipids allows the body to generate continuous energy and to postpone hunger symptoms for a long time. In addition, positive effects such as the capacity of individuals to start the day dynamically and not having problems of adaptation are seen (33).

Research showed that there is a relationship between breakfast and body weight (34). Short-term studies emphasize that breakfast has an effect on the potential physiological mechanisms that may affect appetite, energy expenditure, fat oxidation and body weight (35, 36, 37, 38). However, it is unclear whether the proposed physiological mechanisms lead to long-term effects on energy intake and body weight. Some hypotheses about breakfast consumption and low body weight are based on the assumption that breakfast consumption is important for regulation of energy intake (34).

2.2.1. Breakfast and Diet

A balanced breakfast meal should meet 1/4 or at least 1/5 of the energy required to be taken daily. Although the daily energy requirement can differ according to age groups, breakfast should provide about 360-400 kcal (16) when the energy requirement is 1800-2000 kcal. A balanced breakfast meal should also meet the needs of fiber, minerals and vitamins (39).

In a study of the role of breakfast in adult American individuals, it was seen that women aged 18 to 24 consumed more breakfast cereals, milk, bread and coffee at breakfast (5). Another study revealed that adult women consume more milk, vegetables - fruits, breads and other cereals in the morning breakfast (40).

In a study of French individuals whose breakfast contents were examined, it was found that the energy and nutritional values provided from breakfast meals could meet 13-16% of the nutritional value being recommended daily (41).

In a study of adults consuming food at breakfast, the protein-based breakfast was reported to have a high total lipid and cholesterol content and low fiber content. It is known that the composition of the breakfast with cereals has low lipid content and high fiber content (42).

2.2.2. Those Having Breakfast Regularly

Generally, individuals having breakfast regularly consume a higher level of micronutrient, and has lower percentage of energy taken from the lipids and higher fiber (16, 43). It is known that eating breakfast regularly reduces the risk of obesity (44, 45, 46).

Research supports that regular breakfast affects nutrition positively (5, 6). In addition, one of the most important benefits of regular breakfast is that it reduces the amount of more snacks consumed throughout the day, thus reducing the daily caloric and lipid intake (7).

In most studies, it has been observed that those having breakfast regularly eat more macro-micro nutrients than those skipping breakfast (47, 48, 49, 50).

Studies indicated that those having breakfast have a feeding profile consisting of a high calcium, fiber, vitamin A, vitamin C, riboflavin, zinc and iron, and a low total lipid, cholesterol and energy " (6, 51).

Many observational studies have shown that those having regular breakfast consume more fiber and take less calori in their daily food intake than those skipping the breakfast, suggesting that they follow a quality diet (52).

Examining why those having breakfast regularly have a low value of BMI, Wyatt et al. (53) suggested that breakfast inhibits a feeling of hunger on the advancing hours of the day, and therefore, prevents a desire to eat excessively. In another study regarding the effect of breakfast on obesity treatment, it was found that women having regular breakfasts succeed more in losing weight than those skipping breakfast (54).

NHANES (1999-2000) reported an inverse relationship between breakfast consumption and BMI. Regular consumption of breakfast was found to be significantly associated with having a BMI <25, especially in women. Women having breakfast regularly had lower body weights than women skipping breakfast (55). Also, the relationship between breakfast skipping and high BMI is similar to many studies showing that skipping breakfast is associated with unbalanced energy intake during the rest of the day (56,57).

2.2.3. Those Skipping Breakfast

When breakfast is skipped, enough energy cannot be generated in the brain. Therefore, fatigue, headache and lack of attention can be experienced. (11, 43)

Skipping the breakfast may direct towards unhealthy food and increase the risk of overeating during the day and, thus, of overweight (58, 59, 60). Many people, especially young girls and adults, are skipping breakfast to lose weight. However, research suggests that skipping breakfast is likely to lead to weight gain rather than weight loss (61).

Breakfast can be skipped because of reasons such as breakfast preparation, lack of time, lack of food for breakfast (62), weight anxiety (63) or limited information about health and nutrition. Children who like to skip breakfast can grow this way, and even when they are adults, this behavior can continue in the same way (64).

Breakfast also regulates energy intake for the rest of the day; young adults who regularly skip breakfast due to an increased sense of hunger much prefer food with especially a high-density and high-fat content in their next meal (65). Studies suggest that skipping breakfast leads to higher energy intake at lunch than eating breakfast (66, 67, 68, 69).

Individuals who skipped the breakfast meal were found to have higher values of waist circumference compared to those who did regular breakfast meals, higher

hypertension incidences and increased blood lipid levels. When breakfast is skipped, the body uses its own reserves and immune system resistance reduces. When breakfast meals are not taken in individuals whose daily physical activity is intense, adverse events such as nausea, vomiting and dizziness are often mentioned (14).

Breakfast skipping is directly linked to feeding quality. Consuming cereal, fruit and protein in breakfast reduces appetite and disease risk (Figure 1) (70).

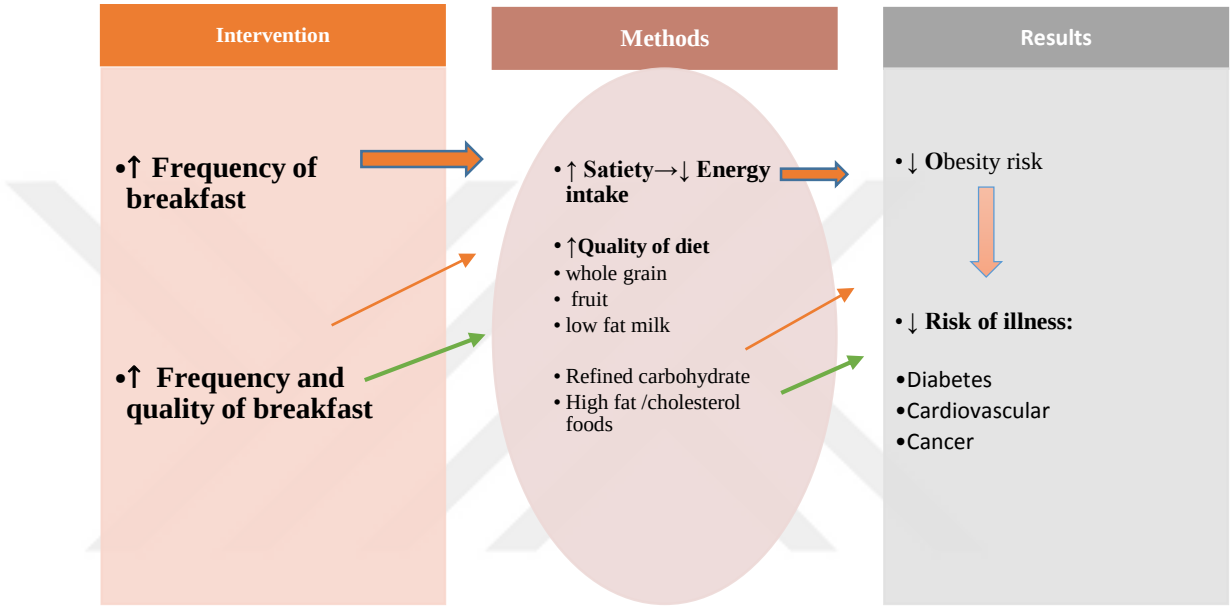


Figure 1. Posssible Consequences of Skipping Breakfast (70)

Studies in Western countries show that skipping breakfast is associated with obesity in children and adolescents (71, 72). However, the relationship between breakfast skipping and obesity in adults is controversial. Some studies of the US (73, 74, 75) and Asia-Pacific regions (76) show that skipping breakfast is associated with obesity, while not being associated with prevalence of obesity in Canadian adults (77). One of the reasons for these differences is thought to be cultural diversity among countries. In a study by Sakurai et al., there has been found to be no relationship between the frequency of breakfast skipping and changes in body mass index (BMI) and waist circumference (78).

As a matter of fact, many studies indicate that skipping breakfast leads to increased BMI (79, 80). There is no such risk in Hong Kong (82) and US (83), Australia

(84), Portugal (85) and Saudi Arabia (86), where skipping breakfast is linked to high obesity risk.

Surveys having conducted since the last thirty years have reported a decrease in the consumption of breakfast by young adults (5). In addition, many studies have shown that young adults have an inverse relationship between BMI and breakfast consumption (87, 88).

The decrease in breakfast consumption has been associated with increased obesity frequency, indicating that skipping breakfast can lead to excessive energy intake (89).

In a study of eating habits of university students in Europe, those with younger women with BMI> 25 were compared with those with lower BMI. According to this, it is seen that those who eat less breakfast are more inclined to lose weight, eat less snack, consume less salt, eat higher fibrous foods and escape from fat and cholesterol (90).

In addition to all these studies, there are also studies suggesting that skipping breakfast in terms of meal timing bears a striking resemblance to intermittent fasting (91). One of the metabolic effects of intermittent fasting results in appetite suppression effects (92, 93) and calorie reduction (94). The calorie restriction is shown to have metabolic benefits, including neuroprotective, anti-aging and anti-inflammatory. In addition, Mattson et al. showed that intermittent fasting in rodents has more metabolic benefit than permanent calorie restriction (97), so skipping breakfast can be more beneficial than the traditional restrictive diet.

2.2.3.1. Breakfast Skippers/ Intermittent Fasting

Intermittent Fasting, which started to be talked about in 1945 years, is the “Aralıklı Oruç” in Turkish meaning. It is a form of nutrition that underpins science in the years of 2000 and is preferred by individuals for fat burning. Intermittent Fasting method has been developed by scientists to decrease the level of anti-aging, diabetes, and cancer. Especially individuals interested in sports, people aimed to increase muscle weight and reduce body fat, and the ones taking care of their health prefer this method (98).

Several methods are employed together when dieting. The 16/8 method, the eat-stop-eat method or the 5: 2 method have an important place in the implementation process of the diet. Diet is based on balanced and adequate nutrition by preventing excessive eating in each method. It helps you lose the fastest weight through the least amount of calorie you can get.

Method 16/8

Arrangements are made during the day and nutrition takes place only during those hours. For example, 4 or 6 hours are determined. Total eating time is 8 hours. So, 16 hours a day are hungry. This method is known as the Martin Berkhan method, which is well known for its intermittent fasting applications.

Method Eat-Stop-Eat

The IF method, which is basically composed of 3 different methods, uses the method 16/8 at most. Those who do not have the courage to be hungry for 16 hours prefer the eat-stop-eat method. What is important in this method is to be able to follow the weekly cycle. Unlike the intermittent fasting method 16/8, the day-order is not important in this method.

In the method eat-stop-eat, any food is not consumed during 24 hours for 2 days a week. If you eat an evening meal, you should not eat anything until you eat your dinner the next day. It is likened to fasting order by this way.

Method 5:2

The inventor of this method is the journalist and the doctor Michael Mosley. It is suggested that energy intake up to 5 days a week; women should receive 500 kcal for two days a week and 600 kcal for men, energy intake is recommended for the rest of the week.

According to the study conducted, while intermittent fasting increases insulin sensitivity in men, there is no improvement in this issue in women. On the contrary, women experiencing intermittent fasting appear to have worsened glucose tolerance (99). In another study in which intermittent fasting was investigated, there was no change in

insulin levels while reducing BMI (98). Another study shows that the intermittent fasting carried out day after day have effects on women and men. It is observed that HDL (high density lipoprotein) level increases in females, the level of triglyceride remains unchanged, while the level of HDL is remains unchanged but the level of triglyceride is lower in blood (99).

In another study on obese male and female, body fat percentage decreased, weight loss and blood pressure decreased, total cholesterol and LDL levels and triglyceride levels lowered in both groups (25).

In another study; a diet with high-protein, intermittent fasting and low-calorie led to similar reductions in BMI and blood lipids in obese women and men (34).

Carlson and Hoetzel (13) reported that the 5: 2 method increases the lifespan by 15-20% and decreases breast tumor growth by 65-90% (94).

Recent studies indicate that intermittent fasting is beneficial to health. It was determined that there was a decrease in Type 2 diabetes by intermittent fasting, but it was reported that further studies were needed.

In conclusion, it is unclear whether fasting actually results in metabolic health, cognitive performance and cardiovascular outcomes at long-term (98, 99). Much more studies need to be done on this subject.

2.2.4. Lifestyle and Breakfast

Nutrition not only suppress the feeling of hunger but increase the quality of life and receive the food items that the body needs in sufficient quantity and at the right time as well (16). Breakfast varies depending on the culture and the availability of traditional foods in different countries. Scientific studies increasingly show that breakfast plays an important role in ensuring the health and well-being of a person. However, studies on diet habits of diverse populations and age groups show that breakfast is underestimated (14).

Approximately 40% of American adults are reported to skip breakfast (75).

A study on breakfast in America showed that skipping breakfast, causes malnutrition especially in women. Also, it is seen that those who don’t have breakfast regularly often have inadequate levels of nutritional habits at very low levels throughout

the day. For this reason, it is important to have breakfast at an advanced age population (5).

The results of the NHANES (2002) study show that skipping breakfast and snacking breakfast is a common habit among American adults, 18% skipping breakfast, and 86% eating breakfast every day as an aperitive (95).

In studies conducted in Australia, there is a significant contribution to breakfast consumption, especially breakfast cereal consumption (57).

The frequency of weekly breakfast consumption among males and females in Europe is reported to be 5.9% per week, whereas in Slovenia it is 5.1% and in Spain it is 6.7% (8).

According to Australian National Nutrition Survey, when breakfast cereal combined with milk consumption, the RDA provides 25% for various nutrients such as B vitamins, iron and calcium (17). In another study, one of the studies with Australian men aged 14-16 years compared nutrient uptake according to breakfast choice and reported a decrease in BMI and waist circumference compared to those who did not consume grain (12).

In international studies, it is observed that adult women who skip breakfast eat lower nutrient intake, such as calcium, phosphorus and zinc than those who do. Adults who get more energy at breakfast have been found that the rates of daily intake of nutritional items such as B1 vitamins and beta-carotene are higher than those who skip breakfast (100, 101).

2.3. Types of Breakfast

2.3.1. Protein Based Breakfast

The amount of protein that should be taken daily for breakfast meals is enough to regulate the level of blood sugar and therefore prevent individuals from feeling hungry (2).

Milk and Dairy Products

Nutrients containing milk and dairy products are milk-yoghurt, cheese and ice cream etc. These products are important sources of nutrients because they contain high quality protein, B1, B2, B6, B12, calcium, niacin, phosphorus and zinc. Fatty soluble (A, D, E, K) vitamins are found in the fat of dairy products. When the fat level drops, these vitamins are reduced. Vitamin D level is low in dairy products which are insufficient content. Every age group, especially childhood and adolescence period and old age, should take milk products regularly. Calcium mineral is important in the development of bone and dental health. The daily amount to be taken varies according to factors such as gender, age, growth and development (2).

Meat and Products

Meat products are one of the most important nutrients in the nutrition of individuals and contain protein, fat, minerals and vitamins. Meat products are the most important protein sources because they contain high quality of protein. The proportion of fat and protein in the meat varies according to the fatty and fat-free status. Ratio of cholesterol and saturated fat are higher in those who have higher fat levels. Meat products are rich in minerals such as zinc and iron as well as calcium, vitamins B12, C and E, and play an important role in the anemia of iron deficiency (2).

Sausage, bacon and so on are produced from meat using different techniques. Nitrite-nitrate chemistries are used to prevent microorganism growth during the production stage of these products. Damages of these chemicals can be prevented by vitamins C and E, and it needs to be fed with nutrients rich in these vitamins (2).

Egg

Egg is the most important nutrient in terms of protein quality (1). Studies have reported that proteins egg contains are converted into body proteins completely. Egg has 33% of saturated fat, 16% of polyunsaturated fats and its remaining contains mono-unsaturated fatty acids and the egg fat is found in egg yolk. The effect that lecithin in the egg yolk increases the level of cholesterol is less than that of fat meat and dairy products (1).

Findings of studies examining eating protein-rich eggs at breakfast show that it can help control appetite and reduce food intake during the rest of the day (101,102). Egg consumption is especially important for breakfast in terms of satiety and control of body weight (16, 39, 106).

The egg is a well-nutritious food and contains a number of antioxidants. Egg consumption is thought to improve the diet balance. However, in many countries, the effect on serum cholesterol levels is a matter of concern. This data suggest that consuming one egg at breakfast per day, as well as a normal diet, does not affect serum lipids and may improve serum antioxidant status in healthy men (104).

2.3.2. Oatmeal Based Breakfast

Oats are commonly used as additives in the preparation of various grain products. Breakfast cereals have great achievements on the market among products with coffee, cocoa and chocolate. As it is known, the decrease in water activity of foods increases the shelf life. This principle is also used in the production of oat cereal products (107). The fiber content of the oat is cellulose, arabinoxylanes and mixed (1 → 3) (1 → 4) -β-D-glucan soluble fibers (47, 48) and oat contains significant amounts of beta glucan (46).

In recent years, it has been emphasized that the oats are enriched, rich in protein, fat, mineral substances and B1 vitamins compared to other grains (108). Nutritive value of oats is 35% of minerals and vitamins, 33% of protein, 22% of carbohydrates and 10% of fat. Once it turns out that the oat can be used as a functional product in human nutrition, it is said that husking oat can be crushed and used in whole grain or normal flour breakfast mixes and baby foods. Oats are an important food enrichment with high calorie value, low price, beneficial protein fractions and having the desired flavor (108).

Oatmeal is rich in b-glucan, a highly viscous, soluble diet fiber found predominantly in the endospermic cell wall of oats and barley (109). Despite the fact that most of the research on health benefits of oats focus on β-glucan content, research shows that oatmeal may contain other beneficial ingredients. For example, oatmeal contains avenathramide, which may have antioxidant and anti-inflammatory activities (110, 111).

According to this study, oat consumer's body weight, BMI and waist circumference are lower. For this reason, oat consumption is considered to be a more appropriate food, good diet quality, and at least healthier (112).

Oats can be used in the treatment of diabetes with the advantage of having a high β-glucan concentration (9). The effects of oat intake were investigated from various aspects (10, 11, 12). It has been suggested that oats are effective in lowering total cholesterol and low-density lipoprotein, and it is recommended to patients due to effects of reducing type 2 diabetes (13).

In one study, the effects of feeding oatmeal instead of bread at morning breakfast on the fasting and postprandial blood sugar and cholesterol and triglyceride levels of type 2 diabetic patients were investigated. As a result, it is observed that diet supplemented with oat product rich in soluble fibers is effective in controlling blood sugar and cholesterol in diabetics (113).

In studies investigating oatmeal consumption, it is seen that oatmeal consumers are significantly lower in body weight, waist circumference, BMI, serum insulin and homeostatic model when insulin resistance is compared to non-consumers (112).

In a study of Georgiou et al.'s eating habits of young adults aged 18 to 24 years in the United States, women seem to consume rich grain foods more than refined cereals (114).

It appears that the cholesterol-lowering activity of oat is effective in reducing intestinal absorption of cholesterol and circulating bile acids by increasing transport of bile acids and facilitating their excretion in the feces (112). Studies have also shown that oats have beneficial health effects against gastrointestinal problems (100).

2.3.2.1. Diet Fiber

The diet fiber is a group of food components that are essential for health (115, 116), whereas those that ferment in the large intestine (117) are indigestible in the small intestine.

Dietary fibers are divided into two groups as soluble and insoluble dietary fibers for their solubility. The insoluble dietary fiber water absorbs up to 20 times its own

weight. Soluble dietary fiber forms a gelatinous structure with its water-binding effect (115).

Dietary fiber, fruits, vegetables and grains are seen. Dietary fibers not digested in small intestines are classified into two types according to their solubility in water (Figure 2) (118).

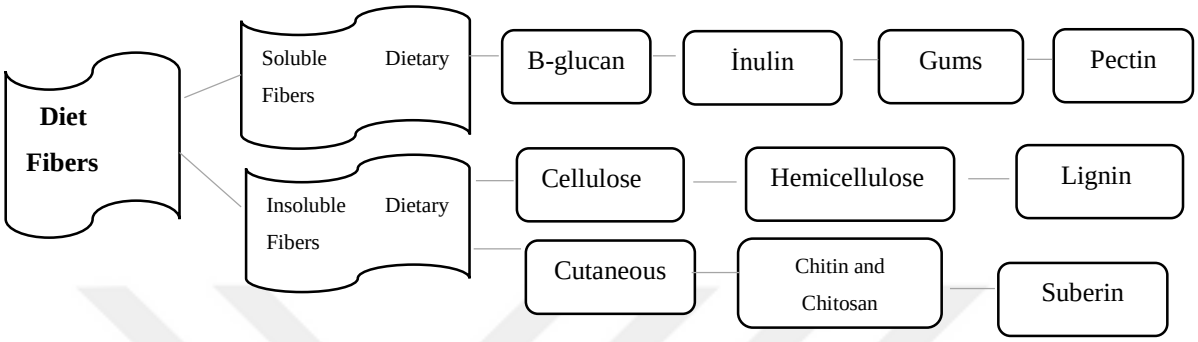


Figure 2. Classification of Dietary Fibers by Water Solubility (118)

Dietary fibers help prevent constipation by reducing the duration of intestinal transit (119).

Dietary fibers constitute the main component of dietary products and provide a feeling of fullness for a long time. It is stated that the amount of fiber to be taken is 25-50 gr per day (2). 5-7 grams of the amount of fiber to be taken daily should be composed of water-soluble fibers. In studies conducted, this amount was found to be 11-12 gr (120).

Soluble dietary fiber is found in foods such as apple, quince etc.; gums are in resin, β-glucan is found in foods containing oats, mucilages are found in plants, resistant starch is found in dry legumes. In the group of insoluble dietary fiber, cellulose is found in bran, hemicellulose is found in grains and lignin is found in wheat abundantly. (121)

Dietary fiber is one of the main part of edible plants, which are resistant to digestion and absorption in the small intestine of humans and undergo full or partial fermentation in the large intestine (122)

Dietary fibers delay the emptying of the stomach by increasing the viscosity of the stomach contents due to low energy density and water-attracting properties. Thus,

they will also delay the feeling of hunger. This has a positive impact on weight loss individuals for a longer period of time (123).

There has been a growing interest in dietary fiber in recent years. In Burkitt and Trowell's "civilization diseases" (constipation, large intestine cancer, obesity), high-fat foods are recommended in the treatment of these diseases (124, 125, 126).

Eating a fiber-rich diet will likely prevent in excessive intake of high-fat foods, and consequently high energy intake, which can prevent overweight and obesity (2).

As a source of carbohydrate, the amount of fiber and nutritive value of whole wheat, bran, and rye bread should be preferred instead of the white flour. High fiber uptake relieves the digestive system and allows it to work better; reducing the risk of cancer in the intestine (127)

Students' fiber consumption was found to be under the values recommended in a study of the eating habits of third-year medical students of Crete University in Greece (128).

Studies of the effect of nutrients consumed by young American adults on the outside have been reported to be low compared to those taken at home (129).

Another study reported that consuming vegetables, fruit, bread and grains under the recommendations did not result in the determination of the amount of fiber required per day when examining the fiber intake in young adults (130).

2.3.2.2. B-glucan

Oat β-glucan is obtained from the inner walls of oat cells, a water-soluble liberator. Due to the gelatinous structure they form in the digestive system, it affects the cholesterol and blood sugar positively and reduces the risk of cardiovascular diseases. There are positive effects on the regulation of stomach and intestinal function (134).

B-glucan is a soluble fiber and is commonly found in products such as oats, barley and yeast. The content of beta glucan in oats and barley is approximately 2.3-8.5% (oats) to 3-11% (barley) (127, 131). Beta-glucan can also increase the feeling of fullness, delaying the time needed to drain the food from the food (2).

Chemical β-glucan is a water-soluble, high molecular weight polysaccharide found in (1 → 3) (1 → 4) -β-D-glucan (β glucan) bound mixed in oats and barley. A single β- (1 → 3) glucose chain forms a branch of unstrained linear β- (1 → 4) -D-glucopurinase units separated by every two to three bonds and makes this molecule flexible (1 → 3), contributes to the solubility and viscosity. Figure 3 shows the chemical structure of oat β glucan (132, 133)

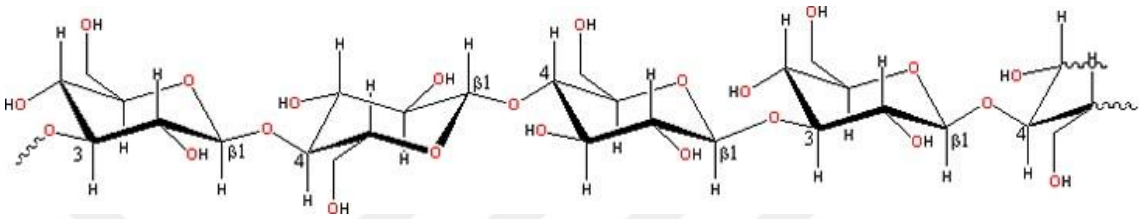


Figure 3. Structure of β-D-Glucan Found in Oat (132,133)

Beta-glucan can also stimulate the release of YY (PYY) peptide, a hormone produced in the intestine, in response to swallowing. This unsaturated hormone has been reported to reduce calorie intake and reduce the risk of obesity (1).

2.4. Breakfast and Satiety

Satiety is positively correlated with protein, fiber and water content of food. (135, 136).

Protein based breakfasts result in reduced appetite compared to skipping breakfast or having a normal protein breakfast and increasing satiety during the day. (137, 138).

High protein intake at breakfast can be particularly useful in weight-loss efforts by helping to regulate a variety of factors related to appetite control and increasing satiety (139, 140, 141, 142).

Studies show that egg has a better satisfactory effect compared to general cereal-based breakfasts, which can be attributed to macro nutritional composition (143).

In one study, it was shown that carbohydrate-restricted diets reduced body weight, while egg consumption was associated with increased satiety (144).

Another study provides the evidence supporting the importance of food selection at breakfast to increase egg saturation in the morning and reduce energy intake at lunch (145).

In one study, it was reported that diet protein at breakfast increased satiety and reduced subsequent energy intake more than carbohydrate or lipid (146).

A study in Australia suggests that a high egg diet can be safely included as part of diet management of Type 2 diabetes and provide greater satiety (147).

In a study conducted in the United States, when three groups were examined, high protein, high fiber, and both groups, it was understood that the group that was fed with high protein at the end of 3 weeks provided more satiety during the day.

In a study examining the relationship between oats and satiety between the ages of 18-48, it was determined that they suppressed appetite and prolonged the saturation period and decreased energy intake at the next meals. Other studies have assessed the effects of β-glucan on appetite and satiety. In some studies, while showing a beneficial effect on satiety (9, 12, 17), it showed no effect in some (17, 18).

When a breakfast is skipped, the body uses the existing nutrient reservoir, fatigue and hunger in the individual occurs, and the body loses resistance to diseases that may occur (148).

3. MATERIALS AND METHOD

In this section, the methods and tools used in the research are explained with the subheadings "Purpose and Type of Research", "Place of Research, Time and Sampling Selection", "Data Collection Tools" and "Statistical Evaluation of Data".

3.1. Purpose and Type of Research

This thesis is an investigative, analytical and cross-sectional study which scientifically shows the differences in breakfast types; protein-based (cheese-egg) or oatmeal-based; aimed to clarify whether individuals had a significant difference during the daytime satiety state, body mass index (BMI) and body fat ratio.

For the research, "Ethics Committee Approval" dated 14.03.2017 and 81 of Bahcesehir University Non-Interventional Clinical Research Ethics Committee was taken (Annex-1).

3.2. Place and Time of the Research and Sampling Selection

The population of the study is the individuals who are referred to the Department of Nutrition and Diet of the Istanbul Ataşehir Avicenna Hospital between March and December 2017. The sample consisted of 146 individuals (n: 20) and females (n: 126) in Avicenna Hospital. Participants are those who can be followed for 2 weeks at that time. These are all the counselors who agree to participate in the study.

3.3. Data Collection Tools

3.3.1 Data Form

For the individuals involved in the study; a data form consisting of 30 questions prepared by the researcher using the literature has been applied (Appendix-4). Prepared data form consisted of personal information, eating habits, breakfast preferences (with protein and/ or oatmeal), BMI status, daytime satiety.

Women who were in labor, during the first 6 months of breast-feeding and those who were in a situation requiring surgery were not included. Before the data form was applied, participants had volunteer patients informing and approval form read and signed (ANNEX-2) The data form was filled by the researcher by face-to-face interview method.

3.3.2. Food Consumption Record

A 2-week nutrition consumption record was taken to determine the food consumption status of the individuals participating in the study. Taken daily energy and nutrient values were analyzed using "Computer Aided Nutrition Program, Nutrition Package Information Systems Program (BEBIS 6.1)" developed for Turkey.

Contents of Breakfast

Participants were divided into 3 groups. Group 1; for 10 days protein-based breakfast (cheese-egg) more than other groups, for 4 days oatmeal-based breakfast (milk /yoghurt + oatmeal + fruit), Group 2; for 10 days oatmeal-based breakfast; Protein-based breakfast for 4 days, 3. Group was followed by consumption of without oatmeal- normal protein-based breakfast.

The daily protein requirement was determined as 0.8g * kg (2). For example, 60 kg healthy individual needs 48 grams of protein per day total protein; the amount of protein at lunch and dinner was equally determined in groups. According to the distribution in the breakfast, high-normal and low protein (oatmeal) breakfasts were determined.

Breakfast: 16g
Lunch: 16g
Dinner: 16g

Normal protein based breakfast; 1 slice of cheese (30g): 6 gr protein
1 egg: 6 gr protein
2 slices of whole grain bread: 4 gr protein

Breakfast:24g
Lunch: 12g — High protein based; — 2 slices of cheese (60g): 12gr protein
Dinner: 12g — 1 egg: 6 gr protein
2 wallnut: 2 gr protein
2 slices of whole grain bread: 4 gr protein

Breakfast:8g
Lunch: 20g — Low protein based- ; — 1 cup of milk (200ml): 6 gr protein
Dinner: 20g — Oatmeal Breakfast — 2 spoons of oatmeal: 2 gr protein

For example, for an individual weighted 90 kg, the daily total protein requirement is for 72 gr protein;

Breakfast:24g
Lunch: 24g — Normal protein-based Breakfast; 2 slices of cheese (60g): 12 gr protein
Dinner: 24g — 1 egg: 6 gr protein
2 wallnut: 2 gr protein
2 slices of whole grain bread 4 gr protein

Breakfast:36g
Lunch: 18g — High protein based; — 4 slices of cheese (120g): 24 gr protein
Dinner: 18g — 1 egg: 6 gr protein
2 wallnut: 2 gr protein
2 slices of whole grain bread: 4 gr protein

Breakfast:12g
Lunch: 30g — Low protein based; — 1.5 cup of milk (300ml): 9 gr protein
Dinner: 30g — Oatmeal Breakfast — 4 spoons of oatmeal: 4 gr protein

3.3.3. Anthropometric Measurements

3.3.3.1. Length and Body Weight

Individual body weights were measured by the Tanita BC-418 brand bioelectrical impedance analyzer at the hospital's nutrition and diet clinic with shoes removed, and the height measurements were measured by the investigator with the graduated scale. Care has been taken to ensure that their feet are joined together and that they are in the frankfort platform (the eye and the lapel over the same line) when length measurements are taken.

3.3.3.2. Body Mass Index (BMI)

Body mass index (BMI) was calculated using height and body weight measurements and assessed according to World Health Organization (WHO) classification.BMI: [Body Mass Index (kg) / height (m)2]

According to BMI, individuals' weakness and obesity were assessed according to international standards:

- Less than 18.5 kg/m2 " Underweight",
- 18.5-24.9 kg/m2 " Normal weight",
- 25-29.9 kg/m2 " Overweight",
- 30-34.9 kg/m2 " 1rd Degree Obese",
- 35-39.9 kg/m2 " 2rd Degree Obese",
- Over 40 kg/m2 is " 3rd Degree Morbid Obese" (2).

3.4. Statistical Evaluation of Data

The statistical analyzes of the findings obtained after the research were used statistical package program of SPSS 23 (Statistical Package for Social Sciences). Mean (X) standard deviation (SS) and sub-max (min-max) values of the data obtained from individuals were determined. The categorical data in the questionnaire form were evaluated as number (n) and percentage (%).

The significance of the difference between the distributions of the observed frequencies of the individuals in the different groups indicated in the hypotheses was examined by means of the one-way ANOVA for the two groups by means of t test in independent groups for two groups and the significance of the difference between the averages of normal distribution data by square ($\chi 2$) test. Non-parametric hypothesis tests were applied for data with no normal distribution.

4. RESULTS

This study was carried out between the dates of March-December 2017 to determine the demographic characteristics, nutritional habits, BMI status and breakfast preferences of a total of 146 men (n: 20) and women (n: 126) with age between 18-55 who applied to Istanbul Ataşehir Avicenna Hospital Nutrition and Diet Department.

The distribution of the demographics of the participants is given in Table 4.1. When the age range of the participants was examined, it was determined that 51.6% of the women were in the age range of 31-50 years, 10% of the men were in the age of 51 and over, 50% of them were in the age range of 31-50. The marital status of the participants was examined and it was found that 66.7% of the women were married and 3.3% were single, 60% of men were married. Given the educational status of the participants, it is determined that 33.3% of the women graduated from high school and 30.2% of the men with bachelor's degree have a bachelor's degree and 20% have a bachelor's degree. When we examined the working situation, it was determined that 55.6% of the women and 70% of the men were working.

Table 4.1. Distribution of Participants by Demographic Characteristics

		Male (n:20)		**Female (n:126)**	
		n	**%**	**N**	**%**
Age (year)	**18-30**	8	40,0	49	38,9
	31-50	10	50,0	65	51,6
	51 year and over	2	10,0	12	9,5
Marital Status	**Married**	12	60,0	84	66,7
	Single	8	40,0	42	33,3
Educational status	**Primary**	2	10,0	10	7,9
	High School	2	10,0	42	33,3
	Associate	2	10,0	18	14,3
	License	10	50,0	38	30,2
	Master	4	20,0	18	14,3
Working Status	**Yes**	14	70,0	70	55,6
	No	6	30,0	56	44,4

In Table 4.2, when we examined according to body mass index (BMI) distribution of the subjects participating in the study, 23.8% of the women were normal weight, 44.4% were overweight and 1.6% were morbid obese; 70% of men were found to be obese at

first degree and 20% morbid obese. Distribution of BMI according to sex was statistically significant (p <0.001).

Table 4.2. Distribution of Participants According to BMI

		Male (n: 20)		Female (n: 126)	
		N	**%**	**N**	**%**
BMI	**Normal-Weight**	0	0,0	30	23,8
	Obese	2	10,0	56	44,4
	1rd Degree Obese	14	70,0	24	19,0
	2rd Degree Obese	0	0,0	14	11,1
	3rd Degree Morbid Obese	4	20,0	2	1,6
x^2: 43,595 p: 0,000*					

*p< 0,001

When the health problem cases of the participants in the study are examined in Table 4.3, 25.4 % of the women and 50% of the men have health problems. In 37.5 % of women and 40 % of men, hypertension, digestion and vitamin mineral deficiency are seen; digestive and Vitamin Mineral Deficiency are seen in 6.3% of women but not of men.

Table 4.3. Health Information of Participants

		Male (n:20)		Female (n:126)	
		n	**%**	**n**	**%**
Health Problem	**Yes**	10	50,0	32	25,4
	No	10	50,0	94	74,6
Following Health Problems	**Diabetes**	2	20,0	6	18,8
	Hypertension	4	40,0	12	37,5
	Digestive	0	0,0	2	6,3
	Respiratory	2	20,0	2	6,3
	Endocrine	2	20,0	8	25,0
	Vitamin Mineral Deficiency	0	0,0	2	6,3
Post-meal Digestion Problem	**Yes**	4	20,0	42	34,4
	No	16	80,0	80	65,6
Cigarette Use	**Yes**	6	30,0	30	23,8
	No	14	70,0	96	76,2
Alcohol	**Yes**	6	30,0	22	17,7

Use	**No**	14	70,0	102	82,3
Situation of doing sports	**Yes**	12	60,0	66	52,4
	No	8	40,0	60	47,6
the Frequency of Doing Sports	**Every Day**	0	0,0	14	12,3
	2 days in a week	6	30,0	42	36,8
	3-4 days in a week	14	70,0	58	50,9
Daily Water Consumption	**4 cups and below**	0	0,0	6	4,8
	5-9 cups	6	30,0	42	33,3
	10 cups and over	14	70,0	78	61,9

Nutritional habits of the individuals participating in the survey are 44,4% of the women and 40% men who consumed 3 main and 3 snacks when they are examined in Table 4.4. The difference between sexes was not statistically significant (p> 0.05).

When we asked why they participated in the survey, 44.4% of the women were the most important meal of the day, 7.9% were in the early morning, 23.8% were feeling better, and 60% they thought that they were important meals, 40% said they had breakfast because they felt better, and the difference between the groups was significant (p <0.05).

90% of men who think that business life is not an obstacle to breakfast, 76.5% of women. It is determined that 23.5% of women and 10% of men think that breakfast is an obstacle. The difference between sexes was not statistically significant (p> 0.05).

While 42.9% of the women were single, 39.7% were family and 17.5% were having breakfast with their friends, 50% of the men were family, 40% were alone and 10% they were found to have breakfast. The difference between sexes was not statistically significant (p> 0.05)

85.7% of women regularly eat breakfast, 14.3% when they start a diet, 80% of men eat regular breakfast, while 10% do not have regular breakfast or do it when the diet starts. It was found that women had more regular breakfast than men and found statistically significant (p <0.05).

It was determined that 100% of men did not have time for breakfast before the diet, 33.3% of the women were without appetite, 16.7% were late and 38.9% were not time, and the difference between the groups was not statistically significant p> 0.05).

When the place of breakfast was examined, 70% of the men were at home, 30% of them were at work, 66.7% of women were at home, 23.8% were at work and 1.6%

were in cars and restaurants. The difference between sexes was not statistically significant (p> 0.05).

Table 4.4. Feeding Habits of Participants

	Male		Female		
Nutritional Properties	**N**	**%**	**n**	**%**	**P**
Meal Consumption					
3 main 3 snack meal	8	40,0	56	44,4	**0,452**
3 main 2 snack meal	12	60,0	70	55,6	
Why Do Have Breakfast					
Breakfast is the most important meal of the day	12	60,0	56	44,4	**0,030***
Nutrition Intake Early Morning	0	0,0	10	7,9	
Feel Better	8	40,0	30	23,8	
Giving Energy	0	0,0	30	23,8	
The Disorder Status of Working Life to Breakfast					**0,145**
Yes	2	10,0	24	23,5	
No	18	90,0	78	76,5	
With Whom Have a Breakfast					
Single	8	40,0	54	42,9	
Family	10	50,0	50	39,7	**0,587**
Friend	2	10,0	22	17,5	
Regularly Having Breakfast					
Yes	16	80,0	108	85,7	**0,002***
No	2	10,0	0	0,0	
Begin diet	2	10,0	18	14,3	
The Reason for Having Breakfast Before diet					
No Time	2	100,0	14	38,9	
Hungry Late	0	0,0	6	16,7	**0,574**
Don't Like Breakfast	0	0,0	2	5,6	
Have No Appetite	0	0,0	12	33,3	
Other	0	0,0	2	5,6	
The Place of Having Breakfast in the Morning					
Home	14	70,0	84	66,7	
School	0	0,0	8	6,3	**0,699**
Work	6	30,0	30	23,8	
Car – Bus	0	0,0	2	1,6	
Restaurant – Cafe	0	0,0	2	1,6	

*p<0,05

In Table 4.5, when we examined the breakfast preferences of the individuals participating in the survey, 100% of men and 74.6% of women prefer breakfast with protein-based and 25.4% of oatmeal-based breakfast. It has been determined that women prefer breakfast with protein rather than men. The difference between groups was statistically significant (p <0.05).

Table 4.5. Status of Participants According to Breakfast Preferences

	Male (n: 20)		**Female (n: 126)**	
	N	**%**	**N**	**%**
Protein based	20	100,0	94	74,6
Oatmeal based	0	0,0	32	25,4
x^2: 6,505 p: 0,005*				

*p<0,05

For breakfast, 56.1% of the women had the usual taste, 19.3% of the women were satisfied with the meal, 21.1% of the women preferred the taste, 60% of the men were satisfied and 30% breakfast type. The difference between groups was statistically significant (p <0.05).

77.8% of the women and 80% of the men stated that they liked oatmeal. It has been determined that women prefer oatmeal for breakfast rather than men. The difference between sexes was not statistically significant (p> 0.05).

It was determined that 64.5% of the women in the study had a good appearance of oatmeal in the intestines and 60% of the men in the oatmeal. It was found that women were better at their intestines and the difference between the groups was not statistically significant (p> 0,05).

It is determined that 25% of men prefer to use oatmeal for breakfast, 51.9% of women prefer to keep fit, 20.4% of them are healthy and 18.5% of them prefer easy to prepare. The difference between sexes was not statistically significant (p> 0.05).

58.7% of the women prefer oatmeal with milk and 41.3% prefer yoghurt. While 60% of men prefer milk, 40% prefer oatmeal with yoghurt. The difference between sexes was not statistically significant (p> 0.05).

Table 4.6. Status of Participants According to Protein and Oatmeal Preferences

	Male		**Female**		
	N	**%**	**N**	**%**	**p**
Protein Preference					
Usual Taste	6	30,0	64	56,1	
Tasty	2	10,0	24	21,1	
thoughness	12	60,0	22	19,3	**0,004***
Cereal don't	0	0,0	2	1,8	
thoughness	0	0,0	2	1,8	
Other					
The status of Liking Breakfast with Oat					
Yes	16	80,0	98	77,8	
No	4	20,0	26	20,6	**0,847**
Already using	0	0,0	2	1,6	
Oatmeal Preference is Good for the Intestine					
Yes	12	60,0	80	64,5	**0,438**
No	8	40,0	44	35,5	
Oatmeal Preference					
Keep Fit	4	25,0	56	51,9	
More Healthy	4	25,0	22	20,4	**0,134**
Easy Preparation	4	25,0	20	18,5	
thoughness	4	25,0	10	9,3	
Oatmeal Preference					
With Milk	12	60,0	74	58,7	**0,559**
With Yoghurt	8	40,0	52	41,3	

*p<0,05

In Table 4.7, when we examine the state of satiety, 57.1% of the protein-based foods in females, 80% in males, 42.9% of oatmeal-based foods in females and 20% in

males. Men were more likely to prefer protein-based breakfast than women and the difference between the sexes was statistically significant (p <0.05).

Table 4.7. Satiety Satus of Participants' Breakfast Preferences

	Male (n: 20)		**Female (n: 126)**	
	N	**%**	**n**	**%**
Protein Based	16	80,0	72	57,1
Oatmeal Based	4	20,0	54	42,9
x^2: 3,766 p: 0,042*				

*p<0,05

In Table 4.8, 45.7% of the overweight, 22.9% of the normal and first degree obesity were the usual breakfast style, and 53.8% of the overweight were good 35.3% of first-degree obese and 23.5% of second-degree obese are satisfied.

Table 4.8. The Status of Protein Based Food Preference of Individual's BMI Situation

			Usual breakfast preference	**Tasty**	**Satiety**	**Cereals don't satiate**
BMI	**Normal Weight**	**N**	16	6	4	0
		%	22,9	23,1	11,8	0,0
	Over weight	**N**	32	14	6	2
		%	45,7	53,8	17,6	100,0
	1.rd degree Obese	**N**	16	4	12	0
		%	22,9	15,4	35,3	0,0
	2.rd degree obese	**N**	4	2	8	0
		%	5,7	7,7	23,5	0,0
	3.rd degree Morbid Obese	**N**	2	0	4	0
		%	2,9	0,0	11,8	0,0

In Table 4.9, it is observed that 23,3% of normal weight and first degree obese individuals and 33,3% of excess weight are in form, when overweight and first-degree obesity are selected in Table 4.9, 33.5% of the normal and first-degree obesity were easy to prepare and 57.1% of the overweight were preoccupied with oatmeal, as 38.5% were healthy.

Table 4.9. The Status of Oatmeal Based Food Preference of Individual's BMI Situation

			Keep fit	More healthy	Easy preparation	Satiety
BMI	**Normal Weight**	**n**	14	6	8	0
		%	23,3	23,1	33,3	0,0
	Over Weight	**n**	20	10	6	8
		%	33,3	38,5	25,0	57,1
	1.rd degree Obese	**n**	14	10	8	2
		%	23,3	38,5	33,3	14,3
	2.rd degree obese	**n**	8	0	2	2
		%	13,3	0,0	8,3	14,3
	3.rd degree Morbid Obese	**n**	4	0	0	2
		%	6,7	0,0	0,0	14,3

In Table 4.10, when we examined the BMI and toughness, we found that 25% of the normal weights were protein based, 13.8% was oatmeal based, 29.5% of excess weight was protein based, 55.2% was oatmeal based, 1% of the obese individuals had protein weight, 17.2% had oatmeal weight, 6.8% of protein obesity, 13.8% of oatmeal weight, and only 6% of morbid obese, while 8 means that they are fed with protein. According to the BMI status of the subjects participated in the study, the satiety status is not statistically significant ($p > 0.05$).

Table 4.10. Evaluation of Individuals' Value of BMI According to the Satiety of Breakfast

			Protein based breakfast	Oatmeal based breakfast
BMI	**Normal Weight**	**n**	22	8
		%	25,0	13,8
	Over weight	**n**	26	32
		%	29,5	55,2
	1.rd degree Obese	**n**	28	10
		%	31,8	17,2
	2.rd degree obese	**n**	6	8
		%	6,8	13,8
	3.rd degree Morbid Obese	**n**	6	0
		%	6,8	0,0
x^2: 5,616 p: 0,230*				

*p>0,05

In Table 4.11 when the breakfast and working conditions were examined, it was found that 88,1% of the working people, 80,6% of the unemployed had regular breakfast, 9,5% of the employees and 19,4% of the unemployed they said they had breakfast regularly when they started. Regular breakfasts were not found statistically significant according to the working status of the individuals participating in the study (p> 0.05).

Table 4.11. The Status of Having Breakfast According to Participant's Working Status

			Working Status	
			Yes	**No**
Regularly Having Breakfast	**Yes**	n	74	50
		%	88,1	80,6
	No	n	2	0
		%	2,4	0,0
	Begin diet	n	8	12
		%	9,5	19,4
x^2: 4,226 p: 0,121*				

*p>0,05

In Table 4.12 of the study participants, it is seen that 87.5% of the married people, 80% of the unmarried people have regular breakfast, 2.1% of the married individuals can not make regular breakfast and 10.4% they do regularly. Regular breakfasts according to the marital status of the individuals participating in the study were not statistically significant (p> 0.05).

Table 4.12. The Status of Having Breakfast According to Participants' Marital Status

			Marital Status	
			Single	**Married**
Regularly Having Breakfast	**Yes**	**N**	40	84
		%	80,0	87,5
	No	**N**	0	2
		%	0,0	2,1
	Begin diet	**N**	10	10
		%	20,0	10,4
x^2: 3,864 p: 0.177*				

*p>0,05

In Table 4.13 of the individuals participating in the study, we did not find statistically significant results when we evaluated breakfast type preferences according to anthropometric measurements conducted for 2 weeks (p> 0,05).

Individuals' first measurements of weight were found to be the difference between oatmeal nutritional averages of 79,35±16,94 and weight final measure of 77,07±16,73.

The first weight average of the subjects fed protein-based diet was 82,02±17,08 and the last weight average was 78,86±16,14

In the first percentage of fat, it was determined that the average of the individuals fed with oatmeal was 35,97±6,19 and the final percentages were 34,77±6,32 of the oatmeal fed the average of fat percentages.

The first weight average of the individuals fed without oatmeal content is 81,23±16,57 and the difference of 79,30±16,73 individuals in the last weight average is observed.

Tablo 4.13. The Status of Anthropometric Measurements According to Participant's Breakfast Type Preferences

	1.Group - Protein Based (n:48)				2.Group - Oatmeal Based (n:50)				3.Group - Without Oatmeal (n:48)				
	x	SD	Min.	Max.	x	SD	Min.	Max.	x	SD	Min.	Max.	p
Weight First	82,0250	17,08236	57,90	139,20	79,3581	16,94330	55,30	129,10	81,2324	16,57330	57,30	137,10	,524
Weight Last	78,8687	16,14572	55,30	137,10	77,0740	16,76527	53,70	129,10	79,3083	16,73505	55,70	135,20	,778
Fat First	29,2854	8,16544	14,20	60,70	28,8060	10,45977	14,00	63,30	30,0583	9,94852	15,40	61,80	,809
Fat Last	27,7896	8,14902	13,20	58,80	27,2860	10,30385	13,10	61,80	28,5917	9,74884	14,60	58,90	,790
Fat Percent First	36,0083	5,73566	25,10	46,40	35,9760	6,19014	25,30	50,20	36,3572	5,93224	24,80	50,80	,357
Fat Percent Last	34,9562	5,74286	23,90	45,50	34,7760	6,32896	24,30	50,30	35,6083	6,11670	21,40	49,10	,777
BMI First	30,3812	5,07449	22,60	48,20	29,2380	5,04664	22,20	44,60	29,8042	4,85255	22,80	47,40	,528
BMI Last	29,6187	5,02363	22,10	47,40	28,6060	5,05898	21,30	43,50	29,1375	4,83144	22,40	46,80	,602

*p>0,05.

5. DISCUSSION

Demographic characteristics, nutritional habits, BMI status and breakfast preferences of 146 men (n: 20) and women (n: 126) with age range of 18-55 who applied to İstanbul Ataşehir Avicenna Hospital Department of Nutrition and Diet were carried out. The discussion section of the research was examined in accordance with the flow in the conclusion section. It has been determined that the age range of the participating 146 individuals is 31-50 years. Most of the participants consisted of women (86.3% women, 13.7% men) (Table 4.1).

In Table 4.2, when we examine the distribution of body mass index (BMI) of the subjects participating in the study, there is a significant difference between men and women ($p < 0.001$).

Meal skipping is a common bad nutrition habit in recent days and as a result it prevents the adequate feeding of the individuals. The most important reason for the inadequacy of nutrition in our country is the acquisition of the wrong nutrition habits due to the inability to give proper education on time (53).

Most participants in weight control consumed 3 main meals and 3 meals (44.4% women, 40% men) (Table 4.4). Heseminia et al. (24) reported that 53.3% of those who eat less than 3 meals a day, 41.9% of those who consume 3 meals, and 4.8% of those who consume more than 3 meals a day. Drummond and colleagues (32) found that breakfast was associated with increased eating habits. According to this, the high frequency of eating breakfast makes the metabolizing energy more efficient, ultimately leading to high levels of metabolic rate for a long time and an increase in total daily energy expenditure.

Most of the individuals involved in the survey stated that they had breakfast because it was the most important meal of the day ($p < 0,05$). While 42.9% of the women had breakfast alone, 50% of the men had family breakfast ($p > 0,05$) (Table 4.4). According to the survey conducted by Tuncay, 26.3% of the respondents reported that 45.1% of them were members of the family, 5.5% of them were members of the family, and 23.1% of them were friends (40). It can be said that the individuals working according to our research do not have time to prepare breakfast at home because of the busy working schedule, do not have breakfast with the whole family and have breakfast with their friends at work.

The majority of the individuals in our study had regular breakfast ($p < 0.05$) (Table 4.4). In a study, (53) claimed that those who regularly eat breakfast do not have a feeling of hunger in the later hours of days, and therefore, do not have a desire to eat excessively.

It was determined that the men who participated in the survey preferred breakfast with more protein than women (Table 4.5). It is seen that women prefer to use protein for breakfast because they are more familiar with taste and men prefer to use it. The difference between the groups was statistically significant ($p < 0.05$) (Table 4.6).

In our study, it was determined that women prefer oatmeal for breakfast rather than men. The reasons for preferring oatmeal consumption by individuals are that they prefer to stay in shape, because they are healthy and because they are easy to prepare. Most of the individuals in our study prefer to consume oatmeal with milk instead of yoghurt. Part of the participants indicated that the oatmeal was good for the intestines (64.5% female - 60% male) ($p > 0.05$) (Table 4.6).

When we examined the state of satiety in food preferences, 57.1% of the women who said that the protein-based foods were saturating and 80% of the men said that the proportion of the oatmeal-based foods was 42.9% and that of the males was 20% ($p < 0,05$) (Table 4.7). In one study, it was seen that dietary protein at breakfast increased satiety and reduced subsequent energy intake more than carbohydrate or fat (146). In a study examining the relationship between oatmeal and satiety between the ages of 18-48, it was determined that they suppressed appetite and prolonged saturation period and decreased energy intake at the next meals. Some studies show that oats have a beneficial effect on satiety (9, 12, 17)

When we examined the body mass index and satiety status, 25% of normal pounds were protein based, 29.5% of excess poultry was protein based, 55.2% was oatmeal based, 31.8% of first degree obese individuals were fed protein weight ($p > 0,05$) (Table 4.10). In a study conducted in the USA, when examined in three groups; high protein, high fiber and both groups were regarded. As a result, it was found that the group fed with high protein at the end of 3 weeks provided satiety throughout the day (17).

It was observed that the individuals who participated in the study have breakfast at regular breakfast when they take breakfast and so this affects their working conditions positively ($p > 0.05$) (Table 4.11).

It was determined that protein or oatmeal-based breakfast type preferences of the participating individuals lost an average of 2 kilos when we evaluated according to anthropometric measurements made for 2 weeks. In our study, oatmeal or protein-based

breakfast type preferred weight loss, BMI status and oatmeal / protein preference in fat ratio went head to head. Which breakfast type was better could not be understood ($p > 0.05$) (Table 4.13).

This study could have been resulted in different outcomes if more participants had been selected on the street randomly or there had been more participants. We are doing well on healthy and weight-controlled individuals and as the number of women and men is not equal to each other and even the number of female participants is more than male participants, it is thought that the certain result cannot be obtained because the majority of the group is stucked between the ages of 31-50.

6. CONCLUSION AND RECOMMENDATIONS

From the results of research carried out to determine the effects of starting a total of 146 individuals within the age range of 18-55 (male, n: 20) and females, n: 126) applied to the Department of Nutrition and Diet, İstanbul Ataşehir Avicenna Hospital the day with breakfast options containing the different rate of protein and oatmeal on their satiety, body mass index (BMI), and body fat percentage during the day, it is understood that there is no difference between protein-based and oatmeal-based breakfast in terms of weight control.

It was seen that most of the participants who were under weight control knew that breakfast was the most important meal of the day, and that the majority had regular breakfast. It is also understood that men prefer more protein-based breakfasts than women and they believe that protein foods are more effective in being filling. Women, on the other hand, reported that oatmeal-based foods supply more fullness.

According to the results of our study, skipping the breakfast meal is an improper nutrition habit for individuals' metabolism to work correctly. For this purpose, it may be suggested to share the data obtained from these studies in education in terms of more scientific studies and community health. The right and scientific suggestions to be made through the press and social media will also benefit. All of these mean that future generations prefer healthy breakfast meals should be encouraged.

7. REFERENCES

1) Baysal A, Bozkurt N, Pekcan G, Aksoy M, Keçecioğlu S. Diyet El Kitabı, 6. Baskı. Ankara: Hatipoğlu yayınevi; 2011, 7-26.

2) Baysal A., Beslenme, 14. Baskı, Hatiboğlu Yayınevi, Ankara 2012.

3) Kutluay MT. Beslenme Antropolojisi, Hatiboğlu Yayınevi, Ankara 2012, 35-40.

4) Budak N, Özer E, Kovalı S, İnceiş N. "Kahvaltının Öğrencilerin Beslenmesine Katkısı ve Akademik Başarıya Etkisi". Beslenme ve Diyet Dergisi. 2005; 32(1): 47-54.

5) Morgan KJ, Zabik ME, Stampley GL. "The Role of Breakfast in the Diet Adequacy of the US Adult Population". J Am Coll Nutr. 1986; 5: 551–563.

6) Stanton JL Jr, Keast DR." Serum Cholesterol, Fat İntake, and Breakfast Consumption in the United States Adult Population". J Am Coll Nutr. 1989; 8(6): 567–72.

7) Farshchi HR, Taylor MA, MacDonald IA. "Deleterious Effects of Omitting Breakfast on Insulin Sensitivity and Fasting Lipid Profiles in Healthy Lean Women". Am J Clin Nutr. 2005; 81(1):16-24.

8) Aracı, Hikmet. Okullarda beden eğitimi. (3. bs.), Ankara: Nobel Yayın Dağıtım (2001).

9) Driskell, J.A. Sports Nutrition. CRC Press, (2000), 280, London.

10) Kiefer, I., Rathmanner, T. and Kunze, M. Eating and dieting differences in men and women. The Journal of Men's Health and Gender, (2005), 2 (2), 194-201.

11) Kutluay Merdol T. Yeterli, Dengeli ve Sağlıklı Beslenmenin Temel Özellikleri, Toplu Beslenme Servisi Yapılan Kurumlar İçin Sağlıklı Beslenme Rehberi, Okan Üniversitesi Yayınları, İstanbul, 2014, 7-39.

12) Baysal A. Genel Beslenme. Hacettepe Üniversitesi Beslenme ve Diyetetik Bölümü, Hatiboğlu Basım Yayım San., Ankara.1995: 11-13.

13) DSÖ Kütüphanesi Kataloğu-Yayın Verileri Data Bulaşıcı Olmayan Hastalıklara İlişkin Küresel Durum Raporu 2010.

14) Türkiye'ye Özgü Besin ve Beslenme Rehberi, Ankara, 2015. Erişim: (http://www.bdb.hacettepe.edu.tr/TOBR_kitap.pdf). Erişim tarihi: 27/01/18.

15) Şanlıer N. Beslenme ve Besin Öğeleri. Pegem Yayıncılık, 2002, Ankara.

16) Kutluay MT. Kahvaltının Önemi ve Kahvaltı Örüntümüz. Türk Mutfak Kültürü Üzerine Araştırmalar. Türk Halk Kültürünü Araştırma ve Tanıtma Vakfı, Yayın No: 28, Yayına Hazırlayan: Kamil Toygar, Takav Matbaası, Ankara. 2001; 95-106.

17) Sürücüoğlu, MS. Beslenme ve sağlığımız. Standart Araştırma / İnceleme Dergisi, 1999, 4:40–51.

18) Karagözoğlu Ş, Çabuk S, Tahta Y, Temel F. [Some Factors Influencing the Sleep of Hospitalized Adult Patients]. Toraks Dergisi 2007; 8(4): 234-40.

19) Peuhkuri K, Sihlova N. Diet promotes sleep duration and quality, Nutrition Research 32, 2012; 309-319.

20) Penev PD. Sleep deprivation and energy metabolism: to sleep, perchance to eat. Curr Opin Endocrinol Diabetes Obes. 2007; 14(5):374-81.

21) Nelson, M., Poulter, J. (2004). Impact of tea drinking on iron status in the UK: a review. Journal of Human Nutrition and Dietetic. 17, 43- 54.

22) Sanlıer N, Arlı M. Üniversitede okuyan beslenme egitimi alan kız ögrencilerin beslenme durumları, günlük enerji alımları ve harcamaları. Gazi Beden Egitimi ve Spor Bilimleri Dergisi. 2000; 3: 21–30.

23) Arslan P, Pekcan G, Yurtta kalan yükseköğrenim öğrencilerinin beslenme durumları ve sorunları, Cerrahpaşa Tıp Fakültesi. İstanbul Üniversitesi Diyabet Yıllığı 4. İstanbul: 1985; 161–171.

24) Arslan C, Mendes B. Üniversitelerin farklı bölümlerinde okuyan erkek ve kız öğrencilerin sıvı tüketimleri ve bilgi düzeylerinin araştırılması. Fırat Üniversitesi Sağlık Bilimleri Dergisi. 2004; 18(3): 163–170.

25) Akal E, Baysal A. Doğurganlık çağındaki kadınlarda anemi ve A vitamini arasındaki etkileşim. Beslenme ve Diyet Dergisi. 1994; 22(2): 227.

26) Özçelik AÖ. "Sağlık Personelinin Beslenme Alışkanlıkları Üzerinde Bir Araştırma". Gıda Dergisi. 2000; 25(2), s: 93-99.

27) Yaman, M, Yabancı N. (2006). Üniversite öğrencilerinin beslenme alışkanlıklarının değerlendirilmesi. I. Uluslararası Ev Ekonomisi Kongresi, Mart 2006, Ankara. Kongre Özet Kitabı, 214-223.

28) Eisenmann JC, Bartee RT, Wang MQ. Physical activity, TV viewing, and weight in U.S. youth: 1999 Youth Risk Behavior Survey. Obes Res. 2002; 10(5): 379- 385.

29) Hu FB, Li TY, Colditz GA, Willet WC, Manson JE. Television watching and other sedentary behaviors in relation to risk of obesity and type 2 diabetes mellitus in women. JAMA. 289(14): 1785-1791.

30) Bowman SA. Television-Viewing characteristics of adults: correlations to eating practices and overweight and health status. Prev Chron Dis. 2006; 3(2): 1-11.

31) Keski-Rahkonen A, Kaprio J, Virkunen M, Rose RJ, Breakfast skipping and health-compromising behaviors in adolescents and adults. Eur J Clin Nutr. 2003; 57: 842–853.

32) Kerver JM, Yang EJ, Obayashi S, Bianci L, Song WO. Meal and snack patterns are associated with dietary intake of energy and nutrients in US adults. J Am Diet Assoc. 2006; 106(1): 46–53.

33) Sencer E, Orhan Y. Klinik Beslenme, 1.Baskı, İstanbul Medikal Yayıncılık, İstanbul, 2005,53-59.

34) Emily J Dhurandhar, John Dawson, Amy Alcorn, Lesli H Larsen, Elizabeth A Thomas, Michelle Cardel, Ashley C Bourland,Arne Astrup, Marie-Pierre St-Onge, James O Hill, Caroline M Apovian, James M Shikany, and David B Allison. The effectiveness of breakfast recommendations on weight loss: a randomized controlled trial. Am J Clin Nutr 2014; 100:507–13. Printed in USA. 2014 American Society for Nutrition.

35) Astbury NM, Taylor MA, Macdonald IA. Breakfast consumption affects appetite, energy intake, and the metabolic and endocrine responses to foods consumed later in the day in male habitual bre-akfast eaters. J Nutr 2011; 141:1381–9.

36) Smeets AJ, Westerterp-Plantenga MS. Acute effects on metabolism and appetite profile of one meal difference in the lower range of meal frequency. Br J Nutr 2008; 99:1316–21.

37) Leidy HJ, Racki EM. The addition of a protein-rich breakfast and its effects on acute appetite control and food intake in 'breakfast-skipping'adolescents. Int J Obes (Lond) 2010; 34: 1125–33.

38) Farshchi HR, Taylor MA, Macdonald IA. Deleterious effects of omitting breakfast on insulin sensitivity and fasting lipid profiles in healthy lean women. Am J Clin Nutr 2005; 81: 388–96.

39) Ortega RM, Requejo AM. "The Importance of Breakfast in Meeting Daily Recommended Calcium Intake in A Group Of School Children". J Am Coll Nutr. 1998; 17 (1): 19-24.

40) Soriano JM, Molto JC, Manes J. Dietary intake and food pattern among university students. Nutr Res. 2000; 20: 1249–1258.

41) Preziosi P, Galan P, Deheeger M, Yacouth N, Drenowski A. "Breakfast Type Daily Nutrient Intakes and Vitamin and Mineral Status of French Children, Adolescents and Adults". J Am Coll Nutr. 1999; 18(2):171–178.

42) Siega-Riz AM, Popkin BM, Carson T. Differences in food patterns at breakfast by sociodemographic characteristics among a nationally represantative sample of adults in the United States. Prev Med. 2000; 30: 415–424.

43) Nursal Berat. "Büyümede Besinler" Amerikan Diyetisyenler Derneği'nin Geliştirilmiş Besin ve Beslenme Rehberi, Roberta Larson, Duyff, Ms, Rd, Cfcs. Çeviri Editörleri: Prof. Dr. Sevinç Yücesan ve diğerleri. Acar Matbaacılık, Yay. Hiz. San. ve Tic. İstanbul, 2002.

44) Casazza K, Fontaine FR, Astrup A, Birch LL, Brown AW, Bohan Brown MM, et al. Myths, pre-sumptions, and facts about obesity. N Engl J Med. 2013; 368: 446–54.

45) Brown AW, Bohan Brown MM, Allison DB. Belief beyond the evidence: using the proposed effect of breakfast on obesity to show 2 practices that distort scientific evidence. Am J Clin Nutr. 2013; 98:1298–308.

46) Reeves S, Halsey LG, McMeel Y, Huber JW. Breakfast habits, beliefs and measures of health and wellbeing in a nationally representative UK sample. Appetite. 2013; 60:51–7.

47) Barr SI, DiFrancesco L, Fulgoni VL III. Breakfast consumption is positively associated with nutrient adequacy in Canadian children and adolescents. Br J Nutr. 2014; 112: 1373-1383.

48) Deshmukh-Taskar PR, Nicklas TA, O'Neil CE, Keast DR, Radcliffe JD, Cho S. The relationship of breakfast skipping and type of breakfast consumption with nutrient intake and weight status in children and adolescents: the National Health and Nutrition Examination Survey 1999-2006. J Am Diet Assoc. 2010; 11 :869-878.

49) Grieger JA, Cobiac L. Comparison of dietary intakes according to breakfast choice in Australian boys. Eur J Clin Nutr. 2012; 66:667-672.

50) Williams BM, O'Neil CE, Keast DR, Cho S, Nicklas TA. Ready-to-eat cereal breakfasts are associa-ted with improved nutrient intake and dietary adequacy but not body mass index in black adoles-cents. Am J Lifestyle Med. 2009; 3: 500-508.

51) Cho S, Dietrich M, Brown CJ, Clark CA, Block G. The effect of breakfast type on total daily enegry intake anad body mass index: results from Third National Health and Nutrition Examination Survey (NHANES III). J Am Coll Nutr. 2003; 24(2): 296-302.

52) Timlin MT, Pereira MA. Breakfast frequency and quality in the etiology of adult obesity and chronic diseases. Nutr Rev. 2007; 65: 268-281.

53) Wyatt HR, Grunwald GK, Mosca CL, et al. Long-term weight loss and breakfast in subjects in the National Weight Control Registry. Obes Res. 2002; 10: 78–82.

54) Schlundt DG, Hill JO, Sbrocco T, Pope-Cordle J, Sharp T, The role of breakfast in the treatment of obesity: a randomized clinical trial. Am J Clin Nutr. 1992; 55: 645–651.

55) Song WO, Chun OK, Obayashı S, Cho S, Chung CE. Is consumption of breakfast associated with body mass index in US adults. J Am Diet Assoc. 2005; 105(9): 1373–1382.

56) Stockman NK, Schenkel TC, Brown JN, Duncan AM. Comparison of energy nutrient intakes among meals and snacks of adolescent males. Prev Med. 2004; 41(1): 203– 210.

57) Martin A, Normand S, Sothier M, Peyrat J, Louche-Pellissier C, Lavilla M. Is consumption for breakfast consumption justified? Results from short term dietary and metabolic experiment in healthy men. Br J Nutr. 2000; 84: 337–344.

58) Watanabe Y, Saito I, Henmi I, et al. Skipping breakfast is correlated with obesity. J Rural Med. 2014;9: 51-58.

59) O'Neil CE, Nicklas TA, Fulgoni VL III. Nutrient intake, diet quality, and weight/adiposity parame-ters in breakfast patterns compared with no breakfast in adults: National Health and Nutrition Examination Survey 2001-2008. J Acad Nutr Diet. 2014; 114 :S27-S43.

60) Gonzalez-Suarez CB, Lee-Pineda K, Caralipio ND, Grimmer-Somers K, Sibug EO, Velasco ZF. Is what Filipino children eat between meals associated with body mass index? Asia Pac J Public He-alth. 2015; 27: NP650-NP661.

61) Timlin MT, Pereira MA, Story M, Neumark-Sztainer D. Breakfast eating and weight change in a 5-year prospective analysis of adolescents: Project EAT (Eating Among Teens). Pediatrics. 2008;121 (3):e638-645.

62) Sirichakwal PP, Janesiripanich N, Kunapun P, Senaprm S, Purttiponthanee S. Breakfast consump-tion behaviors of elementary school children in Bangkok metropolitan region. SE Asian J Trop Med. 2015; 46: 939-948.

63) Rampersaud GC, Pereira MA, Girard BL, Adams J, Metzl JD. Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents. J Am Diet Assoc. 2005;105:743-760.

64) Hallstrom L, Vereecken CA, Ruiz JR, et al. Breakfast habits and factors influencing food choices at breakfast in relation to socio-demographic and family factors among European adolescents. The HELENA Study. Appetite. 2011; 56:649-657.

65) Nicklas TA, Yang SJ, Baranowski T, Zakeri I, Berenson G: Eating patterns and obesity in children. The Bogalusa Heart Study. Am J Prev Med 2003, 25:9–16.

66) Astbury NM, Taylor MA, Macdonald IA. Breakfast consumption affects appetite, energy intake, and the metabolic and endocrine responses to foods consumed later in the day in male habitual bre-akfast eaters. J Nutr 2011;141:1381–9.

67) Geliebter A, Yahav E, Haq S, Hashim SA. Cholesterol and weight change following daily high or low fiber breakfast cereals. Obes Res 2000; 8: 25.

68) Hamedani A, Akhavan T, Samra RA, Anderson GH. Reduced energy intake at breakfast is not compensated for at lunch if a high-insolublefiber cereal replaces a low-fiber cereal. Am J Clin Nutr 2009; 89: 1343.

69) Geliebter A, Yahav E, Forbes G, Hashim SA. Lunch meal intake following high and low glycemic breakfast cereals. FASEB J 1999;13(5): A871.

70) Siega-Riz AM, Popkin BM, Carson T. Differences in food patterns at breakfast by sociodemographic characteristics among a nationally representative sample of adults in the United States. Prev Med. 2000; 30 (5): 415–424.

71) Haug E, Rasmussen M, Samdal O, et al. Overweight in school-aged children and its relationship with demographic and lifestyle factors: results from the WHO-Collaborative Health Behaviour in School-aged Children (HBSC) study. Int J Public Health 2009; 54: 167–179.

72) Szajewska H, Ruszczynski M. Systematic review demonstrating that breakfast consumption influences body weight outcomes in children and adolescents in Europe. Crit Rev Food Sci Nutr 2010; 50: 113–119.

73) Deshmukh-Taskar P, Nicklas TA, Radcliffe JD, O'Neil CE, Liu Y. The relationship of breakfast skipping and type of breakfast consumed with overweight/obesity, abdominal obesity, other cardiometabolic risk factors and the metabolic syndrome in young adults. The National Health and Nutrition Examination Survey (NHANES). Public Health Nutr 2013; 16: 2073–2082.

74) Van der Heijden AAWA, Hu FB, Rimm EB, van Dam RM. A prospective study of breakfast consumption and weight gain among U.S. men. Obesity 2007; 15: 2463–2469.

75) Odegaard AO, Jacobs DR, Steffen LM, Van Horn L, Ludwig DS, Pereira MA. Breakfast frequency and development of metabolic risk. Diabetes Care 2013; 36: 3100–3106.

76) Horikawa C, Kodama S, Yachi Y, et al. Skipping breakfast and prevalence of overweight and obesity in Asian and Pacific regions: a meta-analysis. Prev Med (Baltim) 2011; 53: 260–267.

77) Barr SI, DiFrancesco L, Fulgoni VL. Association of breakfast consumption with body mass index and prevalence of overweight/obesity in a nationally-representative survey of Canadian adults. Nutr J 2016; 15: 33.

78) M. Sakurai, K. Yoshita, K. Nakamura, K. Miura, T. Takamura, S.Y. Nagasawa, Y. Morikawa, T. Kido, Y. Naruse, K. Nogawa, Y. Suwazono, S. Sasaki, M. Ishizaki and H. Nakagawa . Skipping breakfast and 5-year changes in body mass index and waist circumference in Japanese men and women. Obes Sci Pract. 2017 Jun; 3(2): 162–170.

79) Van Lippevelde W, Te Velde SJ, Verloigne M, Van Stralen MM, De Bourdeaudhuij I, Manios Y, et al.Associations between family-related factors, breakfast consumption and BMI among 10-to 12-year-old European children: the cross-sectional.

80) Timlin MT, Pereira MA, Story M, Neumark-Sztainer D. Breakfast eating and weight change in a 5-year prospective analysis of adolescents: Project EAT (eating among teens). Pediatrics (2008) 121(3):e638–4510.1542/peds.2007-1035.

81) Harding S, Teyhan A, Maynard MJ, Cruickshank JK. Ethnic differences in overweight and obesity in early adolescence in the MRC DASH study: the role of adolescent and parental lifestyle. Int J Epidemiol (2008) 37:162–7210.

82) So HK, Nelson EA, Li AM, Guldan GS, Yin J, Ng PC, et al. Breakfast frequency inversely associated with BMI and body fatness in Hong Kong Chinese children aged 9–18 years.

83) Laska MN, Murray DM, Lytle LA, Harnack LJ. Longitudinal associations between key dietary behaviors and weight gain over time: transitions through the adolescent years. Obesity (2012) 20:118–2510.

84) William P. Breakfast and the diets of Australian children and adolescents: an analysis of data from the 1995 National Nutrition Survey. Int J Food Sci Nutr (2007) 58:201–1610.

85) Mota J, Fidalgo F, Silva R, Ribeiro JC, Santos R, Carvalho J, et al. Relationship between physical activity, obesity and meal frequency in adolescents. Ann Hum Biol (2008) 35:1–1010.

86) Abalkhail B, Shawky S. Prevalence of daily breakfast intake, iron deficiency anaemia and awareness of being anaemic among Saudi school students. Int J Food Sci Nutr (2002) 53:519–2810.

87) Summerbell CD, Moody RC, Shanks J, Stock MJ, Geissler C. Relationship between feeding pattern and body mass index in 220 free-living people in four age group. Eur J ClinNutr. 1996; 50: 513–519.

88) Keski-Rahkonen A, Kaprio J, Virkunen M, Rose RJ, Breakfast skipping and health-compromising behaviors in adolescents and adults. Eur J Clin Nutr. 2003; 57: 842–853.

89) Berkey CS, Rockett HR, Gilman MW, et al. Longitudinal study of skipping breakfast and weight change in adolescents. Int J Obes Relat Metab Diord. 2003; 27: 1258– 1266.

90) Monneuse MO, Bellisle F, Kopper G. Eating habits food and health related attitudes and beliefs reported by French students. Eur J Nutr. 1997; 51: 46–53.

91) Zilberter T, Zilberter EY. Breakfast and cognition: sixteen effects in nine populations, no single recipe. Front Hum Neurosci (2013) 7:631.

92) Scharrer E. Control of food intake by fatty acid oxidation and ketogenesis. Nutrition (1999) 15:704–1410.

93) La Fleur SE, Ji H, Manalo SL, Friedman MI, Dallman MF. The hepatic vagus mediates fat-induced inhibition of diabetic hyperphagia. Diabetes (2003) 52:2321–3010.

94) Horn CC, Ji H, Friedman MI. Etomoxir, a fatty acid oxidation inhibitor, increases food intake and reduces hepatic energy status in rats. Physiol Behav (2004) 81:157–6210.

95) Dutton SB, Sawyer NT, Kalume F, Jumbo-Lucioni P, Borges K, Catterall WA, et al. Protective effect of the ketogenic diet in Scn1a mutant mice. Epilepsia (2011) 52(11):2050–610.

96) Willcox BJ, Willcox DC. Caloric restriction, caloric restriction mimetics, and healthy aging in Okinawa: controversies and clinical implications. Curr Opin Clin Nutr Metab Care (2014) 17(1):51–810.

97) Mattson MP, Duan W, Guo Z. Meal size and frequency affect neuronal plasticity and vulnerability to disease: cellular and molecular mechanisms. J Neurochem (2003) 84:417–3110.

98) Racette SB , Das SK , Bhapkar M , Hadley EC , Roberts SB , Ravussin E , Pieper C, DeLany JP , Kraus BİZ , Rochon J , ve ark.; CALERIE Çalışma Grubu . İnsanlarda kalori kısıtlama müdahaleleri sırasında enerji alımı miktarını ve kalori kısıtlamasını belirleme yaklaşımları: çok merkezli CALERIE çalışması. Am J Physiol Endocrinol Metab 2012; 302: E441 – 8.

99) Huffman KM, Redman LM, Landerman LR, Pieper CF, Stevens RD, Muehlbauer MJ, Wenner BR, Bain JR, Kraus VB, Newgard CB, ve ark. Kalorik kısıtlama karışık bir yemek yeme metabolik tepkisini değiştirir: randomize, kontrollü bir denemeden sonuç. PLoS ONE 2012; 7: e28190.

100) Tuncay P, Öktem BA. "Başkent Üniversitesi Öğrencilerinin Sabah Kahvaltı Yapma ve Beslenme Alışkanlıkları Üzerine Bir Araştırma". Yüksek Lisans Tezi. Gazi Üniversitesi, Sağlık Bilimleri Enstitüsü. Ankara, 2008; 95-106.

101) Zive MM, Nicklas TA, Busch E, Myers L, Berenson GS. "Marginal Vitamin and Mineral Intakes of Young Adults: The Bogalusa Hearth Study". J Adoles Health.1996; 19: 39–47.

102) Leidy HJ, Bossingham MJ, Mattes RD, Campbell WW. Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness during energy restriction compared to other meal times. Br J Nutr. 2009; 101(6):798-803.

103) Vander Wal JS, Gupta A, Khosla P, Dhurandhar NV. Egg breakfast enhances weight loss. Int J Obes (Lond). 2008; 32 (10):1545-1551.

104) Kishimoto, Y, Taguchi C, Suzuki-Sugihara, Saita D , Usuda M , Wang G , Masuda, Y , Kondo K . The Effect of the Consumption of Egg on Serum Lipids and Antioxidant Status in Healthy Subjects. J Nutr Sci Vitaminol (Tokyo). 2016; 62(5): 361-365.

105) Haines PS, Guılky DK, Popkın BM. Trends in breakfast consumption of US adults between 1965 and 1991. J Am Diet Assoc. 1996; 96(5): 465–470.

106) T.C. Sağlık Bakanlığı. Temel Sağlık Hizmetleri Genel Müdürlüğü. Beslenme ve Fiziksel Aktiviteler Daire Başkanlığı. Kahvaltının Önemi. Sağlıklı Beslenme Serisi No: 04. Erişim: http://www.ihsm.gov.tr/pdf/9.pdf.

107) Havrlentova, M, Petrulakova, Z, Burgarova, A, Gago, F. Hlınkova, A. Sturdık, E, "Cereal β-glucans and their Significance for the Preparation of Functional Foods-A Review", Czech Journal of Food Sciences, 29 (1), 1-14, (2011).

108) Güvendi, Ö. "Besinsel Lif ve Antioksidanca Zengin Tahıllardan Geleneksel Yöntem İle Erişte Üretimi", Yüksek Lisans Tezi, Abant İzzet Baysal Üniversitesi Fen Bilimleri Enstitüsü Gıda Mühendisliği Anabilim Dalı, (2011).

109) Wood PJ. Oat b-glucan: structure, location and properties. In: Webstger FH, editor. Oats: chemistry and technology. St Paul, MN: AACC Inc.; 1986. p. 121e52

110) Katz D.L. Evans M.A., Chan W., Nawaz H., Comerford B.P., Hoxley M.L., et al: Oats, antioxidants and endothelial function in overweight, dyslipidemic adults. J Am Coll Nutr 2004; 23: pp. 397-403.

111) Chen C.Y. Milbury P.E., Collins F.W., and Blumberg J.B.: Avenanthramides are bioavailable and have antioxidant activity in humans after acute consumption of an enriched mixture from oats. J Nutr 2007; 137: pp. 1375-1382.

112) Fulgoni VL, Chu Y, O'Shea M, Slavin JL, DiRienzo MA. Oatmeal consumption is associated with better diet quality and lower body mass index in adults: the National Health and Nutrition Examination Survey (NHANES), 2001-2010. Nutrıtıon Research 35. 2015; 1052–1059.

113) Doğanay, E., "Kahvaltıda Ekmek Yerine Yulaf Ezmesi Verilmesinin İnsüline Bağımlı Olmayan Diyabetlilerde Kan Şekeri ve Lipitlere Etkisi Üzerine Bir Çalışma", Yüksek Lisans Tezi, Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü, (1994).

114) Georgıou CC, Betts NM, Hoerr SL, Keim K, Peters PK. Among young adults college students and graduates practiced more healtful and made more healtful food choices than did non students. J Am Diet Assoc. 1997; 97(7): 754–759.

115) Thebaudin, J.Y., Lefebvre, A.C., Harrington, M., Bourgeois, C.M. 1997. Dietary fibres: nutritional and technological interest. Trends Food Sci Tech, 8; 41-48.

116) Vasanthan, T., Gaosong, J., Yeung, J., Li, J. 2002. Dietary fiber profile of barley flour as affected by extrusion cooking. Food Chem, 77; 35-40.

117) Guillon, F. and Champ, M. 2000. Structural and physical properties of dietary fibres, and consequences of processing on human physiology. Food Res Int, 33; 233-245.

118) Dülger D, Şahan Y. Diyet lifin özellikleri ve sağlık üzerindeki etkileri. U.Ü. Ziraat Fakültesi Dergisi 25/2:147-157, 2011.

119) BeMiller, J.N. and Whistler, R.L. 1996. Dietary fiber and carbonhydrate digestibility. In 'Food Chemistry', O.R. Fennema (ed). Marcel Dekker, pp. 157-224, New York.

120) Anar, S. "Besinsel lif nedir?" Gıda Dergisi, Dunya Basımevi, 1999.

121) Rodríguez, R., A. Jiménez, J. Fernández-Bolaños, R. Guillén and A. Heredia. 2006. Dietary Fibre from Vegetable Products as a Source of Functional Ingredients. Trends in Food Sciences and Technology, 17: 3-15.

122) Harris, P.J., Ferguson, L. R., "Dietary Fibres May Protect or Enhance Carcinogenesis."Nutrition Research, 443, 95-110. 1999.

123) Samur, G., Mercanlıgil, M.S. "Diyet Posası ve Sağlık" Hacettepe Universitesi – Sağlık Fakultesi Beslenme ve Diyetetik Bolum, Ders Kitabı, 2008.

124) Kahlon, T.S., Chow, F.I., Hoefer, J.L., Betschart, A.A., "Effect of wheat bran fiber and bran particle size on fat and fiber digestibility and gastrointestinal tract measurements in the rat." Cereal Chemistry, Cilt 78, Sayı 4, 481–484. 2001.

125) Jimenez, A., R. Rodriguez, I. Fernandez-Caro, R. Guillen, J. Fernandez-Bola~Nos and A. Heredia. 2000. Dietary fibre content of table olives processed under different European styles: Study of physicochemical characteristics. Journal of the Science of Food and Agriculture. 80: 1903-1908.

126) Chau, C.F. and Y.L. Huang. 2003. Comparison of the chemical composition and physicochemical properties of different fibers prepared from the peel of Citrus sinensis L. Cv. Liucheng. J Agr. Food Chem. 51: 2615-2618.

127) Butt MS, Tahir-Nadeem M, Khan MK, Shabir R, Butt MS. (2008). Oat: Unique Among the Cereals. Eu J Nutr. 47:68-79.

128) Mammas I, Bertsias G, Linardakis M, Moschandreas J, Kafatos A. Nutrient intake and food consumption among medical students in Greece assessed during a clinical nutrition course. Int J Food Sci Nutr. 2004; 55: 17–26.

129) Guthrie JF, Lın BH, Frazao E. Role of food prepared away from home in the American Diet, 1978–78 versus 1994– 96: Changes and Consequences. J Nutr Educ Behav. 2002; 34: 140–150.

130) Nicklas TA, Farrıs TP, Myers L, Berenson GS, Dietary fiber ıntake of children and young adults: the Bogalusa Hearth Study, J Am Diet Assoc. 1995; 95(2): 209–214.

131) Theuwissen E, Mensink RP. (2007). Simultaneous Intake of β-Glucan and Plant Stanol Esters Affects Lipid Metabolsm in Slightly Hypercholesterolemic Subjects. J Nutr. 137:583- 588.

132) Kim SY, Song HJ, Lee YY, Cho KH, Roh YK. (2006). Biomedical Issues of Dietary Fiber β-Glucan. J Korean Med Sci. 21:781-9.

133) Daou C, Zhang H. (2012). Oat beta-Glucan: It's Role in Health Promoting and Prevention of Disease. 11:355-365.

134) İstek, D., İşlerer, M., Ertop, M., "Beta Glukanların Biyoaktif Bileşen Özellikleri ve Fonksiyonel Olarak Kullanım İmkanları", 8. Gıda Mühendisliği Kongresi, Ankara, 191, (2013).

135) Holt SHA, Brand Miller JC, Petocz P, Farmakalidis E. A satiety index of common foods. Eur J Clin Nutr 1995; 49: 675–690.

136) Holt SHA, Brand Miller JC, Stitt PA. The effects of equal-energy portions of different breads on blood glucose levels, feelings of fullness and subsequent energy intake. J Am Diet Assoc 2001; 101: 767–773.

137) Leidy HJ, Racki EM. The addition of a protein-rich breakfast and its effects on acute appetite control and food intake in 'breakfast-skipping' adolescents. Int J Obes (Lond) 2010; 34: 1125–33.

138) Leidy HJ, Lepping RJ, Savage CR, Harris CT. Neural responses to visual food stimuli after a normal vs. higher protein breakfast in breakfast-skipping teens: a pilot fMRI study. Obesity (Silver Spring) 2011;19: 2019–25.

139) Leidy HJ, Bossingham MJ, Mattes RD, Campbell WW. Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness during energy restriction compared to other meal times. Br J Nutr. 2009; 101(6): 798-803.

140) Leidy HJ, Racki EM. The addition of a protein-rich breakfast and its effects on acute appetite control and food intake in 'breakfast skipping adolescents. Int J Obes (Lond). 2010; 34(7): 1125-1133.

141) Pereira MA, Erickson E, McKee P, et al. Breakfast frequency and quality may affect glycemia and appetite in adults and children. J Nutr. 2011; 141(1):163-168.

142) Vander Wal JS, Gupta A, Khosla P, Dhurandhar NV. Egg breakfast enhances weight loss. Int J Obes (Lond). 2008; 32(10): 1545-1551.

143) Agnes Marsset-Baglieri, Gilles Fromentin, Francoise Nau, Gheorghe Airinei, Julien Piedcoq, Didier Remond, Pierre Barbillon, Robert Benamouzig, Daniel Tome, Claire Gaudichon. The satiating effects of eggs or cottage cheese are similar in healthy subjects despite differences in postprandial kinetics. Appetite, 136-143, 2015.

144) Joseph Ratliffa, Gisella Mutungia, Michael J. Puglisia, Jeff S. Volekb, Maria Luz Fernandez. Carbohydrate restriction (with or without additional dietary cholesterol provided by eggs) reduces insulin resistance and plasma leptin without modifying appetite hormones in adult men. Nutrition Research 29 (2009) 262–268.

145) Rosalind Fallaize, Louise Wilson, Juliet Gray, Linda M. Morgan, Bruce A. Griffin. Variation in the effects of three different breakfast meals on subjective satiety and subsequent intake of energy at lunch and evening meal. Eur J Nutr (2013) 52, 1353–1359.

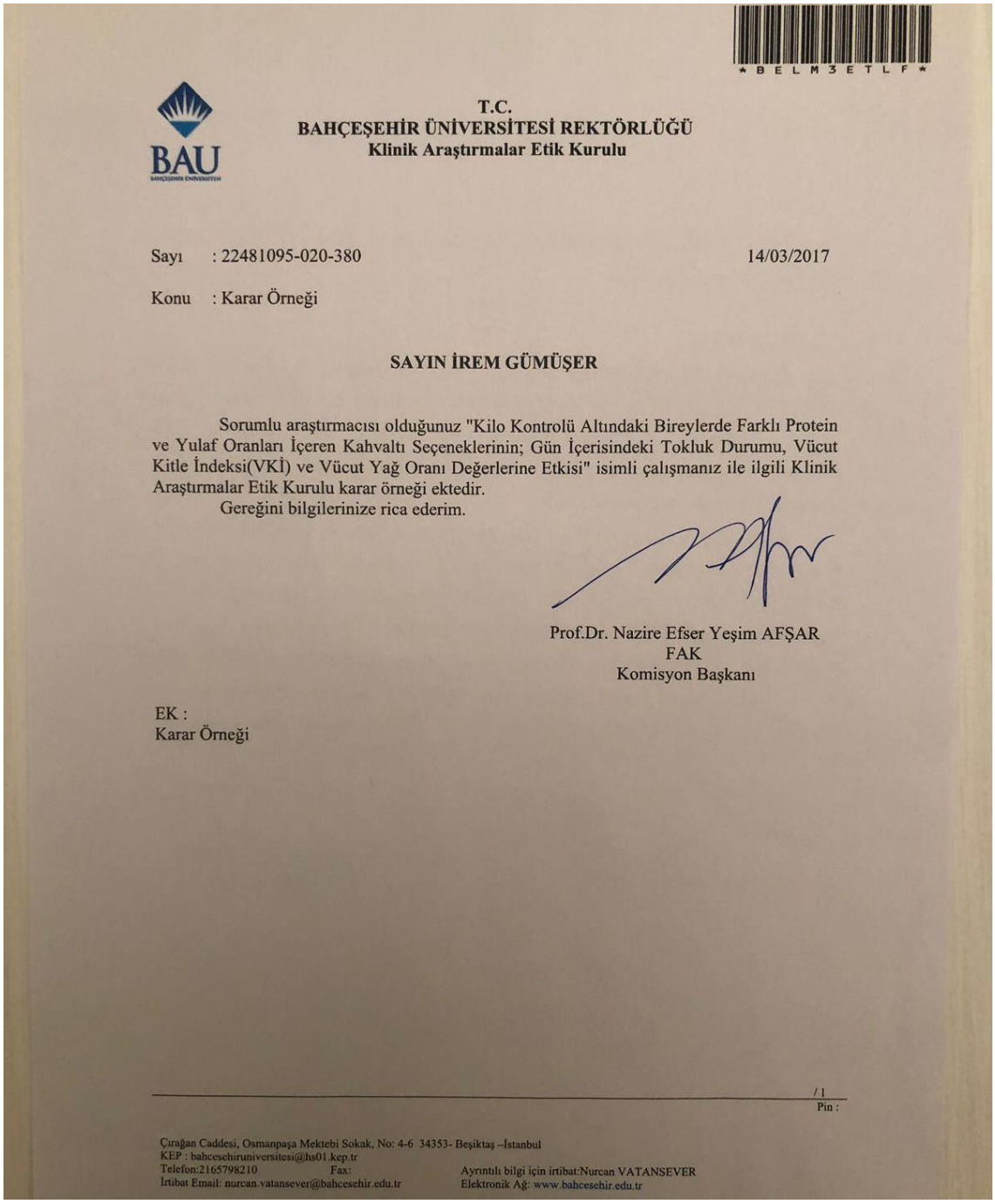
146) Tia M Rains, Heather J Leidy, Kristen D Sanoshy, Andrea L Lawless and Kevin C Maki. Rains et al. Nutrition Journal (2015) 14:17.

147) Nicholas R Fuller, Ian D Caterson, Amanda Sainsbury, Gareth Denyer, Mackenzie Fong, James Gerofi, Katherine Baqleh, Kathryn H Williams, Namson S Lau, and Tania P Markovic.. The effect of a high-egg diet on cardiovascular risk factors in people with type 2 diabetes: the Diabetes and Egg (DIABEGG) study—a 3-mo randomized controlled trial. Am J Clin Nutr 2015;101:705.

148) Anding JD, Suminski RR, Boss L. "Dietary Intake, Body Mass Index, Exercise, and Alcohol: Are College Women Following the Dietary Guidelines for Americans". J Am Coll Health. 2001; 49: 167-171.

8. APPENDICES

APP 1: Ethics Committee Approval Form



T.C.
BAHÇEŞEHİR ÜNİVERSİTESİ REKTÖRLÜĞÜ
Klinik Araştırmalar Etik Kurulu

Sayı : 22481095-020-380 14/03/2017

Konu : Karar Örneği

SAYIN İREM GÜMÜŞER

Sorumlu araştırmacısı olduğunuz "Kilo Kontrolü Altındaki Bireylerde Farklı Protein ve Yulaf Oranları İçeren Kahvaltı Seçeneklerinin; Gün İçerisindeki Tokluk Durumu, Vücut Kitle İndeksi(VKİ) ve Vücut Yağ Oranı Değerlerine Etkisi" isimli çalışmanız ile ilgili Klinik Araştırmalar Etik Kurulu karar örneği ektedir.

Gereğini bilgilerinize rica ederim.

Prof.Dr. Nazire Efser Yeşim AFŞAR
FAK
Komisyon Başkanı

EK :
Karar Örneği

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BAHÇEŞEHİR ÜNİVERSİTESİ
KLİNİK ARAŞTIRMALAR ETİK KURULU

Üniversitemiz Klinik Araştırmalar Etik Kurulu'na ait 01 Mart 2017 Tarih ve 2017-04/02 Sayılı Karar Örneğidir.

KARAR:2017-04/02

Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Beslenme ve Diyetetik Bölümü Yüksek Lisans Öğrencisi İrem GÜMÜŞER'in **"Kilo Kontrolü Altındaki Bireylerde Farklı Protein ve Yulaf Oranları İçeren Kahvaltı Seçeneklerinin; Gün İçerisindeki Tokluk Durumu, Vücut Kitle İndeksi(VKİ) ve Vücut Yağ Oranı Değerlerine Etkisi"** isimli tez çalışmasının başvuru dosyası görüşüldü.

Görüşmeler sonunda; Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Beslenme ve Diyetetik Bölümü Yüksek Lisans Öğrencisi İrem GÜMÜŞER'in **"Kilo Kontrolü Altındaki Bireylerde Farklı Protein ve Yulaf Oranları İçeren Kahvaltı Seçeneklerinin; Gün İçerisindeki Tokluk Durumu, Vücut Kitle İndeksi(VKİ) ve Vücut Yağ Oranı Değerlerine Etkisi"** isimli tez çalışması gerekçe, amaç, yaklaşım ve yöntemleri dikkate alınarak; incelenmiş ve uygun bulunmuş olup araştırmanın/çalışmanın başvuru dosyasında belirtilen merkezlerde gerçekleştirilmesinde etik ve bilimsel sakınca bulunmadığına karar verildi.

Prof.Dr. Nazire AFŞAR
Etik Kurul Başkanı

APP 2: Participant Consent Form

Kilo Kontrolü Altındaki Kişilerde Farklı Protein Ve Yulaf Oranları İçeren Kahvaltı Seçeneklerinin; Gün İçerisindeki Tokluk Durumu, Vücut Kitle İndeksi(VKİ) Ve Vücut Yağ Oranı Değerlerine Etkisi

Kilo kontrolü altındaki kişilerde farklı protein ve yulaf oranları içeren kahvaltı seçeneklerinin; gün içerisindeki tokluk durumu, vücut kitle indeksi(VKİ) ve vücut yağ oranı değerlerine etkisini değerlendirmeyi amaçlayan bu çalışma; Yeditepe Üniversitesi Beslenme ve Diyetetik Bölümü Yüksek Lisans Öğrencisi İrem Gümüşer tarafından Yrd. Doç.Dr Arzu Durukan yönetiminde yüksek lisans tez projesi olarak yürütülecektir.

Araştırmaya katılmayı kabul ederseniz beslenme alışkanlıkları, antropometrik ve demografik özellikler gibi soruların yer aldığı bir veri formunu doldurmanız gerekecektir. Veri formuna adınızı ve soyadınızı yazmayabilirsiniz. 30 soruluk ve 10 dk zamanınızı alacak bu veri formunda yanıtlarınızı, soruların altında yer alan seçenekler arasından uygun olanı daire içine alarak ya da açık uçlu sorularda sorunun altında bırakılan boşluğa yazarak belirtiniz. Birden fazla seçenek işaretleyebileceğiniz sorularda, size uygun gelen bütün seçenekleri işaretleyiniz. Eğer sorunun yanıtları arasında "diğer" seçeneği mevcutsa ve yanıtınız var olan seçenekler arasında yer almıyorsa, bu durumda yanıtınızı diğer seçeneğindeki boşluğa yazınız. Çalışmadan elde edilen bulgular toplu olarak bilimsel amaçla değerlendirilecek, katılımcıların kişisel bilgileri gizli tutulacaktır.

Parasal bir bedel ödemenizi gerektirmeyen ve size de bir ödeme yapılması söz konusu olmayan bu araştırmaya katılmama ve katıldıktan sonra çekilme hakkınız bulunmaktadır ve bu hakları kullanmanız size verilen tıbbi hizmette aksamaya yol açmayacaktır. Ek bilgi talebiniz olursa sözlü olarak karşılanacaktır.

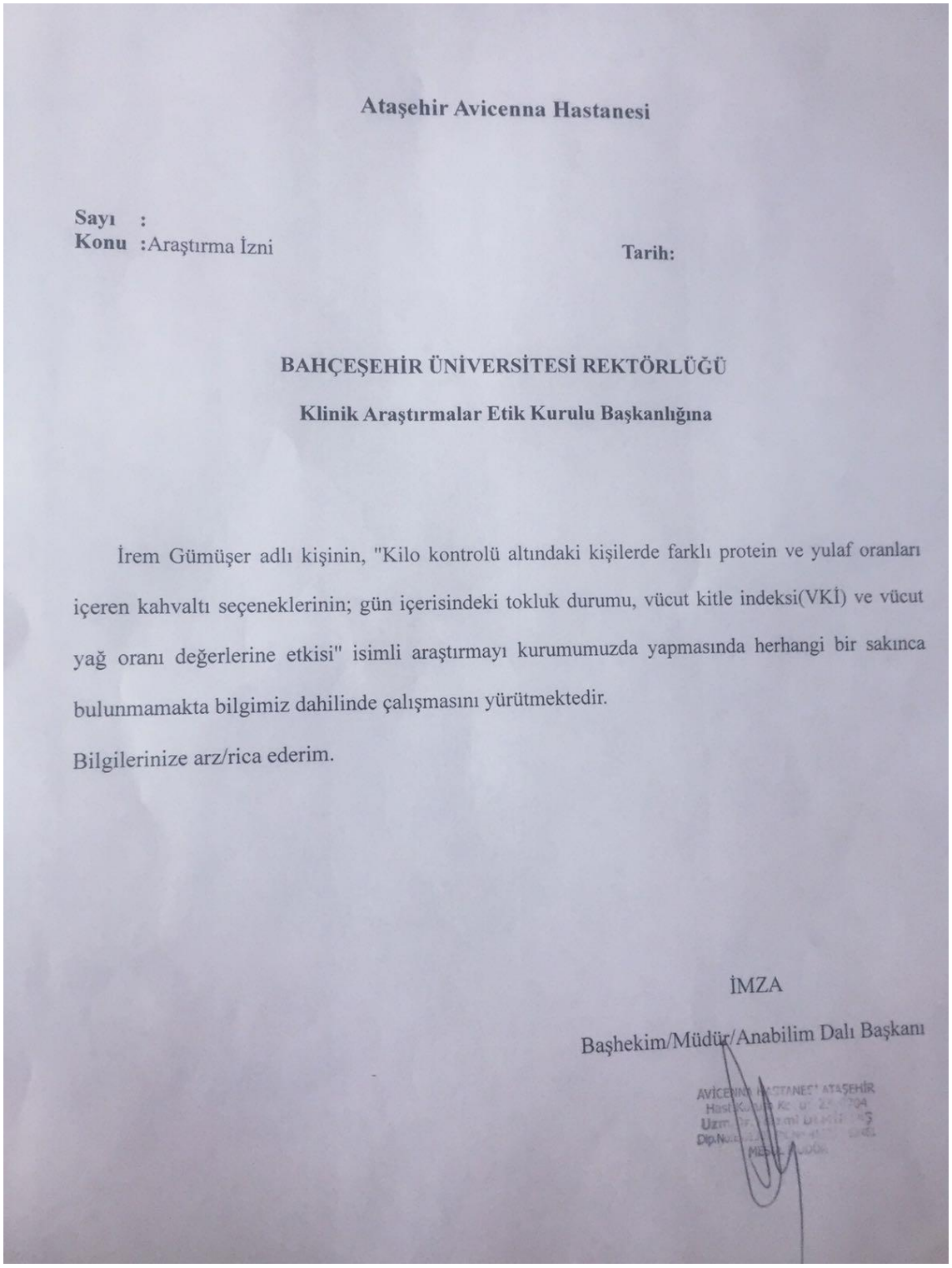
Araştırmamıza katılmayı kabul ediyorsanız, lütfen aşağıdaki bölüme el yazınızla adınızı-soyadınızı yazıp tarih ve imza atınız. Teşekkür ederiz.

Söz Konusu Araştırmaya, Yukarıda Belirtilen Koşullar Çerçevesinde Hiçbir Baskı Ve Zorlama Olmaksızın Kendi Rızamla Katılmayı Kabul Ediyorum.

Tarih **İmza**

Katılımcı
Adı, Soyadı:
Araştırmacı Adı, Soyadı: İrem Gümüşer

APP 3: Research Permit



Ataşehir Avicenna Hastanesi

Sayı :
Konu : Araştırma İzni **Tarih:**

BAHÇEŞEHİR ÜNİVERSİTESİ REKTÖRLÜĞÜ

Klinik Araştırmalar Etik Kurulu Başkanlığına

İrem Gümüşer adlı kişinin, "Kilo kontrolü altındaki kişilerde farklı protein ve yulaf oranları içeren kahvaltı seçeneklerinin; gün içerisindeki tokluk durumu, vücut kitle indeksi(VKİ) ve vücut yağ oranı değerlerine etkisi" isimli araştırmayı kurumumuzda yapmasında herhangi bir sakınca bulunmamakta bilgimiz dahilinde çalışmasını yürütmektedir.

Bilgilerinize arz/rica ederim.

İMZA

Başhekim/Müdür/Anabilim Dalı Başkanı

APP 4: Data Form

KİLO KONTROLÜ ALTINDAKİ KİŞİLERDE FARKLI PROTEİN VE YULAF ORANLARI İÇEREN KAHVALTI SEÇENEKLERİNİN; GÜN İÇERİSİNDEKİ TOKLUK DURUMU, VÜCUT KİTLE İNDEKSİ (VKİ) VE VÜCUT YAĞ ORANI DEĞERLERİNE ETKİSİNİN ARAŞTIRMASI VERİ FORMU

Bu çalışma Ataşehir Avicenna Hastanesi Beslenme ve Diyetetik Bölümü'ne başvuran kilo kontrolü altındaki bireylerde farklı protein ve yulaf oranları içeren kahvaltı seçeneklerinin; gün içerisindeki tokluk durumu, vücut kitle indeksi (VKİ) ve vücut yağ oranı değerlerine etkisini değerlendirmek amacıyla planlanmıştır. Çalışmaya katılım isteğe bağlı olup verilecek bilgiler gizli tutulacak ve bu çalışma dışında hiçbir kişi veya kurumla paylaşılmayacaktır.

Veri no:

1. **Cinsiyetiniz :**

☐ Erkek
☐ Kadın

2. **Yaşınız : ……**

3. **Boy uzunluğunuz : ……**cm

4. **Vücut ağırlığınız : ……**kg

5. **Medeni Durumunuz?**

☐ Evli
☐ Bekâr

6. **Eğitim Durumunuz?**

☐ İlköğretim (ilkokul-ortaokul) mezunu
☐ Ortaöğretim (lise) mezunu
☐ Ön lisans mezunu
☐ Lisans mezunu
☐ Lisansüstü (yüksek lisans / doktora / uzmanlık)

7. **Çalışıyor musunuz?**

☐ Evet
☐ Hayır

8. Doktor tarafından teşhisi konmuş herhangi bir hastalığınız var mı?

☐ Evet
☐ Hayır

9. Cevabınız evet ise teşhis edilen hastalığınız aşağıdakilerden hangisi / hangileridir? (Birden fazla şıkkı işaretleyebilirsiniz.)

☐ Kalp-damar hastalıkları
☐ Şeker hastalığı
☐ Yüksek tansiyon
☐ Kanser
☐ Sindirim sistemi hastalıkları (karaciğer, safra kesesi, mide vb.)
☐ Solunum sistemi hastalıkları (akciğer vb)
☐ Ruhsal sorunlar (depresyon, aşırı yeme, kusma, gece yeme vb.)
☐ Kas iskelet sistemi problemleri (osteoporoz, eklem ağrıları)
☐ Endokrin (hormonal) hastalıklar
☐ Vitamin ve mineral yetersizlikleri (Demir, B_{12} vitamini yetersizliği vb)
☐ Diğer ……

10. Yemeklerden sonra kendinizi şişkin hissediyor, sindirim sorunu yaşıyor musunuz?

☐ Evet
☐ Hayır

11. Sigara kullanıyor musunuz?

☐ Evet
☐ Hayır

12. Alkol kullanıyor musunuz?
☐ Evet
☐ Hayır

13. Günde kaç ana ve ara öğün yemek yersiniz? ..... ana öğün, ... ara öğün

14. Düzenli olarak kahvaltı yapar mısınız?

☐ Evet
☐ Hayır
☐ **Diyete başladığım zamanlarda yapıyorum**

15. Her gün düzenli olarak kahvaltı yapmanın sağlığımız için gerekli olduğunu düşünüyor musunuz?

- ☐ Evet
- ☐ Hayır
- ☐ Bilmiyorum

16. Neden kahvaltı yapıyorsunuz?

- ☐ Günün en önemli öğünü olduğu için
- ☐ Midemi doldurmak için
- ☐ Sabah erkenden besin almak için
- ☐ Daha iyi hissetmemi sağladığı için
- ☐ Bana enerji verdiği için
- ☐ **Diğerleri**.....

17. Diyete başlamadan önce k**ahvaltı yapma alışkanlığınız yoksa nedenleri?**

- ☐ **Zamanım yok**
- ☐ **Geç acıkırım**
- ☐ **Kahvaltı gıdalarını pek sevmem**
- ☐ **Ailem kahvaltı yapmadığı için**
- ☐ Canım istemiyor/iştahsızım
- ☐ **Diğerleri**.....

18. İş hayatı kahvaltı yapmanıza engel oluyor mu?

- ☐ Evet
- ☐ Hayır

19. Sabah kahvaltısını <u>genellikle</u> nerede yapıyorsunuz?

- ☐ Evde
- ☐ Bahçede-açık havada
- ☐ Okulda
- ☐ İş yerinde
- ☐ Arabada/otobüsde
- ☐ **Lokanta-kafe vb. Yerlerde**

20. Kahvaltınızı genellikle kiminle birlikte yapıyorsunuz ?

- ☐ Tek başıma yaparım
- ☐ Ailemle
- ☐ Arkadaşlarımla
- ☐ Diğer……..

21. Genelde hangi kahvaltı türüyle güne başlamayı tercih edersiniz?

- ☐ Protein içerikli bir kahvaltı (peynir-yumurta içerikli)
- ☐ Yulaf içerikli bir kahvaltı (yulaf ezmesi-süt/yoğurt içerikli)

22. Protein içerikli kahvaltıyı neden tercih ediyorsunuz?

☐ Alışılmış kahvaltı tarzınız olduğu için
☐ Tadı daha güzel geldiği için
☐ Bulması daha kolay olduğu için
☐ Tok tuttuğu için
☐ Tahıllar midenizi doyurmadığı için
☐ Yulaf yemeyi sevmediğiniz için
☐ Diğer nedenler……

23. Yulaf ezmesini kahvaltı olarak neden seçtiniz?

☐ Formda kalmak için
☐ Daha sağlıklı geldiği için
☐ Bulması daha kolay olduğu için
☐ Hazırlaması daha kolay olduğu için
☐ Taşıması kolay olduğu için
☐ Tok tuttuğu için
☐ Ucuz olduğu için
☐ Diğer nedenler……

24. Bu süreçte size önerilen yulaflı kahvaltıyla güne başlamaktan hoşlandınız mı?

☐ Evet
☐ Hayır
☐ Zaten tüketiyordum

25. Yulafı daha çok sütle mi yoksa yoğurtla mı tercih ettiniz?

☐ Süt
☐ Yoğurt

26. Yulaf ve süt/yoğurt karışımını sabah tükettikten sonra bağırsak hareketlerinizde farklılık hissettiniz mi?

☐ Evet daha iyi geldi
☐ Hayır farketmedi

27. Hangi kahvaltı türünün sizi gün içerisinde daha uzun süre tok tuttunuğu hissettiniz?

☐ Protein ağırlıklı kahvaltı
☐ Yulaf ağırlıklı kahvaltı

28. Günlük su tüketiminiz ne kadardır?

☐ Günde 10 bardak ve üstü
☐ Günde 5-9 bardak
☐ Günde 4 bardak ve altı

29. Düzenli olarak fiziksel aktivite/yürüyüş/egzersiz/spor yapıyor musunuz?

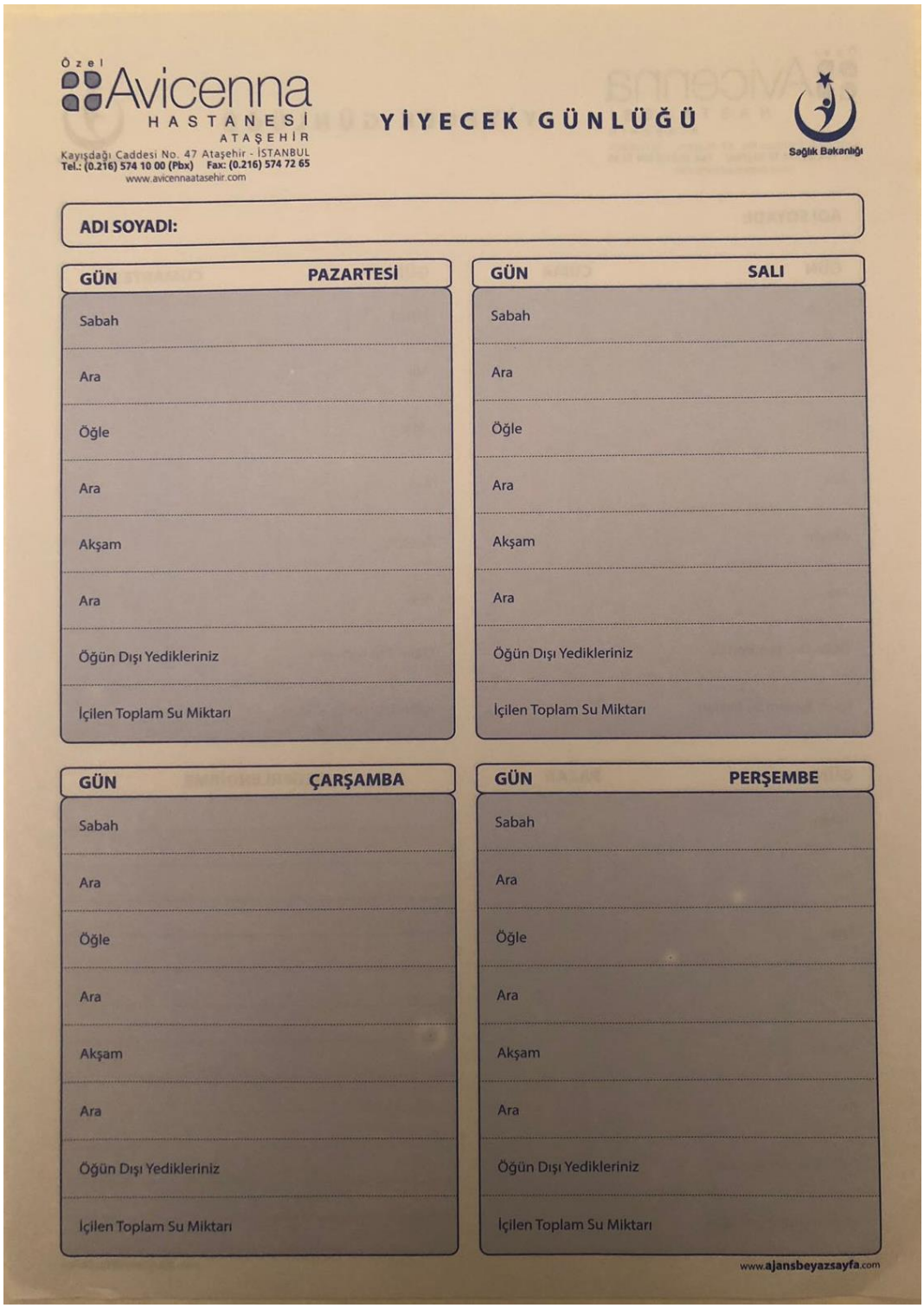
☐ Evet
☐ Hayır

30. Ne sıklıkta fiziksel aktivite/yürüyüş/egzersiz/spor yapıyorsunuz?

☐ Her gün
☐ Haftada ……. gün

Zaman ayırıp formu doldurduğunuz için teşekkür ederiz.

APP 5: Food Consumption Registration Form



Özel Avicenna HASTANESİ ATAŞEHİR
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Tel.: (0.216) 574 10 00 (Pbx) Fax: (0.216) 574 72 65
www.avicennaatasehir.com

YİYECEK GÜNLÜĞÜ

Sağlık Bakanlığı

ADI SOYADI:

GÜN	PAZARTESİ
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

GÜN	SALI
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

GÜN	ÇARŞAMBA
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

GÜN	PERŞEMBE
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

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YİYECEK GÜNLÜĞÜ

Sağlık Bakanlığı

ADI SOYADI:

GÜN	CUMA
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

GÜN	CUMARTESİ
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

GÜN	PAZAR
Sabah	
Ara	
Öğle	
Ara	
Akşam	
Ara	
Öğün Dışı Yedikleriniz	
İçilen Toplam Su Miktarı	

DEĞERLENDİRME

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9. CURRICULUM VITAE

Kişisel Bilgiler

Adı	İREM	**Soyadı**	GÜMÜŞER
Doğum Yeri	KAHRAMANMARAŞ	**Doğum Tarihi**	12/ 04/ 1992
Uyruğu	T.C.	**TC Kimlik No**	30361736560
E-mail	dytiremgumuser@gmail.com	**Tel**	0538 775 16 71

Öğrenim Durumu

Derece	Alan	Mezun Olduğu Kurumun Adı	Mezuniyet Yılı
Yüksek Lisans	Beslenme ve Diyetetik Bölümü	T.C. YEDİTEPE ÜNİVERSİTESİ	2015 – 2018
Lisans	Beslenme ve Diyetetik Bölümü	T.C. YEDİTEPE ÜNİVERSİTESİ	2010 – 2015
Lise		Çukurova Elektrik Anadolu Lisesi/ K.Maraş	2006 – 2010

Bildiği Yabancı Dilleri	Yabancı Dil Sınav Notu
İngilizce	

İş Deneyimi

Görevi	Kurum	Süre (Yıl - Yıl)
Diyetisyen	Özel Meditepe Cerrahi Tıp Merkezi	2015- 2016
Diyetisyen	Özel Avicenna Ataşehir Hastanesi	2016 - 2017
Diyetisyen	İrem Gümüşer Sağlıklı Yaşam ve Diyet Merkezi	2018

Bilgisayar Bilgisi

Program	**Kullanma becerisi**
Windows 7-8, Vista, XP, 2000	İyi
Microsoft Office Word, Excel, PowerPoint, Office 2007-2010	İyi

Diğer (Görev Aldığı Projeler/Sertifikaları/Ödülleri)

Certificate-Intensive English Program (California State University,USA 2012)
IX. Uluslararası Beslenme ve Diyetetik Kongresi 2014 - Ankara
VI. Ulusal Obezite Kongresi (Türk Diabet ve Obezite Vakfı - 2014)
Tedavide ve Önlemde Kanser & Beslenme (İstanbul - 2014)
Bariatrik Cerrahi Diyetisyenliği Kursu (Türk Diabet ve Obezite Vakfı - 2014)
EASO-OMTF Course (Türk Diabet ve Obezite Vakfı - 2014)
Yaşam Koçluğu Sertifikası (İstanbul NLP-2016)