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THE EFFECT OF SNACKING ON FASTED STATE MAIN MEAL OF THOSE WHO ARE 12-60 YEARS OLD AND ON A WEIGHT LOSS DIET

MASTER THESIS

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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 28./06./2019 tarih ve 2019/11-51 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.

Biset Selen CİVELEK

23.07.19

ÖZET

Bu çalışma ara öğün yapanların ana öğündeki açlık durumunun değerlendirilmesi amacıyla 01.11.2017 – 31.12.2017 tarihleri arasında yapılmıştır. Çalışma, Özel Adana Hastanesi Beslenme ve Diyet bölümüne başvuran, 18 yaşından büyük 87 kadın birey ile yapılmıştır. Toplam 11 sorudan oluşan veri formu ile çalışmaya katılan bireylerden bilgi edinilmiştir. Kişilerin herhangi bir rahatsızlığı olup olmadığı, çalışma ve spor yapma, ara öğün yapıp yapmama durumlarına göre değerlendirme yapılmıştır. Araştırma sonucu elde edilen bulguların istatistiksel analizleri SPSS istatistik 17 programı ile yapılmıştır.

Çalışmanın sonucunda diyetisyene başvuran kişilerin çoğunluğunun ara öğün yaptığı ve ana öğüne daha tok girdikleri tespit edilmiştir. Ara öğünün gerekli olup olmadığı kişiden kişiye değişmekle beraber buna net bir cevap verebilmek için daha çok çalışmaya ihtiyaç olduğu tespit edilmiştir.

ABSTRACT

This study was carried out between the dates of 01.11.2017 – 31.12.2017 in order to evaluate fasting status people who has snack or not before main meals. Study was made in Özel Adana Hospital who applies to nutritionist, with 87 female individuals over 18 years of age. Datas collected by 11 questions survey. An assessment was made according to whether they work, goes to any sport, having snacks or not. The statistical analysis of the findings of the study was made with SPSS statistics 17 program.

As a result of the study, it was determined tha most of the participants had snacks in their daily life and felt more satiated before the main meal. However it is determined that we need more studies to provide a clear answer to ‘people should snack or not’.

THANKS

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1. INTRODUCTION

Snacking taught in Turkey to all dietitians is a method of education that should use in patients life. Therefore, intermittent meals are a method used by dieticians to prevent sudden hunger. However, some people feel good both physically and mentally without having snack.

Eating behavior is explained through a complex interaction of biological, psychological, sociocultural, and contextual factors (1). Examining meals and related factors may contribute to our understanding of general nutrient intake and eating behavior.

The snacking diet, which is frequently used by those who are on weight loss diet, does not have the same toughness effect on all herbs. Some people get extra calories when they have snack, and the main portion of the meal remains the same size. For this reason, the starvation conditions in the main meal of the break meals vary from person to person.

In popular dietary literature, snacks are a common method used to cut appetite and reduce energy intake, but the impact of eating frequency on appetite, energy balance, and health measures is controversial. In many studies, however, it has been shown that eating more than six meals a day reduces the risk of obesity compared to less than three meals a day and the lower back waist circumference is lower. A 16-year follow-up study on diabetes showed an increased risk of type 2 diabetes mellitus in men who eat 1-2 times a day compared to those who eat three meals a day. Intermittent eating in hyperglycemic type 1 diabetes patients has a positive effect on glucose control during the day. Making a protein-heavy snack before bedtime is more effective in preventing hypoglycemia than a carbohydrate-weighted snack (2). However, in the weight loss diets; carbohydrates, fat or protein snacking meals also affects fasting. For this reason, it is also necessary to determine which types of meals have a greater effect on the main meal satiety.

This study was carried out in order to determine hunger whether the patients who came to the Özel Adana Hospital diet polyclinic, entered the main meal more. Individuals without diabetes mellitus between the ages of 18 and 60 who applied to Özel Adana Hospital Diet Polyclinic in 2018 were included in the study.

2. GENERAL INFORMATION

2.1. Nutrition

Nutrition is used in the body by taking in enough quantities of nutrients that are necessary for a person to grow, to develop, to be healthy and productive for a long time. Adequate and balanced nutrition; the growth of the body, the rehabilitation of the tissues and all the necessary nutrients for their work are taken in sufficient quantities and in the required quantity and used in the body in a suitable manner. Nutrition is essential for growth, survival and health (3).

Nutrition is an action that every living thing has to do. It also uses various food groups to achieve nutrition. These are divided into macronutrients and micronutrients. Macronutrients are carbohydrates, fats and proteins. Each group provides different amounts of energy and has different effects on the body. Micronutrients are vitamins, minerals and trace elements.

2.1.1. Macronutrients

2.1.1.1. Carbohyrates

Carbohydrates are the primary energy source of the body and the brain is only able to use it as energy. 1 gram of carbohydrate gives 4 kcal energy. Carbohydrayes (CHO) already start breaking down in the mouth (4).

As for other macronutrients, the primary classification of dietary carbohydrates, as proposed at the Joint Food and Agriculture Organization (FAO)/World Health Organization (WHO) Expert Consultation on Carbohydrates in human nutrition convened in Rome in 1997 , is by molecular size, as determined by degree of polymerization, the type of linkage (α or non-α) and character of individual monomers (Table 1). This classification is similar to that used for dietary fat, which is based on carbon chain length, number and position of double bonds and their configuration as *cis* or *trans*. A chemical approach is necessary for a coherent and enforceable approach to measurement and labelling forms the basis for terminology and an understanding of the physiological and health effects of these macronutrients (5).

Table 1 Principal components

Class (DP[a])	***Subgroup***	***Principal components***
Sugars (1–2)	Monosacchdes	Glucose, fructose, galactose
	Disaccharides	Sucrose, lactose, maltose, trehalose
	Polyols (sugar alcohols)	Sorbitol, mannitol, lactitol, xylitol, erythritol, isomalt, maltitol
Oligosaccharides (short-chain carbohydrates)	Malto-oligosaccharides (α-glucans)	Maltodextrins
	Non-α-glucan oligosaccharides	Raffinose, stachyose, fructo and galacto oligosaccharides, polydextrose, inulin
Polysaccharides	Starch (α-glucans)	Amylose, amylopectin, modified starches
	Non-starch polysaccharides (NSPs)	Cellulose, hemicellulose, pectin, arabinoxylans, β-glucan, glucomannans, plant gums and mucilages, hydrocolloids

2.1.1.2. Fats

Fats are an important part of the diet that gives energy. One gram of fat gives 9 kcal energy that means it condensates on energy. Fats help in the absorption of fat soluble vitamins in the intestine.

Fatsa are broken down in the small intestine by enzymes from the pancreas ans the bile. Water soluble vitamins are absorbed together with fats (4). Water soluble vitamins are vitamin B and vitamin C. Fats are divided into two groups, saturated and unsaturated, according to the nature of the fatty acids they contain.

2.1.1.2.1. Saturated fats

It is mostly animal origin and is solid at room temperature. Like butter, oil, milk and eggs are saturated fat.

2.1.1.2.2. Unsaturated fats

They are mostly plant derived and are liquid at room temperature. Like Olive oil, corn oil and sunflower oil.

2.1.1.3. Proteins

Proteins are made up of amino acids and molecules that are building blocks of the body. Amino acids bind to each other through peptide bonds to form polypeptide chains. These polypeptides also come together to form proteins. One gram of protein gives 6 kcal energy.

Some of the protein-forming amino acids are synthesized by the body while eight of them are not synthesizable. These are essential proteins that should be taken with food. They are lysine, threonine, leucine, isoleucine, valine, histidine, arginine. Foods containing essential amino acids are animal proteins such as meat, milk and eggs.

2.1.2. Micronutrients

2.1.2.1. Vitamins

Vitamins are organic substances that are essential elements in the food basket. Fruit and vegetables are rich in vitamins which function as antioxidants (4).

Vitamins are divided into two group which are fat soluble and water soluble. Fat soluble vitamins are A,D,E,K ; water solubles are B and C.

2.1.2.2. Minerals

Minerals are organic elements that are left behind as a result of incineration of food. The result of the ashes analysis is close to 40 minerals. But only 17 of them are essential. Whether or not the mineral is essential is determined by the failure of the diet to occur when removed from the diet. Minerals help to strengthen the immune system (4).

2.2. Snacking and Health

Popular advice for weight control advocates the consumption of small frequent meals. However, science does not have enough evidence to support this idea in weight controll, and studies examinining the effects of eating frequency on body weight have shown mixed results. Despite some cross sectional studies have reported an inverse relationship of habitual meal frequency with body weight, body mass index (BMI) or percentage of body fat, others have found no associations. Prospective studies have also shown no association between eating frequency and weight change. Furthermore Palmer et al, reviewed intervention studies of the effects of meal frequency on weight loss or weight maintenance and cocluded that meal frequency had no effect on weight loss or maintenance (6).

Snacking may cause excess energy intake and weight gain through different ways like: context/environment of eating, frequency of consumption and quality of food choices. In many reports, snacking appears to expedite the adjustment of energy intake to needs, and to help carbohydrates, rather than fats, to the diet, in addition to valuable micronutrients. These results are usually reported in healthy, normal-weight children and adults. By contrast, snacking often appears to contribute much energy but little nutrition in the diet of other consumers, particularly obese children and adults. In addition to selecting energy-dense foods, eating in the absence of hunger in response to external non-physiological cues, in an irregular fashion, in contexts (e.g. while watching television) that do not favor attention to the act of eating, might be crucial factors determining the nutritional effects of snacking (7).

Increased meal frequency has been proposed to have beneficial effects on serum lipids and glucose tolerance. Increased food frequency may be a useful model system in which to demonstrate the effects of fibre in slowing nutrient absorption.

One of the key features of the more extreme models of increased meal frequency discussed is the apparent reduction in insulin need. This is of special interest at a time when insulin resistance and the hyperinsulinaemic syndrome are receiving much attention as possible causes of ill health. Raised insulin levels have been associated with treated and untreated hypertension. No studies have been conducted with meal feeding patterns to determine the effects of food frequency and hypertension. Hyperuricaemia is associated with raised insulin levels and insulin resistance (8). It is considered that the effect is related to the action of insulin on the kidney and the increased re-absorption of Na and uric acid in the

distal convoluted tubule in hyperinsulinaemic states. Studies of nibbling, where reduced 24h C-peptide excretion was noted, have also demonstrated reduced serum uric acid levels and increased urinary uric acid losses during nibbling (seventeen meals daily for 2 weeks) as opposed to three-meal diets.

It is also important that snacking encourages the desired dietary pattern and mix of macro- and micronutrients (9).

Snacking patterns have some effects on energy and nutrient intakes but not on BMI. Snack food choices remain a concern, especially beverages, including those that are sweetened. Vegetables and fruits as snacks should be encouraged (10).

“6 week hypercaloric snacking diet increases lHTG (Iintrahepatic trigliseride content) and abdominal fat lean men while increasing meal size does not. Moreover we show that this was irrespective of the macronutrients in the diet as both snacking sugar and snacking fat and sugar and snacking fat and sugar resulted in IHTG and abdominal fat accumulation. However the increase in IHTG tended to be higher in the Hs frequency group indicating that the frequent snacking of sugar leads to the most profound accumulation of IHTG. Although frequent consumption of snacks has been linked to obesity (4).

Increasing meal frequency resulted in significantly lower peaks, higher troughs and constant glucose and insulin values compared with the low frequecy (LFr) diet under isoenergetic well-controlled conditions in lean healthy males. Nevertheless, no effect of meal frequency was observed on substrate partitioning of CHO and fat. Protein oxidation, appetite control increased significantly in the LFr diet compared with the (high frequency) HFr diet (11).

Eating three or more meals everyday can promote rapid growth and sexual maturation on children, it might not be the healthiest dietary pattern for adults. Indeed, the rising tine of obesity in many developed countries occurs among individuals who consume several large meals per day. Individuals in the health care professions and in the lay pres have repeatedly stated that consumption of smaller and more frequent meals. This adivice is given despite the lack of clear scientific evidence to justify it.

Many studies show that weight gain and its associated high food frequency and metabolic results are due to the high sugar-containing energy intake and metabolic problems

resulting from increased food stimulants, hunger and desire to eat (12). At the same time, How meal frequency affects overall calorie intake in people and whether it varies with factors such as ethnic origin, sex and bodyweight is very important ascertain (13).

Consuming less but larger meals increases glycogen storage and the availability of oxidizable carbohydrate, leading to a reduction in fat oxidation (14). However, the rare frequency of meals, ie feeding from snacks, is an irregular diet that can lead to weight gain, increase hunger-related hormones, and ultimately lead to metabolic diseases. This aspect is similar that taught in nutrition and dietetic faculties to the dietitians in Turkey.

2.3. Snacking and Satiety

Investigating dietary patterns that may minimise sensations of hunger and maximise sensations of satiatedness is relevant in the context of improved control over body energy reserves. Increased feeding frequency has often been proposed to convey favourable effects on body weight, adiposity and energy intake, but controversy persists. It has been hypothesised that the favourable effect of increased meal frequency (MF) could emanate from a more sustained release of gastrointestinal hormones; however, more studies are needed to confirm this postulation (15).

The time-series analysis of the two hormones was carried out to investigate the effects of meal frequency on the insulin–ghrelin association reported in the literature. During a period of fasting, the present data show that insulin falls slightly and ghrelin rises slightly with time, causing an inverse correlation between the two variables. During a period of low-frequency feeding (two meals in 8 h), the results illustrate that although there is an insulin–ghrelin relationship, there is a delay (of approximately 20 min) between responses of the two hormones. Further evidence of an insulin–ghrelin relationship is shown by correlation of the magnitude of postprandial insulin and ghrelin changes (16).

In a free-living environment, data suggest that increased meal frequency, or snacking, is correlated to increased energy intake and that snacks are generally high-sugar or high-fat foods (17).

It has also been hypothesized that consumption of small frequent meals maintains plasma glucose concentrations relatively constant throughout the day, possibly leading to better appetite control (18). Insulin may also play a role in control of appetite regulation

through the central nervous system (19), with increases in insulin being associated with satiety. Thus, consuming more frequent meals might be expected to lead to higher concentrations of insulin and increased satiety. However, the effct of varying meal frequency on glucose and insulin responses over the course of a day has not been wells tudied (6).

A study which is made to find snacking and percieved hunger was said consumption of six meals per day, altough, tended to blunt the post meal fall inperceived hunger and desire to eat and rise in satiatedness (6).

2.4. Exercise

"One prospective study in hyperlipidaemic patients already suggests that recommendations to increase or decrease meal frequency are accompanied by concomitant changes in overall energy intake and in body weight . Interactions between meal frequency and habitual levels of physical activity might also be important. The difficulties of such research with respect to the confounding effects of under-reporting should not be underestimated." (20).

In the majority of these dietary studies of the nutritional practices of active individuals, the definition of an eating occasion and the distinction between 'meals' and 'snacks' have not been made clear. However, for the most part meals were defined according to culturally-based determinants such as the time of day of eating and the types of foods consumed. When these definitions are used, the estimated contribution of 'between meal snacks' to the total daily intake is high and consistent across a variety of athletic populations, accounting for approximately one-third of total daily energy intake (21).

While frequency of eating provides an important aid to the challenge of high energy requirements, food selection should also be considered. When energy and, in particular, CHO needs are high the composition of meals and snacks should favour the inclusion of less-bulky forms of CHO such as commercially available CHO drinks, and foods rich in simple sugars.

An important observation from several of the investigations which have reported very high energy intakes in athletes is that a significant amount of the daily nutrient intake may be consumed while the individual is exercising; considering the extremely high daily energy requirements, such athletes need to use all available opportunities in order to meet their energy needs, including the time taken for training or competing. For example, CHO rich

foods and drinks consumed while riding provided nearly 50 % of the total energy, and 60% of the daily CHO intake of cyclists competing in the Tour de France (22, 23).

3. MATERIALS AND METHODS

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 study was carried out in order to determine hunger whether the patients who came to the Özel Adana Hospital diet polyclinic, entered the main meal more. This thesis is an investigative, analytical and cross-sectional survey study in order to evaluate fasting status people who has snack or not before main meals. For the research, "Ethics Committee Approval" was taken from Tc Yeditepe University procol number 766.

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 Özel Adana Hospital between the dates of 01.11.2017 – 31.12.2017.

The sample consisted of 87 female individuals over 18 years of age who are referred to the Department of Nutrition and Diet of the Özel Adana Hospital. These are all the counselors who agree to participate in the study. The exclusion criteria of the study were those who are under 18, who have diabetes, who are pregnant or lactating.

3.3. Data Collection Tools

The research data were gathered by a questionnaire form that will identify health status, exercise status, personal information, snacking preferences, nutritional behavior, food consumption frequency, working and non-working group. The questionnaire form consisting of 11 questions prepared by the researcher using the literature has been applied.

3.3.2. Anthropometric Measurements

Individual body weights were measured by the Tanita 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 platform (the eye and the lapel over

the same line) when length measurements are taken.

3.4. Statistical Evaluation of Data

Statistical analyzes were performed using the SPSS program (IBM SPSS Statistics 17). The methods used are histograms, descriptive statistics and frequency distributions. Simple regression analysis is used.

4. RESULTS

4.1. General Information About The Analysis

Height; it varies from a minimum of 152 cm to a maximum of 176 cm; the average length of the participants was calculated as 163.97 cm. Weight; minimum 48 kg, maximum 114 kg; the average weight of the participants is 74.51 kg. (Figure 4.1. and 4.2.) 87 female individuals were included in the survey. 66 of those included in the study are working and 21 of them are not working.

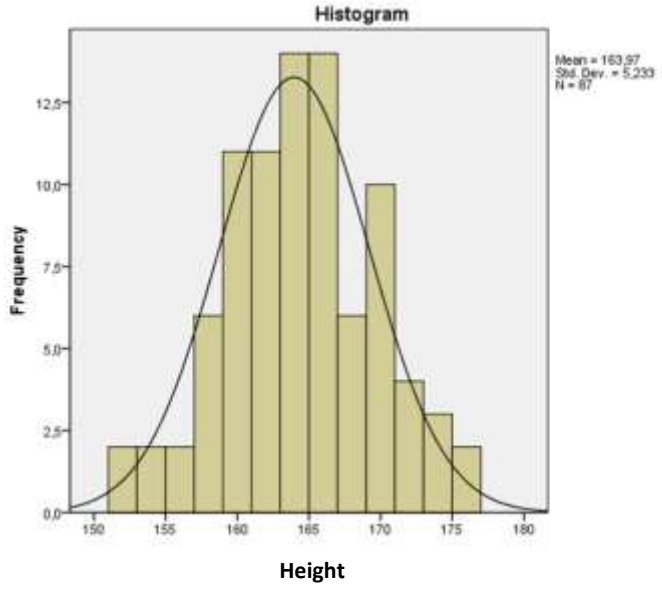


Figure 1 Histogram of Individuals Height

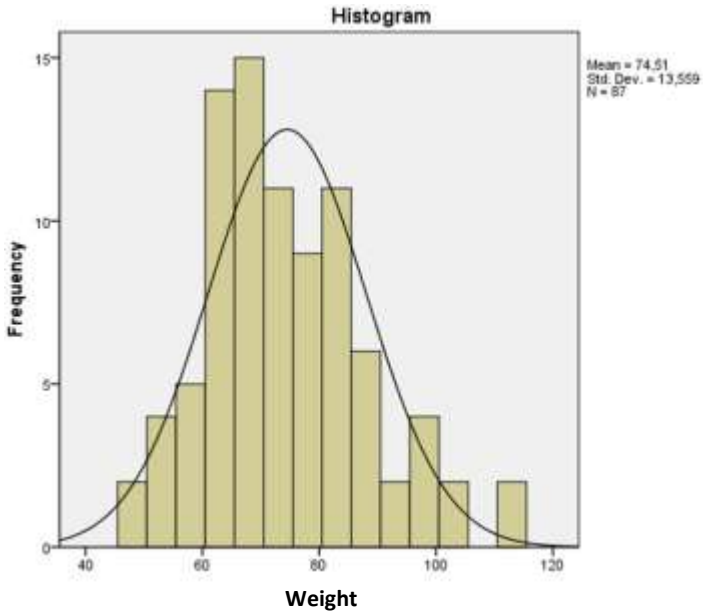
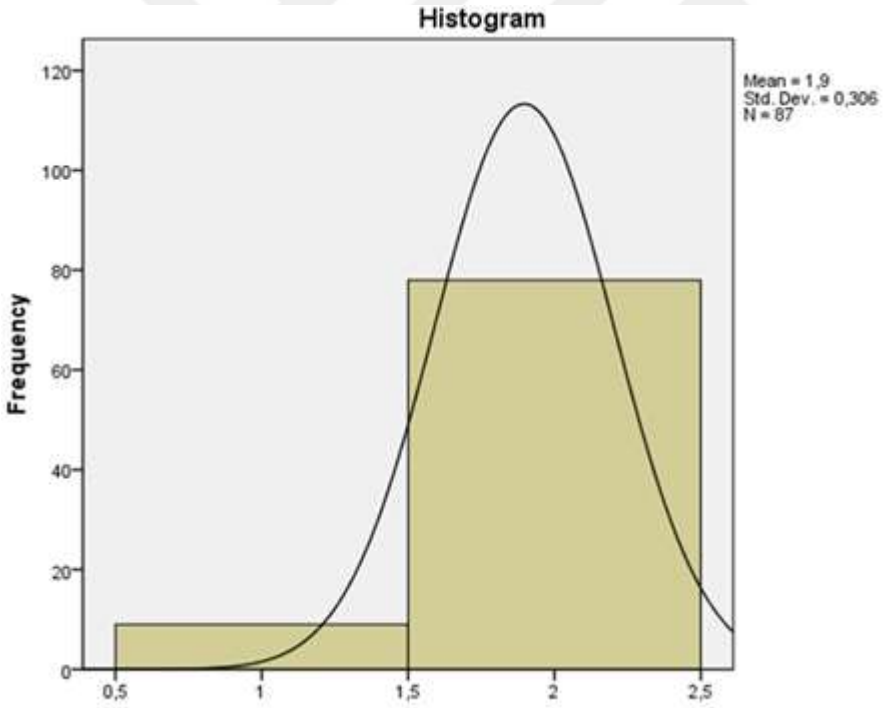


Figure 2 Histogram of Individuals Weight

While 73% of the respondents did not have a specific illness; it was observed that there were certain discomforts in the remaining people. (Table 4.1.). 10% of the participants has other diseases stated. However, none of the disease is diabetes.

Table 2 Diseases

		Frequency	Cumulative nt
Valid	No	64	73,6
	Cardiovascular disease	3	77,0
	Kidney disease	2	79,3
	Hormonal disease	1	80,5
	Hypertension	3	82,8
	Irregular period	5	88,5
	Stomach	5	94,3
	Goiter	4	98,9
	Menpause	1	100,0
	Total	87	



Do you have any other diseases ?

Figure 3 Histogram of Other Diseases

Table 3 Other Diseases

Do you have any other diseases?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	10,3	10,3	10,3
	No	78	89,7	89,7	100,0
	Total	87	100,0	100,0	

10,3 % of the participants has other diseases stated. However, none of the disease is diabetes.

Table 4 Crosstabulation

What is your preference for snacks?	How many main meals a day do you eat? 2	3	4	5	6	Total
Cake	4	8	2	0	0	14
Biscuit	2	5	0	0	0	7
Dry fruit	0	13	0	0	1	14
Fresh fruit	1	10	0	0	0	11
Bread	1	1	0	0	0	2
Yoghurt	3	3	0	1	0	7
Milk	0	2	0	0	0	2
Walnut	2	5	0	0	0	7
Hazelnut	1	1	0	0	0	2
Total	14	48	2	1	1	66

($p > 0.05$).

Those who prefer cakes, biscuits, fruits, milk and walnuts usually make 3 main meals. 66 out of 87 participants make snacks and 48 of them indicate the number of main meals as 3, 14 as 2.

4.2. Research Question No:1

"Is it meaningful that those who eat bread, dried bread, cakes, biscuits etc. at snack feel satiated in the main meal?"

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows.

Hypothesis:

• H_0: Bread, bread rolls, cakes, biscuits etc. at snack feel satiated at the main meal.

• H_1: bread, bread rolls, cakes, biscuits etc. at snack do not feel satiated at the main meal.

Table 5 Is it meaningful that those who eat bread, dried bread, cakes, biscuits etc. at snack feel satiated in the main meal?

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
When you do snacks, do you feel more ed in your main meal?	66	75,9%	21	24,1%	87	100,0%

(p> 0.05).

66 of the participants make snacks. It was determined that 35 people ate cakes, dried bread, biscuits and bread. 48.6% of this sample had the highest value by indicating that they preferred ”Cake” in their intermediate meal; 14.3% preferred to eat “dried bread“. In the overall questionnaire; “ Cake” has a percentile of 17%.

H_0 hypothesis is accepted for exact test since “Sig.” (p value) is 0,186 > 0,05 with 95% confidence. The result to be drawn can be said that *“There is a meaningful relationship between eating bread, dried bread, cakes, biscuits etc. and feeling of satiety at the main meal”.*

4.3. Research Question No:2

“Is it meaningful that those who consume milk group at snack feel satiated in the main meal?”

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows.

Hypothesis:

• H_0: Milk group at snack feel satiated at the main meal.

• H_1: Milk group at snack do not feel satiated at the main meal.

Table 6 Crosstabulation

Is it meaningful that those who consume milk group at snack feel satiated in the main meal?	**When you do snacks, do you feel more satiated in your main meal?**		
	Yes	No	Total
Yes	31	5	36
No	27	3	30
Total	58	8	66

($p > 0.05$).

31 of the 36 people who consumed milk groups in snacks stated that they had more satiety in the main meals. 5 people stated that they have not been satiated yet.

In total, 58 people say that when they make snacks, they enter the main meal more satiated. 31 of these 58 people consumed milk groups and entered the main meal more satiated.

H_0 hypothesis is accepted for homogeneity test since "Sig." (p value) is 0,719 > 0,05. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn here can be said that *"There is a meaningful relationship between consuming milk group and feeling of satiety at the main meal".*

4.4. Research Question No:3

"Is it meaningful that those who eat junk food at snack feel satiated in the main meal?"

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows.

Hypothesis:

• H_0: Junk food group at snack feel satiated at the main meal.

• H_1: Junk food group at snack do not feel satiated at the main meal.

Table 7 Crosstabulation

Is it meaningful that those who eat junk food at snack feel satiated in the main meal?	**When you do snacks, do you feel more satiated in your main meal?**		
	Yes	No	Total
Yes	4	1	5
No	54	7	61
Total	58	8	66

(p> 0.05).

4 of the 5 people who prefer junk food in the snacks stated that the main meal is more satiated and 1 person is not satiated.

In total, 58 people say that when they make snacks, they enter the main meal more satiated. Only 4 of these 58 people consume junk food at snacks.

H_0 hypothesis is accepted for homogeneity test since "Sig." (p value) is 1 > 0,05. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn here can be said that *"There is not a meaningful relationship between eating junk food and feeling of satiety at the main meal".*

4.5. Research Question No:4

"Is it meaningful that those who eat dried nuts at the snack feel satiated in the main meal?"

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. According to the data in the questionnaire, the participants who did not do the snack are not included in the statistics. The remaining transactions were calculated over 66 people.

Hypothesis:

• H_0: Dried nuts group at snack feel satiated at the main meal.

• H_1: Dried nuts group at snack do not feel satiated at the main meal.

Table 8 Crosstabulation

Is it meaningful that those eat dried nuts at snack feel tiated in the main meal?	When you do snacks, do you feel more satiated in your main meal?		
	Yes	No	Total
Yes	6	3	9
No	52	5	57
Total	58	8	66

($p > 0.05$).

Of the 9 people who preferred nuts in snacks, 6 stated that they had more satiety in the main meal and 3 people did not.

In total, 58 people say that when they make snacks, they enter the main meal more satiated. Only 6 out of 58 people consume nuts at snacks.

H_0 hypothesis is accepted for homogeneity test since "Sig." (p value) is 0,71 > 0,05. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn can be said that *"There is not a meaningful relationship between eating dry nuts and feeling of satiety at the main meal".*

4.6. Research Question No:5

"Is it meaningful that those who eat fruit at the snack feel satiated in the main meal?"

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows. According to the data in the questionnaire, the participants who did not do the snack are not included in the statistics. The remaining transactions were calculated over 66 people.

Hypothesis:

• H_0: Fruit group at snack feel satiated at the main meal.

• H_1: Fruit group at snack do not feel satiated at the main meal.

Table 9 Crosstabulation

Is it meaningful that those who eat : at snack feel satiated in the main meal?	When you do snacks, do you feel more satiated in your main meal?		
	Yes	No	Total
Yes	30	3	33
No	28	5	33
Total	58	8	66

(p> 0.05).

Thirty of the 33 people who preferred fruit in the snacks stated that they had more satiety in the main meal and 3 people did not enter satiety.

In total, 58 people say that when they make snacks, they enter the main meal more satiated. Of these 58 people, 30 consume fruit at snacks.

H_0 hypothesis is accepted for homogeneity test since "Sig." (p value) is 0,708 > 0,05. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn can be said that *"There is not a meaningful relationship between eating dry nuts and feeling of satiety at the main meal".*

4.7. Research Question No:6

"Is it meaningful that work life to the main meal effect?"

Participants who were taken as N = 87 were all included since all of them do main meal. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows.

Table 10 Is it meaningful that work life to the main meal effect?

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Do you work?	Equal variances assumed	,303	,583	,266	125	,791	,024	,092	-,158	,206
	Equal variances not assumed			,266	96,663	,791	,024	,092	-,158	,207

54% of the participants of the questionnaire work. In the results obtained, **38%** of the people who have a snack are working. 46% of the respondents do not work. In the results obtained, **37%** of the people who have a snack are working.

Also as additional information; 16% working without intermediate meal; 37% did not work and make snacks; 9% is the percentage of people who do not work and do not work.

As additional information; 16% is the percentage of people who don't have a snack while working; 37% is the percentage of people who have a snack as they don't work; 9% is the percentage of people who neither have a snack nor work.

Hypothesis:

• H_0: According to business life is effective to make main meals.

• H_1: According to business life is not effective to make main meals.

H_0 hypothesis is accepted for t test since "Sig." (p value) is 0,063 > 0,05. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn can be said that "*According to business life is effective to make main meals".*

4.8. Research Question No:7

"Is it meaningful that those who do sports and have snacks feel satiated in their main meal?"

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. There is a slight difference between the averages.

Table 11 Is it meaningful that those who do sports and have snacks feel satiated in their main meal?

	When you do snacks, do you feel more satiated in your main meal?		
Sports and have snacks	Yes	No	Total
Yes	19	4	23
% within sports and have snacks	82,6%	17,4%	100,0%
No	39	4	43
% within sports and have snacks	90,7%	9,3%	100,0%
Total	58	8	66
% within sports and have snacks	87,9%	12,1%	100,0%

When the snacks were made, it was calculated that 87.9% of those who were full in the main meals.

- 82% of the participants who do sports and snacks are satiated to the main meal, while 17% say they have not. 23 out of 66 people are engaged in sports. 19 out of 23 people engaged in sports and snacks feel more full at the main meal.

- In addition, 90% of the participants who do not do sports but who take snacks stated that they have sat full in the main meal.

There is 1% difference between the satiety percentages of the participants who make sports and have snacks and those who do not do sports and have snacks. Factors affecting this difference are determined when the inverse of the requested condition is calculated. Those who do sports, don't have a snack and feel satiated are divided into 6% percentile; those who don't do sports, don't have a snack and feel satiated are divided into 4% percentile.

Moreover, since 25% of the participants skipped this question; the participants who do sports and have snacks started the main meal in a satiated manner with a confidence level of 0.5%.

Hypothesis:

• H_0: There is no statistically significant difference between the averages of the groups with 95% confidence.

• H_1: There is a statistically significant difference between the averages of the groups with 95% confidence.

H_0 hypothesis is accepted for exact test since "Sig." (p value) is 0,435 > 0,05 here. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn can be said that *"There is a meaningful relationship between doing sport and having a snack and feeling of satiety at the main meal".*

4.9. Research Question No:8

"Do you feel more satiated before main meal when you have a snack?"

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. According to the data in the questionnaire, the participants who did not do the snack are not included in the statistics. The remaining transactions were calculated over 66 people.

Table 12 Do you have snack? * When you do snacks, do you feel more satiated in your main meal? Crosstabulation

	When you do snacks, do you feel more satiated in your main meal?		
Do you have snack?	Yes	No	Total
Yes	57	8	65
% within Do you have snack?	87,7%	12,3%	100,0%
No	1	0	1
% within Do you have snack?	100,0%		100,0%
Total	58	8	66
% within Do you have snack?	87,9%	12,1%	100,0%

87 of the paticipants who has snack are 66 people. That means most of the paticipants has sncak. 87,7 % of the paticipants in the survey “Felt more satiety before main meal when they had a snack while (12%) 8 of the pariticipants “Felt hunger before main meal even they had snack.”

Hypothesis:

• H_0: Snack group feel satiated at the main meal.

• H_1: Snack group do not feel satiated at the main meal.

H_0 hypothesis is accepted for exact test since “Sig.” (p value) is 0,063 > 0,05. In other words, it is possible to say that “the variances of the groups are homogeneous with 95% confidence”. The result to be drawn can be said that “*Snack group feel satiated at the main meal.”*

4.10. Research Question No:9

“Do you feel hungrier before the main meal when you do not have a snack?”

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows.

Table 13 Do you feel hungrier before the main meal when you do not have a snack?

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Do you have snack?* *Do you feel hungrier before the meal when you do not have a snack*	87	100,0%	0	,0%	87	100,0%

Hypothesis:

• H_0: Do not snacks group feel hungrier at the main meal.

• H_1: Do not snacks group do not feel hungrier at the main meal.

H_0 hypothesis is accepted for exact test since "Sig." (p value) is 1,0 > 0,05 here.In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn here can be said that *"Do not snacks group feel hungrier at the main meal."*

4.11. Research Question No:10

Participants who were taken as N = 87 were counted as 66 because of the skipped questions in the questionnaire. According to the data in the questionnaire, 21 of the participants who did not do the snack are not included in the statistics. There is a slight difference between the averages and there is some difference between the standard deviations (it is better if the standard deviations are close together). Small differences become meaningful as the sample grows.

Table 14 Do you have snack?* Do you work? Crosstabulation

	Do you work?		
Sports and have snacks	Yes	No	Total
Yes	34	32	66
% within have snacks	51,5%	48,5%	100,0%
No	13	8	21
% within have snacks	61,9%	38,1%	100,0%
Total	47	40	87
% within have snacks	54%	46%	100,0%

54% of the participants of the questionnaire work. In the results obtained, 51% of the people who have a snack are working. 46% of the respondents do not work. In the results obtained, 51% of the people who have a snack are working.

Also as additional information; 13 of the working participants without intermediate meal; 32 of the participants did not work and make snacks; 8 of people who neither have a snack nor work.

Hypothesis:

• H_0: There is a meaningful relationship between working and having a snack

• H_1: There is not a meaningful relationship between working and having a snack

H_0 hypothesis is accepted for Pearson χ^2 test since "Sig." (p value) is 0,405 > 0,05. In other words, it is possible to say that "the variances of the groups are homogeneous with 95% confidence". The result to be drawn here can be said that *"There is a meaningful relationship between working and having a snack"*.

5. DISCUSSION AND CONCLUSION

Popular advice for weight control advocate is the consumption of small, frequent meals. However, the science supporting this as an effective weight control strategy is lacking, and studies examining the effects of eating frequency on body weight have shown mixed results. Although some cross-sectional studies have reported an inverse relationship of habitual meal frequency with body weight, body mass index (BMI), or percentage body fat, others have found no associations. Prospective studies have also shown no association between eating frequency and weight change.

Furthermore, Palmer et al., reviewed intervention studies of the effects of meal frequency on weight-loss or weight-maintenance and concluded that meal frequency had no effect on weight loss or weight loss maintenance. In this study we found that people who has snack with milk and milk products, bread, biscuits, fruit, nuts feel more satisfied before the main meal.

Piehowski et al. year 2016 found that an interventional study with premenopausal overweight women on a weight loss diet; dark chocolate snacks are effective in weight loss (24).

It was determined that Viskaal-van Dongen et al. study in 2010; participants consumed snacks with or between meals and snacks having a low (<4 kJ/g) or high (>12 kJ/g) energy density. There were no differences in changes in body composition, PAL, and energy intake between the groups (25).

Johnstone et al. studied with men in 2000 and found that body weight was not affected by snacking (26).

Almiron-Roig et al. studied in 2009 Fiber-enriched yogurt was more satiating than regular yogurt, banana, crackers, and water. A trend was suggested, with fiber-enriched yogurt having the highest satiating effect followed by regular yogurt, then banana and crackers (27).

Dougkas et al. 2012 in an interventional study with men. All dairy snacks tested reduced appetite compared with water. Hunger ratings were 8%, 10%, and 24% lower after the intake of yogurt than after cheese, milk, and water, respectively (28).

In a study which was made by Dougkas et al. in 2012 with women; the yogurt snack led to reduced hunger and increased fullness compared with no snack. Among the types of snacks, hunger was lower, and fullness was higher throughout the post snack period after the higher-protein yogurt vs. the lower-protein yogurt (28).

Marmonier et al. studied with men in 2000 and found that consumption of the high-protein snack delayed the request for dinner by 60 min, the high-carbohydrate snack delayed the dinner request by 34 min, and the high-fat snack delayed the dinner request by 25 minutes (29).

Ortinau et al. studied with 20 women in 2014 and determined that the consumption of the yogurt snack led to greater reductions in afternoon hunger, but not fullness, vs. chocolate. The yogurt snack also delayed the request of dinner by 30 min compared with the chocolate snack (30).

A study with 137 participants in 2013 shows that participants in the snack group were instructed to consume 43 g almonds. Postprandial “hunger” and “desire to eat” ratings were significantly less than the control groups (31).

Demographic characteristics, nutritional habits, BMI status and meal frequency preferences of 87 women (n: 87) with age range of 18-60 who applied to Ozel Adana 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 weight range of the participating 87 individuals is 48-114 kilograms and the height range of the participating 87 individuals is 152-176 cm.

In this study, participants who were taken as N = 87 were calculated as 66 for the question asked because of the skipping questions in the questionnaire. There is a slight difference between the averages and there is a slight difference between the standard deviations (it is better to have the standard deviations close to each other). As the sample grows, the small differences become meaningful.

Most participants in this study consumed that business life does not prevent us from making snacks; (81% no, 19% yes). According to this, of the 87 individuals incorporated into the investigation, 21 individuals did not have snack and 66 individuals were utilized. So as to thin, most of the general population who apply to the dietitian have a snack. Of the 66

individuals who make snacks, 57 said they had entered progressively felt satiated, while 8 of them didn't feel full before main meal.

Most of the individuals involved in the survey stated that bread, bread rolls, cakes, biscuits etc., is meaningful to feel full in the main meal ($p < 0,05$).

When we asked why they participated in the survey “is it meaningful that those who consume milk groups in break meals feel full in the main meal?”, 31 (86%) of women who think that having a snack with milk groups felt more satiated. It is determined that 5 of women think in the opposite idea.

When we examined the effect of intermediate meal according to peoples work life preferences of the individuals participating in the survey, 47 (54%) of the participants working. 34 of the workers had snack that means working is not a barrier to have snacks.

In our study, it was determined that women prefer snacks for intermeal rather than starved. The reasons for preferring snacks consumption by individuals/women are that they prefer not to be starved and loss energy, because the meals are healthy and because they are easy to prepare and easy in the middle of the day especially in the workdays. Most of the individuals in our study prefer to consume snacks with milk instead of yoghurt. Part of the participants indicated that the snacks was good for the intestines and other body activities.

There is a 1% distinction between the members doing sports and snacks and the rates of the members who don't do sports or enjoy a reprieve. Variables influencing this distinction are resolved when the contrary circumstance is determined. Sports and tidbits don't make you feel full - 6%, sports and bites don't make you feel right - 4% is partitioned into cut. It is presumed that members who take sports and tidbits will be bolstered to the fundamental feast. It is concluded that participants who take sports and snacks will be fed to the main meal.

This examination could have brought about various results if more members had been chosen in the city haphazardly or there had been more members. It is imagined that the specific outcome can't be gotten on the grounds that most of the gathering is stacked on a wide scale between the ages of 18-60.

In the event that we take a gander at the entire of the investigation, it is reasoned that the greater part of the general population making snacks were felt satiated into their main meal.

Of the 87 people included in the study, 21 people did not have a meal and 66 people were employed. In order to slimming, the majority of the people who apply to the dietitian have an intermediate meal. Of the 66 people who make snacks, 57 said they had entered more intimate meals, while 8 of them didn't feel full in their main meal.

It was concluded that making a mid-meal snacks with toughness is a significant relationship between eating bread, breadcrumbs, baking cakes and biscuits and entering the main meal.

It has been concluded that having an intermediate relationship with milk and dairy group gives a toughness to individuals with milk and milk groups.

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 biggest reason for this is the difficulties brought by business life.

It has been concluded that making an intermediate meal with the fat group gives a feeling of satiety, since there is a significant relationship between the consumption of oil seeds and the main meal.

If we look at the percentage data, the most preferred intermediate meal is milk and milk group nutrients, and the group that has the most intense feeling is milk and milk products.

Although efforts have been put forth to examine the effects of snack foods on satiety and weight status, to our knowledge the association between snack foods and body weight has not been sufficiently summarized to date. Specifically, some studies showed weight gain, whereas others found no weight gain (32). The choice of healthy snacks can contribute to the preservation or reduction of body weight. However, it is difficult to reach a definitive conclusion on the effect of snack foods on weight status (32).

If we look at the whole of the study, it is concluded that most of the people making snacks were felt more satiated their main meal. However, there is a need for more studies in order to make a clear judgment about whether or not you need to do snack.

In this study most of the participants had snack and felt more satiated before main meal. Work is not a barrier to make snacks, most of the working people had snacks. Consequently, we found that when people had snack they eat less at the main meal.

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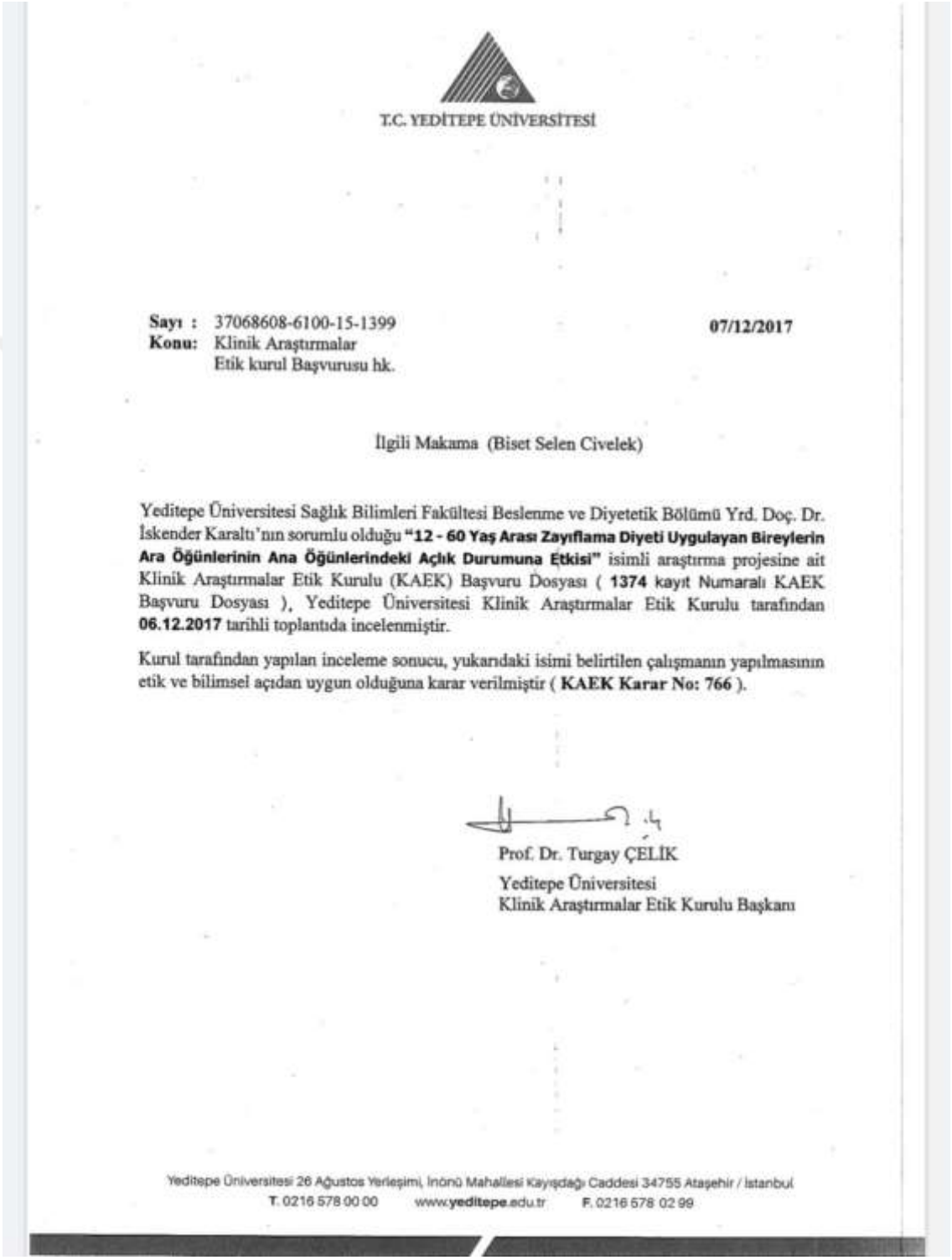
7.APPENDICES

7.1. APP 1: Ethics Committee Approval Form



T.C. YEDİTEPE ÜNİVERSİTESİ

Sayı : 37068608-6100-15-1399 **07/12/2017**
Konu: Klinik Araştırmalar
Etik kurul Başvurusu hk.

İlgili Makama (Biset Selen Civelek)

Yeditepe Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü Yrd. Doç. Dr. İskender Karaltı'nın sorumlu olduğu **"12 - 60 Yaş Arası Zayıflama Diyeti Uygulayan Bireylerin Ara Öğünlerinin Ana Öğünlerindeki Açlık Durumuna Etkisi"** isimli araştırma projesine ait Klinik Araştırmalar Etik Kurulu (KAEK) Başvuru Dosyası (**1374** kayıt Numaralı KAEK Başvuru Dosyası), Yeditepe Üniversitesi Klinik Araştırmalar Etik Kurulu tarafından **06.12.2017** tarihli toplantıda incelenmiştir.

Kurul tarafından yapılan inceleme sonucu, yukarıdaki isimi belirtilen çalışmanın yapılmasının etik ve bilimsel açıdan uygun olduğuna karar verilmiştir (**KAEK Karar No: 766**).

Prof. Dr. Turgay ÇELİK
Yeditepe Üniversitesi
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7.2. APP 2: Participant Consent Form

ANKET ARAŞTIRMALARI İÇİN AYDINLATILMIŞ ONAM FORMU

Sevgili ……,

12-60 yaş arası zayıflama diyeti uygulayan bireylerin ara öğünlerinin ana öğünlerindeki açlık durumuna etkisi adlı bu araştırma, Biset Selen Civelek isimli kişi tarafından yapılmaktadır. Araştırma ara öğünün her birey için gerekli olup olmadığı amacıyla planlanmıştır. Sizin yanıtlarınızdan elde edilecek sonuçlarla tezin sonuç aşaması planlanabilecektir. Bu nedenle soruların tümüne ve içtenlikle cevap vermeniz büyük önem taşımaktadır.

Araştırmaya katılmanız gönüllülük esasına dayalıdır. Bu form aracılığı ile elde edilecek bilgiler gizli kalacaktır ve sadece araştırma amacıyla (veya "bilimsel amaçlar için") kullanılacaktır. Çalışmaya katılmamayı tercih edebilirsiniz veya anketi doldururken istemezseniz son verebilirsiniz.

Anket formuna adınızı ve soyadınızı yazmayınız.

Anketimiz 1 bölümden oluşmaktadır. 11 soruluk, 5 dk zamanınızı alacak bu çalışmada 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.

Anketi yanıtladığınız için teşekkür ederiz.

Çalışma ile ilgili herhangi bir sorunuz olduğunda aşağıdaki kişiler ile iletişim kurabilirsiniz:

İskender Karaltı
iskender.karalti@yeditepe.edu.tr
Araştırma Ekibi
Biset Selen Civelek
dytselencivelek@gmail.com

Çalışmaya katılmayı kabul ediyorsanız aşağıdaki kutucuğu X ile işaretleyiniz ve devam ediniz

☐

Kabul ediyorum.

7.3. APP 3: Data Form

Table 2 The Questionnaire

Date of Birth:

Gender: FEMALE / MALE

Height:

Weight:

1- Do you have any illness? / Is this disease under a doctor's supervision?

Cardiovascular disease Hypertension Stomach (ulcer, reflux, nausea) etc.

Kidney Disease Diabetes Goiter

Hormonal problems Menstrual irregularity Menopause symptoms

2 - Do you have any other illnesses diagnosed by a doctor with the exception of the above diseases?

YES I have .....

NO

3- Do you do sports??

YES : .....

NO

4- Do you work? (If no, go to the next box)

YES My job is: .....

NO

5- Does your work life prevent you from having snacking?

YES/NO

6- How many main meals do you have a day?

…….

7- Do you have snacking?

YES (If your answer is YES, skip question 8) / NO (If your answer is NO, skip question

9, 10, 11)

8- Does not having snacks cause you to feel hungry in your main meal?

YES/NO

9- What are your preferences for snacking (junck food, fruit, bread, cheese, yogurt,

milk, coke, chest nut, nut, almond, etc.)

…….

10- When you have snacking, do you feel more satiated before the main meal?

YES, I feel less hungry / NO there is no change in my feeling of hunger.

11- What kind of snacks drive you feel more satiated at your main meal? (milk,

yoghurt, cheese, junck food, fruit , dried bread, bread, etc.)

7.4. APP 4: CV

Biset Selen Civelek

Yeditepe Üniversitesi

Sağlık Bilimleri Fakültesi

Beslenme Diyetetik

Kayışdağı, İstanbul/TÜRKİYE

Email: selen.civelek@hotmail.com

Kişisel Bilgiler

Vatandaşlık: Türk

Telefon Numarası: +905333119128

Cinsiyet: Bayan

Doğum Yeri ve Tarihi: 25/09/1993-Balıkesir/TÜRKİYE

Adres: Barbaros Mahallesi Akzambak Sokak Varyap Meridian Sitesi Grand Tower Kat:33 Daire:274 Ataşehir/İSTANBUL

Öğretim

2011-2015 Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü Yeditepe Üniversitesi (İngilizce), İstanbul/TÜRKİYE

24.06.2013-09.08.2013 University of California Los Angeles

*Genel Kimya(General Chemistry)

*İletişim(Comminucation Studies)

2007-2008 Ayşe Atıl Anadolu Lisesi

2008-2011 Ö.Ç. Bilfen Koleji

Adana/TÜRKİYE

5/80

2015-.. Yeditepe Üniversitesi Yüksek Lisans

Staj Tecrübeleri (*)

09/06/2014-09/08/2014 Çukurova Üniversitesi Balcalı Araştırma Hastanesinde staj. Adana/TÜRKİYE

Yıl içi stajları

ÇAPA (9 gün) İstanbul/TÜRKİYE

Fatih Sultan Mehmet Araştırma Hastanesi (9 gün) İstanbul/TÜRKİYE

Emsey Hastanesi (9gün) İstanbul/TÜRKİYE

Eyüp Hevlet Hastanesi (9 gün) İstanbul/TÜRKİYE

Yeditepe Üniversitesi Hastanesi (9gün) İstanbul/TÜRKİYE

Sanitas- okul öğrencilerine beslenme danışmanlığı (9 gün) İstanbul/TÜRKİYE

GATA (18 gün) İstanbul/TÜRKİYE

İş Tecrübeleri(*)

03.08.2015-03.11.2015	Keyifle Yaşam Merkezi
10.11.2015-01.02.2016	Öznur Atay Estetik Güzellik
01.02.2016-01.01.2017	Özel Güney Adana Hastanesi
01.01.2017-15.10.2019	Özel Adana Hastanesi
15.10.2019-..	Daha İyi Yaşa Beslenme ve Diyet Merkezi

Projeler

İstanbul Anadolu yakasındaki ergenlerin beslenme durumunun saptanması

Moda ilköğretim okulundaki öğrencilere sağlıklı beslenme eğitimi

Dünya Sağlık Örgütü (WHO) sağlıklı kampus projesi

Beslenme şenliğinde beslenme eğitimi

Seminer ve Kurslar

09.11.2013	Diyetisyenler için obezite cerrahisi kursu
25.06.2015-27.06.2015	Hacettepe Beslenme ve Diyetetik Günleri V. Mezuniyet sonrası eğitim kursu
18.10.2015	Nutraxin Besin Destekleri Semineri

Yetenekler

Anadil: Türkçe

Office programları: Word, Excel, Powerpoint

İlgi Alanları ve aktiviteler

Kulüpler: Yeditepe Üniversitesi YIIS Kulübü

Yeditepe Üniveristesi Müzik Kulübü

Yeditepe Üniversitesi Dans Kulübü

Yeditepe Üniversitesi SANİTAS

Adana Atlıspor Kulübü

Referanslar

Yar. Doç Dr. Arzu Durukan Yeditepe Üniversitesi Öğretim Görevlisi

Erkan Deniz DİNÇER Fatih Sultan Mehmet Hastanesi Diyetisyeni

Uzm. Dyt. Yunus Emre Uzun Valikonağı cad. 117/7 Nişantaşı