

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

**THE RELATIONSHIP BETWEEN EATING
BEHAVIOURS AND DAILY ENERGY INTAKES OF
STUDENTS AT THE DEPARTMENT OF
ARCHITECTURE AT A UNIVERSITY**

MASTER'S THESIS

ZÜLAL KAYIRAN

İstanbul – 2016

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SUPERVISOR

Prof. Dr. Baki Serdar ÖZTEZCAN

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Jüri Başkanı:

Prof.Dr.Baki Serdar
ÖZTEZCAN

Yeditepe Üniversitesi

Tez danışmanı:

Prof.Dr.Baki Serdar
ÖZTEZCAN

Yeditepe Üniversitesi

Üye:

Yrd. Doç.Dr.Binnur
OKAN BAKIR


Yeditepe Üniversitesi

Üye:

Yrd.Doç.Dr. Fatma Esra
GÜNEŞ
Marmara Üniversitesi

ONAY

Bu tez Yeditepe Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğinin ilgili maddeleri uyarınca yukarıdaki jüri tarafından uygun görülmüş ve Enstitü Yönetim Kurulu'nun 04.03.2016 tarih ve 06-01 sayılı kararı ile onaylanmıştır.


İmza
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 acknowledgement has been made in the text.

08.03.2016



Zülal Kayıran

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LISTS OF ABBREVIATIONS

DEBQ	Dutch Eating Behaviour Questionnaire
BMI	Body Mass Index
VITAL	Vitamins and Lifestyle
HPA	Hypothalamic Pituitary Adrenal
TFEQ	Three Factor Eating Questionnaire
AN	Anorexia Nervosa
DSM	Diagnostic and Statistical Manual of Mental Disorders Book
BN	Blumia Nervosa
CCK	Cholecystokinin
BED	Binge Eating Disorder
IES	Intuitive Eating Scale
EAT	Eating Attitude Test
EDI	The Eating Disorder Inventory
EDE-Q	The Eating Disorder Examination Questionnaire
BEBIS	Turkish Version of German Food Code and Nutrient Data Base
SPSS	Statistical Package for the Social Sciences

ABSTRACT

Kayıran, Z. (2016). The Relationship Between Eating Behaviours and Daily Energy Intakes of Students at the Department of Architecture at A University. Yeditepe University, Institute of Health Science, Department of Nutrition and Dietetics, MSc thesis, İstanbul.

Susceptibility to weight gain is affected by a lot of factors. Eating behaviour is one of these factors which influences energy intake. The aim of this study was to examine the relations between emotional, external and restrained eating behaviours and daily energy intake. The sample was composed of 224 students which studied at the department of architecture at a University in İstanbul. Eating behaviours were assessed with the Turkish Version of Dutch Eating Behaviour Questionnaire (DEBQ). 24-hour food recall questionnaire was used to determine daily energy intake. Reliability of questionnaire and subscales was found to be high (Cronbach's Alpha value for the questionnaire 0,897). Spearman correlation was used to analyze the relations between eating behaviours and daily energy intake of participants. Distinctly from Turkish reliability and validity study of DEBQ, it was detected that, besides the evaluation of emotional eating, external eating and restrained eating behaviour, the questionnaire may also be used for the evaluation of disinhibited eating behaviour. This study showed that restrained eating behaviour was negatively related to daily energy intake ($p \leq 0.01$). External eating behaviour was found to be positively related to daily energy intake ($p \leq 0.05$). Emotional and disinhibited eating behaviours were not related to daily energy intake. Although restrained eating was negatively related to daily energy intake, it was positively related to Body Mass Index (BMI) ($p \leq 0.01$). Total oppositely from this, there was not found a relation between external eating behaviour and BMI. In conclusion, although restrained eating behaviour decrease daily energy intake, it may cause weight gain. Emotional eating, external eating and disinhibited eating behaviours do not affect weight status.

Key Words: Eating Behaviours, Dutch Eating Behaviour Questionnaire, Restrained Eating Behaviour

ÖZET

Kayıran, Z. (2016). Bir Üniversitenin Mimarlık Bölümü Öğrencilerinin Yeme Davranışları ve Günlük Enerji Alımları Arasındaki İlişki. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Bölümü, Master Tezi. İstanbul.

Kilo almaya karşı duyarlılığa birçok faktör etki etmektedir. Yeme davranışı enerji alımını etkileyen bu faktörlerden biridir. Bu çalışmanın amacı duygusal, dışsal ve kısıtlayıcı yeme davranışları ve günlük enerji alımı arasındaki ilişkiyi belirlemektir. Örneğimiz bir üniversitenin mimarlık bölümünde okumakta olan 224 öğrenciden oluşmaktadır. Yeme davranışları Hollanda Yeme Davranışı Anketinin (DEBQ) Türkçe Versiyonu ile belirlenmiştir. Günlük enerji alımını belirlemek için 24 Saatlik Hatırlama Yöntemi Formu kullanılmıştır. Anketin ve alt faktörlerin güvenilirliği yüksek olarak bulunmuştur (Anketin Cronbach's Alfa değeri 0.897). Katılımcıların yeme davranışları ve günlük enerji alımları arasındaki ilişkiyi belirlemek için Spearman korelasyonu kullanılmıştır. DEBQ'nun Türkçe geçerlilik ve güvenilirlik çalışmasından farklı olarak, anketin duygusal, dışsal ve kısıtlayıcı yeme davranışlarına ek olarak kontrolsüz olarak yemek yeme davranışını da ölçebileceği saptanmıştır. Bu çalışma kısıtlayıcı yeme davranışının günlük enerji alımı ile negatif olarak ilişkili olduğunu göstermiştir ($p \leq 0.01$). Dışsal yeme davranışı günlük enerji alımı ile pozitif olarak ilişkili bulunmuştur ($p \leq 0.05$). Duygusal ve kontrolsüz yeme davranışları günlük enerji alımı ile ilişkili bulunmamıştır. Kısıtlayıcı yeme davranışı günlük enerji alımıyla negatif olarak ilişkili olmasına rağmen beden kitle indeksi (BKI) ile pozitif olarak ilişkili bulunmuştur ($p \leq 0.01$). Bunun tam tersi olarak, dışsal yeme davranışı ve BKI arasında bir ilişki bulunmamıştır. Sonuç olarak, kısıtlayıcı yeme davranışı günlük enerji alımını azaltmasına rağmen, kilo alımına sebebiyet verebilmektedir. Duygusal yeme davranışı, dışsal yeme davranışı ve kontrolsüz yeme davranışı ise kilo durumuna etki etmemektedir.

Anahtar Kelimeler: Yeme Davranışları, Hollanda Yeme Davranışı Anketi, Kısıtlayıcı Yeme Davranışı

1. INTRODUCTION AND PURPOSE

Overweight has an increasing prevalence and causes increased risk for social stigmatization and chronic diseases (1). Susceptibility to weight gain and overweight can be understood at various levels ranging from genetic, physiological and metabolic to behavioural and psychological (2).

Eating behaviour refers to quantitative and qualitative features of the selection and decision of what foods to eat (3). A range of factors which are apart from hunger or energy need affect human eating behaviour. These factors lead to a risk for overconsumption and overweight (4). Eating behaviours influence energy intake through choices about when and where to eat, and the types and amounts of foods chosen, including decisions about starting and stopping eating (5).

It is supposed that emotional eating, external eating and restrained eating are three main eating behaviours which are closely related to weight gain. Each of these types of eating behaviour has its own aetiology and is linked to the nature of food consumption (6). The purpose of this study is to examine the relations between restrained, external and emotional eating and daily energy intake.

2. LITERATURE REVIEW

2.1. Eating Behaviours

2.1.1. Emotional eating

The tendency to eat in response to feelings rather than hunger is named as emotional eating (4). Emotional eating implies an inclination to eat in response to negative emotions such as depression, disappointments and feelings of loneliness (7). During stressful times, eating can be a rewarding, comforting and distracting thing (8). Eating is also very social. Meals are often eaten together and food is an integral part of celebrations and sad occasions (8). However, eating to regulate emotion can be maladaptive (8).

There are important physical and psychological health affects of emotional eating (9). Greater stress levels were associated with greater amount of food consumption according to self reports and experimental studies (9). Larger weight fluctuations occurred in emotional eaters more than non-emotional eaters (10). When they are under stress, disinhibited eating and overconsumption of high-calorie palatable food cause weight gain in emotional eaters. However, emotional eaters are seem to eat less and lose weight at the time when they are under lower stress. These situation causes weight fluctuations over time (10). Emotional eating behaviour is also related to various eating disorders. Binge eating, bulimia nervosa and depression are some of these eating behaviours (9).

When present findings are evaluated, it is suggested that unhealthy food choices are influenced from both emotional eating and depressive symptoms (11). It has been suggested that emotional eating increases the consumption of sweet and high-fat foods in particular (11). In a study which focused on weight fluctuations, results showed that negative emotions evoked by stress cause eating more palatable foods such as chips, hamburger or sodas. These emotions also lead to eating fewer vegetables and whole grain foods (10). Studies consistently found association between measures of stress and intake of dietary fat, high fat snacks and fast food. Studies also suggest an association between perceived stress and consuming more sweetened beverages (12).

Results of The Vitamins and Lifestyle Study (VITAL) Study, a current and broad cohort study made in 2014, also demonstrated that higher levels of perceived stress were associated with higher fat intake as a percentage of energy consumed, greater intake of high-fat snacks, more fast-food consumption, as well as lower carbohydrate intake as a percentage of energy consumed and fewer eating occasions. Intakes of added sugars, servings of fruit and vegetables and sweetened drinks were not significantly associated with amount of perceived stress. VITAL study also found that perceived stress was associated with decreased carbohydrate intake, but one another study made with similar age group found a positive relationship between each other. However, the association between perceived stress and percentage energy from added sugar (sugar from non-whole foods) was not evidenced in VITAL study with regards to statistical significance (12). Perceived stress was associated with fewer eating occasions, including meals and snacks, although only among those people who perceived themselves as vulnerable to stress (12). Van strien et al. showed that the high and low emotional eaters did not differ in their food intake, but emotional eating significantly moderated the relationship between mood condition and food intake. They found that low emotional eaters ate similar amounts after the sad and after the joy mood condition. However, high emotional eaters ate significantly more after the sad mood condition than after the joy mood condition (2013) (13).

The link between stress and emotional eating has been well established. However, little research has focused on the underlying mechanisms that mediate such an association (9). Distress is associated with both increased and decreased food intake (14). Most people eat more in response to stress, whereas some eat less (12). The typical and predominant response is decreased food intake (14). Therefore, it is considered that emotional overeating is an inappropriate response to stress (11). Distress is normally associated with activation of the hypothalamic pituitary adrenal axis (HPA-axis) with physiological reactions that are designed to prepare the individual for a fight or flight reaction: inhibition of gastric motility and release of sugar into the bloodstream. Consequently, hunger is suppressed because of these reactions (15). However, so-called emotional eaters show the atypical response to distress of eating similar or larger amounts of food (14).

It is suggested that chronic activation of the stress response can lead to dysregulation that has been associated with increased appetite, preference for foods high in sugar and fat, visceral fat accumulation and deposition and obesity (12). The type and severity of the stressors may also be important to associations with eating. Also, repeated exposure to stressors that threaten one's social self (eg, stressors associated with social position) are thought to especially contribute to this dysregulation (12). In humans, it has been shown that chronically stressed people report higher scores on emotional eating, have a greater abdominal fat distribution and have dampened HPA-axis activity (15). The latter authors hypothesized that highly stressed humans tend to cope with high levels of stress by engaging in stress eating, thereby developing a blunted HPA-axis response (15). Also, the feedback mechanisms which are controlling the normalization of eating-related peptides (ghrelin) which signals food initiation might be disturbed in emotional eaters (10).

A study made with obese people showed that emotional eating was strongly positively associated to Neuroticism, in particular impulsiveness and depression, and further linked to lower Conscientiousness, Extraversion and Openness, and lower self-discipline (7). Emotional eating was also found higher in females than males. This situation was interpreted that, presumably, males have underreported their emotional eating behaviours because of cultural stereotype which perceives emotional eating as a behaviour women do (8).

2.1.2. External eating

External eating can be defined as eating in response to external food-related cues, such as the sight, smell and taste of food, regardless of physical need (7, 16). External eating has been linked to overeating and it is considered a highly problematic eating behaviour due to its association with higher body weights, more unhealthy food intake and increased risk of relapse in eating disorders and obesity (17, 18).

External eating has been associated with increased BMI in a healthy weight sample. Furthermore, it is positively correlated with increased BMI in children and adults (17). External eating was found to be extremely associated with fat intake than to

carbohydrate intake (16). External eating is positively correlated with laboratory based food intake in adolescent girls and candy consumption in children in experimental studies. It is also associated with unhealthy snack food intake in healthy weight women according to experimental studies. Results of the researchs also reported that external eating is linked to increased self-reported energy intake over three days and one month in healthy weight women (17). In a current study which has only women participants, external eating was associated with the intake of sweet food, rather than savoury food during the taste tests (17).

External eating behaviour was found to be associated with increased impulsivity especially in overweight and obese individuals (17). It was suggested that environmental cues affect eating behaviours of obese people more than non-obese people. However, more recent studies revealed that all weight classes can be influenced by environment (19).

External eating correspond to a relative insensitivity to internal hunger and satiety signals such as emotional eating (3). Externality theory focuses on the external environment such as food cues as a determinant of eating behaviour (20). Elevated responsiveness to food related cues in the immediate environment cause overeating of external eater (20). There is also a further difference of external eating from emotional eating. This difference has been considered as an evolutionary adaptive response that has been related to Neel's thrifty-genotype concept (2, 20). This concept suggests that evolution has favored genetic adaptations that allow humans to survive during periods of food shortages, including adaptations that allow them to overeat in times of food surplus (whenever external food cues are present in the environment) and rapidly develop fat on their bodies (2).

There are some interventions to struggle with external eating. Cognitive control training is one of them. This training strengths inhibitory control for reducing both attentional and motor impulsivity. It is found that using general inhibitory control training (i.e., repeatedly inhibiting responses to stimuli unrelated to food) reduced unhealthy food intake on a subsequent taste test. Others have used specific inhibitory control training that focuses on food stimuli and found that increased inhibitory control for chocolate cues as well as food in general can reduce unhealthy food intake. In

addition, increasing inhibitory control for unhealthy food resulted in weight loss among dieters with high BMI (17).

Another intervention is food-cue reactivity training. These intervention makes foods less tempting to external eaters by reducing the saliency of attractive food cues. This method was found effective at reducing cue reactivity for unhealthy foods such as chocolate. This particular intervention may be useful at reducing unhealthy food intake among individuals with problematic eating behaviour, specifically those with a pronounced external eating style (17).

2.1.3. Restrained eating

Many people appeal to different dieting strategies because of being overweight and obesity (21). Dieting is a generic term that refers to specific behaviours or, more generally, to the extent of restrained eating (22). Restrained eating is cognitively attempting to control eating behaviour for losing weight and for preventing weight gain (23). This eating behaviour is more common in people who previously experienced difficulty in controlling their food intake (21).

Restrained eating has been found to be associated with lower daily energy intake. These suggestion was supported by laboratory taste tests and self reports (16). Self reports also suggested that restrained eaters take lower energy with lower levels of fat and carbohydrates (16). Although it is generally thought that dietary restraint is related to less overeating and reduced weight, research findings showed that these attempt causes a pattern of disinhibited eating oppositely (21). Restrained eating is a mainly studied eating behaviour by previous studies. The mutual relations between different eating styles have never taken into account (16). However, restricted eating also related to different eating behaviours and eating disorders (3, 19). Dietary restraint is a form of inhibition and associated with disinhibition which occurs as overeating tendencies as in emotional eating and external eating (24). Distrupting events, or disinhibitors, described in the literature include certain cognitions, alcohol, and strong emotional states (25). Restraint theorists postulate that restrained food intake under strict cognitive control is vulnerable to break down by stronge emotional situations. Perhaps the most commonly investigated trait for risk of eating in response to negative

affect, however is dietary restraint. In this situation, restrained eaters abandon control and proceed to overconsume. In line with this theory, restrained eating has been associated with negative affect-induced eating in a number of contexts, although its role has more recently been disputed (4). Therefore, dietary restraint has also been found to be associated with excessive food intake and weight gain yet. The long term effectiveness of such diets is also unstated in reviews about calorie restricted diets (24). Some dieters successfully maintain lower body weight, but most diets and also restrained eating are not effective in long term (22). Frequent lapses from restricted diet occur in many chronically restrained eaters. Specifically, they increased disinhibition when they exposed to palatable food cues with stronger positive attitudes (21). Between one-third and two-thirds of the dieters had at follow-up regained more weight than they lost on their diets according to the meta analysis (22).

Dividing eating restraint into rigid and flexible control holds promise for understanding some of the conflicting data in the restraint field. Research has shown that rigid control and flexible control are related in opposite directions to some health-related and well-being indices in various populations (26). Rigid control is an all-or-nothing approach to eating-operationalized by behaviors such as actively avoiding and refusing desired calorie-dense foods (and if such foods are consumed, overeating and guilt may follow), regimented calorie counting and dieting to control weight, eating diet foods to avoid weight gain, and skipping meals. In contrast, flexible control is generally considered a balanced approach to eating-operationalized by behaviors such as taking smaller than desired servings of food to control weight, being conscious of foods eaten, taking weight into account when making food choices, and engaging in compensation (i.e., intentionally eating less and/or healthier alternatives at the next meal) if too much is eaten or less healthy options are chosen at the previous meal (26). It is reported that flexible restraint is more closely related with a decrease in energy intake and body mass index (27). As opposed to flexible control, it has been suggested that especially rigid control over food intake (as opposed to flexible control) is associated with disinhibition and higher BMI (22). Westenhoefer et al. also found that rigid restraint is positively related to a range of preoccupying cognitions and attentional bias to food and shape-related stimuli. In flexible restraint, although there is an impaired working memory performance, there is a better long-term weight loss (28)

High cognitive control also increases the risk for eating disorders like bulimia nervosa or binge eating disorder even worse (29). Another problem with dietary restraint is that the body cannot distinguish true food shortage from self-imposed food restriction. These situation increase feelings of hunger and slows down the metabolic rate of the body (24). Jastreboff et al. suggested that high restrained eating is associated with insulin resistance in men (2014) (30).

Restrained eaters, lean or obese, stop eating not in response to satiety but because they have reached a cognitively-set limit (25). Therefore, self-control may also be one of the key differences for weight loss and maintenance of diet for restrained eaters (21). Self-control is the ability against to a behavioural impulse for carrying out a higher-order goal. Weight loss and maintenance of a diet can also be one of these goals. Self-control may be intimately connected to successful weight control so that successful weight regulators are better able to control themselves in tempting situations where unsuccessful weight regulators are prone to indulge (21). Palatable food cues tempt successful and unsuccessful weight regulators equally. For this reason, successful weight regulators who are enduring to this tempting situation may be better able to regulate such positive, appetitive responses to palatable food cues. Indirect evidence for this idea comes from studies demonstrated that food intake is more easily regulated in line with dieting intentions when self-control resources are high. In contrast, when self-control resources are low, eating behavior is more strongly guided by appetitive reactions to palatable food such as positive effect. Further, successful weight regulators have been found to activate a dieting goal in response to palatable food cues, while unsuccessful weight regulators seem to inhibit such dieting goals. It was suggested that such facilitative links between palatable food cues and the higher-order goal of dieting develop when people are repeatedly and successfully able to exert self-control in tempting situations. Together, these findings suggest that successful weight regulators are better able to inhibit appetitive responses to palatable food cues in situations where unsuccessful weight regulators exhibit disinhibition (21).

It is suggested that increased physical activity can be protective against to the risk of anabolism and weight regain after a diet. Increased physical activity causes increased caloric expenditure and increased metabolic rate. In addition, physical activity has been found to be related with lower depressive symptomatology, decreased feelings

of tension and a greater emotional well-being (24). There was a positive correlation between dietary restraint and energy intake following a period of rest, but not after a bout of exercise. This relationship was independent of the nutrient manipulation (25).

2.1.4. Disinhibited eating

Lack of ability to inhibit eating is named as disinhibition of eating control or disinhibited eating (8). Disinhibited eating occurs when an individual is unable to control intake and overeats in response to internal (e.g., emotional stressors) or external (e.g., presence of palatable foods) cues despite his or her intentions not to do so (31). Eating in response to environmental triggers also existing in disinhibited eating. However, disinhibited eating also includes social or emotional eating (32).

Disinhibition has been repositioned as a psychobiological tendency towards 'opportunistic eating'. More recently, a high restrained/high disinhibited subtype has been identified as a more reliable risk factor for food consumption after negative affect than restrained eating alone (4).

Attitude is an important concept in disinhibited eating field. Attitudes affect opinion of an individual positively or negatively about a certain food. Implicit attitudes and explicit attitudes are two broad categories of attitudes. Implicit attitudes tend to be automatic in nature, such that individuals are often not consciously aware of them and are hypothesized to form due to associative reasoning. Explicit attitudes are more deliberative in nature and are typically within conscious awareness; they are believed to form through logical processes. This grouping of attitudes is a hallmark of the dual-process model (31).

According to the dual-process model, not only one attitude direct eating behaviour at all situations. Both of them regard towards a food. However, dominant of them direct food choice. For example, someone could have a positive implicit attitude towards chocolate (driven by associations to its immediate hedonic properties) while simultaneously reporting, through explicit attitudes, a lesser liking towards chocolate (driven by associations to its unhealthy attributes). Implicit and explicit attitudes towards food often differ and that, under varying circumstances, one type of attitude

tends to be more predictive of eating behavior than the other. When individuals have high cognitive capacity, meaning when there is no distraction or other stimuli to attend to, explicit attitudes are more predictive of food choice. Conversely, when individuals have low cognitive capacity, implicit attitudes will predict food choice. Emotional situations (e.g. after watching an upsetting film) and low inhibitory control (e.g, self-control resources have been depleted, high levels of impulsivity) also cause implicit attitudes to predict food choice (31).

2.1.5. Hunger

Hunger is the perception of individual's typical hunger level (8). Hunger reflects a person's stable underlying sensitivity to hunger feelings and predisposition to eat (32).

Hunger scores are positively associated with energy intake. Being chronically hungry makes individuals more susceptible to overeating, when compared with individuals do not report being often hungry. Correlations between hunger and disinhibition tend to be high when correlation between hunger and restraint tend to be low (32). Hunger is common in younger individuals than older individuals (29). It is also suggested that women might be more aware of their biologic signals of hunger and consequently they are maybe more responsive to their inner cues (28).

Ghrelin is one of the gastrointestinal hormones with its putative orexigenic function and is mainly produced by gastric cells prior to food intake. Langlois et al. showed that ghrelin is associated with self-reported perception of hunger, independently of anthropometric measures and lifestyle. They reported that in lean people, ghrelin regulates hunger signaling and energy intake. In contrast, increased BMI seems to be associated with lower ghrelin levels and disrupted association between ghrelin levels and hunger feelings. Also, in their cohort study, obese teenagers had higher ghrelin levels and reported a greater food intake than their lean counterparts. Therefore, they hypothesized that ghrelin could be implicated in early obesity development (childhood and adolescence) by increasing hunger signals and energy intake, but once body weight has reached a certain point, chronically increased ghrelin levels are down-regulated,

explaining the observation of lower ghrelin with higher BMI as observed in their cohort and in previous reports in obese adults (28).

Although hunger has a homeostatic component, it has also a hedonic part. Overeating is originated from this hedonic part of hunger. Hedonic hunger favors energy-dense palatable food, rich in sugar and fat, for example snacks, pastries, desserts, baked confectionery and sweets which foods typically ingested in between meals and preferred by women. Regardless of energy status, the anticipation of pleasure causes hedonic eating. The hedonic hunger is constituted by two components, wanting and liking. Wanting represents the anticipation phase, the motivation to eat a food item, and is triggered by cues. Liking is the hedonic reaction of the pleasure experienced through a rewarding orosensory stimuli (33).

In a study, thylakoids supplementation reduces feelings of hunger and increases feeling of satiety by affecting subjective ratings of appetite. It also reduces wanting for palatable food. Furthermore, the treatment effect on wanting and liking is correlated to reduction in food intake. In addition, liking for sweet is reduced after consumption. It is suggested that these effects are due to altered secretion of appetite regulating hormones, induced by the thylakoids, affecting reward-related areas in the brain (33).

2.1.6. Intuitive eating

Intuitive eating behaviour is based on physiological hunger and satiety cues rather than situational and emotional cues. Its central premise is that individuals innately are able to stay in tune with their bodies' natural signals about hunger and fullness. From this perspective, individuals are thought to be able to regulate their food intake in a healthy manner, eating what they want, when they want it, beginning when they become hungry, and stopping when they feel full. Intuitive eating enables individuals to choose more nutritious foods. For this reason, intuitive eaters prevent weight fluctuations and maintain their proper weight (34). Intuitive eating also plays a part in improvement of physical health. It is associated with lower body mass (BMI), cholesterol, blood pressure and decreased cardiovascular risk (35). In addition, intuitive eating is also negatively correlated with chronic dieting and binge eating, which is an important counterproductive effect in rigid restrained eaters (19, 34). Intuitive eating also causes

beneficial outcomes on both psychological and physiological variables slightly (19) For example, intuitive eaters showed greater unconditional self-regard and body satisfaction (or appreciation) and lower levels of depression and disordered eating behaviors (35).

Advocates of intuitive eating caution that engaging in restriction of certain foods or limiting portion size can lead individuals to feel deprived, which can then place individuals at risk for experiences of counterregulatory eating in which they violate dietary rules and binge eat . Preventing the influence of environmental factors such as plate and portion sizes is a necessary characteristic which should be comprised by a successful intuitive eating behaviour (19). It is suggested that foods are chosen for the purposes of satisfaction (i.e., taste), health, energy, stamina, and performance in intuitive eating. Preoccupation with food and dichotomization of foods as good and bad are prevented by intuitive eating (26).

Intuitive eating influences on various populations differently according to some researches. For example, elevated awareness to internal cues may differentially relate to eating behaviors among healthy weight individuals, as compared to overweight or obese individuals. Therefore, positive effects of intuitive eating on different population and weight classes should be investigated (19). Restraint eating focuses on external and environmentally-based solutions (i.e. limiting calories or portion sizes). However, disordered eating behaviours may occur in these solutions. On the other hand, intuitive eating focuses on internal cues (i.e. increasing awareness and response to hunger and satiety). These internal cues determine hunger and fullness. For this reason, intuitive eating appears to be negatively correlated with disordered eating (19). If intuitive eating works as hypothesized, environmental cues (i.e., plate and portion size) should have less influence on food consumption among individuals who report high levels of intuitive eating, as compared to those who report low levels of intuitive eating. However, it was shown that mindfulness does not provide an adequate level of prevention from external variables (plate or portion size effect). For this reason, this situation causes researchers to suggest that external cue effects may act independently from internal cues (19). In their current research, Anderson et al. suggested that hungry individuals who report high levels of intuitive eating, as measured by the Intuitive Eating Scale (IES), are more likely to eat an objectively larger amount when presented with larger plate and portion sizes, compared to individuals who report lower levels of intuitive eating.

However, according to them, it was also possible that particular facets of intuitive eating (i.e., unconditional permission to eat when hungry) influenced participants' eating behaviors in the laboratory which is an environment in which they were given permission to eat as much pasta as they wanted (19)

2.2. Disordered Eating Behaviours

Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder are disorders defined by disturbances in eating behavior for which there are currently no established etiologies. Numerous genetic, environmental, biological and psychological factors have been suggested to contribute to their development, but their precise roles and mechanisms are unclear (36).

2.2.1. Anorexia nervosa

Anorexia nervosa (AN) is a psychiatric disease. Energy restriction, low body weight and an intense fear of gaining weight are characteristics of this disease (37). High emotional and financial burden make AN a devastating and costly disorder for patients and their families. AN can also be lengthy, physically destructive, and psychologically exhausting (36, 38).

Diagnostic and Statistical Manual of Mental Disorders Book (DSM-IV) lists four criteria for the diagnosis of an AN (39)

- (1) Refusal to maintain body weight at or above a minimally normal weight for age and height
- (2) Intense fear of gaining weight
- (3) Disturbance of one's body weight or shape
- (4) Amenorrhea

The disorder ranks among the ten leading causes of disability among young women and has one of the highest mortality rates of any psychiatric disorder (38) AN is recognized as the third most common chronic illness in adolescents and the teenage years are the most common time of onset of the disease. The lifetime prevalence of anorexia nervosa in women is 2.2% but because only 50% of women with AN recover

even many years after their initial diagnosis. This is a chronic disease for many women. In fact, the number of women over 35 years of age entering treatment facilities for anorexia nervosa has dramatically increased in recent years. Although primarily recognized in females, males are also affected by this disease. Although it is reported that 10% of individuals affected by AN are male, the incidence may be much higher (37).

One of the first observational studies in this field on fat avoidance reported that individuals with AN consumed fewer calories than controls (1289 kcal vs. 2220 kcal) . This low calorie intake primarily caused by fat avoidance of the AN patients. In that study, the macronutrient composition of caloric intake over a 24-h period was analyzed and it was found that individuals with AN ate a slightly higher percentage of protein and carbohydrates than controls, but substantially less fat (17.6% vs. 28.4%) (36).

Etiology of AN is unknown. There are determined various and generally non-specific psychological and biological risk factors of AN. However, this risk factors do not explain major fraction of the variance in occurrence. Treatment for eating disorders in a structured environment usually restores normal weight in 2–4 months, in certain patients, with concomitant physiological, physical and psychological improvement (36). The fact that full recovery occurs in a substantial fraction of individuals who develop anorexia nervosa and that, despite numerous studies, no major physiological disturbances have been identified that are not reversed by weight gain suggest that cognitive and emotional factors play a major role in the development and persistence of AN. Pre-meal psychological state may be one such factor by playing an important role in the food choices of individuals with AN. According to recent studies, pre-meal level of anxiety affects calorie intake negatively . Increased distress level might affect food choice function adversely (36).

2.2.2. Bulimia nervosa

Bulimia Nervosa (BN) includes episodes of binge eating followed by recurrent inappropriate behaviours (such as self-induced vomiting) for preventing weight gain from the caloric overload. To satisfy the current Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (2000) criteria, the behavior must be frequent(on

average, at least two times per week for 3 months or longer) (36). BN developed in majority of AN patients in progress of time (40).

In addition to binge eating and purging, individuals with BN frequently report concurrent psychological symptoms such as depression, anxiety, low self-esteem, and cognitive eating disorder pathology (e.g., weight and shape concerns) at more severe levels than non-psychiatric controls (41). Psychological theories suggest that concurrent psychological symptoms are very effective in both the development and maintenance of bulimic pathology. In addition, certain psychological symptoms (e.g., greater depressive symptoms and lower self-esteem) may lead to poorer treatment outcomes for adults with BN (41).

In a study, fixed sized meal were given to individuals with BN and controls. They are wanted to evaluate their subjective satiety. Individuals with BN reported that they are feeling less full when compared with controls. Furthermore, a potential biological mechanism was identified in BN. This mechanism is associated with cholecystokinin (CCK) which have role in controlling food intake. CCK has an important role in the termination of meal with its post-prandial increase. The release of CCK was diminished after a meal in individuals with BN, but not in the control group. This study demonstrated a potential translational link between a biological control mechanism from the gut and clinical symptoms, suggesting that post-ingestive satiety signals are disturbed in BN. The change in fullness per unit of food consumed was much lower in the individuals with BN, consistent with a disturbance in the development of satiety (36)

In another study, the quantity of consumed food and the total amount to be provided were not indicated to participants while they ate showed various results. In contrast to the previous study, the average ratings of fullness of the individuals with BN during the course of the meal were identical to the those of controls. In contrast to the previous study where study participants determined how much they ate and were aware of the quantity of what they had eaten during the course of the meal. According to the results of this study, the change in fullness per unit of food consumed was quite normal, and therefore did not suggest an impairment in the development of satiety. Notably, in the previous study, subjects were asked specifically to binge eat, suggesting

the possibility that a person's decision to overeat then alters their how they interpret subjective sensations and biological signals resulting from food ingestion (36).

2.2.3. Binge eating disorder

Consuming large amounts of food by a sense of loss of control over eating in a discrete period of time named as binge eating disorder (BED). BN and BED comprise binge eating as a core diagnostic feature. BED is frequently endorsed by individuals with AN (namely, those with the binge eating/purging subtype; AN-BE/P). The restraint model of binge eating theorizes that attempts at dietary restriction arising from shape and weight over concern promote binge eating, which in turn leads to a vicious cycle of increased efforts to restrict eating again (42).

Individuals which have both of BN and BED are especially studied by researches investigating the relation between dietary restriction and binge eating. Individuals restricting caloric intake or consume meals and snack irregularly are vulnerable to more frequent binge eating episodes according to these studies. However, the relation of caloric restriction and irregular meal patterns with BED is still unknown (42).

2.3. Eating Behaviour Questionnaires

There are number of psychometric instruments which measure such behavioural-psychological aspects of eating behaviour (29)

2.3.1. Dutch eating behaviour questionnaire

Dutch Eating Behaviour Questionnaire (DEBQ) is a 33-item questionnaire. It is consisted of three subscales. These are emotional eating, external eating and restrained eating subscales (43). Emotional scale is consisted of 13 questions which assess eating in response to arousal states such as anger, fear or anxiety. External scale is consisted of 10 questions which assess eating in response to external food-related stimuli, regardless of the internal state of hunger or satiety. Restraint scale includes 10 questions assess

deliberate, planned weight control (44). All items had to be rated on a five-point scale from 1 (never) to 5 (very often) (45).

For Turkish Version of DEBQ, reliability and validity study made on Turkish University Students in 2009. Results from the Turkish samples indicated that the DEBQ subscales have a high internal consistency and test–retest reliability coefficient. According to results, it can be a useful questionnaire in Turkey (1).

2.3.2. Three-factor eating questionnaire

Three-factor Eating Questionnaire (TFEQ) is one of the widely used questionnaires (29). The TFEQ has an extensive research literature that includes large population-based cohorts, participants in clinical weight loss interventions, and college student samples across multi-country, prospective and cross-sectional studies (29). Questionnaire is composed of 51 items collect under three subscales. Two of them are restrained eating and emotional eating. As distinct from DEBQ, disinhibition of eating control is another subscale of TFEQ (46). Shortened new version named as The Three-Factor Eating Questionnaire Revised 18-item version (TFEQ-R18) (47). This new version of the questionnaire comprises of 18 items that are measured on a 4-point response scale (definitely true: 1, mostly true: 2, mostly false: 3, definitely false: 4) (47). The TFEQ-18 has been validated in different populations, also within obese subjects (48).

The reliability and validity of the TFEQ for Turkish population is determined by Kırış et al. in 2015. In this study, hunger was found as another factor in addition to emotional eating, restrained eating and disinhibition of eating control (46). Results from the Turkish samples indicated that the TFEQ scale could be used for the investigation of eating behaviours by other researches in Turkey (46)

2.3.4. Intuitive eating scale

The intuitive eating scale (IES) evaluates the degree to which individuals utilize an intuitive approach to eating. The IES consists of 21-item which collect under 3 subscales. These subscales are unconditional permission to eat, eating for physical rather than emotional reasons, and reliance on internal hunger/satiety cues. Each item is

rated on a 5-point scale that ranges from 1 (strongly disagree) to 5 (strongly agree). Scores on the IES positively relate to body acceptance, body appreciation, and overall well-being, and negatively relate to eating disorder symptomology, body dissatisfaction, pressure for thinness, and body mass. The psychometric properties of the IES have not yet been documented in men (19). As far as we know, the reliability and validity study for the Turkish population of IES was not made yet.

2.4. Eating Disordered Behaviour Questionnaires

2.4.1. Eating attitude test (EAT-40)

The EAT- 40 is a psychological measure of anorexic/bulimic like attitudes and beliefs. It is composed of 40 items. Each item filled out according to the frequency of attitudes and beliefs by using 6-point scale . For determining that an individual has anorexia or bulimia, a score of 30 and above is commonly used as a cut-off point (1).

The reliability and validity of the EAT-40 for Turkish population is determined by Savaşır and Erol (1989). Internal consistency coefficient (Cronbach's alpha) and test-retest reliability of the EAT-40 for Turkish sample were 0.70 and 0.60, respectively. Savaşır and Erol (1989) reported that the EAT-40 has acceptable construct validity (1).

2.4.2. The eating disorder inventory (EDI)

The Eating Disorder Inventory (EDI) is used worldwide in research and treatment of eating disorders (a3). The EDI consists of 64 items and eight subscales measuring (1) drive for thinness, (2) bulimia, (3) body dissatisfaction, (4) ineffectiveness, (5) perfectionism, (6) interpersonal distrust, (7) interoceptive awareness, and (8) maturity fears. The first version of EDI was developed in the 1980s. It was a self-report measure which is used for the assessment of attitudinal and behavioural dimensions relevant to anorexia and blumia nervosa. Second version is published 27 new added items which describing three new subscales (49) . The EDI-3 (third version) was also published, this version represents an expansion and improvement of the earlier versions of the EDI. It consists of the same 91 questions as the EDI-2, including the same three subscales of eating disorder symptoms (50). As far

as we know, the reliability and validity study of EDI for the Turkish population was not made yet.

2.4.3. Eating disorder examination self report version- eating disorder examination questionnaire (EDE-Q)

The Eating Disorder Examination Questionnaire (EDE-Q) is a 28-item self-report measure of eating disorder psychopathology which asks participants to rate on a 0–6 scale the frequency or severity of core eating disorder symptoms and related behaviors and beliefs over the past 28 days (51). The instrument also assesses frequency of specific behaviors (i.e., fasting, binge eating, self-induced vomiting, laxative use, excessive exercise) over the past 28 days (52). The measure comprises four subscales: Restraint, Eating Concern, Shape Concern, and Weight Concern (51). The reliability and validity study for Turkish population of EDE-Q was made by Yücel et al. in 2011. The present study suggests that the Turkish version of EDE-Q is an acceptable, reliable and valid measure in nonclinical adolescent samples (53).

3. MATERIALS AND METHODS

3.1. Materials

The material of this study was questionnaire (A.1). Questionnaire was composed of 3 part and 6 page. On the heading of the first page, there is an information letter which give general information about the study to the participant. First part is composed of a questionnaire was used to collect information about general situation (gender, age, height, weight, general state of health, physical activity situation) of the participant. Second part is a valid and reliable Turkish version of DEBQ. Third part is composed of 3 pages about daily calorie intake of the participant. How fill in questionnaire explained in first two page of this third part (one page is about how fill in 24-hour food recall and another page is an exemplary filled 24-hour food recall questionnaire) and then there was an empty 24-hour food recall questionnaire for the participants.

3.2. Measures

The Turkish Version of Dutch Eating Behaviour Questionnaire (DEBQ) was used to assess the eating styles of participants. The reliability and validity of the DEBQ for turkish population is determined by Bozan, Baş and Aşçı (2011) (1). In this study, it was showed that Turkish version of DEBQ is consisted of three subscales (1). The internal consistency of DEBQ subscales was 0.90 for external eating, 0.92 for emotional eating and 0.96 for restrained eating. The test-retest reliability of DEBQ was 0.90 for emotional eating, 0.94 for restrained eating and 0.96 for external eating subscales (1).

24 Hour Food Recall Questionnaire was used to evaluate daily energy intakes of participants. Daily energy intake (calorie) was calculated using Turkish Version of German Food Code and Nutrient Data Base (BeBiS 7).

3.3. Data Collection

Researcher obtained permission from the head of the departmen of architecture firstly. After ethical approval, questionnaires distributed and collected by a research assistant during the lectures (A.2). Necessary and sufficient information for filling in questionnaire was available. After collection, questionnaires were controlled.

At the start of the fieldwork, 3 days food record questionnaire was used in questionnaire for the determination of daily energy intake of participants. Distribution of questionnaires was made by researcher. Researcher entered classrooms individually and explained participants how to fill in the questionnaires. After this informing researcher distributed questionnaires. Collection of questionnaires left to next week. However, 3 days food record was found to be difficult to fill in by participants. Then, 3 days food record replaced with 24-hour food recall. This alteration was notified to participants. However, questionnaires were not filled in and were not redelivered by participants. This situation required distribution and collection of questionnaires during the lecture. Consequently, questionnaires were distributed and collected by research assistants during the lecture.

There were some underfilled questionnaires. Some of them are lacking in information which are important for correlation, especially calorie intake, which is the primary objective of this research. In this situation, these questionnaires were not included in research. However, some questionnaires are lacking in information which are slight and can be came by missing value imputation over. In this situation, these questionnaires were included in the research by missing value imputation. As a result, 224 questionnaires were included in the research.

3.4. Statistical Analysis

Data was analysed by Statistical Package for the Social Sciences 20 (SPSS 20) program in computer environment. There were missing values in DEBQ part of the questionnaire. For this reason, firstly, missing value analyses made for missing value imputation. Little's MCAR test was used for missing value analysis. Series mean method was used for imputation (54).

Compliance with normal distribution of data were evaluated with Kolmogorov-Smirnov test. Explanatory statistics were demonstrated by mean±standard deviation for continuous variables. For categorical variables, explanatory statistics were demonstrated by frequency and percentage. Reliability of DEBQ were tested by Cronbach's Alfa value. Reliability of factors were also tested separately. Values above 0.7 are accepted as reliable (54).

In correlation analysis, correlation of non-normally distributed variables was determined spearmen correlation coefficient. $p < 0.05$ was accepted as statistically significant (54).



4. RESULTS

4.1. Descriptive Statistics

This study made between March 7 and May 4 at Yeditepe University. The sample was consisted of 224 students which study at the department of Architecture. Volunteer students participated in the study. 167 (74,6%) participants were female and 57 (25,4%) participants were male (Table 1). Participants who have a chronic disease which may change nutritional status or have a medication can be thought to affect nutritional status were not included in the study. There were no further exclusion criteria.

Table 1. Distribution of Participants by Gender

GENDER	FREQUENCY	PERCENT
Female	167	74,6
Male	57	25,4
Total	224	100,0

31,7 % of participants studied in the first class of faculty. More than half of the participants were composed of second and third class students (51,3%). 17,0% of them studied in fourth class (Table 2).

Table 2. Distribution of Participants by Class

CLASS	FREQUENCY	PERCENT
1,00	71	31,7
2,00	57	25,4
3,00	58	25,9
4,00	38	17,0
Total	224	100,0

Participants was composed of 21 (24,6%) and 22 (23,2%) year old students mostly (Table 3).

Table 3. Distribution of Participants by Age

AGE	FREQUENCY	PERCENT
18,00	1	,4
19,00	27	12,1
20,00	46	20,5
21,00	55	24,6
22,00	52	23,2
23,00	21	9,4
24,00	15	6,7
25,00	5	2,2
27,00	1	,4
28,00	1	,4
Total	224	100,0

When body mass index of participants were evaluated descriptively. The mean BKI of the participants was 21,9 (Table 4).

Table 4. Mean Value of the Body Mass Index of Participants (BMI)

	NUMBER	MINIMUM	MAXIMUM	MEAN	STANDART DEVIATION
BKI	224	15,20	55,70	21,9437	4,17080
Valid Number	224				

In this sample; 13,4% of the participants were underweight, 68,8% had a normal weight, 14,7% were classified as being overweight and 3% of the participants was classified as being obese (Table 5).

Table 5. Distribution of Participants by Body Mass Index (BMI) Classification (55)

BMI CLASS	FREQUENCY	PERCENT
Underweight	30	13,4
Normal	154	68,8
Overweight	33	14,7
Class 1 Obesity	5	2,2
Class 2 Obesity	1	,4
Class 3 Obesity	1	,4
Total	224	100,0

95,5% of the participants had no disease. 4,5% of them had disease or diseases (Table 6, Table 7).

Table 6. Distribution of Participants by Health Status

EXISTENCE OF DISEASE	FREQUENCY	PERCENT
Existent	10	4,5
Non-existent	214	95,5
Total	224	100,0

Regarding participants which have a chronic disease, most common disease was asthma with 40.0% (Table 7).

Table 7. Diseases of The Participants

DISEASE	FREQUENCY	PERCENT
Migraine	1	10,0
Asthma	4	40,0
Rheumatoid Arthritis	1	10,0
Anemia	1	10,0
Allergy, chronic sinusitis	1	10,0
Mediterranean Fever	1	10,0
Talasemia	1	10,0
Total	10	100,0

More than half of participants were not physically active (56,3 %) (Table 8).

Table 8. Distribution of Participant by Physical Activity Status

PHYSICAL ACTIVITY	FREQUENCY	PERCENT
Participant do physical activity	98	43,8
Participants do not physical activity	126	56,3
Total	224	100,0

Physical activity types of participants resulted variously. Major physical activity type was fitness (20,4%). Walking comes after fitness (16,3%) (Table 9).

Table 9. The Distribution of Participants by Physical Activity Type

PHYSICAL ACTIVITY TYPE	FREQUENCY	PERCENT
Walking	16	16,3
Walking, Riding, Dance	1	1,0
Fitness	20	20,4
Rugby	1	1,0
Amerikan football	2	2,0
Running	3	3,1
Walking and basketball	1	1,0
Dance	5	5,1
Plates	9	9,2
Kardiyo and training	5	5,1
Fitness and football	2	2,0
Walking and running	1	1,0
Walking and dance	1	1,0
Fitness and basketball	4	4,1
Walking and Plates	2	2,0
Fitness and cardio	2	2,0
Fitness and spinning	1	1,0
Walking and Spinning	1	1,0
Plates and Swimming	1	1,0
Swimming,running and strength	1	1,0
Football and basketball	1	1,0
Sailing	1	1,0
Fitness and swimming	2	2,0
Plates and cardio	2	2,0
Swimming	1	1,0
Cardio	2	2,0
Kickbox and dance	1	1,0
Walking and skating	1	1,0
Fitness and American football	1	1,0
Gymnastic and plates	1	1,0
Pull up and push up	1	1,0
Volleyball	1	1,0
Plates and horse riding	1	1,0
Football	2	2,0
Running and fitness	1	1,0
Total	98	100,0

5,1% of the participants make a sportive activity everyday (Table 10).

Table 10. Sportive Activity Frequency of Participants Which Make A Sportive Activity In A Week

DAYS	FREQUENCY	PERCENT
1,00	4	4,1
1,50	1	1,0
2,00	28	28,6
2,50	4	4,1
3,00	34	34,7
4,00	12	12,2
5,00	9	9,2
6,00	1	1,0
7,00	5	5,1
Total	98	100,0

Mean physical activity duration of participants is 1,5 hour (90 minute) (Table 11).

Table 11. Physical Activity Duration of Participants Which Make Sportive Activity

	Number	Minimum	Maximum	Mean	Standart Deviation
Duration (minute)	88	30,00	300,00	90,2273	51,02912
Valid N (listwise)	88				

Daily mean calorie intake of participants was 1610,5 calorie (Table 12).

Table 12. Daily Energy Intake of Participants

	N	Minimum	Maximum	Mean	Standart Deviation
Energy (Calorie)	224	414,40	3547,10	1610,5170	603,18635
Valid N (listwise)	224				

4.2. Reliability

There were missing values in DEBQ part of questionnaire. For this reason, missing value analysis made before making other analysis. Little's MCAR test showed that missing values distributed randomly (significance=0,389). Series mean method was used for imputation.

Reliability of DEBQ questionnaire was estimated with Cronbach's Alpha value. According to this value, responses of our questionnaire have internal consistency. Therefore, questionnaire has good level of reliability (Cronbach's Alpha value 0,897) (Table 13). Chronbach's alpha value also calculated for each factor separately in themselves. Chronbach's alphas of the DEBQ scales in this sample were 0,898, 0,957, 0,834 and 0,768 for restrained, emotional eating, external eating and disinhibited eating (Table 14, 15, 16 and 17).

Table 13. Cronbach's Alpha Value of DEBQ questionnaire

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,897	,897	33

Table 14. Cronbach's Alpha Value of Restrained Eating Subscale of DEBQ

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,898	,898	10

Table 15. Cronbach's Alpha Value of Emotional Eating Subscale of DEBQ

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,937	,957	13

Table 16. Cronbach's Alpha Value of External Eating Subscale of DEBQ

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,836	,834	5

Table 17. Cronbach's Alpha Value of Disinhibited Eating Subscale of DEBQ

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,764	,768	5

4.3. Factor Analysis

For making factor analyse to evaluate the validity of this study, conformity of data was assessed. It was estimated that number of sample is sufficient according to Kaiser-Maier-Olkin (KMO) test. According to barlett's test, it was assessed that correlation matrix is not unit matrix ($p=0,000$). For factor analysis, basic components and varimax rotation were used and these results were estimated; questions 1,2,3,4,5,6,7,8,9,10 measuring restrained eating, question 11,12,13,14,15,16,17,18,19,20,21,22,23 measuring emotional eating, questions 24,25,26,27,31 measuring external eating and questions 28,29,30,32,33 measuring disinhibited eating (Table 18).

4 factor which have values more than 1 were designated as a factor (factor 1=9.604, factor 2=5.951, factor 3=3.414, factor 4=1.346) . First 4 factor explain a major part (59.752%) of the variance. Table 19 showing 4 factor (colons) and loads of each variable under factors. * sign showed that this question classified under this factor.

Table 18. Point Averages of Responses Which Gives to Questionnaire Questions Classified by Factors

FACTOR NUMBERS	QUESTION NUMBERS	MEAN±STANDART DEVIATION
FACTOR 1 (Emotional Eating)	11	2.6726±1.39039
	12	3.3527±1.27961
	13	2.7366±1.49057
	14	2.7040±1.37313
	15	2.4796±1.39048
	16	2.5759±1.43109
	17	2.2723±1.33995
	18	2.4286±3.07518
	19	2.2197±1.32285
	20	1.6682±.99199
	21	2.2523±1.30168
	22	2.3857±1.33573
	23	2.3677±1.36719
FACTOR 2 (Restrained Eating)	1	2.7085±1.19426
	2	2.1121±1.12493
	3	2.3170±1.08907
	4	2.7813±1.02935
	5	1.9865±1.05660
	6	2.3045±1.21019
	7	2.5180±1.16562
	8	2.1928±1.13783
	9	1.9507±1.16075
	10	2.1161±1.09918
FACTOR 3 (External Eating)	24	3.7098±1.06333
	25	3.4554±1.15124
	26	3.7489±1.01984
	27	3.7188±.96875
	31	3.4595±.99581
FACTOR 4 (Disinhibited Eating)	28	3.1704±1.11557
	29	3.0135±1.09413
	30	2.7902±1.13077
	32	2.2152±1.20656
	33	3.0402±1.08737

Table 19. Factor Loads of Questions

	Component				
	1	2	3	4	5
Question 15	.922*				
Question 16	.899*				
Question 22	.897*				
Question 21	.887*			.103	.191
Question 19	.875*			.156	.110
Question 13	.862*	.153	.134		
Question 17	.858*				.114
Question14	.836*	.106		.142	-.109
Question23	.813*	.143		.153	
Question11	.771*	.186	.103		-.131
Question12	.713*		.289		-.178
Question20	.541*	.185	-.136	.348	.372
Question18	.478*				.435
Question7		.849*	-.110		
Question6		.797*			-.127
Question10	.150	.772*			
Question3	.156	.764*		-.109	
Question2	.133	.709*			
Question5	.129	.705*			
Question8		.704*			
Question1		.678*			
Question 9	.112	.602*		-.131	.160
Question 4		.548*	-.145	.123	-.298
Question 25			.833*	.168	
Question 24	.119		.832*		
Question 26		-.111	.796*	.274	
Question 27		-.155	.707*	.282	
Question 30	.259		.261	.731*	-.167
Question 29			.450	.671*	.139
Question 28		-.111	.459	.644*	.154
Question 32	.256		.204	.615*	-.249
Question 33				.526*	.175
Question 31		-.239	.399*	.172	.572

Table 20. Descriptive Statistics of Eating Behaviours

	N	Minimum	Maximum	Mean	Standart Deaviation
Restrained	224	10,00	45,00	22,9875	8,13892
Emotional	224	13,00	65,00	31,9373	14,59389
External	224	7,00	25,00	18,0923	4,04750
Disinhibited	224	5,00	25,00	14,2295	4,04245
Valid N (Listwise)	224				

4.4. Correlations

For estimating the correlation between eating behaviours and energy intake, spearman correlation was used (variables distributed non-normally) (54). Correlations between eating behaviours and calorie intake are shown in Table 21. Results showed that there is a negative correlation between restrained eating and daily calorie intake ($p \leq 0.01$). There is a positive correlation between external eating and daily calorie intake ($p \leq 0.05$). There is no significant correlation between other eating behaviours and daily calorie intake.

Table 21. Correlations Between Eating Behaviours and Daily Calorie Intake

		Daily Calorie Intake
Daily Calorie Intake	Correlation Coefficient	1,000
	Sig.(2-tailed)	.
	N	224
Restrained Eating	Correlation Coefficient	-,285**
	Sig.(2-tailed)	,000
	N	224
Emotional Eating	Correlation Coefficient	-,078
	Sig.(2-tailed)	,242
	N	224
External Eating	Correlation Coefficient	,146*
	Sig.(2-tailed)	,029
	N	224
Disinhibited Eating	Correlation Coefficient	,094
	Sig.(2-tailed)	,159
	N	224

Correlation is significant at the 0.01 level (2-tailed).**

Correlation is significant at the 0.05 level (2-tailed).*

Table 22 shows the correlations between eating behaviours and BMI. There is a positive correlation between restrained eating and BMI ($p \leq 0.01$). There is no significant correlation between other eating behaviours and BMI.

Table 22. Correlations Between Eating Behaviour and Body Mass Index

		Body Mass Index
Restrained Eating	Correlation Coefficient	,278**
	Sig. (2-tailed)	,000
	N	224
Emotional Eating	Correlation Coefficient	,079
	Sig. (2-tailed)	,239
	N	224
External Eating	Correlation Coefficient	-,071
	Sig. (2-tailed)	,293
	N	224
Disinhibited Eating	Correlation Coefficient	-,085
	Sig. (2-tailed)	,203
	N	224
Body Mass Index	Correlation Coefficient	1,000
	Sig. (2-tailed)	.
	N	224

Correlation is significant at the 0.01 level (2-tailed).**

Table 23 shows the correlations of eating behaviours between each other. Restrained eating was positively correlated to emotional eating and negatively correlated to external eating. In addition, emotional and external eating were positively correlated to disinhibited eating. The associations of eating behaviours with age are presented in Table 24. There is only a positive correlation between disinhibited eating and age ($p \leq 0.05$).

Table 23: Correlations Between Eating Behaviours

		Restrained Eating	Emotional Eating	External Eating	Disinhibited Eating
Restrained Eating	Correlation Coefficient	1,000	,231**	-,260**	-,108
	Sig. (2-tailed)	.	,000	,000	,108
	N	224	224	224	224
Emotional Eating	Correlation Coefficient	,231**	1,000	,103	,265**
	Sig. (2-tailed)	,000	.	,125	,000
	N	224	224	224	224
External Eating	Correlation Coefficient	-,260**	,103	1,000	,565**
	Sig. (2-tailed)	,000	,125	.	,000
	N	224	224	224	224
Disinhibited Eating	Correlation Coefficient	-,108	,265**	,565**	1,000
	Sig. (2-tailed)	,108	,000	,000	.
	N	224	224	224	224

** . Correlation is significant at the 0.01 level (2-tailed).

Table 24. Correlations Between Eating Behaviour and Age

		Age
Restrained Eating	Correlation Coefficient	,045
	Sig. (2-tailed)	,507
	N	224
Emotional Eating	Correlation Coefficient	-,055
	Sig. (2-tailed)	,416
	N	224
External Eating	Correlation Coefficient	-,016
	Sig. (2-tailed)	,808
	N	224
Disinhibited Eating	Correlation Coefficient	,164*
	Sig. (2-tailed)	,014
	N	224

Correlation is significant at the 0.05 level (2-tailed).*

5. DISCUSSION AND CONCLUSION

5.1. Discussion

Factor analysis of this study showed that DEBQ questionnaire was composed of four factor. In original DEBQ study, it was showed that questionnaire has three factor structure (56). In 2009, reliability and validity study of DEBQ was made for Turkish population. Similarly to original research, Turkish version study reported that DEBQ had three factor and these factors are restrained eating, emotional eating and external eating (1). Other reliability and validity studies also showed that questionnaire had a three factor structure (2, 6). In this study, factor analyse showed that questions which measure participants restrained eating level and emotional eating level are same as Turkish reliability and validity study (1). In Turkish reliability and validity study, questions which stayed out of these questions measure external eating level (1). However, these questions gathered under two separate factors in this study (questions 24, 25, 26, 27, 28, 29, 30, 31, 32, 33) (Table 19). After this different result, meaning contents of these questions were examined. It was thought that questions 24, 25, 26, 27 and 31 were associated with external eating behaviour obviously. Thereby, it was determined that questions 24, 25, 26, 27, 31 measuring external eating and this eating behaviour accepted as factor 3.

Recently, in reliability and validity study of the Turkish Version of TFEQ, it was detected that, there was another factor in addition to previously named three factor (cognitive restraint of eating, disinhibition of eating control and emotional eating) likewise to our study. These fourth factor was named as susceptibility to hunger (2011) (46). Firstly, it was thought that the unnamed fourth factor of our study could be accepted as susceptibility to hunger same as Turkish version study of TFEQ. However, questions of fourth factor (28, 29, 30, 32, 33) were not found to be associated with susceptibility to hunger, when their meaning content were examined.

Disinhibition is used to refer to a tendency to overeat in a variety of situations (57). There is overeating in response to internal and external cues which cause inability to control food intake (31). Environmental factors such as sight or smell of a palatable food can trigger food intake. Emotional factors are also effective in this eating

behavior. Disinhibited eating also involves social eating which is the most important feature of disinhibited eating for this study (32). When questions come under this unnamed factor were examined, there were generally found to be associated with social interaction. For this reason, social interaction was the most effective thing in naming of fourth factor. Questions of factor 4 were also associated with environmental factors. In addition to this, these questions were belong to external eating behaviour in previous researches (1, 16). Disinhibited eating involves these two features (social and external eating) (32). Therefore, when questions stayed out of three factor (restrained eating, emotional eating and external eating) were examined, disinhibited eating was found the most proper naming for this previously unnamed fourth factor. Factor 4 accepted as disinhibited eating and it was accepted that questions 28, 29, 30, 32, 33 measuring disinhibited eating (Table 18). Therefore, this study showed that this questionnaire has four factor. Three factors were restrained eating, emotional eating and external eating. Factor do not found in previous studies was named as disinhibited eating, in other words disinhibition of eating control. Although this factor structure was different from previous researches, disinhibited eating was not only mentioned in relation to DEBQ in our study (1, 2, 6, 56). This eating behaviour was also mentioned in a previous research. It was reported that by calculating the mean of emotional and external eating, a DEBQ measure for disinhibition can be obtained (57).

Regarding the relation between eating behaviours and daily calorie intake, it can be suitable to summarize the main results before discuss. In this study, correlation analysis showed that restrained eating had a negative relation with daily energy intake. External eating was positively related to daily energy intake. Emotional eating and disinhibited eating were not related to daily energy intake (Table 21). Restrained eating was positively related to BMI. However, there was no relation between external eating and BMI. Emotional eating and disinhibited eating were also not related to BMI (Table 22). Only disinhibited eating had a positive relation with age. Other eating behaviours were not related to age (Table 23).

In 2009, Anschutz et al. found a negative relation between restrained eating and total energy intake by using DEBQ. Same study also found a positive relation between external eating and total calorie intake. Emotional eating was also not related to energy intake in compatible with this study (16). The relation between eating behaviours and

BMI was currently evaluated in the validation study of DEBQ which made in Spain (2014). According to this study, BMI was positively related to restrained eating and there was no relation between BMI and external eating. However, Cebolla et al. found a positive relation between emotional eating and BMI unconformably (2). Also, Snoek et al. found that emotional and external eating were unrelated to the BMI trajectories, when adolescents with high restrained eating scores had a higher BMI trajectories (2013) (45). Although our results were compatible with this similar current studies, there are another studies which have different results.

Validation study of DEBQ which made in Italy examined BMI status and found that overweight individuals scored significantly higher on emotional and external eating than normal weight individuals (2013) (6). Van strien et al. also suggested that overconsumption is more strongly related to overweight in people with higher levels of emotional or external eating. However, in their prospective study, the moderator effect for emotional eating remained significant when the participants were categorized as people with no meaningful weight gain versus people with meaningful weight gain, and the moderator effect for external eating become borderline significant (2012) (24). Findings of the VITAL (The vitamins and lifestyle) study also suggested that everyday perceptions of stress may influence dietary patterns that are linked to obesity (2014) (12). Another prospective study made in Korea also showed that an increase in external eating cause adult weight gain in women and man. However, they also stated that the relative contribution of eating behaviour on weight change was very small (2013) (58).

In another current and longitudinal study (2015), the influence of initial dietary restraint and overeating tendencies on weight fluctuations over 4 consecutive years (2010-2013) examined in either gender groups and it was suggested that eating in response to negative emotions predicted weight fluctuations in both gender as opposed to dietary restraint and external eating (10). Examining these eating behaviours separately may be useful to discuss these different results.

Although restrained eating had a negative relation with daily energy intake, there was a positive relation between this eating behaviour and BMI in this study (Table 21 and Table 22). Restrained eaters cognitively control their food consumption under normal circumstances, so they eat little food (59). Psychometrically defined

restrained eaters consume less energy, take fewer meals and show higher preferences for low-caloric foods in comparison to unrestrained eaters (60). However, several experimental studies suggested that restrained eaters overeat (59). Longitudinal design studies have also shown that eating restraint increases weight gain and disordered eating among children, adolescents and adults (26).

Restrained eating had a positive relation with BMI. However, there was no relation between restrained eating and disinhibited eating in this study (Table 23). Triggers of overeating are called disinhibitors and they seem to undermine the cognitive control of eating. The act of overeating following a disinhibitor observed in restrained eaters is called the disinhibition effect (59). Fay et al. suggested that individuals who are both highly restrained and vulnerable to disinhibited eating are particularly at risk of negative affect-induced overconsumption (2011) (25). In this study, disinhibited eating behaviour analysed as a different eating behaviour. Disinhibited eating was not analysed as a different factor in DEBQ previously (1, 56). Disinhibited eating was thought to be located in restrained eating behaviour as a counterproductive effect (59) . For this reason, this incompatible result may caused from our different evaluation for disinhibited eating.

In this study, restrained eating had a positive relation with emotional eating (Table 23). Rigid control may cause overeating in restrained eaters in response to emotions than physical hunger. This situation also often cause a binge. Such rigid cognitive and behavioural controls may undermine individuals' understandings of their bodies' signals, disrupt their ability to know what they want to eat and permission they give themselves to eat it (34).

In this study, external eating had a positive relation with daily calorie intake. However, there was no relation between external eating and BMI (Table 21, Table 22). External eaters had a lower body weight but higher energy intake than restrained eaters (16). This situation may be because of metabolic differences between external and non-external eaters. Another suggested interesting possibility is that external eaters tend to overreport their energy intake due to the salience of the visual imagery of the food items (16). Findings of this study also showed that external eating behaviour had a positive

relation with disinhibited eating behaviour (Table 23). Already, disinhibited eating involved external eating (32).

Regarding emotional eating, no relation was found between emotional eating and daily energy intake in this study (Table 21). There was a suggestion that, emotional eaters may only eat more if they are emotionally aroused, which might only be observed shortly after the arousal (16). For this reason, it was also suggested that emotional eaters in phases of lower stress eat less and lose weight (10). Conformably, emotional eating was not related to BMI in this study (Table 22).

Results of this study showed that emotional eating is positively related to disinhibited eating (Table 23). It was suggested that negative emotions cause gain weight because of disinhibited eating and overconsumption of high-calorie palatable food in stressful times (10). Although emotional and external eating are independent constructs, Dakanalis et al. found that men and women who have an eating reaction to environmental stressors are also likely to have an eating reaction to environmental food cues disregarding internal physiological signals of hunger and satiety (6). However, there was no relation between emotional eating behaviour and external eating behaviour in this study (Table 23).

Although disinhibition associated consistently with higher BMI and energy intake, there was no relation between daily energy intake and disinhibited eating in this study (32) (Table 21). Normally, DEBQ questionnaire was consisted of three factors in previous studies. These factors are emotional eating, external eating and restrained eating (1, 56). In this study, there was one more factor except these three factors and it was disinhibited eating. This incompatible result about the association between disinhibited eating and energy intake might be caused from this situation.

Regarding age, correlation analysis showed that emotional eating, restrained eating and external eating are not correlated with age. Only disinhibited eating was positively related to age in this study (Table 24). In Italian validity study of DEBQ (2013), Dakanalis et al. found that oldest-old individuals reported significantly lower emotional eating than younger-old individuals (6). In 2014, another validity study of DEBQ which was made in Spain found that there was a positive relation between external

eating and age (2). A research report (2015) (which was consisted of 3144 participants with four age groups: 40–49, 50–59, 60–69 and 70–79 year) showed that older individuals showed significantly higher mean scores than the younger ones in the domain of cognitive restraint, but lower mean scores in disinhibition. In addition, in younger age groups, emotional eating was particularly an important eating behaviour problem (3.3% in 40–49 year old males vs. 0.3% in 70–79 year old males; 4.5% in 40–49 year old females vs. 0.2% in 70–79 year old females) (29). When compare with this research reports, this study had incompatible results (2, 6, 29). However, this study made in a limited age group range and did not involve elders and children. In addition, it is possible that, when students start to university, they have narrow social space and maybe they connect their family much more. However, in the following years, they become more independent and they make a circle of friends. Therefore, they maybe eat out much more with their friends for only originated from social space. Therefore, this inconsistency with literature may be originated from this situation.

5.2. Limitations and Strengths

This study has some strength features and limitations. The Turkish version of DEBQ was firstly used to examine the relations between different eating behaviours and daily energy intake in this study. In 2009, a similar study which aim to examine the relations between three different eating behaviours and energy intake was made in the Netherlands. However, it was consisted of only females (16). Our participants were composed of both males and females.

This study has also some limitations. Most important limitation of the study is the use of self-reports. Some questions in DEBQ part were left unanswered. These questionnaires were evaluated by missing value analysis and missing values resolved by series mean missing value imputation method. This imputation could affect correlation results. Some participants also did not filled questionnaires 24-hour food recall part in properly. There was an informing part how to fill in 24-hour food recall questionnaire and there was also an exemplary filled questionnaire, but some of the participants did not state portion sizes. Some of them did not specify their foods. Energy intake can be changed according to the kind of foods. For this reason, energy intake could be

calculated incorrectly. Usage of self-reports could also cause some bias because of under or overreporting. Recall biases could also come across.

Calorie intakes of some participants were very low by comparison with their daily energy requirement. This can be a result of inattentively filled questionnaires. There is an ongoing debate about the validity of self-reported intake in restrained eaters, as some scholars stress that restrained eaters tend to underreport their energy intake (16). It is possible that restrained eaters could also underreport their energy intake in this study.

5.3. Conclusion

Findings of this study provide information on relationships between eating behaviours and daily energy intake. Consistent results with other similar studies were obtained in this study generally (2, 16, 44, 58). Findings of this study suggested that restrained eating behaviour reduces daily energy intake, but increase BMI in the long term. On the other hand, although external eating enhances daily energy intake, it is not related with high BMI. In addition, it was detected that DEBQ may also be used in studies about disinhibited eating behaviour besides of restrained eating, emotional eating and external eating behaviours. It was also suggested that a measure of disinhibited eating behaviour was obtained by calculating the mean of emotional and external eating scores (25). Unfortunately, most of previous similar studies did not found disinhibited eating as a subscale of DEBQ as far as we know (1, 2, 6, 16). This different situation of DEBQ could be originated from our sample characteristic. Further studies is necessary and can be beneficial about this subject. This different result emphasizes the importance of the necessity for further studies.

6. REFERENCES

1. Bozan N, Bas M, Asci FH. Psychometric properties of turkish Version of Dutch Eating Behaviour Questionnaire (DEBQ). A preliminary results. *Appetite*. 2011; 56: 564-566.
2. Cebolla A, Barrada JR, van Strien T, Oliver E, Banos R. Validation of the Dutch Eating Behaviour Questionnaire (DEBQ) in a sample of Spanish women. *Appetite*. 2014; 73: 58-64.
3. Poinhos R, Oliveira BMPM, Correia F. Eating behaviour in Portuguese higher education students: the effect of social desirability. *Nutrition*. 2015; 31: 310-314.
4. Fay SH, Finlayson G. Negative affect-induced food intake in non-dieting women is reward driven associated with restrained-disinhibited eating subtype. *Appetite*. 2011; 56: 682-688.
5. French SA, Epstein LH, Jeffery RW, Blundell JE, Wardle J. Eating behaviour dimensions. Associations with energy intake and body weight. A review. *Appetite*. 2012; 59: 541-549.
6. Dakanalis A, Zanetti MA, Clerici M, Madeddu F, Riva G, Caccialanza R. Italian version of the Dutch Eating Behaviour Questionnaire. Psychometric properties and measurement invariance across sex, BMI-status and age. *Appetite*. 2013; 71: 187-195.
7. Elfhag K, Morey L. Personality traits and eating behaviour in the obese: Poor self-control in emotional and external eating but personality assets in restrained eating. *Eat Behav*. 2008; 9: 285-293.
8. Alexander KM, Siegel HI. Perceived hunger mediates the relationship between attachment anxiety and emotional eating. *Eat Behav*. 2013; 14: 374-377.
9. Tan CC, Chow CM. Stress and emotional eating: The mediating role of eating dysregulation. *Pers Individ Differ*. 2014;66:1-4
10. Keller C, Siegrist M. Ambivalence toward palatable food and emotional eating predict weight fluctuations. Results of a longitudinal study with four waves. *Appetite*. 2015; 85: 138-145.
11. Konttinen H, Mannistö S, Sarlio-Lahteenkorva S, Silventoinen K, Haukkala A. Emotional eating, depressive symptoms and self-reported food consumption. A population-based study. *Appetite*. 2010; 54: 473-479.

12. Brrington WE, Beresford SAA, Mcgregor BA, White E. Perceived Stress and Eating Behaviours by Sex, Obesity Status, and Stress Vulnerability: Findings from the Vitamins and Lifestyle (VITAL) Study. *J Acad Nutr Diet.* 2014; 114: 1791-1799.
13. Van Strien T, Cebolla A, Etchemendy E, Gutierrez-Maldonado J, Ferrer-Garcia M, Botella C, Banos R. Emotional eating and food intake after sadness and joy. *Appetite.* 2013; 66: 20-25.
14. Van Strien T, Ouwens MA, Engel C, Weerth C. Hunger, inhibitory control and distress-induced emotional eating. *Appetite.* 2014; 79: 124-133.
15. Van Strien T, Roelofs K, de Weerth C. Cortisol reactivity and distress-induced emotional eating. *Psychoneuroendocrinology.* 2013; 38: 677-684.
16. Anschutz DJ, Van Strien T, Van De Ven MOM, Engels RCME. Eating styles and energy intake in young women. *Appetite.* 2009; 53: 119-122.
17. Kakoschke N, Kemps E, Tiggemann M. External Eating mediates the relationship between impulsivity and unhealthy food intake. *Physiol Behav.* 2015; 147: 117-121.
18. Evers C, Stok FM, Danner UN, Salmon SJ, de Ridder DTD, Adriaanse M.A. The shaping role of hunger on self-reported external eating status. *Appetite.* 2011; 57: 318-320.
19. Anderson DA, Schaumberg K, Anderson LM, Reilly EE. Is level of intuitive eating associated with plate size effect?. *Eat Behav.* 2015; 18: 125-130.
20. Van Strien T, Herman CP, Verheijden MW. Eating style, overeating, and overweight in a representative Dutch sample. Does external eating play a role? *Appetite.* 2009; 52: 380-387.
21. Houben K, Nederkoorn C, Jansen A. Too tempting to resist? Past success at weight control rather than dietary restraint determines exposure-induced disinhibited eating. *Appetite.* 2012; 59: 550-555.
22. Snoek HM, Van Strien T, Janssens JMAM, Engels RCME. Longitudinal relationship between fathers', mothers' and adolescents' restrained eating. *Appetite.* 2009; 52: 461-468.
23. Meule A, Vögele C, Kübler A. Restrained eating is related to accelerated reaction to high caloric foods and cardiac autonomic dysregulation. *Appetite.* 2012; 58: 638-644.
24. Van Strien T, Herman CP, Verheijden MW. Eating style, overeating and weight gain. A prospective 2 –year follow-up study in a representative Dutch sample. *Appetite.* 2012; 59: 782-789.

25. Fay SH, Finlayson G. Negative affect-induced food intake in non-dieting women is reward driven associated with restrained-disinhibited eating subtype. *Appetite*. 2011; 56: 682-688
26. Tylka TL, Calogero RM, Danielsdottir S. Is the intuitive eating same as flexible dietary control? Their links to each other and well-being could provide an answer. *Appetite*. 2015; 95:166-175.
27. Leblanch V, Provencher V, Begin C, Gagnon-Girouard MP, Corneau L, Tremblay A, Lemieux S. Associations between eating patterns, dietary intakes and eating behaviours in premenopausal overweight women. *Eat Behav*. 2012; 13:162-165.
28. Langlois F, Langlois M, Carpentier AC, Brown C, Lemieux S, Hivert M. Ghrelin levels are associated with hunger as measured by the Three-factor Eating Questionnaire in healthy young adults. *Physiol Behav*. 2011; 104: 373-377.
29. Löffler A, Luck T, Then FS, et al. Age-and gender-specific norms for the German version of the Three-factor Eating-Questionnaire (TFEQ). *Appetite*. 2015; 91: 241-247.
30. Jastreboff AM, Gaiser EC, Gu P, Sinha R. Sex differences in the association between dietary resistance and obesity. *Eat Behav*. 2014; 15: 286-290.
31. Goldstein SP, Forman EM, Meiran N, Herbert JD, Juarascio AS, Butryn ML. The discrepancy between implicit and explicit attitudes in predicting disinhibited eating. *Eat Behav*. 2014; 15: 164-170.
32. French SA, Mitchell NR, Finlayson G, Blundell JE, Jeffery RW. Questionnaire and laboratory measures of eating behaviour. Associations with energy intake and BMI in a community sample of working adults. *Appetite*. 2014; 72: 50-58.
33. Stenblom EL, Egecioğlu E, Landin-Olsson M, Erlanson-Albertsson C. Consumption of thylakoid-rich spinach extract reduces hunger, increases satiety and reduces cravings for palatable food in overweight women. *Appetite*. 2015; 91: 209-219.
34. Moy J, Petrie TA, Dockenrorff S, Greenleaf C, Martin S. Dieting, exercise and intuitive eating among early adolescents. *Eat Behav*. 2013; 14: 529-532.
35. Denny KN, Loth K, Eisenberg ME, Neumark-Sztainer D. Intuitive eating in young adults. Who is doing it, and how is it related to disordered eating behaviours. *Appetite*. 2013; 60: 13-19.
36. Heaner MK, Walsh BT. A history of the identification of the characteristic eating disturbances of Bulimia Nervosa, Binge Eating Disorder and anorexia Nervosa. *Appetite*. 2013; 71: 445-448.

37. Fazeli PK, Klibanski A. Anorexia nervosa and bone metabolism. *Bone*. 2014; 66: 39-45.
38. Zerwas S, Lund BC, Von Holle A, et al. Factors associated with recovery from anorexia nervosa. *J Physiol Behav*. 2013; 47: 927-979.
39. Milos G, Kuenzli C, Solech CM, Schumacher S, Moergeli H, Mueller-pfeiffer C. How much should I eat? Estimation of meal portions in anorexia nervosa. *Appetite*. 2013; 63: 42-47.
40. Alvarenga MS, Koritar P, Pisciolaro F, Mancini M, Cordas T.A, Scagliusi FB. Eating attitudes of anorexia nervosa, bulimia nervosa, binge eating disorder and obesity without eating disorder female patients: differences and similarities. *Physiol Behav*. 2014; 131: 99-104.
41. Ciao AC, Accurso EC, Fitzsimmons-craft EE, Le Grande D. Predictors and moderators of psychological changes during the treatment of adolescent bulimia nervosa. *Behav Res Ther*. 2015; 69: 48-53.
42. Elran-Barak R, Sztainer M, Goldschmidt AB, et al. Dietary Restriction Behaviours and Binge Eating in Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder: Trans-diagnostic Examination of the Restraint Model. *Eat Behav*. 2015; 18: 192-196.
43. Hou R, Mogg K, Bradley BP, Moss-Morris R, Peveler R, Roefs A. External eating, impulsivity and attentional bias to food cues. *Appetite*. 2011; 56: 424-427.
44. Keller C, Siegrist M, Does personality influence eating styles and food choices? Direct and indirect effects. *Appetite*. 2015; 84: 128-138.
45. Snoek HM, Engels CMER, van Strien T, Otten R. Emotional, External and restrained eating behaviour and BMI trajectories in adolescence. *Appetite*. 2013; 67: 81-87.
46. Kıraç D, Kaspar EÇ, Avcılar A, et al. New method in investigation of obesity-related eating behaviors 'three-factor eating questionnaire'. *Journal of Marmara University Institute of Health Sciences*. 2015; 5: 162-169.
47. Lobera IJ, Cruz PG, Carreno RC, Magallares A, Prieto IR. Psychometric properties of Spanish Version of the Three-factor Eating Questionnaire-R18 (Tfeq-Sp) and Its relationship with Some Eating- and Body Image-related Variables. *Nutrients*. 2014; 6: 5619-5635.
48. Nurkkala M, Kaikkonen K, Vanhala ML, Karhunen L, Keranen AM, Korpelainen R. Lifestyle intervention has a beneficial effect on eating behaviour and long-term weight loss in obese adults. *Eat Behav*. 2015;18:179-185

49. Thiel A, Paul T. Test-retest reliability of the Eating Disorder Inventory 2. *J. Psychosom. Res.* 2006;61:567-569
50. Clausen L, Rosenvinge JH, Friborg O, Rokkedal K. Validating the Eating Disorder Inventory-3 (EDI-3): A Comparison Between 561 Female Eating Disorders Patients and 878 Females from the General Population. *J Psychopathol Behav Assess.* 2011;33:101-110
51. Darcy AM, Hardy KK, Lock J, Bell Hill K, Peebles R. The Eating Disorder Examination Questionnaire (EDE-Q) among university men and women at different levels of athleticism. *Eat Behav.* 2013;14:378-381
52. Zuromski KL, Witte TK, Smith AR, Goodwin N, Bodell LP, Bartlett M, Siegfried N. Increased prevalence of vegetarianism among women with eating pathology. *Eat Behav.* 2015; 19: 24-27.
53. Yücel B, Polat A, Düşgör BP, Elif Yavuz A, Sertel Berk O. The Turkish version of the eating disorder examination questionnaire: reliability and validity in adolescents. *Eur. Eat Disord Rev.* 2011; 19: 509-511.
54. Kalaycı Ş. ed. *SPSS uygulamalı çok değişkenli istatistik teknikleri.* 5th ed. Ankara: Asil Yayın Dağıtım; 2010.
55. Fink HH, Mikesky AE, Burgoon LA. *Practical Applications in Sport Nutrition.* 3rd ed. London: Jones & Bartlett Learning; 2012.
56. Van Strien T, Frijters JER, Bergers GP. The Dutch Eating Behaviour Questionnaire (DEBQ) for assessment of restrained, emotional and external eating behaviour. *Int J Eat Disorder.* 1986; 5: 295-315.
57. Soetens B, Braet C, Van Vlierberghe L, Roets A. Resisting temptation: Effects of exposure to forbidden food on eating behaviour. *Appetite.* 2008; 51: 202-205.
58. Song Y, Lee K, Sung J, Yang YJ. Changes in eating behaviours and body weight in Koreans: The Healthy Twin Study. *Nutrition.* 2013; 29: 66-70.
59. Ouwens MA, Van Strien T, van der Staak PFC. Tendency toward overeating and restraint as predictors of food consumption. *Appetite.* 2003; 40: 291-298.
60. Laessle RG, Wurmser H, Pirke KM. Restrained eating and leptin levels in overweight preadolescent girls. *Physiol Behav.* 2000; 70: 45-47.

7. APPENDICES

A.1. Questionnaire

Öğrencilerin Beslenme Davranışları ve Günlük Enerji Alımları Arasındaki İlişki: Bir Uygulama Anket Formu

Bu anket Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Anabilim Dalı, ‘‘Öğrencilerin Beslenme Davranışları ve Günlük Enerji Alımları Arasındaki İlişki: Bir Uygulama’’ adlı tez çalışması kapsamında yapılmaktadır. Araştırmada yapılan değerlendirmelerin sonuçları yalnızca araştırma kapsamındaki çalışmalarda kullanılacaktır. Kişisel bilgileriniz herhangi bir amaçla, kurum yöneticileri veya üçüncü kişilerle kesinlikle paylaşılmayacaktır. Katılımınız için teşekkürler.

BÖLÜM 1:

Cinsiyet: Kadın () Erkek ()

Yaş:

Boy:

Kilo:

Herhangi bir hastalığınız var mı?

Evet () Hayır ()

Cevabınız evet ise lütfen hastalığınız veya hastalıklarınızı yazınız?.....

Fiziksel aktivite durumu: Yapıyorum () Yapmıyorum ()

Eğer cevabınız yapıyorum ise lütfen aşağıdaki kısmı doldurunuz

Ne tür fiziksel aktivite yapıyorsunuz?	Haftada kaç gün fiziksel aktivite yapıyorsunuz?	Ne kadar süre ile fiziksel aktivite yapıyorsunuz?

BÖLÜM 2:

YEME DAVRANIŞI ANKETİ (DEBQ)

Aşağıdaki anket yeme alışkanlıklarınızı belirlemeye yöneliktir. Lütfen her bir soruyu dikkatlice okuyup cevap veriniz. Hiçbir sorunun doğru ya da yanlış cevabı yoktur. Teşekkürler.

1. Eğer kilo aldıysanız, her zaman yediğinizden daha az mı yersiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
2. Yemek zamanlarında, yemek istediğinizden daha az yemeye çalışır mısınız?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
3. Kilonuzdan endişe duyduğunuz için size sunulan yiyecek yada içeceği ne sıklıkla reddedersiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
4. Ne yediğinize tam olarak dikkat eder misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
5. Bilinçli olarak zayıflatıcı besinler mi yersiniz ?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
6. Çok fazla yediğinizde, ertesi gün daha az yer misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
7. Kilo almamak için az yemeye dikkat eder misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
8. Kilonuza dikkat ettiğiniz için ne sıklıkla öğün aralarında yemek yememeye çalışırsınız?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
9. Kilonuza dikkat ettiğiniz için ne sıklıkla akşamları yemek yememeye çalışırsınız?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
10. Ne yiyeceğinize karar verirken kilonuzu hesaba katar mısınız?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
11. bir şeyden rahatsız olduğunuzda daha fazla yemek yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
12. Yapacak bir şeyiniz olmadığında yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
13. Depresyonda olduğunuzda yada hayal kırıklığına uğradığınızda yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
14. Kendinizi yalnız hissettiğinizde yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
15. Biri sizi üzdüğünde yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
16. Sinirleriniz bozuk olduğu zaman yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
17. İstemediğiniz bir şey olduğu zaman yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>

18. Kaygılı, endişeli olduğunuz zaman yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
19. bir şeyler ters yada yanlış gittiğinde yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
20. Korktuğunuz zaman yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
21. Hayal kırıklığına uğradığınız zaman yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
22. Duygusal olarak üzüntülü olduğunuzda yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
23. Huzursuz olduğunuzda yada canınız sıkın olduğunda yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
24. Yediğiniz şey lezzetliyse, genelde yediğinizden daha çok yer misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
25. Yediğiniz şey güzel kokuyor ve güzel görünüyorsa, genelde yediğinizden daha çok yer misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
26. Lezzetli bir şey gördüğünüzde yada kokladığınızda onu yemek ister misiniz ?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
27. Eğer yemek için lezzetli bir şeyler varsa doğrudan onu yer misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
28. Eğer bir fırının önünden geçerseniz, lezzetli bir şeyler satın almak ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
29. Eğer bir kafe yada büfenin önünden geçerseniz, lezzetli bir şeyler satın almak ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
30. Başkalarını yerken görürseniz, sizde yemek yemek ister misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
*31. Lezzetli yiyeceklere karşı koyabilir misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
32. Başkalarını yerken gördüğünüzde, genelde yediğinizden daha fazla yer misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>
33. Yemek hazırlarken bir şeyler yemeye meyilli misiniz?	Hiçbir zaman <input type="radio"/>	Nadiren <input type="radio"/>	Bazen <input type="radio"/>	Sık <input type="radio"/>	Çok sık <input type="radio"/>

BÖLÜM 3: 24 SAATLİK BESİN TÜKETİM KAYDI FORMU

FORM DOLDURULURKEN DİKKAT EDİLMESİ GEREKENLER

1. Lütfen arka sayfadaki forma, son 24 saat içinde yediğiniz tüm yiyecek ve içecekleri ölçüleri ile beraber kaydediniz. Örnek olarak, anketi bugün saat 11:00'da doldurmaya başladıysanız, formu 24 saat geriye doğru giderek yani dün saat 11:00'a kadar yediklerinizi yazarak doldurunuz.

2. Formu doldururken öğünün karşısına o öğünde yediklerinizi ve miktarlarını yazınız. O öğünde bir şey yemediyseniz o satırı boş bırakınız. Miktarları doğru kaydetmeye lütfen özen gösteriniz.

3. Yediğiniz bir yiyeceği kayıt ederken o yiyeceği detaylı olarak yazınız (yarım yağlı beyaz peynir, şehriyeli pirinç pilavı gibi)

4. Yediğiniz yiyeceklerin ölçülerini kayıt ederken lütfen aşağıdaki ölçüleri kullanınız.

Yemekler için yemek kaşığı, tatlı kaşığı, çay kaşığı

İçecekler, sıvılar, salata, yoğurt ve çorba için su bardağı, kase, tatlı kaşığı, çay kaşığı

Kuruyemişler ve zeytin için adet

Ekmek için dilim

Peynir için kibrit kutusu

Yumurta için adet

Et ürünleri için yumurta büyüklüğü

Meyveler için tane veya büyüklük ölçülerini kullanınız

Diğer yediklerinizi yukarıdaki ölçülerden herhangi biri ile ifade etmeniz yeterlidir

AŐAĐIDAKİ FORM ÖRNEK OLARAK DOLDURULMUŐ BİR FORMDUR. LÜTFEN İNCELEYİNİZ.

	TÜKETİLEN YİYECEK VE İÇECEKLER	MİKTAR
SABAH	ŐEKERLİ ÇAY TAM YAĐLI BEYAZ PEYNİR YUMURTA ÇAVDAR EKMEĐİ	1 ÇAY BARDAĐI, 2 KÜP ŐEKERİ 1 KİBRİT KUTUSU KADAR 1 ADET 2 DİLİM
KUŐLUK	SÜT MISIR CİPSİ	1 SU BARDAĐI 1 KASE
ÖĐLE	TAVUK ETİ ZEYTİNYAĐLI KEREVİZ ZEYTİNYAĐLI SALATA	2 YUMURTA BÜYÜKLÜĐÜNDE 3 YEMEK KAŐIĐI 1 KASE, 1 TATLI KAŐIĐI YAĐ
İKİNDİ	ELMA	1 ORTA BOY
AKŐAM	ÇORBA BİBER DOLMA YOĐURT TAM BUĐDAY EKMEĐİ	1 KASE 3 ADET 1 KASE 1 DİLİM
GECE	MUZ	1 BÜYÜK BOY

	TÜKETİLEN YİYECEK VE İÇECEKLER	MİKTAR
SABAHA		
KUŞLUK		
ÖGLE		
İKİNDİ		
AKŞAM		
GECE		

A.2. Ethical Approval

T.C.
İSTANBUL MEDİPOL ÜNİVERSİTESİ
GİRİŞİMSEL OLMAYAN KLİNİK ARAŞTIRMALAR ETİK KURULU

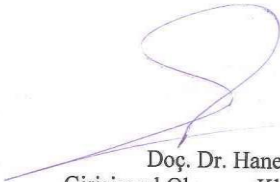
Sayı : 108400987-110
Konu: Etik Kurulu Kararı

03/03/2015

Sayın Zülal KAYIRAN

Üniversitemiz Girişimsel Olmayan Klinik Araştırmalar Etik Kuruluna yapmış olduğunuz “Öğrencilerin Beslenme Davranışları ve Günlük Enerji Alımları Arasındaki İlişki: Bir Uygulama” isimli başvurunuz incelenmiş olup, etik kurulu kararı ekte sunulmuştur.

Bilgilerinize rica ederim.


Doç. Dr. Hanefi ÖZBEK
Girişimsel Olmayan Klinik Araştırmalar
Etik Kurulu Başkanı

EK:
-Karar Formu (2 sayfa)

Tel: (0216)681 51 37
Faks: (0212)531 75 55
E-mail: ilknurfil@medipol.edu.tr

Adres: Kavacık Mah. Ekinciler Cad.No:19,34810
Kavacık/BEYKOZ




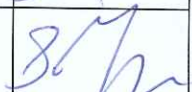
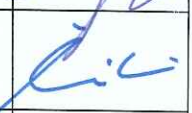
BAŞVURU BİLGİLERİ	ARAŞTIRMANIN AÇIK ADI	Öğrencilerin Beslenme Davranışları ve Günlük Enerji Alımları Arasındaki İlişki: Bir Uygulama			
	KOORDİNATÖR/SORUMLU ARAŞTIRMACI UNVANI/ADI/SOYADI	Zülal KAYIRAN			
	KOORDİNATÖR/SORUMLU ARAŞTIRMACININ UZMANLIK ALANI				
	KOORDİNATÖR/SORUMLU ARAŞTIRMACININ BULUNDUĞU MERKEZ	İstanbul			
	DESTEKLEYİCİ	-			
	ARAŞTIRMAYA KATILAN MERKEZLER	TEK MERKEZ <input checked="" type="checkbox"/>	ÇOK MERKEZLİ <input type="checkbox"/>	ULUSAL <input checked="" type="checkbox"/>	ULUSLARARASI <input type="checkbox"/>

İSTANBUL MEDİPOL ÜNİVERSİTESİ GİRİŞİMSSEL OLMAYAN KLİNİK ARAŞTIRMALAR ETİK KURULU KARAR FORMU

Değerlendirilen Belgeler	Belge Adı	Tarihi	Versiyon Numarası	Dili		
	ARAŞTIRMA PROTOKOLÜ/PLANI	18.02.2015		Türkçe <input checked="" type="checkbox"/>	İngilizce <input type="checkbox"/>	Diğer <input type="checkbox"/>
BİLGİLENDİRİLMİŞ GÖNÜLLÜ OLUR FORMU	18.02.2015		Türkçe <input checked="" type="checkbox"/>	İngilizce <input type="checkbox"/>	Diğer <input type="checkbox"/>	
Karar Bilgileri	Karar No: 99	Tarih: 03.03.2015				
	Yukarıda bilgileri verilen Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu başvuru dosyası ile ilgili belgeler araştırmanın gerekçe, amaç, yaklaşım ve yöntemleri dikkate alınarak incelenmiş ve araştırmanın etik ve bilimsel yönden uygun olduğuna "oybirliği" ile karar verilmiştir.					

İSTANBUL MEDİPOL ÜNİVERSİTESİ GİRİŞİMSSEL OLMAYAN KLİNİK ARAŞTIRMALAR ETİK KURULU

BAŞKANIN UNVANI / ADI / SOYADI Doç. Dr. Hanefi ÖZBEK

Unvanı/Adı/Soyadı	Uzmanlık Alanı	Kurumu	Cinsiyet		Araştırma ile ilişki		Katılım *		İmza
Prof. Dr. Şeref DEMİRAYAK	Eczacılık	İstanbul Medipol Üniversitesi	E <input checked="" type="checkbox"/>	K <input type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input checked="" type="checkbox"/>	H <input type="checkbox"/>	
Prof. Dr. Tangül MÜDOK	Histoloji ve Embriyoloji	İstanbul Medipol Üniversitesi	E <input type="checkbox"/>	K <input checked="" type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	
Doç. Dr. Hanefi ÖZBEK	Farmakoloji	İstanbul Medipol Üniversitesi	E <input checked="" type="checkbox"/>	K <input type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input checked="" type="checkbox"/>	H <input type="checkbox"/>	
Yrd. Doç. Dr. Sibel DOĞAN	Psiko-onkoloji	İstanbul Medipol Üniversitesi	E <input type="checkbox"/>	K <input checked="" type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input checked="" type="checkbox"/>	H <input type="checkbox"/>	
Yrd. Doç. Dr. Hüseyin Emir YÜZBAŞIOĞLU	Protetik Diş Tedavisi	İstanbul Medipol Üniversitesi	E <input checked="" type="checkbox"/>	K <input type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input checked="" type="checkbox"/>	H <input type="checkbox"/>	
Yrd. Doç. Dr. İlknur KESKİN	Histoloji ve Embriyoloji	İstanbul Medipol Üniversitesi	E <input type="checkbox"/>	K <input checked="" type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input checked="" type="checkbox"/>	H <input type="checkbox"/>	
Yrd. Doç. Dr. Muhammed Fatih EVCİMİK	Kulak-Burun Boğaz	Özel Nisa Hastanesi	E <input checked="" type="checkbox"/>	K <input type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	E <input type="checkbox"/>	H <input checked="" type="checkbox"/>	

* :Toplantıda Bulunma

8. CURRICULUM VITAE

Personal Data

Name	Zülal	Surname	Kayıran
Birth Place	Beykoz	Birth Date	1990
Nationality	TC	TC number	
E-mail	Dyt.zulal@gmail.com	Telephone	0535 605 9208

Education

Degree	Department	Foundation	Graduation Year
Master	Nutrition and Dietetics	Yeditepe University	Continue
Licence	Nutrition and Dietetics	Yeditepe University	2013
High School	Science	Şehit Osman Altinkuyu Anatolian High School	2009

Foreign language	Foreign Language Score
English	67 (ÜDS)
German	Anatolian High School

Work Experience

Department	Organization	Dates
Polyclinical Dietician	FSM Madenler Medical Center	10.2015-Continue
Polyclinical Dietician	Sarıgazi Yaşam Medical Center	3.2015-2.2016
Polyclinical Dietician	Sultanbeyli Medical Center	4.2014-2.2015

Computer Skills

Programs	Ability
Microsoft Office	Good
SPSS	Good

