

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

## THE ASSESSMENT OF EATING ATTITUDE AND NIGHT EATING SYNDROME IN TERMS OF TEST ANXIETY IN GASTRONOMY AND CULINARY ARTS STUDENTS OF A FOUNDATION UNIVERSITY

**MASTER THESIS** 

AYSEL ÖZYAPRAK



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Değerlendirilmesi.

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### ONAY

Bu tez Yeditepe Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğinin ilgili maddeleri uyarınca yukarıdaki jüri tarafından uygun görülmüş ve Enstitü Yönetim Kurulu'nun 31/07/2019. tarih ve 2019/13-57... sayılı kararı ile onaylanmıştır.

> Prof. Dr. Bayram YILMAZ Sağlık Bilimleri Enstitüsü Müdürü

> > ii

### **DECLARATION**

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

Aysel Özyaprak

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### TABLE OF CONTENTS

APPROVAL	ii
DECLARATION	iii
ACKNOWLEDGEMENTS	iv
TABLE of CONTENTS	V
LIST OF TABLES	vi
LIST OF SYMBOLS AND ABBREVIATIONS	vii
ABSTRACT	
ÖZET	
1. INTRODUCTION	
2. GENERAL INFORMATION	
2.1. Eating Disorders	3
2.1.1. Factors Affecting Eating Disorder	4
2.1.2. Classification of Eating Disorders	4
2.1.3. DSM-V Feeding and Eating Disorders Diagnostic Criteria and Basic Characteristics	
2.1.4. Research on Eating Attitudes	12
2.2. NIGHT EATING SYNDROME	13
2.2.1. Definition of Night Eating Syndrome and Diagnostic Criteria	13
2.2.2. Night Eating Syndrome Diagnostic Criteria	14
2.2.3. Prevalence of Night Eating Syndrome	15
2.2.4. Clinical Features of Night Eating Syndrome	15
2.2.5. Night Eating Syndrome and Eating Disorders	17
2.2.6. Night Eating Syndrome and Obesity	17
2.2.7. Night Eating Syndrome and Sleep	19
2.2.8. Night Eating Syndrome Treatment	19
2.3. ANXIETY	20
2.3.1. Exam Anxiety	20
3. MATERIALS AND METHODS	26
3.1. Data Collection Tools	26
3.2. Statistical Analysis	27
4. RESULTS	29
5. DISCUSSION	39
6. CONCLUSION	
7. RECOMMENDATIONS	42
8. REFERENCES	43
9 APPENDICES	51

### LIST OF TABLES

Table 1.: Distribution of findings related to the research.	29
<b>Table 2.</b> : The relationship between gender and age and location variable	30
Table 3. : Comparison of scale scores by gender	30
Table 4. : Comparison of scale scores according to age groups by gender         difference	32
Table 5. : Comparison of scale scores according to the location variable by gender         difference	
Table 6. : Comparison of scale scores by gender	35
Table 7.: Comparison of scale scores by gender	36
<b>Table 8.</b> : Analyses of the relationship between the scale scores of females	37
<b>Table 9.</b> : Analyses of the relationship between the scale scores of males	38

### LIST OF SYMBOLS AND ABBREVIATIONS

**DSM-V**: Diagnostic and Statistical Manual of Mental Disorders

**WHO**: World Health Organization

**DSM-IV**: Eating disorders Diagnostic and Statistical Manual of Mental Disorders 4.

Edition

AN: Anorexia Nervosa

BN: Bulimia Nervoza

**UFED**: Other Unspecified Feeding and Eating Disorders

**BED**: Binge Eating Disorder

**ARFID**: Avoidant Restrictive Food Intake Disorder

**BMI**: Body Mass Index

**SRED**: Sleep-Related Eating Disorders

**REBT**: Rational Emotive Behavior Therapy

**EAT-40**: Eating Attitude Test– 40

### **ABSTRACT**

Özyaprak, A. (2019). The Assessment of Eating Attitude and Night Eating Syndrome in Terms of Test Anxiety in Gastronomy and Culinary Arts Students of a Foundation University. Yeditepe University, Institute of Health Sciences, Department of Nutrition and Dietetics, Master Thesis, İstanbul.

The aim of this thesis is investigating the eating attitude, night eating syndrome and exam anxiety of students at examination period in Gastronomy and Culinary Arts of a Foundation University. The results of the statistical data obtained were investigated by information acquisition form. It is assumed that students in the Department of Gastronomy and Culinary Arts have a high level of awareness in these areas as they take courses on nutrition and cuisine. After the final exams, participants' demographic characteristics, eating attitudes, night eating syndromes, and test anxiety were questioned with data forms whose validity and reliability are adapted. The study was conducted with 150 volunteers selected from the students of Yeditepe University Gastronomy and Culinary Arts Department. As a result of this study, it was found that test anxiety was associated with night eating syndrome in females and males, and eating attitude and night eating syndrome were associated for females. There was a relationship between test anxiety and eating attitude in females, but no significant relationship was found in men.

**Keywords**: Eating Attitude, Night Eating Syndrome, Test Anxiety, University Students, Gastronomy and Culinary Arts

### ÖZET

Özyaprak, A. (2019). Bir Vakıf Üniversitesinin Gastronomi ve Mutfak Sanatları Bölümü Öğrencilerinde Yeme Tutumu ile Gece Yeme Sendromunun Sınav Kaygısı Açısından Değerlendirilmesi. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Anabilim Dalı, Master Tezi. İstanbul.

Bu tezin amacı bir vakıf üniversitesinin Gastronomi ve Mutfak Sanatları Bölümü öğrencilerinde sınav dönemindeki yeme bozukluklarının, gece yeme sendromunun ve sınav kaygısının incelenmesidir. Elde edilen istatistik verilerinin sonuçları ve bilgi edinme formu ile araştırılmıştır. Gastronomi ve Mutfak Sanatları Bölümünde okuyan öğrenciler beslenme ve mutfak ile ilgili dersler aldıkları için bu alanlardaki farkındalıklarının yüksek olduğu varsayılmaktadır. Final sınav çıkışlarından sonra katılımcıların demografik özellikleri, yeme tutumları, gece yeme sendromları ve sınav kaygıları geçerlilik ve güvenilirlik çalışması yapılmış veri formları ile sorgulanmıştır. Yeditepe Üniversitesi Gastronomi ve Mutfak Sanatları Bölümünde okumakta olan öğrenciler arasından seçilen 150 gönüllü birey ile araştırma yürütülmüştür. Bu araştırmanın sonucunda, kadınlarda ve erkeklerde sınav kaygısının gece yeme sendromu ile bağlantısı olduğu, kadınlarda yeme tutumu ile gece yeme sendromunun ilişkili olduğu bulunmuştur. Kadınlarda sınav kaygısı ve yeme tutumu arasında ilişki bulunmuştur, erkeklerde ise anlamlı bir ilişki yoktur.

**Anahtar Kelimeler:** Yeme Tutumu, Gece Yeme Sendromu, Sınav Kaygısı, Üniversite Öğrencileri, Gastronomi ve Mutfak Sanatları

### 1. INTRODUCTION

Eating attitude is defined as the tendency of individuals' thoughts, behaviors and feelings about eating and nutrition [1]. The concept of eating disorder attitude is used to describe the process leading to disorder in eating behaviors [2]. Eating disorders are seen in case of eating attitude and body perception disorders, and physical and psychosocial problems are seen as a result of eating disorders.

In individuals with eating disorders; restricted food consumption, feeling fatter and shapeless, desire for intense exercise, laxative use, vomiting or forced vomiting after eating may be seen [3]. In studies conducted in different samples, university students constitute one of the groups at risk for eating disorders [1]. Neuroendocrine changes occurring in the brain, the response of metabolism to these changes, and genetic predisposition are the three main factors that contribute to the development of eating disorders [4].

Night eating syndrome (NES) was first described in 1955. Different criteria are used in the definition of this syndrome in which morning anorexia, evening hyperphagia and insomnia are seen. Information and studies on this disease are increasing [5]. NES is defined as a postponement of food intake that the patient consumes at least 25% of the total daily calorie intake after dinner or during waking up at night. In the last twenty years, many definitions have been proposed with different samples and different variables related to NES. Due to these differences, the definition of NES has been delayed. Diagnostic criteria for NES were recommended in 2010; in 2013, NES was included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) among the mental disorders [6]. In NES, as patients limit their food intake during the day they try to consume food at night to compensate it. Behaviors of patients with NES often causes sleep problems. Emotional and biological factors (hunger-related hormones, stress, sleep) have an effect on NES. Contrary to happiness, consuming food in the evening and at night causes feelings of guilt, shame and tension. There are problems in getting into and maintaining sleep [4].

Test anxiety is a state of intense tension with cognitive, behavioral, or physiological elements that are frequently seen in students who encounter in the assessment and assessment processes or in the examination environment [7]. Test anxiety is a subject that has been researched around the world since the 1940s; however, it has

been studied in Turkey lately. While the rate of exam anxiety among students is 20% in the United States, it was found to be 65-70% in Turkey. Therefore, it is of great importance to support students about exam anxiety in our country [8]. The high expectation of success created by the society and their families poses pressure and increases the anxiety of the students [9].

The aim of this study is to evaluate eating disorders, which are affected from many factors and as a result causes serious health problems, and NES in relation with exam anxiety and to examine the relationship between these factors. In the literature there is no study including these variables together. This study, which will evaluate the eating disorders of university students during final exams and NES in terms of exam anxiety, will guide future studies on this subject. In the study conducted with the students of Yeditepe University Department of Gastronomy and Culinary Arts, demographic characteristics, eating behaviors, NES and exam anxiety of 150 participants who voluntarily accepted to participate in the research were questioned with the data form after the final exams.

### 2. GENERAL INFORMATION

### 2.1. Eating Disorders

The prevalence of eating disorders, which is increasing in young individuals and especially in women, is a public health problem and defined by the World Health Organization (WHO) as an 'important medical condition' requiring 'medical attention' [10].

Eating disorders, which are life-threatening and among chronic diseases, have high morbidity and mortality rates [11]. Eating disorders are mental disorders in which the struggle on the body is also observed. Eating disorders, one of the psychiatric disorders, work in the persistence of the individual in controlling the body weight, and as a result both physical and psycho-social problems are observed [12]. Eating disorders are characterized by behaviors that give extreme importance to thinness and want to have a slim body which is considered providing self-confidence.

The developing eating disorders usually occurs in ages between 10 and 20. Comorbidity with mental illnesses is common. Although the proportion of patients diagnosed with lifelong eating disorder is low, medical treatment is recommended [13]. About 10% of young women develop different kinds of eating disorders [14].

Stress, mood, culture, parental behavior model, media, and concerns about health are associated with eating disorders. In transition from adolescence to adulthood, people are more prone to unhealthy eating habits, drug abuse, and sedentary lifestyle [15].

Cultural changes such as urbanization, westernization, widespread use of television, consumption of ready-to-eat foods, and lack of active living lead to increased rates of eating disorders [16].

In the last 30 years, significant advances have been made in both understanding and treating eating disorders [17]. Sharing information with the family is effective and may make it easier to overcome the eating disorder [14].

Overweight girls have more unusual eating habits. High doses of vitamin C intake was observed in this group. Calcium intake is lower in men with unusual dietary habits than normal [18].

Dissatisfaction with body size and shape is common in eating disorders, and it is related to western outlook and certain iconic figures [19].

Individuals pay extreme attention to their external appearances in order to be slim, to appear fit and to make themselves accepted in the society. As a result, some people develop eating disorders and have serious health problems. Since women tend to try more diet programs than men, the rate of eating disorders seen with women may be higher. It would be beneficial to provide training programs for raising awareness on weight control methods among university students [20].

### 2.1.1. Factors Affecting Eating Disorder

Eating disorders are more common in women due to gender differences, family, social and cultural differences, biological factors, and psychological differences. The effect of families on eating disorder stems from the family structure which prevents children to have freedom of making decisions. The norms and societal pressures of the thinness as socio-cultural elements constitute the eating disorder. It is also claimed that genetic predisposition is effective as biological factor. In terms of psychological elements, it stated that they shape behaviorally since infancy and childhood [21].

### 2.1.2. Classification of Eating Disorders

Eating disorders as cited in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSMIV), are classified as Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Other Unspecified Eating Disorder (UFED). DSM-5 was adopted in 2013 and changes in the diagnostic criteria of AN and Bulimia Nervosa were proposed. In addition, Binge Eating Disorder (BED) and Pica, Rumination and Avoidant/Restrictive Food Intake were added to eating disorders [10].

Disorders which were categorized in two parts as "Eating disorders" and "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" in DSM-IV are examined in one section as "Feeding and Eating Disorders" in DSM-5 [22].

### 2.1.3. DSM-V Feeding and Eating Disorders Diagnostic Criteria and Basic Characteristics

Eating disorders in DSM-5 have 8 categories: Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), Pica Syndrome, Retraction (Restraint) Disorder, Avoidant Disorder, Other Defined Nutrition and Eating Disorder and Unspecified Nutrition and Eating Disorder stop [23]. Anorexia nervosa (AN), Bulimia nervosa (BN), Binge eating disorder, Pica, Rumination disorder, Avoidant/Restrictive

Food Intake Disorder (ARFID), Other Specified Feeding or Eating Disorder (OSFED), Unspecified Feeding and Eating Disorders (UFED) [23].

### 2.1.3.1. Anorexia Nervosa

Anorexia Nervosa (AN) is associated with eating a small amount of food, not wanting to consume food, and weight loss caused by this condition.

The term "AN" means 'loss of appetite' in Greek. There are three main criteria. The severe hunger individual causes, excessive desire for thinness, and / or intense fear of gaining weight at an obsession level are the presence of medical symptoms that result from hunger reaching extreme dimensions [24].

### 2.1.3.1.1. Types

There are two subtypes of AN. These are Restricting and Binge-eating or purging type subtypes. The restricting type is characterized by low calorie intake, with a daily intake of 300 to 700 kcal, usually accompanied by coercive exercise. In the binge-eating type, cramming is composed of foods starting from small amounts to thousands of calories. Vomiting usually occurs with self-inducing, laxative use, or dietary pills or diuretic use [25].

### 2.1.3.1.2. Typical Symptoms of Anorexia Nervosa

People with this disease decide to start a diet at the beginning of the process and are indistinguishable from ordinary individuals who are worried about gaining weight during this initial process. In the diet of these people high-calorie foods such as pastry, borek, bakery products such as cakes, sweets do not take place. Then they start to calculate the calories of all the meals one by one. AN reaches extreme levels until the excesses of the person's situation attract the attention of other people. Though having ideal weight, the idea of further weakening becomes an obsession. In addition to calorie restriction in their diets, they use diuretic and laxative drugs [26].

AN patients engage their brains too much with their body shapes and weight. These people do exercises such as walking, swimming, cycling to prevent weight gain. As a result of weight loss 30% to 50% of patients in approximately in 1.5 years start to overeat [27].

The prevalence of AN is 4% in young people. The age range of 15-19 is the onset age at which AN is seen mostly. In 5% of these people, AN is seen after the age of 20 years. Prevalence in women is 20 times higher than in men. The most prominent feature

of AN is intense fear of obesity. Patients perceive their bodies as more obese than they are and try to get thinner even if they are extremely weak [26]. With the resistance to change in AN patients, fixed thoughts and attitudes make treatment difficult [14].

Patients with AN may have low self-esteem, 'all-or-nothing' thinking, sleep problems, emotional problems, irritability, withdrawal, and communication problems with the opposite sex [26].

### 2.1.3.1.3. Diagnosis

Continuous restriction of energy intake, which leads to low body weight, leads to significantly lower body weight in terms of one's sex, age and development. Even if they are underweight, they behave in a way that will prevent them from gaining weight or becoming overweight or constantly gaining weight. Individual has a negative or distorted body image When evaluating oneself, the person pays ultimate attention to his weight and body shape or he cannot be aware of the seriousness of the low body weight at that time [28].

### 2.1.3.2. Bulimia Nervoza

The term bulimia in Greek means 'ox hunger'. Continuous binge eating episodes, excessive food consumption and lack of control of eating desire accompany eating episodes [24].

In patients with Bulimia Nervosa (BN), fear of obesity that cannot be prevented occurs after eating episodes. The person exhibits attitudes that are harmful to him by the embarrassment created by eating; vomits with or without stimulation, uses laxative diuretics. In these eating episodes, they quickly eat foods with high calories during a short period of time. In these individuals, eating excessively and vomiting is a vicious cycle [29].

The prevalence of BN, which is known to be common in women, is between 1% and 2.8% in women. However, with the addition of sub-threshold conditions that are not clinically diagnostic, rates can be seen 2-5 times higher. BN usually begins at an older age than AN [12].

### 2.1.3.2.1. Types

Purging Type: During the episode of BN, there is regular self-vomiting or misuse of laxative, diuretic, or enema.

Non-Purging Type: During the episode of BN, the individual may engage in other inappropriate compensatory behaviors such as not eating or excessive exercise. However, self-induced vomiting or misuse of laxatives, diuretics or enemas are not observed [12].

Bulimic attacks are often planned with purchasing food or ordering food. Mood swings is very common in BN, and anxiety and tension symptoms are also common. BN patients tend to hide their bulimic behavior and refuse treatment [30].

### 2.1.3.2.2. Clinical Features

Unlike AN in patients with BN, patients may be in the normal weight range or overweight. In eating episodes, they consume nutrients that are forbidden in terms of their regular eating patterns and which have high calories. They can dream of these eating ceremonies during the day and shop before eating episodes. After eating episodes, they feel guilty and regret and criticize themselves. Eating episodes are generally followed by harmful compensatory behaviors [12]. BN can be treated with cognitive behavioral therapy [14].

### 2.1.3.2.3. **Diagnosis**

The main symptoms of BN are binge-eating episodes, vomiting, use of laxatives and diuretics, and excessive occupation with weight and body [12].

Individuals with BN secretly vomit food with high carbohydrate content, which they have consumed excessively, for a certain period of time on a daily basis in eating episodes. The weight of BN patients is usually in the normal range but irregularities in menstruation may occur. The facial appearance of people with BN is typically similar. Patients' cheeks appear round and swollen, and their bodies are weak. The cause of swelling on their faces is the growth of salivary glands. Patients have teeth decay due to self-induced vomiting, and have thicken fingers and skin [26].

BN is usually seen at a slightly older age than AN and the mean age of onset is 18-19. AN is seen from the ages of 16-17 [30].

### 2.1.3.3. Binge Eating Disorder

Binge Eating Disorder (BED) is characterized by individuals losing control of their eating and resulting repeated episodes of excessive eating.

In contrast to BN, people with BED do not act to compensate it with intense exercise and starvation after consuming excessive nutrients. Individuals with BED are

usually slightly obese or obese. Emotions such as embarrassment, guilt and distress may be observed following binge episodes [31].

### 2.1.3.3.1. Diagnosis

In recurrent binge eating processes individuals consume more food than most people can eat in the similar time and condition. It is known that during this period, the control of eating has been abolished, and binge eating periods are accompanied by at least three of the following:

- 1. Eating food much faster than usual.
- 2. Eating until feeling satiety at discomfort level.
- 3. Eating excessively without physical hunger.
- 4. Eating alone because they are ashamed of eating.
- 5. Subsequently, feeling self-disgust, depression or excessive guilt

There is a significant feeling of distress with binge eating. These binge eating behaviors occur at least once a week for an average of three months. In binge eating, there are no recurring inappropriate preventive behaviors as in BN, and binge eating does not occur only during the course of BN or AN [32].

### 2.1.3.3.2. According to DSM-5, The Severity of Binge Eating Disorder

Mild: The average binge eating is 1-3 times a week.

Moderate: The average binge eating is 4-7 times a week.

Severe: The average binge eating is 8-13 times a week.

Extreme: The average binge eating is 14 or more times a week [33].

### 2.1.3.3.3. Differential Diagnosis

The common features of BED and BN are that both have binge eating processes, and patients in these two groups go on a diet. The main difference that separates BED from Bulimia is that during regular binge eating episodes, no measures are taken to eliminate the negative effects of binge eating. In the researches, it was determined that BN patients generally consumed high calorie desserts and BED patients consumed different foods during binge eating episodes. In periods other than binge eating behavior, BN patients tend to diet more strictly than patients with BED. It is stated that diet in BN starts before binge eating behavior, but this situation changes for BED.

It is important to differentiate NES and BED among 'Other Specified Feeding or Eating Disorder (OSFED)' in DSM-5. People with NES wake up more often at night and

also they eat less when they wake up. In BED, cramming is seen not only at night, but also at different time periods of the day. There are fewer concerns about diet and body appearance in patients with NES than in BED. Complaints of morning loss of appetite and inability to sleep until late hours are necessary for the diagnosis of this disease, but not for BED. Excessive food consumption may also be a symptom of major depression. Excessive nutrient consumption processes associated with depression generally do not include binge eating [33].

### **2.1.3.3.4. Epidemiology**

The most common eating disorder in adults is BED. When the distribution of male and female were examined, differences were found. Accordingly, Bulimia and Anorexia are frequently seen in women, and men tend to have uncommon disorders. BED is common in men, although it is 1.75 times more common in women than men [33].

There has been a significant increase in the prevalence of BED [14]. The lifetime prevalence of BED was found to be 1.4% in a recent study [33]. In a study conducted in Turkey, the most common eating disorder in men is BED [34]. The mean age for onset of BED is 25, as determined by the National Institute of Mental Health [31].

### 2.1.3.3.5. Clinical Features

Persons with BED tend to eat alone because they are ashamed of what they eat. They also feel seriously distressed. Individuals with BED may experience disgust or disgust with their body and their appearance, hate themselves, and have bodily concerns and problems in their personal relationships due to their weight or eating behavior [33].

BED can be treated with cognitive behavioral therapy [14].

### 2.1.3.4. Pica

Pica is to eat non-food substances that have been going on regularly for at least one month. They consume materials such as paper, soap, clothing, hair, soil, wool, chalk, powder, paste, paint, metal, clay, ash, coal and gravel. There is no correlation between the consumption of these non-food substances and the developmental level of the individual. There is no cultural basis and socially normal acceptance in pica eating behavior [35].

### 2.1.3.5. Rumination Disorder

Rumination is defined as regurgitating the food consumed frequently, provided that it lasts for at least one month. People may chew, swallow or spit the food they regurgitate. The common regurgitation cannot be associated with bowel, stomach diseases or any other health problem. The rumination disorder does not occur only during the course of AN, BN, BED, or avoidant food intake disorder [35].

### 2.1.3.6. Avoidant / Restrictive Food Intake Disorder

There is no concern about weight and body appearance in Avoidant Restrictive Food Intake Disorder (ARFID), which is an important criterion for AN and BN. ARFID is characterized by regular avoidance of food or limitation of nutrition [35].

Although there is a marked restriction of food consumption and growth retardation in ARFID, there is no fear of gaining weight, so it was decided to be classified separately from AN and BN [22].

### **2.1.3.6.1. Epidemiology**

Since ARFID has been recently described, it is not included in large-scale epidemiological studies [35]. It is approximately 3% in the community sample and 14-23% in the clinical sample [22].

### 2.1.3.6.2. Clinical Features

The history of ARFID patients varies. In general, psychiatric or medical risk factors that affect food intake may be seen, but they do not have body image concerns. These individuals may react to food or chemicals that they find dangerous according to their perception, such as fat, sugar, and chemical additives. Food intake may be restricted to avoid the risk of pain, nausea, suffocation or vomiting [22].

### 2.1.3.6.3. Diagnosis

According to DSM-5, the diagnostic criterion was stated as indifference to food or food consumption, avoidance of sensory properties such as smell and appearance of food, and worry about the disgusting consequences of food consumption.

As a result, at least one or more of the following must be seen:

- Significant weight loss.
- Significant malnutrition.
- Dependence on intravenous feeding or oral supplements.

• Significant problems in psychosocial functioning.

Exclusion criterias:

- This condition cannot be better explained by lack of food or a related cultural situation,
- Eating disorder does not occur only during AN or BN and there is no evidence of dissatisfaction with the individual's weight or shape. Eating disorder cannot be attributed to a concurrent medical condition or better explained by another mental disorder; in such cases, if the eating disorder cannot be explained by its general condition or disorder and requires additional clinical attention, a diagnosis of ARFID may be made [22].

### **2.1.3.6.4.** Key Features

It is the loss of weight and the inability to gain weight due to the inability of the individual to consume enough food.

Behavior related to eating can be seen in infancy or early childhood. For example; parental neglect and abuse have been shown to cause psychopathologies such as depression, anxiety, and personality disorders [35].

### 2.1.3.7. Other Specified Feeding or Eating Disorder

This category is used when the symptom characteristics of feeding and eating disorders are predominant but do not fully meet the diagnostic criteria in the diagnostic list. From a clinical perspective, it causes significant distress in the individual and leads to a decline in functionality in both social and work-related areas.

This category is taken into account when clinicians specify the specific cause of feeding and eating disorders that do not meet the diagnostic criteria. When expressed, it begins with "Other Specified Feeding or Eating Disorder" followed by the specific cause, for example: 'Low Frequency BN'.

Examples that can be given with the expression "Other Specified":

- 1. Atypical Anorexia Nervosa: The diagnostic criteria for AN are met, but despite the noticeable overweight, the person's weight is within or beyond normal limits.
- 2. BN (low frequency and / or limited duration): All diagnostic criteria of BN are met, but binge food consumption and inappropriate compensatory behaviors are less than once a week and / or continues less than three months.

- 3. BED (low frequency and / or limited duration): BED's diagnostic criteria are met, but BED is less than once a week and / or less than three months.
- 4. Purging Disorder: It is a repetitive vomiting behavior but occurs without binge eating to affect body weight or body shape.
- 5. Night Eating Syndrome: Individual wakes up or after dinner consumes a large amount of food occurs and it recurs. The person is aware that he / she is eating and remembers eating. NES cannot be better explained by changes in one's sleep-wake cycle or by external influences (local, community). NES clearly causes stress and decreases functionality.

### 2.1.3.8. Unspecified Feeding and Eating Disorder

The other unspecified category of feeding and eating disorders is used when, for example, in the emergency room, where clinicians do not wish to determine the specific reason for failing to meet the diagnostic criteria for any of the feeding and eating disorders and there is insufficient information to make a more specific diagnosis [35].

### 2.1.4. Research on Eating Attitudes

In a study conducted with nursing students in Turkey, a relationship was found between obesity and eating attitude. The class, age, and financial status of the participants affect the obsessive-compulsive symptoms of the students. Obsessive-compulsive symptoms are observed more frequently as eating behavior deteriorates [36].

It should be considered that as the severity of depression increases in depressed and obese individuals, there may be deterioration in eating attitudes and the possibility of having more impulsivity in these people because the severity of depression affects impulsivity more than body mass index (BMI) [37].

In a study conducted with high school students, a relationship was found between body perception and eating attitude. Since the students had low body perception, they tried different methods for weight loss by being influenced from non-experts. It has been suggested by researchers to provide them with the right information to ensure a healthy and balanced diet in their lives [38].

The relationship between eating attitude and self-esteem level was determined. There was also a significant relationship between family behavior and BMI and self-esteem. Feeding of adolescents should be given importance as malnutrition affects the

health and success of the participants negatively. Therefore, it is important and recommended that adolescents gain healthy eating habits [39].

As a result of a study that examined the relationship between eating attitude and behavioral disorders, depression, body weight in people who received diet via internet, the average BMI of the people who wanted an online diet program was in the mild fat class. Women are more prone to depression and eating disorders than men. In addition, a correlation was found between BMI and depression, and obesity was thought to adversely affect the psychological status of individuals [40].

Eating attitudes and eating behaviors have a significant and positive effect on mood. It has been reported that individuals' eating routines with their families at home, mother-father marriage status, frequent diets and eating junk food affect mood disorder symptoms [41].

The most important factors associated with abnormal eating behavior are distorted body image, fewer hours of sleep, irregular eating habits, smoking and more exercise [42].

In a study conducted in our country, it was stated that 6.3% of males and 33.6% of females had a diet, and 18.3% of males and 43% of females wanted to be thinner [43].

### 2.2. NIGHT EATING SYNDROME

### 2.2.1. Definition of Night Eating Syndrome and Diagnostic Criteria

Hunger is a biological impulse related to being awake. Homeostatic and circadian rhythms control the pattern between hunger and sleep. In humans, circadian rhythms of sleeping and eating are often interrelated. Therefore, energy homeostasis; although food is consumed at night, can be maintained with changes required for glucose regulation and appetite regulation [44].

According to Piergiuseppe (2011), Stunkard et al. first defined NES in 1995. The first identification criteria include morning anorexia, evening hyperphagia, insomnia, low mood at night and emotional distress. The diagnostic criteria for NES have been changed many times. People with NES feel irritable, sad and worried during night sleep times. In 1996, it was proposed that the NES diagnostic criteria should be taken as 50% of daily calories after 7 pm. Waking up at night that caused food intake were included in the

diagnostic criteria of NES in 1999. Between 1955 and 1991, only nine studies were published. 7 of them were case reports, but 75 research articles have been published in the last 10 years. However, NES was not included in the Diagnostic and Statistical Manual of Mental Disorders (DSM). This is mainly due to the lack of agreement on a clear definition of the syndrome [45].

The First International Night Eating Symposium was held on April 26, 2008 in Minneapolis. The experts working in this field gathered and agreed on the diagnostic criteria developed for NES [5].

### 2.2.2. Night Eating Syndrome Diagnostic Criteria

NES criteria defined by Stunkard et al. are more than 25% of daily calorie intake after dinner, morning anorexia, difficulty in transition to sleep and feeling worse at night. Birkevendt et al. (1999) defined NES criteria as of more than 25% of daily calorie intake after dinner, more than 50% of energy intake, morning anorexia, waking up from night's sleep (at least 1 time), snacks after waking up and these symptoms lasting for at least 3 months and the criteria for BED and BN are not met.

The International Night Eating Symposium Diagnostic Criteria (2010), on the other hand, has been reported as one or both of the following, showing a significant increase in daily eating patterns in the evenings and / or nights.

- 1. Consumption of at least 25% of food consumption after dinner
- 2. Waking up and eating at least two nights in a week

Apart from these, being aware and remembering of evening and night eating episodes and at least 3 of the following findings accompany the clinic

- 1. Reduced eating desire in the morning and / or 4 or more non-breakfast days per week
  - 2. Having a strong desire to eat between onset of sleep and dinner and / or at night
- 3. Having insomnia to initiate and / or maintain sleep at least 4 or more times per week
  - 4. Belief in the necessity of eating to fall asleep or go back to sleep
  - 5. Emotional state is often depressive or worsens in the evening

The disorder leads to significant distress and / or reduces functionality, the presence of eating disorder lasts at least 3 months, and this disorder is not secondary to addiction, abuse, medical illness, drug use or other psychiatric disorders [46].

The diagnostic criteria of NES according to DSM-V are:

- 1- Night eating episodes and eating after dinner are seen as recurring.
- 2- Awareness of these eating episodes
- 3- Significant anguish or distortion caused by disorder

Exclusion criterias: BED, other mental disorders, medical conditions, or medications that may affect feeding habits [6].

### 2.2.3. Prevalence of Night Eating Syndrome

In a study conducted in the USA, the prevalence of NES was found to be 1.5% in the randomly selected research sample from the general population and 27% in the patient sample who would undergo obesity surgery. The prevalence of NES was higher in the patient sample. The presence of the syndrome in both samples is not weight-dependent [47].

The prevalence of NES in obesity patients receiving weight loss treatment is between 6% and 14% and between 8% and 42% in gastric surgery patients. In obesity patients who do not respond to treatment, this prevalence is between 51% and 64%. The association of NES and obesity was confirmed by observation; in addition, 57.1% of the participants had night-time eating and overweight, while outpatient psychiatric patients and those with night-eating behavior were found to be 28.6% [48].

### 2.2.4. Clinical Features of Night Eating Syndrome

According to studies conducted with individuals diagnosed with NES, depressive mood and stress are associated with NES. In a study that included people with obesity, it was found that depression scores of individuals with NES were higher than other obesity patients and self-esteem scores were lower than the other group. In another study, it was stated that the depressive mood of NES patients increased significantly in the evening or at night. It has been reported that depressive mood in patients with NES is typically associated with a lack of control in eating behavior at night, with feelings of shame and guilt [49].

When weight changes after eating at night were examined, no correlation was found between the weight change after NES and eating at night in males. In women, the relationship between obesity, night eating and weight gain was found to be modifying. The results of the analysis indicated that obese women with NES gain more weight than obese women without NES [50].

Depression scores were found to be high in participants with night eating syndrome, but the level of depression found was not excessively high. In addition, self-esteem scores of those who eat at night were significantly lower than those who did not eat at night. Those who eat at night feel less hunger during the day and before the day's test meal a feeling of high satiety is also detected, and they consume more food late in the day, which is not seen in normal individuals. Less weight loss has been observed in individuals with night eating syndrome despite the same diet as compared to normal individuals [51].

Clinical assessment of insomnia in the initial NES has been reported in two ways of having difficulty falling asleep or consuming night meals to initiate sleep [52]. In the diagnosis of NES, all of these problems should continue for at least 3 months and the state of eating at night should not develop due to substance, drug addiction or any psychiatric disorder, health problem or treatment [5].

Individuals with NES consume much more of their daily calorie consumption after dinner and by waking up at night [53]. There are delays in the energy intake of people with NES and as a result suppression of eating in the morning hours, their food intake increases at night. In these individuals, 2-6 hours of delays between food consumption and sleep rhythms are observed [44]. Food selection of individuals with NES generally consists of breads, sandwiches and desserts [53]. The nutrients consumed by these people at night are composed of 70% carbohydrates. In daytime, this rate is specified as 47%. The carbohydrate / protein ratio of snacks in the evening is indicated as 7/1, which is quite high. The feeding form with high carbohydrate rate facilitates tryptophan pass into the human brain and transform into serotonin. Serotonin also facilitates sleep onset [44].

NES that starts in early adulthood can be seen from the end of the 10s to the end of the 20s. In terms of clinical features, NES tends to occur in sleep without Rem sleep. It is linked to a low sleep effect. NES usually occurs in early adulthood. It is characterized by periods of remission and increased severity. It tends to occur during periods of stress. It tends to be mostly in families. Its prevalence increases with BMI. There is no clear difference in gender distribution. There is no significant difference in race distribution. The most common comorbid conditions are eating disorders, obesity, depression, insomnia, substance abuse and anxiety. It may have effects on weight and diabetes treatment [53].

In order to distinguish between NES and sleep-related eating disorders, conscious consumption of night-time meals and whether they are remembered is examined [54].

People with NES have a 4.9-fold higher incidence of NES in first-degree relatives compared with the control group. The prevalence of NES varies according to the level of weight anxiety. As many weight loss therapies involve a large number of women, NES has been found to affect women more as a result, but NES is seen in both men and women, but the two gender criteria are comparable. According to Wal (2012), close proportions of men and women confirmed that they woke up for food. The prevalence of NES in different races is unknown. Further research is needed to determine the prevalence of NES between sex and race [53].

### 2.2.5. Night Eating Syndrome and Eating Disorders

It is more common in patients with eating disorders such as NES, BED, and Bulimia. Moreover, individuals with NES are more likely to have other eating disorders. The estimated prevalence of NES in people with eating disorders is between 5% and 44%. Comprehensive research has been conducted to evaluate the relationship between BED and NES. NES was found in 15% to 44% of BED patients. Psychopathology, weight and eating habits of BED and NES and coexisting individuals were found to be more problematic than those with only NES or BED alone [6].

In order to distinguish between NES and BED, it should be taken into consideration that people with NES have more frequent waking up at night compared to people with BED and that the amount of food they consume when they wake up is less. Binge eating behaviors are not seen only at night in BED. Ideas about diet and body appearance are more common in patients with BED than in NES patients [33].

The number of studies examining the relationship between NES, AN and BN is low and the prevalence of NES in patients with BN is between 9% and 47%. NES has a time order (night) and BED does not. Moreover, food consumption is higher in BED than in NES [6]. Eating addiction is also associated with depressive mood like NES. NES and eating addiction are associated with weight gain and unhappiness [55].

### 2.2.6. Night Eating Syndrome and Obesity

Obesity is associated with excessive food intake in the evening [56]. The relationship between NES and obesity is controversial and some epidemiological studies have not found a relationship between these two conditions. The psychopathology of the

relationship between NES and obesity is not yet fully defined. Several studies have found a positive relationship between NES, life stress, depression and low mood in obesity patients. Obesity patients receiving weight loss treatment were divided into two as patients with and without NES, and those with NES had higher rates of depression and lower self-confidence. The prevalence of NES in diabetes was reported to be 9.7% and participants were more likely to be obese in those with night eating symptoms. In obese individuals with type 2 diabetes, NES was found to be more frequent than in BED, with a percentage of 3.8 and 1.4, respectively [48]. Two subtypes of eating disorders affect obesity. These are Night Eating and BED [57].

According to Orhan and Tuncel (2009), in three studies in this area, it was stated that eating at night can be a factor that may cause obesity. Night-eating patients with ideal weight are younger than those who are obese. In addition, it was reported that patients with obesity and NES had night meal habit before the diagnosis of obesity. In a similar way it stated that non-obese night eating patients are younger than obese ones. In addition, the majority of people with NES are reported to have night eating before the beginning of obesity [44].

NES showed a strong positive relationship with obesity, and a positive correlation was found between BMI, NES and male individuals. Increased and high psychological sadness was seen only in the group consuming night snacks [58].

There are also studies indicating that obesity level is a risk for NES. There has not been a relationship between the amount of food consumed after 17 o'clock and the weight of the same people in 10 years. In a community sample of 2111 participants, it was stated that waking up to eating at night was unrelated to weight changes before 5 years and after 6 years, except for women with obesity. It has been suggested that eating at night can only cause weight gain in overweight women. Most people with NES are not overweight and do not consider eating at night as a problem. In addition, most NES patients stated that they were not overweight and did not consider eating as a problem at night [44].

Night eating severity is associated with high BMI in middle-aged individuals, and not in young adults. NES is associated with poor glycemic control as a result of nutritional choices involving high carbohydrates and excess fat at night [59]. Obesity is not included in mental illness in DSM-5 [35]. Physical health problems and psychosocial problems in children with obesity and eating disorders make children worse [60].

### 2.2.7. Night Eating Syndrome and Sleep

According to Orhan and Tuncel (2009), Schenck et al.(1991) have reported that daytime eating disorders are different from Sleep Related Eating Disorders (SRED). SRED is defined as recurrent involuntary eating or drinking episodes during sleep [44].

The fact that eating episodes can be seen especially during the deep sleep phase, the patient usually does not remember the event and the habit of eating non-edible foods such as fat and cold soup are the main features that differentiate sleep-related eating disorder from NES [61].

### 2.2.8. Night Eating Syndrome Treatment

Psychological interventions, improving eating, relaxation strategies, sleep hygiene, physical activity and social support may be beneficial in the treatment of NES [53]. Several treatment approaches have been tested for the treatment of NES. Psychotherapy has been found to be effective in reducing night-eating syndromes [59]. Studies state that central nervous system serotonin modulation may be an effective treatment modality in the treatment of NES [44].

Pharmacotherapy is the treatment option that attracts the most attention of researchers in the treatment of NES [54]. When pharmacological treatments are examined, it has been suggested that serotonin system plays a role in the components of NES such as eating order, sleep and mood. Decrease in serotonin levels leads to circadian rhythm disturbances and decreases satiety and increases the risk of evening hyperphagia and night food intake. Progressive muscle relaxation has also been studied to find alternative therapies for NES. Progressive muscle relaxation has been observed to reduce stress associated with NES. When the amount of food consumed after dinner is compared, the greatest decrease in symptoms is in the education and progressive muscle relaxation group [59].

Light therapy is recommended for getting thinner for obese patients. As a result of this therapy, there was a decrease in night eating symptoms and a decrease in depression scores [44]. Phototherapy or light therapy is another alternative for the treatment of NES. Phototherapy was found to increase postsynaptic serotonin access. Light therapy has been found to significantly reduce symptoms in individuals with NES [59].

### **2.3. ANXIETY**

It is a basic human emotion that helps individuals to cope with dangers and adapt. It is also a versatile emotional state. It consist of scientific elements, subjective emotions, physiological symptoms and behaviors [62].

### 2.3.1. Exam Anxiety

### 2.3.1.1. Definition of Test Anxiety

Various definitions of test anxiety have been made in studies conducted by different researchers. Test anxiety occurs before and after the tests, and it includes negative thoughts, feelings and behaviors related to possible failure at the end of the test. Test anxiety is the fear or anxiety caused by being tested [63].

Test anxiety, which is seen at the time of evaluation, is the emotional state that has behavioral, affective and cognitive features that cause the people to be nervous, and prevents them from showing they real performance [64]. Test anxiety begins before the test and is most commonly seen among students [65].

Test anxiety is a complex and situation-specific physiological and emotional response. If the test anxiety threshold is low in students, they are affected from test anxiety enough to feel sick [66].

The effect of anxiety in the learning process is complex and it is stated that low-level anxiety will facilitate learning. Anxiety is common in education. Test anxiety occurs in schools in childhood and this is most commonly seen in exams [67].

### 2.3.1.2. Factors Affecting Test Anxiety

According to the book "Life is a Test, Test Anxiety and Motivation", there are many factors that cause test anxiety in individuals and the most important ones are:

### 1. Family

Some parents reflect concerns about the future of their children with various discourses and actions. Instead of consciously or unconsciously criticizing their children, comparing them with others and expressing the opportunities offered to him many times, trying to discover the interests and abilities of children in a different way is the right action to be taken.

### 2. Teacher

Teachers may be concerned that their students can achieve better living conditions with the best achievements as a result of their efforts depending on the socio-economic conditions of the school or environment where they work.

### 3. Friends

The circle of friends is very important for the child's life. It is seen that children who do not have friends have both psychological and social problems. If the child's desire to compete with friends is intrinsic, the child's self-recognition and acceptance process can accompany by a higher probability of positive gains.

### 4. Environment

The environment is very important for the child. People in the environment can cause our professional anxiety to increase or, on the contrary, reset. That is why the environment we live in plays a decisive role.

In addition to the above-mentioned factors, sudden changes in the examination system made by the Council of Higher Education and the Ministry of National Education have also been reported to be a serious factor causing anxiety [68].

### 2.3.1.3. Causes of Test Anxiety

According to Güler and Çakır (2013), Albert Ellis, who developed Rational Emotive Behavior Therapy (REBT), stated that people have developed ideas and thoughts about the world from the moment they are born. These ideas and opinions developed are divided into rational and irrational beliefs. Rational beliefs are to survive, to get away from pain and to be happy in a reasonable way. Irrational beliefs are disruptive views and thoughts that prevent individuals from achieving their basic goals. A significant positive correlation was found between test anxiety and irrational beliefs [69].

### **2.3.1.3.1.** Types of Anxiety

Duysak (2018) states that Spielberger explained anxiety under two headings as "state anxiety" and "trait anxiety".

a. State Anxiety: It is subjective fear caused by stress. Physiologically, there are involuntary turning pale, depressions, flushing, sweating and tremor in the autonomic nervous system. These symptoms are signs of discomfort and tension in the person. When the stress is felt intensely, the state anxiety level increases and the state anxiety level decreases with decreasing stress. The main characteristics of state anxiety are:

To perceive the current situation as dangerous. Therefore, an environment occurs where the individual is disturbed. There is a state of consciousness in the state anxiety. In addition, physiological changes in the nervous system can be detected. Exam anxiety, which poses a serious problem for students and prevents success, is one of the state anxiety types.

b. Trait Anxiety: It is often caused by people who are prone to anxiety and perceive every situation as stressful. Even if this situation is positive, negative and neutral, anxiety is seen. According to Spielberger, the main characteristics of trait anxiety are consistent with state anxiety and are also stable. According to the personality structure of the individual, the extent and length of severity in perception of anxiety varies. Susceptibility to anxiety affects the level of trait anxiety. Trait anxiety levels differ from one person to another, with perceived threatening events varying from person to person [70].

Trait anxiety is associated with the individual's own personality. State anxiety is the expectation of a negative result that a person feels in the face of any personal situation. The expectation of negative results that students felt in exams is an example of state anxiety. In researches, it was found that the test anxiety was higher in females and lower in males. There are two psychological components of exam anxiety: delusion and affectivity. These dimensions are conceptualized as situational and specific features. The dimension of the delusion constitutes the cognitive aspect of the test anxiety. The affective dimension is that the person is not aware of the bodily arousal and tension. If the individual does not feel ready during the evaluation process, lack of confidence in his / her competence, anxious, tense, sad, and depressive feelings are present there is test anxiety [71].

Kapıkıran (2002) also mentioned the works of Mandler and Sarason. They stated that any exam raises the impulse of learned anxiety. As a result, reactions such as decreased self-esteem, feelings of inadequacy, helplessness, expectation of punishment, attempts to leave the situation and increased somatic symptoms are observed. They are thought to have a negative impact on the performance and educational expectations of individuals [71].

Inadequate rest, inadequate physical activity, irregular nutrition, and lack of time management, which are related to lifestyles, were identified by different researchers as factors causing test anxiety. Lack of strategic work, working the night before the exam, not revising the notes, inadequate work are the main factors that cause test anxiety [72].

### 2.3.1.4. Test Anxiety Symptoms

Various physiological and mental symptoms occur in the students who feel intense test anxiety. Headache, nausea in the stomach, diarrhea, acceleration of pulse rate, feeling restless, sweating in the palm, vomiting, fainting, constipation, chill, decreased reasoning, carelessness are observed symptoms [73].

### 2.3.1.5. Test Anxiety Models

According to Kurt (2017), there are different models that explain the reasons for exam anxiety. These are:

- 1. Incomplete Learning Model: According to this model, inefficient studying habits were determined among students with high test anxiety. For this reason, problems in the learning process of students with high exam anxiety were identified. In addition, students who thought that they could not get prepared adequately for the exam were found to have high anxiety.
- 2. Social Learning Model: Self-sufficiency consists of expectations and motivations towards the goal.
- 3. Double Damage Model: Exam anxiety is as important in this model as inadequate working skills. Inadequate work and non-targeted internal conversations are unrealistic evaluations. This model is defined as a structure with interaction against test anxiety.
- 4. Cognitive Attention Model: It includes negative thoughts and underlying negative cognitions that the individual repeats himself regularly and insistently [73].

### 2.3.1.6. Test Anxiety Performance Relationship

According to Özcan (2011), Wine explains the connection between performance and test anxiety with attention model. Accordingly, at the time of an exam, individuals with high test anxiety spend most of their attention on reactions and delusions which are not related to the exam. They devote very little attention to the exam. This reduces performance [74].

Individuals with normal anxiety levels see exams as an opportunity to test their success, whereas those with more anxiety levels perceive exams as a threat and have negative attitudes towards the exam [75].

In terms of academic achievement, test anxiety was reported to be negatively effective [62]. Chapell et al. (2005) found a relationship between academic achievement and exam anxiety of undergraduate students. The general academic average of students with low test anxiety was found to be higher, whereas the academic average was lower in those with high test anxiety [76].

### 2.3.1.7. Coping with Test Anxiety

Methods of coping with exam anxiety consist of behavioral and thought strategies, including the ability of students to cope with anxiety and stress seen before and during the exam, and to control and eliminate the factors that cause anxiety [77].

In today's competitive world, students face various academic problems such as exam stress, anxiety during exams, problems with homework, expectations for academic achievement, and inability to understand lessons [78].

### 2.3.1.8. The Relationship Between Test Anxiety and Nutrition

In a study conducted with senior health care students in Athens, it was found that these students generally adopted a healthy lifestyle, but this situation was negatively affected during the examination period and consumption of saturated and high calorie foods increased especially among females. Most of the participants were nonsmokers, had normal BMI and healthy eating habits. Diet scores were positively correlated with anxiety. It was found that male students with high anxiety consumed sweets more frequently at breakfast and females consumed less salty supplementary foods [79].

Male and female students tend to quit physical activity and consume unhealthy foods and sugary drinks with low nutritional value in case of exam anxiety. In addition to this change, it was seen that male students skipped breakfast. As a result of these dietary changes, an increase in body weight was observed in male and female students [80].

In a study conducted with university students studying nutrition and dietetics in Brazil, it was stated that processed foods and foods with high glycemic index were consumed because it was prepared quickly and saved time for the exam. In the case of anxiety, it has been reported that consumption of coffee, tea and fat increased to perform academic activities and to keep the body active [81].

In the study conducted on depressive and non-depressive individuals, a significant difference was observed in carbohydrate intake depending on depression score. It was

determined that depressive group consumed 98 grams more carbohydrate than normal group. 77% of this increase is due to the increase in sucrose consumption. It has been found that carbohydrate consumption increases more in depressed women [82].

Excessive stress seen in the final periods of colleges and universities may cause students to choose energy drinks, coffee and unhealthy diet. At this time, conscious efforts should be made to promote healthy foods [83].

In a study conducted with students at a university in Australia, 52.9% of participants were stressed at various levels and the rate of stress in females was significantly higher than that of males. Stressed participants consume unhealthy foods containing high fat and sugar [84].

### 3. MATERIALS AND METHODS

This study was conducted to investigate the eating disorders, NES and test anxiety of Yeditepe University Gastronomy and Culinary Arts students during the final exam and to determine the interrelated states of these variables. The study was conducted between December 2018 - February 2019.

Since the students of the Department of Gastronomy and Culinary Arts took courses on nutrition and cuisine, the research was conducted on these students. Eating attitudes during the exam period and night eating syndromes were examined in terms of exam anxiety levels.

The subjects included in this research are the students of Yeditepe University Gastronomy and Culinary Arts department who have come to the final exams and have accepted to participate in the study voluntarily.

The study was approved by the Ethics Committee of Yeditepe University (KAEK Decision No: 956, Date: 14.02.2019). The consent form was signed by the volunteer participants. This is a cross-sectional study of key words about the parameters investigated which includes the publications of the last 10 years. Statistical analyzes were performed using SPSS (IBM SPSS Statistics 24).

### 3.1. Data Collection Tools

The data of the study was collected between December 2018 and February 2019 by the Demographic Information Form, Eating Attitude Test - 40 (EAT-40), Night Eating Questionnaire (NEQ) and Westside Exam Anxiety Scale.

- 1. Demographic Information Form
- 2. Eating Attitude Test 40 (EAT-40)

The Eating Attitude Test (EAT-40) is used to survey eating disorders [85]. EAT-40 can be applied to individuals older than 11 years, and was developed by Garner and Garfinkel (1979) to identify adolescents with eating disorders and to survey AN symptoms [86]. In our country, the validity of the scale was adapted to Turkish by reliable study and by Savaşır and Erol (1989) [87].

EAT has 6-multiple choice options which are Always, Very often, Often, Sometimes, Rarely, Never. It is answered as Likert type and based on self-report. 30 points is the cut-off point of this scale. In the calculation of the scale, for questions 1, 18, 19, 23, 27, 39 sometimes is given 1 point, rarely is 2 points and never is 3 points and other options are 0 points. For the other items of the scale, always is given 3 points, very often

is 2 points, often is 1 point and other options is 0 point. As a result, individual item scores are added and the total score of the scale is calculated. If the total score is 30 the result is "predisposed to eating behavior disorder", which poses a risk for eating disorder [88].

#### 3. Night Eating Questionnaire (NEQ)

With this scale, the behavior of waking up from sleep at night, morning anorexia, evening hyperphagia, initial insomnia and mood disorder were tried to be determined. The Night Eating Questionnaire consists of 14 questions. The first 9 questions are answered by all students. Questions 10-12 are for the ones wake up at night, questions 13-14 are filled by students who have night snacks. Items except 7 in the questionnaire are scored between 0-4 with a five-point Likert-type measurement. In the 7th item of the questionnaire, the change of mood during the day was questioned and those who did not change during the day scored 0 points. Items 1, 4, and 14 are scored opposite. Item 13 questioning the awareness of midnight snacks, was asked to differentiate NES from sleep-related eating disorder but was not included in the scoring. The score from this scale varies between 0 and 52 [89]. Atasoy et al. (2014) found the alpha coefficient to be 0.69 as a result of the reliability of Turkish validity [90].

#### 4. Westside Test Anxiety Scale

Westside Exam Anxiety Scale was developed by Driscoll. The Westside Test Anxiety Scale is used to measure the anxiety levels of the students. The Westside Exam Anxiety Scale is a 5-point Likert-type rating which consists of 11 items that are marked as (5) Always, (4) Usually, (3) Sometimes, (2) Rarely, and (1) Never. The Westside Test Anxiety Scale had the highest score of 55 and the lowest score of 11. If the score is low, the test anxiety level is low, and if the score is high, the student's test anxiety level is high [91]. The scale was adapted to Turkish by Totan and Yavuz (2009). The Westside Test Anxiety Scale was also validated [92].

#### 3.2. Statistical Analysis

Statistical analyzes were performed using SPSS (IBM SPSS Statistics 24). Frequency tables and descriptive statistics were used to interpret the findings.

In the data with normal distribution, Independent Sample-t "test (t-table value) was used for comparison of two groups, and "ANOVA" test (F-table value) statistics were used to compare three or more groups with the measured values.

In the non-normal distribution of data, the "Mann-Whitney U" test (Z-table value) was used to compare the two groups and "Kruskal-Wallis H" ( $\chi^2$ -table value) test statistics were used to compare three or more groups with the measured values. "Bonferroni" correction was used for binary comparisons of variables with significant differences.

For investigation of the relationship between two qualitative variables Pearson-  $\chi^2$  cross tables were used.

"Pearson" was used to investigate the relationships between two quantitative variables with normal distribution, and "Spearman" correlation coefficient was used in relationships where at least one of the two quantitative variables did not show normal distribution.

#### 4. RESULTS

This study was conducted with the students of Gastronomy and Culinary Arts Department of a foundation university. 150 students participated in the study. When missing and incorrectly filled forms were omitted, 123 information acquisition forms were included. The participants were 52.8% females and 47.2% males. The majority of the participants (49.6%) live with their families when the place they live is considered. The number of students staying in a student house is 27 and the number of students staying in the dormitory is 28. When analyzed in terms of age groups, most of the participants were between 21-23 as expected because they were students. In addition, the number of participants aged 20 and under is more than the number of participants aged 24 and over.

As shown in Table 1, it was found that 61 students were in the 21-23 age group and the mean age of the students was  $21.98 \pm 3.26$  (years). 65 (52.8%) of the students were female and 58 (47.2%) were male. It was determined that 68 students (55.3%) lived with their families, 28 (22.7%) stayed in dormitories and 27 (22.0%) stayed in student house.

**Table 1.** Distribution of research findings

Variable (N. 122)		0/
Variable (N=123)	n	%
<b>Age</b> [ $\bar{X} \pm S.S. \rightarrow 21,98 \pm 3,26 \text{ (yıl)}$ ]		
20 and below	39	31,7
21-23 age	61	49,6
24 age and above	23	18,7
Gender		
Female	65	52,8
Male	58	47,2
Living place		
With family	68	55,3
Student house	27	22,0
Dormitory	28	22,7

As it is seen in Table 2, there is no statistically significant difference between gender and age group and location variable (p>0.05).

Table 2. Examination of the relationship between gender and age and location variable

Variable (N=123)	Female	e (n=65)	Male	(n=58)	Statistical
	n	%	n	%	Analysis* Probability
Age Groups					
20 and below	21	32,4	18	31,0	$\chi^2 = 2,255$
21-23	35	53,8	26	44,8	p=0,324
24 and above	9	13,8	14	24,2	_
Living Place					
With family	35	53,8	33	56,9	$\chi^2 = 0.137$
Student house	15	23,1	12	20,7	p=0.934
Dormitory	15	23,1	13	22,4	

<sup>\*</sup> Investigation of the relationship between two qualitative variables Pearson-  $\chi^2$  cross tables were used.

As seen in Table 3, there was no statistically significant difference in terms of gender, eating attitude test, night eating questionnaire total score, night eating, evening hyperphagia, morning loss of appetite, mood and sleep disorder subscales, and Westside test anxiety scale scores (p > 0.05).

Table 3. Comparison of scale scores by gender

Variable (N=123)	Female	(n=65)	Male (	n=58)	Statistical
	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median	Analysis*
		[IQR]		[IQR]	Probability
<b>Eating Attitude</b>	$17,85\pm12,15$	14,0 [11,5]	16,40±13,75	12,5 [9,5]	Z=-1,307
Test					p=0,191
Night eating	$4,08\pm3,89$	3,0 [4,5]	$4,81\pm4,46$	3,0 [6,0]	Z=-0.705
					p=0,481
Evening	$3,77\pm1,54$	4,0 [3,0]	$4,02\pm1,65$	4,0 [2,0]	Z=-0,596
hyperphagia					p=0,551
Morning loss of	$4,98\pm2,51$	5,0 [4,0]	$4,29\pm2,02$	4,0 [3,0]	Z=-1,829
appetite					p=0.067
Mood and sleep	$3,88\pm1,94$	4,0 [3,0]	$3,31\pm2,05$	3,0 [2,0]	Z=-1,763
disorder					p=0.078
Night eating	$16,71\pm6,50$	17,0 [9,0]	$16,43\pm6,88$	16,0 [10,0]	t=0,229
questionnaire					p=0,819
Westside test	$34,74\pm11,18$	34,0 [15,5]	$33,90\pm9,37$	34,0 [13,5]	Z=-0,152
anxiety scale					p=0,879

<sup>\*</sup> In the data with normal distribution, "Independent Sample-t "test (t-table value) was used for comparison of two groups, In the non-normal distribution of data, the "Mann-Whitney U" test (Z-table value) was used to compare the two groups

As seen in Table 4, there was no statistically significant difference in terms of eating attitude test, night eating questionnaire total score, night eating, evening hyperphagia, mood and sleep disorder subscales and Westside test anxiety scale scores of women according to age classes (p > 0.05).

A statistically significant difference was found in terms of the morning loss of appetite scores according to age classes of women in night eating questionnaire (F = 7.256; p=0,001). As a result of Tukey paired comparisons made by considering homogeneity of variances in order to determine from which group the significant difference originates it was found that there was statistically significant difference between those in the 21-23 age group and  $\leq$ 20 and  $\geq$ 24-year-olds. In the 21-23 age group, the night eating questionnaire scores of morning anorexia were statistically significantly lower than those who were  $\leq$ 20 and  $\geq$ 24 years old.

There was no statistically significant difference of males in terms of the scores of eating attitude test, night eating questionnaire total score, night eating, evening hyperphagia, morning loss of appetite, mood and sleep disorder subscales and Westside test anxiety scale according to male age groups (p> 0,05).

Table 4. Comparison of scale scores according to age groups by gender difference

	Female (n=65)									Male (n	=58)			
Age	≤20 age (1)	(n=21)	21-23 age (2		≥24 age <sup>(3)</sup>	(n=9)	Statistical	<b>≤20 age</b> (1	n=18)	21-23 age		≥24 age (	(n=14)	Statistica
groups (N=123)	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	$\overline{X} \pm S. S.$	Median [IQR]	$\overline{X} \pm S. S.$	Median [IQR]	Analysis* Probability	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	Analysis Probabilit
Eating														
Attitude Test	$18,95\pm15,81$	13,0	17,37±10,20	15,0	17,11±10,47	14,0	$\chi^2 = 0.129$	$18,67\pm20,26$	10,5	$17,54\pm11,10$	15,5	11,36±4,36	11,5	$\chi^2 = 3,643$
		[13,5]		[12,0]		[12,0]	p=0.938		[12,8]		[10,8]		[4,5]	p=0,162
Night eating	$3,67\pm3,14$	3,0	$4,03\pm4,40$	2,0	$5,22\pm3,56$	5,0	$\chi^2 = 2,496$	$4,44\pm3,65$	3,5	$5,58\pm4,31$	6,0	$3,86\pm5,63$	1,0	$\chi^2 = 4,192$
	,	[4,5]		[4,0]	,	[6,0]	p=0.287	,	[4,5]		[8,3]	,	[3,0]	p=0,123
Evening	$4,19\pm1,75$	4,0	$3,69\pm1,35$	4,0	$3,11\pm1,62$	3,0	$\chi^2 = 3,141$	$4,06\pm1,76$	4,0	4,04±1,59	4,0	$3,93\pm1,73$	4,0	F=0,026
hyperphagia		[3,0]		[2,0]		[2,5]	p=0.208		[3,3]		[2,0]		[3,3]	p=0,974
Morning loss		. , .		. , .			F=7,256	$4,94\pm2,07$	5,0	$4,35\pm2,04$	4,0	$3,36\pm1,65$	3,0	F=2,590
of appetite	$5,67\pm2,46$	6,0	$4,06\pm2,35$	4,0	$7,00\pm1,50$	7,0	p=0,001	,	[2,5]	,,	[3,0]	-,,	[2,0]	p=0,084
TI	-,,	[4,0]	-,,-	[4,0]	• , , -	[2,0]	[1,3-2]		L 7- J		L- 7-3		L 7-3	Ι - 7 -
Mood and		L 7-3		L 7-3		L 7-3	L /- J							,
sleep disorder	$4,29\pm2,00$	4,0	$3,49\pm1,87$	3,0	4,44±1,94	5,0	$\chi^2 = 2,685$	$3,44\pm2,36$	3,0	$3,31\pm2,15$	3,0	$3,14\pm1,51$	3,0	F=0,082
	, , , , , , ,	[3,5]	-,,	[3,0]	-,	[3,5]	p=0,261	-,	[2,3]	-,, -	[2,0]	-, ,-	[2,0]	p=0,921
Night eating		L= 7- J		[-,-]		L= 7- 3	Γ -,		L—>- J		L—y - 3		L-7-3	F - 7-
questionnaire	17,81±5,72	18,0	15,26±7,06	15,0	19,78±4,63	20,0	F=2,264	$16,89\pm5,44$	17,0	17,27±6,36	18,0	14,29±9,17	12,0	$\chi^2 = 4,906$
questionin	17,01=0,.=	[9,0]	12,20=.,00	[10,0]	17,76= .,55	[6,0]	p=0,113	10,07=2,	[8,0]	17,27=0,00	[10,5]	11,2/=/,1/	[7,5]	p=0,086
Westside test		[>,~]		[10,0]		[0,0]	p 0,110		[0,0]		[10,0]		[,,5]	P 0,000
anxiety scale	37,67±10,14	37,0	32,63±10,83	30,0	36,11±14,17	31,0	F=1,430	33,06±8,24	34,0	36,00±8,51	35,5	31,07±11,78	31,5	F=1,381
anxiety scare	37,07±10,14	[13,5]	32,03±10,03	[17,0]	30,11-1-1,17	[26,5]	p=0,247	33,00±0,24	[11,0]	30,00±0,31	[9,5]	31,07-11,70	[20,5]	p=0,260

<sup>\*</sup> In the data with normal distribution which had three or more independent variables, "ANOVA" test (F-table value) statistics were used for comparison of two groups, and "Kruskal-Wallis H" ( $\chi^2$ -table value) statistics were used in the non-normal distribution of data which had three or more independent variables.

As seen in Table 5, there was no statistically significant difference in terms of eating attitude test, night eating questionnaire total score, night eating, evening hyperphagia, morning loss of appetite, mood and sleep disorder subscales, and Westside test anxiety scale scores according to the place where males lived (p> 0,05).

There was no statistically significant difference in terms of total subscale scores of eating attitude test and night eating questionnaire, night eating, evening hyperphagia, morning loss of appetite, mood and sleep disorder, and Westside test anxiety scale according to the place females lived (p>0,05).

 Table 5. Comparison of scale scores according to the location variable by gender difference

			Female (1	n=65)				Male (n=58)							
Living place	with family	(n=35)	Student hous	se (n=15)	<b>Dormitory</b>	(n=15)	Statistical	With family	y (n=33)	Student hou	se (n=12)	Dormitory	(n=13)	Statistical	
(N=123)	$\overline{X} \pm S. S.$	Median [IQR]	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	Analysis* Probability	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median [IQR]	Analysis Probability	
Eating															
Attitude Test	16,66±10,43	14,0 [11,0]	20,87±12,28	18,0 [19,0]	17,60±15,69	15,0 [10,0]	$\chi^2=1,862$ p=0,394	15,88±8,50	15,0 [10,0]	14,58±14,20	10,0 [6,0]	19,38±22,52	11,0 [11,0]	$\chi^2 = 2,353$ p=0,308	
Night eating	4,43±3,82	3,0 [6,0]	3,40±5,30	1,0 [1,0]	3,93±2,19	4,0 [2,0]	$\chi^2 = 4,705$ p=0,095	4,85±4,49	3,0 [6,0]	5,42±5,57	2,5 [7,5]	4,15±3,39	3,0 [5,0]	$\chi^2 = 0.073$ p=0.964	
Evening hyperphagia	$3,66\pm1,41$	4,0 [3,0]	3,93±1,39	4,0 [2,0]	3,87±1,99	4,0 [3,0]	$\chi^2 = 0.271$ p=0.873	4,21±1,62	4,0 [3,0]	3,67±1,72	4,0 [3,0]	3,85±1,72	3,0 [2,0]	$\chi^2 = 1,403$ p=0,496	
Morning loss of appetite Mood and	5,11±2,76	6,0 [5,0]	4,47±2,47	4,0 [4,0]	5,20±1,93	5,0 [3,0]	$\chi^2 = 0.975$ p=0.614	3,97±1,96	4,0 [3,5]	4,75±2,09	4,0 [1,8]	4,69±2,10	5,0 [4,5]	$\chi^2 = 1,757$ p=0,415	
sleep disorder	3,69±1,84	3,0 [3,0]	3,93±2,37	5,0 [4,0]	4,27±1,75	4,0 [2,0]	$\chi^2=1,002$ p=0,606	3,58±2,12	3,0 [2,5]	3,08±1,56	3,0 [1,0]	2,85±2,30	4,0 [3,5]	$\chi^2=0,732$ p=0,694	
Night eating															
questionnaire	16,89±6,45	17,0 [10,0]	15,73±7,63	14,0 [10,0]	17,27±5,84	17,0 [8,0]	F=0,231 p=0,794	16,61±6,79	16,0 [9,5]	16,92±8,11	15,5 [10,5]	15,54±6,34	14,0 [10,0]	F=0,146 p=0,865	
Westside test anxiety scale	36,11±11,73	34,0 [22,0]	31,53±9,90	30,0 [16,0]	34,73±11,12	38,0 [12,0]	$\chi^2=1,758$ p=0,415	34,67±8,70	34,0 [12,0]	36,58±9,80	38,0 [11,0]	29,46±9,85	29,0 [10,0]	F=2,142 p=0,127	

<sup>\*</sup> In the data with normal distribution which had three or more independent variables, "ANOVA" test (F-table value) statistics were used for comparison of two groups, and "Kruskal-Wallis H" ( $\chi^2$ -table value) statistics were used in the non-normal distribution of data which had three or more independent variables.

As seen in Table 6, a positive, weak and statistically significant relationship was found between Westside test anxiety scale and eating attitude test, night eating questionnaire, night eating, morning loss of appetite, mood and sleep disorder subscales of women (p <0,05). As women's test anxiety increases, night eating, morning loss of appetite, mood and sleep disorder increase. Likewise, as women's test anxiety diminishes, night eating, morning loss of appetite, mood and sleep disorder decrease.

A positive, moderate and statistically significant relationship was found between the Westside test anxiety scale and the total score of the night eating questionnaire in females (r = 0.594; p = 0.000). As women's test anxiety increases, the total score of eating at night increases. Likewise, the lower the test anxiety of women is, the lower the total score of eating at night is.

A positive, weak, and statistically significant relationship was found between the Westside test anxiety scale and night eating questionnaire, evening hyperphagia, mood and sleep disorder subscales and total score of the males (p <0,05). As males's test anxiety increases, the night eating questionnaire, the sub-scale and total score of evening hyperphagia, mood and sleep disorder increase. Likewise, as men's test anxiety diminishes, the night eating questionnaire, evening hyperphagia, the sub-scales of mood, and sleep disorder total score decreases.

**Table 6.** Comparison of scale scores by gender

	Westside test anxiety scale								
Correlation * (N=123)	Female	(n=65)	Female	e (n=65)					
	r	p	r	р					
<b>Eating Attitude Test</b>	0,362	0,003	0,141	0,290					
Night eating	0,413	0,001	0,142	0,288					
Evening hyperphagia	0,181	0,149	0,472	0,000					
Morning loss of appetite	0,429	0,000	0,139	0,297					
Mood and sleep disorder	0,481	0,000	0,319	0,015					
Night eating questionnaire	0,594	0,000	0,348	0,007					

<sup>\* &</sup>quot;Pearson" was used to investigate the relationships between two quantitative variables with normal distribution, and "Spearman" correlation coefficient was used in relationships where at least one of the two quantitative variables did not show normal distribution.

The distribution of the findings related to the scales is given in Table 7.

**Table 7.** Comparison of scale scores by gender

Variable (N=123)		Resi	ults	
	$\overline{\mathbf{X}} \pm \mathbf{S}.\mathbf{S}.$	Median	Min.	Max.
<b>Eating Attitude Test</b>	17,16±12,90	14,0	3,0	89,0
Night eating	4,42±4,17	3,0	0,0	19,0
Evening hyperphagia	$3,89\pm1,59$	4,0	1,0	8,0
Morning loss of appetite	$4,66\pm2,31$	4,0	0,0	10,0
Mood and sleep disorder	3,61±2,01	3,0	0,0	8,0
Night eating questionnaire	16,58±6,65	17,0	4,0	37,0
Westside test anxiety scale	34,34±10,34	34,0	12,0	55,0

As seen in Table 8, there was a positive, weak and statistically significant relationship between Westside test anxiety scale and eating attitude test, night eating questionnaire, night eating, morning loss of appetite, mood and sleep disorder subscales of females (p <0, 05). As women's test anxiety increases, night eating, morning loss of appetite, mood and sleep disorder increase. Likewise, as women's test anxiety diminishes, night eating, morning loss of appetite, mood and sleep disorder decrease.

A positive, moderate and statistically significant relationship was found between the Westside test anxiety scale and the total score of the night eating questionnaire of females (r = 0.594; p = 0.000). As women's test anxiety increases, the total score of eating at night increases. Likewise, the lower the test anxiety of women is, the lower the total score of eating at night is.

A positive, weak and statistically significant relationship was found between the women's night eating questionnaire scores and the eating attitude test and evening hyperphagia sub-scales (p<0,05). As women's eating attitude test and evening hyperphagia scores increase, night eating questionnaire scores increase too. Similarly, as women's eating attitude test and evening hyperphagia scores decrease, their night eating questionnaire scores decrease too.

A positive, moderate and statistically significant relationship was found between the women's night eating questionnaire scores and night eating, morning loss of appetite, mood and sleep disorder sub-scales (p <0,05). As the subscale scores of women eating at night, morning loss of appetite, mood and sleep disorder increased, the scores of night eating questionnaire increased. Similarly, as the subscale scores of night

eating, morning loss of appetite, mood and sleep disorder decreased, the scores of the night eating questionnaire decreased.

**Table 8.** Analyses of the relationship between the scale scores of females

Correlation*					•	Mood		Westside
		Eating	Night	Evening	Morning	and	Night	test
		Attitude	eating	hyperphagia	loss of	sleep	eating .	anxiety
		Test			appetite	disorder	questionnaire	scale
Eating	r	1.000	0,083	-0,140	0,174	0,425	0,261	0,362
Attitude Test	p		0,512	0,267	0,165	0,000	0,036	0,003
Night eating	r	0,083	1.000	0,134	0,239	0,243	0,727	0,413
	p	0,512		0,287	0,055	0,051	0,000	0,001
Evening	r	-0,140	0,134	1.000	0,175	0,183	0,449	0,181
hyperphagia	p	0,267	0,287		0,164	0,146	0,000	0,149
Morning loss	r	0,174	0,239	0,175	1.000	0,355	0,659	0,429
of appetite	p	0,165	0,055	0,164		0,004	0,000	0,000
Mood and								
sleep disorder	r	0,425	0,243	0,183	0,355	1.000	0,636	0,481
	p	0,000	0,051	0,146	0,004		0,000	0,000
Night eating	r	0,261	0,727	0,449	0,659	0,636	1.000	0,594
questionnaire	p	0,036	0,000	0,000	0,000	0,000		0,000
Westside test	r	0,362	0,413	0,181	0,429	0,481	0,594	1.000
anxiety scale	p	0,003	0,001	0,149	0,000	0,000	0,000	

<sup>\*</sup> Spearman correlation coefficient was used in relationships where at least one of the two quantitative variables did not show normal distribution.

As shown in Table 9, a positive, weak, and statistically significant relationship was found between the Westside test anxiety scale of the males and the night eating questionnaire, evening hyperphagia, mood and sleep disorder sub-scales and total score (p < 0.05). As males' test anxiety increases; evening hyperphagia, mood and sleep disorder sub-scales and total score of the the night eating questionnaire increase. Likewise, as males' test anxiety diminishes, the night eating questionnaire, the sub-scales of mood, and sleep disorder, evening hyperphagia, and their total score decrease.

A positive, moderate and statistically significant relationship was found between the night eating questionnaire scores of the males and the sub-scales of night eating, morning loss of appetite, mood and sleep disorder (p <0,05). As males' eating at night, morning loss of appetite, subscale scores of mood and sleep disorder subscale increase, the scores of night eating questionnaire increase. Likewise, the lower the subscale scores of males' eating at night, morning loss of appetite, mood and sleep disorder are, the lower the scores of the night eating questionnaire are.

A positive, weak and statistically significant relationship was found between male night eating questionnaire scores and evening hyperphagia sub-scales (r=0,304; p=0,020). As the evening hyperphagia subscale scores of males increase, the night eating questionnaire scores increase. Likewise, the lower the scores of males evening hyperphagia sub-scales are, the less the night eating survey scores are.

A positive, weak and statistically significant relationship was found between the mood and sleep disorder scores of the males and the sub-scales of night eating and morning loss of appetite (p <0.05). As males' mood and sleep disorder subscale scores increase, night eating and morning loss of appetite scores increase. Similarly, the lower the scores of males' mood and sleep disorder subscale scores are, the lower their night eating and morning loss of appetite scores are.

A statistically significant positive relationship was found between males' morning loss of appetite and night eating subscale (r=0,403; p=0,002). As men's night eating subscale scores increase, their morning loss of appetite scores increase. Likewise, as men's night eating subscale scores decrease, their morning loss of appetite scores decrease.

**Table 9.** Analyses of the relationship between the scale scores of males

		Male (n=58)												
Correlation*				-		Mood		Westside						
		Eating Attitude Test	Night eating	Evening hyperphagia	Morning loss of appetite	and sleep disorder	Night eating questionnaire	test anxiety scale						
Eating	r	1.000	0,219	0,050	-0,044	0,034	0,187	0,141						
Attitude Test	p	•	0,099	0,710	0,744	0,799	0,160	0,290						
Night eating	r	0,219	1.000	0,003	0,403	0,318	0,797	0,142						
	p	0,099		0,985	0,002	0,015	0,000	0,288						
Evening	r	0,050	0,003	1.000	0,146	0,135	0,304	0,472						
hyperphagia	p	0,710	0,985		0,273	0,312	0,020	0,000						
Morning loss	r	-0,044	0,403	0,146	1.000	0,431	0,719	0,139						
of appetite	p	0,744	0,002	0,273		0,001	0,000	0,297						
Mood and														
sleep disorder	r	0,034	0,318	0,135	0,431	1.000	0,638	0,319						
	p	0,799	0,015	0,312	0,001		0,000	0,015						
Night eating	r	0,187	0,797	0,304	0,719	0,638	1.000	0,385						
questionnaire	p	0,160	0,000	0,020	0,000	0,000		0,003						
Westside test	r	0,141	0,142	0,472	0,139	0,319	0,385	1.000						
anxiety scale	p	0,290	0,288	0,000	0,297	0,015	0,003							

<sup>\* &</sup>quot;Pearson" was used to investigate the relationships between two quantitative variables with normal distribution, and "Spearman" correlation coefficient was used in relationships where at least one of the two quantitative variables did not show normal distribution.

#### 5. DISCUSSION

In the literature survey, no study including examination of students' eating attitudes and NES in terms of exam anxiety was found. NES and eating attitude disorder can directly affect the nutritional habits, nutrient intake amounts and diet adaptation of individuals. This study was conducted on Yeditepe University Gastronomy and Culinary Arts students in order to evaluate exam anxiety, NES and eating attitudes during the final exams.

Eating disorders are common especially among young adults and university students. It is common for young adults and university students to be dissatisfied with their body weight in developed countries [93]. Feeding habits, which start at an early age, change during university years after they evade the dominance of family authority [94].

Costarelli and Patsai (2012) reported that academic exam stress increased the symptomatology of altered eating behavior among female university students and this was related to low level of self-confidence [95]. Panayiotou et al. (2005) reported that exam stress was associated with alcohol use among US and Southern Cypriot university students [96]. Zήση (2017) examined the change in eating behavior of students in the exam period in her thesis and used the Netherlands Eating Behavior Scale. The mean trait anxiety level was found to be higher during the exam period and was found to be significantly higher in females than in males. Poor eating behavior was observed only during the exam period in high anxiety students. High trait anxiety is associated with poor eating behavior both during the exam and academic year. Both trait anxiety and state anxiety adversely affect eating behavior [97]. In this study, it was found that there was a relationship between test anxiety and eating attitude of females. In males, no relationship was found between test anxiety and eating attitude. In conclusion, the relationship between eating anxiety and test anxiety in females identified in this study supports previous studies.

Borges et al. (2017) found that the prevalence of NES was high in their study on Brazilian university students. The relationship between NES behaviors and stress symptoms, anxiety and depressiveness was found [98]. Wichianson et al. (2008) found a positive relationship between stress levels and night eating in university students [99]. Also, Nolan and Geliebter (2012), in their study with university students, found that there was a relationship between more eating and NES due to depressive mood [100]. He et al. (2018), in their study with university students in China, reported that NES is gender

related and the total score of the Night Eating Questionnaire is significantly associated with sadness [101]. In this study, it was found that test anxiety both for males and females in university students was related to eating at night. A similar result between the aforementioned studies and this study is that anxiety, stress and depressive mood in university students are associated with NES.

Runfola et al. (2014) used the eating disorder assessment scale in their study on university students. Eating disorder scores were significantly higher in patients with NES, and laxative use and compulsive exercise were more frequent. The quality of life of these students decreased. Depression, hyperactivity disorder and self-harm were found to be more common [102]. Sevinçer et al. (2016), stated that NES is widespread among university students in their study. NES can be predicted in the symptoms of depression and anxiety, thus the development of NES can be prevented [103]. In this study, the eating attitude of females is related to eating at night. In males, no relationship was found between eating at night and eating attitude. One of the reasons for this may be that the number of females participating in the study is higher than the number of males. A similar result between the aforementioned researches and this study is that there is a relationship between night eating and eating attitudes in women. In addition, although there was no relationship between night eating and eating attitudes in males in this study, the relationship between night eating and eating attitudes was found in males in the previous studies. In order to evaluate this relationship in more detail, other studies with a higher number of male participants can be conducted.

#### 6. CONCLUSION

This study was conducted to investigate whether there is a relationship between eating attitudes, NES and test anxiety. It is based on the evaluation of data obtained from individuals who are students of Gastronomy and Culinary Arts department of a foundation university and who have taken the final exam and participated in the study voluntarily. In the study, information data forms whose validity and reliability was done were used and the data obtained from the study was found that NES and test anxiety were related in females and males, and eating attitude and NES were related in women. There was a relationship between test anxiety and eating attitude in women, but there was no significant relationship in men. University students' eating attitudes, NES and test anxiety in the exam period were investigated and the relationships found are presented. Since the incidence and prevalence of eating disorder is high and the comorbidity and mortality associated with other diseases is high, it would be beneficial to provide university students training in terms of test anxiety and eating disorders, NES, and to provide dietician and psychologist support before the exam periods.

## 7. RECOMMENDATIONS

This study was conducted on students in exam period. In the future studies, the same students' eating attitudes, NES and test anxiety levels can be measured in exam periods and compared with the out of exam period. In addition, this research was conducted only on the students of the Department of Gastronomy and Culinary Arts. In different studies, data can be collected from students in other departments and comparisons can be made between departments.

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Sayı: 37068608-6100-15-1604

Konu: Klinik Araştırmalar

Etik kurul Başvurusu hk.

14/02/2019

İlgili Makama (Aysel Özyaprak)

Yeditepe Üniversitesi Güzel Sanatlar Fakültesi Gastronomi ve Mutfak Sanatları Bölümü Dr. Öğr. Üyesi Arzu Durukan'ın sorumlu olduğu "Bir Vakıf Üniversitesinin Gastronomi ve Mutfak Sanatları Bölümü Öğrencilerinde Yeme Tutumu ile Gece Yeme Sendromunun Sınav Kaygısı Açısından Değerlendirilmesi" isimli araştırma projesine ait Klinik Araştırmalar Etik Kurulu (KAEK) Başvuru Dosyası ( 1574 kayıt Numaralı KAEK Başvuru Dosyası ), Yeditepe Üniversitesi Klinik Araştırmalar Etik Kurulu tarafından 13.02.2019 tarihli toplantıda incelenmiştir.

Kurul tarafından yapılan inceleme sonucu, yukarıdaki isimi belirtilen çalışmanın yapılmasının etik ve bilimsel açıdan uygun olduğuna karar verilmiştir ( KAEK Karar No: 956 ).

Prof. Dr. Turgay CELIN

Yeditepe Üniversitesi

Klinik Araştırmalar Etik Kurulu Başkanı

#### 9. APPENDICES

#### **APPENDIX - 1**

### Bilgilendirilmiş Gönüllü Olur Formu (Informed Consent Form)

Katılımınızı talep ettiğim bu çalışma, bir araştırmadır.

İstanbul Yeditepe Üniversitesi Gastronomi ve Mutfak Sanatları Bölümünde eğitim görmekte olan öğrencilere final döneminde araştırmacı Dyt. Aysel Özyaprak tarafından "Bir Vakıf Üniversitesinin Gastronomi ve Mutfak Sanatları Bölümü Öğrencilerinde Yeme Tutumu ile Gece Yeme Sendromunun Sınav Kaygısı Açısından Değerlendirilmesi" adlı çalışma için bilgi edinme amaçlı veri formu uygulanacaktır.

Çalışmada kesinlikle detaylı kişisel ve özel bilgileriniz sorulmayacaktır. Araştırmada yeme tutumu, gece yeme sendromu ve sınav kaygısı incelenecektir.

Araştırmaya gönüllü olarak katılmanız durumunda kimliğinizi ortaya çıkaracak kayıtlar gizli tutulacak, araştırma sonuçlarının yayımlanması halinde bile katılımcıların kimliği gizli kalacaktır.

Araştırmada toplanan veriler araştırma kapsamı dışında asla paylaşılmayacaktır. Etik Kurul, kurum ve diğer sağlık otoritelerinin gönüllünün orijinal tıbbi kayıtlarına doğrudan erişimleri olabilecektir ancak bu bilgiler gizli tutulacaktır.

Araştırmaya katılımınız için sizden herhangi bir ücret istenmeyecek ve katılımınız karşılığında size herhangi bir ücret ödenmeyecektir

Çalışmaya katılım gönüllülük esasına dayanmaktadır. Çalışmaya katılmayı reddedebilirsiniz ve istediğiniz zaman çalışmadan çekilebilirsiniz. Bu bilgileri okuyup anladıktan sonra çalışmaya katılmak isterseniz onay formunu imzalayınız. Bu araştırmaya katılımınız araştırmanın başarısı açısından önemlidir. Eğer araştırmaya katkı sağlamayı kabul ederseniz veri formunu doldurmanız talep edilecektir.

Bu çalışma ile Yeditepe Üniversitesi Gastronomi ve Mutfak Sanatları Bölümü öğrencilerinde yeme tutumu ile gece yeme sendromunun sınav kaygısı açısından değerlendirilmesinden elde edilecek bulgular hakkında fikir sahibi olunması ve sonuçların belirlenip düzeltilmesi gereken durumlar varsa bunlarla ilgili yapılacaklara kaynak oluşturulması amaçlanmıştır.

Bilgilendirilmiş Gönüllü Olur Formundaki tüm açıklamaları okudum. Bana yukarıda konusu ve amacı belirtilen araştırma ile ilgili yazılı ve sözlü açıklama aşağıda adı belirtilen diyetisyen tarafından yapıldı. Yapılan tüm açıklamaları ayrıntılarıyla anlamış bulunmaktayım. Bu koşullarda söz konusu araştırmaya hiçbir baskı ve zorlama olmaksızın "gönüllü katılımcı" olarak katılmayı kabul ediyorum.

Tez Danışmanı: Dr. Öğr. Üyesi Arzu Durukan Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Beslenme ve Diyetetik Bölümü Öğretim Üyesi

Araştırmacı: Dyt. Aysel Özyaprak Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Beslenme ve Diyetetik Bölümü Yüksek Lisans Öğrencisi

Gönüllü Katılımcı Adı Soyadı İmza Tarih

## **APPENDIX - 2**



Aysel Özyaprak <dyt.ayselozyaprak@gmail.com>

## Ölçek Kullanım İzni Hakkında

17 Aralık 2018 14:24

Sevgili Aysel Özyaprak,

Tezinizde Yeme Tutumu Ölçeğini kullanabilirsiniz .

Başarı dileklerimle Prof. Dr. Neşe Erol

iPhone'umdan gönderildi

14 Ara 2018 tarihinde 00:17 saatinde, Aysel Özyaprak <dyt.ayselozyaprak@gmail.com> şunları yazdı:

[Alıntılanan metin gizlendi]



## Fw: gece yeme anketi

nuray ulus <nurayulus@yahoo.com> Alıcı: "dyt.ayselozyaprak@gmail.com" <dyt.ayselozyaprak@gmail.com>

11 Kasım 2018 14:57

ölçeğikullanabilirsiniz kolay gelsin

---- Forwarded Message ----From: nuray ulus <nurayulus@yahoo.com>

To: dryasnkara@gmail.com <dryasnkara@gmail.com> Sent: Friday, October 26, 2018, 1:09:37 PM GMT+3

Subject: Fw: gece yeme anketi

---- Forwarded Message -----

From: nuray ulus <nurayulus@yahoo.com>

To: ozgeemm1997@gmail.com <ozgeemm1997@gmail.com>
Sent: Friday, October 26, 2018, 1:09:05 PM GMT+3

Subject: Fw: gece yeme anketi

---- Forwarded Message -----

To: Nuray ATASOY <nurayulus@yahoo.com>
To: Nuray ATASOY <nurayulus@yahoo.com>; Nuray Ulus <nuray.ulus@gmail.com>
Sent: Wednesday, October 24, 2018, 1:16:10 PM GMT+3

Subject: gece yeme anketi

geceyeme anketi.doc 34K



## Ölçek Kullanım İzni Hakkında

**Tarik Totan** <tarik.totan@deu.edu.tr> Alıcı: dyt.ayselozyaprak@gmail.com

12 Kasım 2018 10:18

#### Hocam merhaba

Ölçeğe ve puanlamasına ekte ulaşabilirsiniz çalışmanızda kolaylıklar dilerim

#### Saygılarımla,

Doç. Dr. Tarık TOTAN Adnan Menderes Üniversitesi, Eğitim Fakültesi, Eğitim Bilimleri Bölümü, Rehberlik ve Psikolojik Danışma Anabilim Dalı, Aytepe Mevkii, 09100 Kepez / AYDIN

Tel: +90.256.214.20.23 - 1561 Faks: +90.256.214.10.61

\_\_\_\_\_

Assoc. Prof. Tarık TOTAN, Ph.D. of Guidance and Counseling Adnan Menderes University, Faculty of Education, Department of Counseling & Guidance, Aytepe Mevkii, 09100, Kepez / AYDIN, TURKEY

Phone: +90.256.214.20.23 - 1561 Fax: +90.256.214.10.61

Academia.edu Google Scholar

Aysel Özyaprak <dyt.ayselozyaprak@gmail.com>, 10 Kas 2018 Cmt, 19:08 tarihinde şunu yazdı: [Alıntılanan metin gizlendi]

Westside Sınav Kaygısı Ölçeği Türkçe formu ve değerlendirilmesi.doc 41K

## APPENDIX - 3

# BİLGİ EDİNME AMAÇLI VERİ FORMU

1. ADINIZ SOYADINIZ:
2. YAŞINIZ:
3. CİNSİYETİNİZ: KADIN:
ERKEK:
4. YAŞADIĞINIZ YER: AİLE İLE BİRLİKTE: 🗀
ÖĞRENCİ EVİNDE: 🗌
YURTTA:

## YEME TUTUM TESTİ

Bu anket sizin yeme alışkanlıklarınızla ilgilidir. Lütfen her bir soruyu dikkatlice okuyunuz ve size uygun gelen kutunun içine **X** işareti koyunuz. Örneğin; "**Çikolata yemek hoşuma gider**" cümlesini okudunuz. Çikolata yemek hiç hoşunuza gitmiyorsa "**hiçbir zaman**" yazılı kutunun içine **X** işareti koyunuz, her zaman hoşunuza gidiyorsa "**daima**"nın altını **X** işaretleyiniz.

SORULAR	ä	La l	sık	u	ire	bi
	Daim	Çok	Sıkık	Bazen	Nadire	Hiçbi zamaı
				В		
1. Başkaları ile birlikte yemek yemekten hoşlanırım.						
2. Başkaları için yemek pişiririm, fakat pişirdiğim yemeği						
yemem.						
3. Yemekten önce sıkıntılı olurum.						
4. Şişmanlamaktan ödüm kopar.						
5. Acıktığımda yemek yememeye çalışırım.						
<b>6.</b> Aklım fikrim yemektedir.						
7. Yemek yemeyi durduramadığım zamanlar oldu.						
8. Yiyeceğimi küçük küçük parçalara bölerim.						
9. Yediğim yiyeceğin kalorisini bilirim.						
10. Ekmek, patates, pirinç gibi yüksek kalorili						
yiyeceklerden						
kaçınırım.						
11. Yemeklerden sonra şişkinlik hissederim.						
12. Ailem fazla yememi bekler.						
13. Yemek yedikten sonra kusarım.						
14. Yemek yedikten sonra aşırı suçluluk duyarım.						
15. Tek düşüncem daha zayıf olmaktır.						
16. Aldığım kalorileri yakmak için yorulana kadar						
egzersiz yaparım.						
<b>17.</b> Günde birkaç kere tartılırım.						
18. Vücudumu saran dar elbiselerden hoşlanırım.						
19. Et yemekten hoşlanırım.						
20. Sabahları erken uyanırım.						
21. Günlerce aynı yemeği yerim.						
22. Egzersiz yaptığımda harcadığım kalorileri hesaplarım.						
23. Adetlerim düzenlidir. (Yalnızca kızlar						
cevaplandıracak)						
<b>24.</b> Başkaları çok zayıf olduğumu düşünür.						
25.Şişmanlayacağım (vücudumun yağ toplayacağı) düşüncesi						
zihnimi meşgul eder.						

#### Gece Yeme Anketi

1. Sabahları ne kadar aç oluyorsunuz?

Hiç / Çok az / Biraz / Orta derecede / Aşırı

2. İlk yemeğinizi genelde ne zaman yersiniz?

Saat 9'dan önce / 9-12 arası / 12-15 arası / 15-18 arası / 18'den sonra

3. Akşam yemeğinden yatana kadar aşırı yeme veya atıştırma isteğiniz olur mu?

Hiç / Çok az / Biraz / Oldukça çok / Aşırı

4. Akşam yemeğinden yatana kadarki zamanda yemeniz üzerinde ne kadar kontrolünüz var?

Hiç / Çok az / Biraz / Çok / Tamamen

5. Günlük besin alımınızın ne kadarını akşam yemeğinden sonra tüketirsiniz?

%0 / %1-25 / %26-50 / %51-75 / %76-100

6. Son zamanlarda hüzünlü veya kederli hissediyor musunuz?

Hiç / Çok az / Biraz / Oldukça çok / Aşırı

7. Hüzünlü hissettiğiniz zaman, duygudurumunuz daha çökkün oluyor.

Gün içinde değişme olmuyorsa X işareti koyunuz. \_\_\_\_ sabah erken / sabah /

öğleden sonra /

akşam üzeri /

akşam / gece

8. Uykuya dalmakta hangi sıklıkta zorluk yaşıyorsunuz?

Hiç / Bazen / Zamanın yarısında / Genelde / Her zaman

9. Tuvalet gereksinmesi dışında, gece hangi sıklıkta en az bir kez kalkarsınız?

Hiç / Haftada birden az / Haftada bir / Haftada birden çok / Her gece

Not: 9. soruda cevabiniz hiçse, burada durun.

10. Gece uyanınca yeme isteği veya atıştırmanız oluyor mu?

Hiç / Çok az / Biraz / Oldukça çok / Aşırı

11. Gece uyanınca tekrar uyuyabilmek için yeme ihtiyacı duyar mısınız?

Hiç / Çok az / Biraz / Oldukça çok / Aşırı

12. Gece yarısı uyanınca hangi sıklıkta atıştırırsınız?

Hiç / bazen / zamanın yarısında / sıklıkla / her zaman

Not: 12'ye hiç yanıtı verdiyseniz, burada durun.

13. Gece yarısı atıştırdığınızda, yediğinizin ne kadar farkındasınız?

Hiç / Çok az / Biraz / Çok / Tamamen

14. Gece kalktığınızda yemenizi ne kadar kontrol edebiliyorsunuz?

Hiç / Çok az / Biraz / Çok / Tamamen

Gece yemeyle ilgili sorununuz ne kadar zamandır sürüyor? ---- ay ---- yıl

15. Gece yemeniz sizi ne kadar rahatsız ediyor?

Hiç / Çok az / Biraz / Orta derecede / Aşırı

16. Gece yemeniz hayatınızı ne kadar etkiliyor? Hiç /

Çok az / Biraz / Orta derecede / Aşırı

# Westside Sınav Kaygısı Ölçeği

	Daima doğru	Genellikle doğru	Ara sıra doğru	Nadiren doğru	Asla doğru değil
Önemli bir sınav yaklaştıkça ders çalışmaya yoğunlaşmam da zorlaşır					
2. Ders çalışırken çalıştığım konuları sınavda hatırlayamayacağım diye endişelenirim					
3. Önemli sınavlar sırasında yanlış yapıyorum diye düşünürüm					
4. Önemli sınavlar sırasında dersten kalacağım diye düşünürüm					
5. Önemli sınavlarda dikkatimi kaybederek bildiğim şeyleri hatırlamayabilirim					
6. Sınav sorularının yanıtlarını sınav bittikten sonra hatırlarım					
7. Önemli bir sınav öncesinde öylesine endişelenirim ki sonunda en iyi sınavımda bile çok yorgun olurum					
8. Önemli bir sınavdayken kendimi keyifsiz hissederim					
9. Önemli bir sınavdayken gerçekten kendim değilmişim gibi hissederim					
10. Önemli sınavlar sırasında bazen zihnimi başka yerlere dağılmış olarak bulurum					
11. Bir sınavdan sonra soruları yeterince iyi yanıtlayıp yanıtlayamadığım konusunda endişelenirim					

## APPENDIX - 4 Özgeçmiş

## Kişisel Bilgiler

Adı	Aysel	Soyadı	Özyaprak
Doğum Yeri	Eyüp / İstanbul	Doğum Tarihi	01.01.1992
Uyruğu	TC	TC Kimlik No	18850369864
E-mail	Dyt.ayselozyaprak@gmail.com	Tel	5362287393

## Öğrenim Durumu

Derece	Alan	Mezun Olduğu Kurumun Adı Mezuniy	
Doktora			
Yüksek Lisans	Beslenme ve Diyetetik	Yeditepe Üniversitesi	2019
Lisans	Beslenme ve Diyetetik	Yeditepe Üniversitesi	2016
Lise	Fen Bilimleri	Akşemsettin Anadolu Lisesi	2010

<sup>#</sup>Başarılmış birden fazla sınav varsa(KPDS, ÜDS, TOEFL; EELTS vs), tüm sonuçlar yazılmalıdır

Bildiği Yabancı Dilleri	Yabancı Dil Sınav Notu (#)	
İngilizce	IELTS (International English Language Testing System) Academic OBS: 6	

## Bilgisayar Bilgisi

Program	Kullanma becerisi
Microsoft Office Programları	İyi

<sup>\*</sup>Çok iyi, iyi, orta, zayıf olarak değerlendirin

Diğer (Görev Aldığı Projeler/Sertifikaları/Ödülleri)

EGİTİM ADI	TARİH	EĞİTİM KURUMU
Obezite ve Metabolik Hastalıklar Kursu	06.01.2018	Güncel Tıp Derneği
Stres Yönetimi Eğitimi	19.12.2017	İstanbul İşletme Enstitüsü
Zaman Yönetimi Eğitimi	19.12.2017	İstanbul İşletme Enstitüsü
Aristo'nun İkna Etme Sanatı	16.12.2017	Yeditepe Üniversitesi
Etkileyen İnsan Olmak	10.12.2017	Yeditepe Üniversitesi
Büyük Değişimin Lideri Ol	10.12.2017	Yeditepe Üniversitesi
Etkili İletişim Stratejileri ve Beden Dili	04.12.2017	İstanbul İşletme Enstitüsü
Müşteri İlişkileri Yönetimi - CRM	04.12.2017	İstanbul İşletme Enstitüsü
Danışmanlığın Sırları	26.11.2017	Yeditepe Üniversitesi
Zorlu Hasta Profili İle Başa Çıkma	25.11.2017	Yeditepe Üniversitesi
Fun Training Workshop: Kişisel Marka Oluşturma	04.11.2017	Yeditepe Üniversitesi
Networking	02.11.2017	Yeditepe Üniversitesi
Diyabette Güncel Yaklaşımlar Sempozyumu	16.03.2017	Yeditepe Üniversitesi
5.Ulusal Sağlıklı Yaşam Sempzoyumu	10.03.2016	Acıbadem Üniversitesi
Bariatrik Cerrahi Diyetisyenliği Kursu	10.03.2016	Acıbadem Üniversitesi
Karbonhidrat Sayımı Kursu	11.03.2016	Acıbadem Üniversitesi
Akılcı Laboratuvar Kullanımı	21.11.2015	Mustafa Kemal Üniversitesi