T.C.
YEDITEPE UNIVERSITY
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DEPARTMENT OF NUTRITION AND DIETETICS

INVESTIGATION OF THE RELATIONSHIP BETWEEN EATING ATTITUDES AND EMOTIONAL EATING TENDENCIES OF UNIVERSITY STUDENTS DURING THE COVID-19 PANDEMIC PROCESS AND EVALUATION OF THE FREQUENCY OF CONSUMPTION OF SUGARY FOODS

MASTER OF NUTRITION AND DIETETICS THESIS

ECE ERCİYAS

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APPROVAL

This thesis has been deemed by the jury in the accordance with the relevant articles of Yeditepe University Graduate Education and Examinations Regulation and has been approved by Administrative Board of Institute with decision dated ..... and numbered ..... .

Prof. Dr. Bayram YILMAZ

Director of Health Sciences Institute

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.

05.07.2022

Ece ERCİYAS

DEDICATION

To begin, I would like to express the deepest appreciation to my supervisor, Prof. Dr. Serdar B. ÖZTEZCAN, who has always generously shared his vast knowledge and opinions with me, as well as supported me through all of my difficulties. He patiently addressed all of my concerns through my masters and always greeted me warmly. I am confident that I will continue to benefit from his insightful advice and recommendations in both my career and personal lives.

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I present my thanks and gratitude

Ece ERCIYAS

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LIST OF SYMBOLS AND ABBREVIATIONS

AHA: American Hearth Association

AN: Anorexia Nervosa

APA: American Psychiatric Association

BED: Binge Eating Disorder

BMI: Body Mass Index

BN: Bulimia Nervosa

DGAC: Dietary Guidelines for Americans

DHAP: Dihydroxyacetone phosphate

DRI: Dietary Reference Intake

DSM-V: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition

EAT-26: Eating Attitudes Test

EASD: European Association for the Study of Diabetes

ED: Eating Disorder

EMAQ: Emotional Appetite Questionnaire

FAO: Food and Agriculture Organization

FDA: Food and Drug administration

GLP-1: Glucagon-Like Peptide

HFCS: High Fructose Corn Syrup

kg: kilogram

kcal: kilocalorie

NAFLD: Non Alcoholic Fatty Liver Disease

NCSS: Number Cruncher Statistical System

NHANES: National Health and Nutrition Examination Survey

TÜBER: Türkiye'ye Özgü Beslenme Rehberi

USA: United States of America

UK: United Kingdom

USDA: U.S. Department of Agriculture

VLDL: Very low-density lipoprotein

WHO: World Health Organization

ABSTRACT

Erciyas, E. (2022). Investigation of the Relationship between Eating Attitudes and Emotional Eating Tendencies of University Students during the COVID-19 Pandemic Process and Evaluation of the Frequency of Consumption of Sugary Foods. Yeditepe University, Institute of Health Sciences, Department of Nutrition and Dietetics, Master Thesis, Istanbul.

Eating behaviors of individuals are governed not only by physical hunger but also by emotions. Identifying and preventing the development of eating behaviors that adversely affect health will increase the quality of life and duration of individuals. In this study, it was aimed to examine the relationship between susceptibility to eating disorders and emotional eating tendencies that may arise or increase with the negative emotional changes brought by the COVID-19 pandemic process in university students and to evaluate the frequency of consumption of sugary foods. Demographic information, nutritional habits, physical activity and sleep status, Eating Attitude Test-26, Emotional Appetite Questionnaire and consumption frequency of 20 types of sugary foods were questioned to 546 undergraduate students studying at Yeditepe University. NCSS 2007 program was used for data analysis. The mean age of the students participating in the study was 21.7±2.1 years, 64.2% were female and 35.9% were male. The average BMI values of the students were 22.86±3.85. The mean of the eating attitude test with a cut-off point of 20 was found to be 13.09±7.69 for the students. Accordingly, while the majority of the students showed a healthy eating attitude, 15.6% were found to be prone to eating disorders. Eating attitude test values of women were found to be higher than men ($p=0.001$; $p<0.05$). According to the emotional appetite questionnaire scores, students tended to eat less in negative emotions or situations, while they tended to eat more in positive emotions and situations. Men's emotional appetite questionnaire mean scores were higher than women's ($p=0.001$; $p<0.05$). As a result of the research, a very weak and positive correlation was found between the Eating Attitudes Test-26 and the Emotional Appetite Questionnaire ($r=.089$, $p<0.05$). In order to manage the nutritional habits of university students, trainings, programs and policies should be created to increase nutritional knowledge and awareness.

Keywords: University students, eating attitude, emotional appetite, sugary food

ÖZET

Erciyas, E. (2022). COVID-19 Pandemisi Sürecinde Üniversite Öğrencilerinin Yeme Tutumu ile Duygusal Yeme Eğilimlerinin İlişkisinin İncelenmesi ve Şekerli Besin Tüketim Sıklığının Değerlendirilmesi. Yeditepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Anabilim Dalı, Yüksek Lisans Tezi, İstanbul.

Bireylerin yeme davranışları sadece fiziksel açlık değil duygular tarafından da yönetilmektedir. Sağlığı olumsuz yönde etkileyen yeme davranışlarının belirlenmesi ve gelişiminin önlenmesi bireylerin hayat kalitesini ve süresini arttıracaktır. Bu çalışmada üniversite öğrencilerinde COVID-19 pandemi sürecinin getirdiği olumsuz duygu değişiklikleriyle ortaya çıkabilecek veya artabilecek yeme bozukluklarına yatkınlık ve duygusal yeme eğilimlerinin birbiriyle ilişkisinin incelenmesi ve şekerli besin tüketim sıklıklarının değerlendirilmesi amaçlanmıştır. Yeditepe Üniversitesi'nde öğrenim gören 546 lisans öğrencisinin demografik bilgileri, beslenme alışkanlıkları, fiziksel aktivite ve uyku durumları ile Yeme Tutum Testi-26, Duygusal İştah Anketi ve 20 çeşit şekerli besinin tüketim sıklıkları sorgulanmıştır. Verilerin analizi için NCSS 2007 programı kullanılmıştır. Çalışmaya katılan öğrencilerin yaş ortalaması 21.7±2.1 yıl olup, %64,2'si kadın, %35,9'u erkektir. Öğrencilerin BKI değerleri ortalaması 22.86±3.85 'tir. Kesme puanı 20 olan yeme tutum testinin ortalaması öğrencilerde 13.09±7.69 olarak bulunmuştur. Buna bağlı olarak öğrencilerin çoğunluğu sağlıklı yeme tutumu göstermiş olup, %15,6'sı ise yeme bozukluğuna yatkın bulunmuştur. Kadınların yeme tutum testi değerleri erkeklere göre daha yüksek bulunmuştur ($p=0,001$; $p<0,05$). Duygusal iştah anketi puanlarına göre öğrenciler, olumsuz duygu veya durumlarda daha az yeme eğilimindeyken, olumlu duygu ve durumlarda daha fazla yeme eğilimi göstermiştir. Erkeklerin duygusal iştah anketi ortalama puanları kadınlara göre daha yüksek bulunmuştur ($p=0,001$; $p<0,05$). Araştırma sonucunda, Yeme Tutumu Testi-26 ile Duygusal İştah Anketi arasında pozitif yönde ve çok zayıf düzeyde anlamlı bir ilişki bulunmuştur ($r=.089$, $p<0.05$). Üniversite öğrencilerinin beslenme alışkanlıklarını yönetilebilmeleri için beslenme bilgi ve farkındalığını arttıran eğitimler, programlar ve politikalar oluşturulmalıdır.

Anahtar Kelimeler: Üniversite öğrencileri, yeme tutumu, duygusal iştah, şekerli besin

1. INTRODUCTION AND PURPOSE

Nutrition is the consumption of nutrients for growth, development and continuation of life and for the protection and improvement of current health. It is one of the most important basic human needs. Mankind has always aimed to be healthy and productive throughout its existence. Being healthy and productive occurs when the physical, mental, social and mental health continues for many years without deterioration. The health of individuals is governed by elements such as nutrition, genetic factors and environmental circumstances. Nutrition is at the top of the list among these elements (1). Adequate and balanced nutrition; It is the intake and proper consumption of the nutrients needed for the growth of the body, regeneration of tissues and healthy functioning (2).

While the normal development of eating behavior, which is rapidly shaped from infancy, results in healthy eating behaviors throughout life, negative changes in eating behavior can cause some health problems such as obesity. Many factors such as neural factors, individual factors, socio-demographic factors and environmental factors are effective in shaping eating behavior (3,4). Among these, university education is a period in which lifestyle and eating habits change, some chronic diseases begin to emerge, and unwanted behaviors such as smoking and consumption of junk food gain momentum. In this period, wrong eating habits bring many health problems such as obesity, cardiovascular diseases, hypertension and diabetes (5,6).

Many habits that will determine the lifestyle of individuals and their health status in the future are formed in university life. Eating attitudes and behaviors are one of the factors that create the quality of life and healthy lifestyle attitudes of university students. Eating disorders occur at almost any age; however, university students are in the risk group. Problems encountered during this process can lead people to eating disorders (7).

Eating behavior; It describes complex problems characterized by excessive emotions, attitudes, and behaviors along with body weight and food consumption (8). Eating disorders (EDs) is a condition defined as the deviation of eating habits from normal and can cause serious problems such as depression, anxiety, malnutrition,

overnutrition and substance abuse. It can be seen commonly among psychiatric diseases (9).

Adolescence is a period in which physical, social and spiritual problems are experienced. Approximately 15.6% of Turkey's population is in the 15-24 age group, and eating disorders are frequently seen in the teenage years or young adulthood, and although it is more common in women, it affects both genders (10,11).

A specific cause and pathogenesis for ED is unknown, and it is accepted that risk factors involve general social, familial, biological, developmental, psychological, behavioral factors and life events (12). In previous epidemiological studies in Turkey, the incidence of any type of ED in adolescents and young adults has been reported as 4%, and it is estimated that this rate will increase over time (13). For this reason, university students constitute the risk group for ED due to their age and possible psycho-social and economic difficulties. It is important to take education and preventive measures on this issue, to provide protection and to provide treatment if the disease has occurred (9).

Foods provide psychological saturation as well as physiological saturation. Since the foods consumed are pleasurable and associated with the reward system, they also have a way of revealing positive emotions and providing well-being. This effect is more clearly seen in carbohydrate-rich foods, especially in simple sugar consumption. The effectiveness of carbohydrates in improving negative mood is explained by the fact that carbohydrate absorption is positively associated with central serotonin synthesis and release (14). In a study on mood swings and carbohydrate consumption, depression; It was found to be connected with a rise in appetite and carbohydrate consumption. Dysphoric mode has also been reported to increase carbohydrate consumption (15).

Emotional eating is defined as the eating behavior that is thought to occur only in response to the emotional state, not because of the feeling of hunger or when the meal time has come, and it is known that emotional eating is generally triggered by negative emotional states (16). It is clear that not every individual with emotional eating behavior is obese or slightly obese, and not all obese or slightly obese individuals show emotional eating behavior. However, it is wondered why some individuals consume

food above their metabolic needs. Studies show that individuals with emotional eating behavior may resort to eating to regulate their negative emotional states in daily life. For example in several studies, chocolate consumption caused a spike in mood among individuals with emotional eating behavior compared to individuals without emotional eating behavior (17).

Eating behaviors related to different emotional states also show changes (16). If a mood occurs more frequently during eating than other moods, the relationship between eating and mood is strong. If this mood can cause behavioral changes, it is suitable for revealing the tendency to eat (18). In a study considering the link between eating behavior and mood, it was found that severe stress levels were correlated with the consumption of large quantities of food, mostly the consumption of high-energy snacks (17).

This study was created to examine the differences in eating attitudes and emotional eating tendencies in the process of negative mood changes experienced by university students who received online education from home during the COVID-19 pandemic period. Thus, with the data obtained from this study, it was intended to examine the emotional eating tendencies and susceptibility to eating disorders that may arise or increase with negative emotional changes such as fear, anxiety and stress brought about by the pandemic process, and to evaluate the relationship between them and the frequency of consumption of sugary foods.

Hypotheses:

- During the COVID-19 pandemic, university students' eating attitude test and emotional appetite questionnaire scores differ according to students' demographic characteristics, eating habits, physical activity and sleep states.
- There is a relationship between and eating attitude test and emotional appetite questionnaire of university students.

2. BACKGROUND

2.1 Eating Attitude

Attitude is defined as an individual's positive or negative attitude toward any item, person, group, or idea, and it is made up of three parts: behavioral, cognitive, and emotional. According to this definition, eating attitude can be defined as beliefs, thoughts, feelings and behaviors towards food and it can help understand food choices (19).

A decline in physical, mental, and social well-being occurs when nutrients are consumed in excess or insufficiently. Nutrition, in this context, is a conscious behavior that should be practiced to improve people's quality of living, develop and protect people's health, and maintain social, mental, and physical well-being (20). The management of motor abilities, social and emotional development of a person through central and environmental elements shapes their eating attitude. From birth, it is linked to all social relations. Individuals' eating habits are linked to both pleasant and unpleasant experiences (21).

Nutrition has an impact on mental health, as well as mental health and spoilage.

Emotional and cognitive factors, in particular, influence eating attitudes (22). It is known that emotions have a 30-48% effect on eating behavior and appetite and increase or decrease eating (20). Many theories have been put forward to explain eating behavior from the perspective of psychology. The basic theory is that individuals use eating as an emotional defense mechanism when they encounter distressing situations and that they cope with the distressed situation in this way (23). Despite individual variances, negative emotional states such as stress, depression, anxiety and anger have been demonstrated to increase food consumption and disrupt eating attitudes (24).

One of the fundamental building blocks of eating disorders is the negative process in eating attitudes and behaviors. The findings of the studies reveal that eating attitudes and behaviors are influenced by social, cultural, and psychological variables (25). Because eating attitudes and behaviors are shaped early in life, young people have been observed with unhealthy eating attitudes and behaviors that are not diagnostic (26).

The term "impaired eating attitude" is frequently used to describe the process that leads to eating disorder (27).

Individuals learn to exhibit eating behavior against negative affect as a result of confusing childhood experiences with hunger and satiety, according to the psychosomatic theory, which is another theory explaining impaired eating attitudes. The inability of the child to learn hunger and/or satiety signals as a result of the parent's use of foods for external reward or punishment, as well as the parent's management of the child's nutritional behavior on behalf of the child without listening to the child's own eating needs, results in the conditioning of eating in reaction to positive and negative emotions. Seeing eating as an emotionally comforting element and conditioning eating as a reward leads to using eating to counteract negative affect and maintaining emotional eating behavior in adulthood, especially in individuals who have not been successful in reflecting and regulating emotions in childhood (28).

According to the Escape Model theory, eating behavior is used as an escape method. When the ego is threatened, a person's eating behavior is used to escape and distract from the stimuli (29). As shown in a study, those who engage in binge eating are influenced by a desire to escape from introspection. These people have been seen to have emotional suffering in addition to anxiety and depression, particularly when they have a self-awareness sensitive to others' high standards and expectations, and when they fall short of them. People tend to narrow their attention to the stimuli surroundings and avoid cognitively meaningful thoughts in order to escape from this distress, which triggers the eating behavior (30).

Attachment (31), body image, resilience, cognitive restriction, alexithymia (32), obsessive-compulsive symptoms, external control perceptions, locus of control, assertiveness, introverted hostility (33), depression (34), perfectionism, sociotropy, and autonomy were found to be associated with eating behavior in addition to emotions (35).

Furthermore, it is well recognized that several factors, including impulsivity (36), stress, parental modeling, happiness, boredom, and rage, are strongly linked to emotional eating (20).

Boredom and loneliness, in particular, have been shown to influence eating behavior among these variables. Moreover, this relationship is observed not only in obese people, but also in individuals of normal weight. Boredom promotes eating behavior and triggers eating attacks in people of normal weight, but more so in obese people, as shown in a study (37).

There has been research done to better understand the relation between anxiety and eating. Although the number of research in the context of anxiety in persons with and without eating disorders is small, the findings are impressive. One study looked into several types of anxiety in non-clinical teens and discovered that women were more concerned about their weight, appearance, and food than men, and that their anxiety levels were higher. Individuals with eating disorders had higher levels of anxiety than the control group, according to studies conducted with people with and without eating disorders (38). In those prone to anxiety and chronic dieters, food consumption was also found to be triggered by social evaluation and school-related concerns (39).

Social variables have a significant impact on psychiatric symptoms. Food, diet, and body shape are all very important in Western countries and Westernized Far Eastern countries like Japan today. Thinness and beauty have always been considered key factors in determining attractiveness, particularly in women. "Slimness is vital for women's apparel to look beautiful; a lady with the ideal woman's appearance should have a physique like a model, very slim and stylish appearing," they say in advertisements, sports clubs, dress styles, and societies. These messages from the media and society play a significant impact in women's obsessive eating symptoms (40).

There are additional research that demonstrate that eating attitudes are disrupted as a result of strict dietary behaviors or difficult interpersonal encounters fueled by a person's sense of excess weight and shape. In fact, a decrease in BMI (Body Mass Index) following strict dietary practices predicts a decline in eating attitudes (34).

2.2 Eating Disorders

Eating attitude, which includes decisions about what, when, and with whom a person will eat, is a concept that can shift in response to psychological and social factors in addition to biological and physiological necessities (41). The expression of eating behavior with serious disorders is referred to as an eating disorder (21).

Many elements influence the development of an individual's eating behavior from birth, including the reward mechanism, homeostatic systems, sensory and motor system development, the environment and culture in which the individual grows up, and parental attitudes. While eating is an unavoidable part of life, it can occasionally become a psychiatric condition with obsessions or deviations from normal eating behaviors (42).

It is the manifestation of behaviors such as refusing to accept one's own body weight or exercising to avoid gaining weight. Additionally, some people use self-induced vomiting to avoid gaining weight. One of these scenarios is the feeling of not being able to maintain body weight control. At the cognitive level, eating disorders impact people's beliefs of their bodies, making them believe they are overweight, out of shape, and weak. As a result, disparities in eating patterns emerge, leading to a decline in eating behavior. Individuals who are in this condition reduce their food intake, exercise, or force themselves to vomit in order to avoid gaining weight (9).

Individuals' eating attitudes are linked to their eating behaviour. Attitudes are abstract inclinations that pave the way for behaviors, rather than concrete behaviors (43).

One of the fundamental building elements of eating disorders is the negative process in eating attitudes and behaviors. Eating disorders, according to the APA, are dangerous to people's health and include abnormal eating behaviors. The most crucial determinant in the emergence of eating disorders in the future is an abnormal eating attitude (25,44). According to the findings of a study involving 530 university students, weight anxiety, binge eating, bulimia nervosa, and anorexia nervosa are all linked to disordered/negative eating attitudes (45).

It has also been reported that it can appear as significant psychiatric illnesses with elevated levels of morbidity and mortality (46). The DSM-5 (The Diagnostic and Statistical Manual of Mental Disorders) renamed "Eating Disorders" to "Feeding and Eating Disorders." (47). Eating disorders have a variety of causes, including biological, psychological, developmental, and social factors. It has been attached to anxiety and mood disorders, as well as physical issues such as sleep disturbances, heart abnormalities, hormone imbalances, and a variety of gastrointestinal complaints (48).

2.2.1 Epidemiology of Eating Disorders

Eating disorders primarily affect women and are more prevalent during adolescence (49). The lifetime prevalence of eating disorders is estimated to be between 1-5%, according to the findings of the studies (50). According to studies on the frequency of ED, AN cases occur 8 times for every 100,000 people, while BN cases occur 12 times for every 100,000 people (51). Persons with eating disorders were studied in terms of prevalence, frequency, onset, and course of disease within the scope of DSM-5 diagnostic criteria in a study done with individuals with eating disorders whose diagnostic interviews continued every year for eight years. The lifelong prevalence estimates of eating disorders in people under the age of 20 were found to be 0.8% for anorexia nervosa (AN), 2.6% for bulimia nervosa (BN), and 3.0% for binge eating disorder (BED). Anorexia nervosa, bulimia nervosa, and binge eating disorder all have initiation ages of 19-20 years old forAN , 16-20 years old for BN, and 18-20 years old for BED. Many studies have been conducted in Turkey to determine the incidence of ED.

Kılıç (1998) used the international composite diagnostic assessment (CIDI) to determine the 12-month incidence of BN in a large epidemiology research representing the Turkish population. It was found to be 0.5 % in both men and women. Semiz, Kavakçı, Yağız et al. (2012) revealed that the prevalence of ED was 1.52 %, BN prevalence was 0.63 %, and BED prevalence was 0.81 % in a recent epidemiology study conducted in Sivas city center. Women were also shown to be statistically substantially more likely than men to be diagnosed with ED (88.2 %).Furthermore, those with eating disorders are more likely to have functional impairment, distress, suicidality, a history of psychiatric therapy, and a low BMI. Eating disorders are known

to change within itself, with the most common transition being from BED to BN (23 %) (52–54).

2.2.2 Etiology of Eating Disorders

The exact cause of eating disorders is yet unknown. Biological, psychological, and sociocultural variables influence a person's eating behaviors (55).

Table 2.1 Factors Affecting Eating Behavior Disorders (55)

Biological Factors	**Psychological Factors**	**Socio-cultural Factors**
Genetics Central control mechanism that regulates appetite Neurochemical Pharmacological	Personality Body dissatisfaction Sexuality Familial factors	Environmental Social media pressure Social perception Friendship groups

Biological Factors:

a. Genetic predisposition: This is one of the major elements in the emergence of eating disorders. According to studies, genetic predisposition has a 50-80% role in the development of AN and BN (56).

b. Central control mechanism that regulates appetite: Three key systems in this mechanism take a vital part in the emergence and progression of eating disorders (57). Homeostatic system; regulates h unger, satiety, and autonomic neuronal activity.

   - Drive system; controls eating-reward systems linked to food seeking and consumption.

   - Self-regulatory system; This is the system that regulates and directs the meaning of appetite and value of life (57).

c. Neurochemical factors: It is caused by the dysregulation of neurotransmitter systems and neuromodulators. Norepinephrine enhances appetite while epinephrine and serotonin suppress it. Norendocrine alterations in eating disorders are linked to calorie restriction, weight loss, and eating behavior (42).

d. Antipsychotics, mood stabilizers, and antidepressants have all been demonstrated to be beneficial in the treatment of eating disorders (58). Antidepressants function by enhancing the central nervous system's transmission of norepinephrine and serotonin (42).

Psychological Factors:

Another factor that develops eating disorders through influencing eating attitude behaviors is the individual's psychological concerns with themselves and their environment (59).

a. Personality: Psychological factors such as lack of self-confidence in society, negative and inflexible thinking tendency, inability to express emotions, perfectionist structure, high success expectation, and feelings of guilt take a vital part in the emergence of eating disorders by affecting eating attitude behaviors (60).
b. Body perception and dissatisfaction: Body image focuses on how individuals views his/her body, both positively and negatively, and how he/she visualizes his/her feelings. Body dissatisfaction arises when there is a disconnect between an individual's current physique and the body they desire. Obesity and eating attitude and behavior disorders are related to body dissatisfaction, especially in adolescence (61).
c. Sexuality: In recent years, a thin body has been viewed as a source of sexual attractiveness. This situation, especially among adolescents, encourages unhealthy eating behaviors and leads to eating disorders (62). Emotional, physical, and sexual abuse are other circumstances. According to studies, 30% of bulimia nervosa patients were sexually abused as children, and 50% of them were physically abused as children (56).
d. Familial factors: Situations such as parental love, family strife, and parent-child communication influence an individual's eating behavior beginning in childhood. According to studies, children who are subjected to familial pressure and challenges begin dieting during adolescence, limit their eating habits, or tend to malnutrition (63). According to attachment theory, the changing and imbalanced early communications as the mother-infant relationship may lead to eating behavior disorder later in life (64).

Sociocultural Factors:

a. Environmental: Individuals are pushed to body dissatisfaction by high socio-cultural ideals and expectations concerning body image (61).
b. Media pressure: In Western countries, where thinness is associated with beauty, professional groups such as celebrities, sports, and ballerinas, who are frequently featured in the media, encourage people to lose weight. In young people, this situation has been shown to cause disorder in eating attitude behaviors (restrictive, emotional and external). Therefore, easy access to and extensive use of social media are mostly related to eating disorders in adolescents (65).
c. Social perception: The beauty model imposed by society and affecting women in general; it has been proven that the perception of a slim body influences the individual's body standards and eating habits (66).
d. Friendship groups: According to a study undertaken to assess the impact of peers on eating behavior, peer adolescents influence one another and have an impact on eating behavior, with women being more influenced (66).

2.2.3 Feeding and Eating Disorders Identified in DSM 5

One of the most widely used classifications is the Diagnostic Statistical Manual of Mental Disorders (DSM) criteria. According to the DSM-IV diagnostic criteria, eating disorders are examined under 3 main headings: 1. Anorexia Nervosa (AN), 2. Blumiya Nervosa (BN), and 3. Eating disorder not otherwise specified (EDNOS). According to the DSM-5 diagnostic criteria (2013), the classification of eating disorders; Pica, Rumination Disorder (RD), Avoidant/Restrictive Food Intake Disorder (ARFID), Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), Other Specified Feeding or Eating Disorder (OSFED), and Unspecified Feeding or Eating Disorder Eating Disorder (UFED) (67).

2.2.3.1 Pica

Pica disease is defined as the consumption of non-nutritive items for at least 1 month at a developmental age when this behavior is improper (68). Despite the specific base of pica is unidentified, it has been advocated that malnutrition, dietary deficits, gastrointestinal issues, or infection susceptibility may all play a part in its pathogenesis. Ice, sand, clay, soil, plastic, fabric, lime, paper, hair, and match tips are the most commonly eaten things in pica disease. It has been reported that pica causes

serious somatic consequences such as peptic ulcer, intestinal obstruction, infections, anemia, electrolyte imbalance and poisoning (69). Although it is more common in children, it is a disease that affects people of all ages and societies. Pica can only be diagnosed in children who are older than two years old (70).

According to DSM-5, the diagnostic criteria are as follows (70):

A. Non-nutritive value during a period of at least one month when eating items.

B. The attitude of eating non-nutritive, non-food products is incompatible with the developing stage of the person.

C. This eating attitude is not based on culture or is socially acceptable.

D. If the condition arise in terms of another mental disease, it is severe enough to merit further clinical assessment (eg, autism spectrum disorder, intellectual developmental disorder, schizophrenia).

2.2.3.2 Rumination Disorder (RD)

Rumination disorder is the withdrawal of food after eating without nausea, involuntary retching, or disgust (50). RD is a disorder based on the ability to chew food by removing it from the mouth and chewing it back into the mouth, or swallowing and chewing the food again, or expelling it (60). It can be seen in every period of life (69).

The diagnostic criteria of retrieval (rumination) disorder in DSM-5 are as follows (70):

A. For a minimum of one month, refrain from eating commonly consumed foods.

B. There should be no medical need for frequent retrieval.

C. This should not happen only when there are other eating disorders present (AN, BN and BED).

D. If this problem develops as part of another psychological disorder (e.g., intellectual developmental or other neurodevelopmental disorder), it should not be treated as an eating disorder on its own; instead, it should be subjected to a separate psychiatric evaluation.

2.2.3.3 Avoidant/Restrictive Food Intake Disorder (ARFID)

ARFID refers to a of heterogenous group of presentations that presumably have several etiologies. The majority of people with eating difficulties have underlying fundamental health problems, most frequently neurological or gastroenterological problems (71). DSM-5 has defined avoidant restrictive food intake disorder as a new disorder in the "Feeding and Eating Disorders" section (72). In the DSM-5, ARFID is now recognized as a non-age-related disorder (73). It contains a heterogeneous clinical display that can cause important weight loss, nutritional deficiencies, dependence on enteral feeding or nutritional supplementation, and/or significant interference with psychosocial functioning (74). Symptoms can appear in the context of a general disinterest in food and eating, sensory-based food selectivity, and fear about negative eating impact, such as choking or vomiting (75).

Patients with ARFIDs are at risk for the same medical consequences that anorexia nervosa patients are. Comorbidity with anxiety disorders or neurodevelopmental problems is common (84). A person with avoidant-restrictive food intake disorder can only be identified if they are not concerned about their weight or shape (72).

The diagnostic criteria for ARFID, according to DSM-5, should be as follows (70):

A. It's an eating disorder in which one or more of the symptoms are present at the same time (eg, a feeling of indifference and discomfort towards food; feeling anxious about the odious consequences of nutrition). The following are diagnostic criteria that set it apart from other eating disorders:

    1. Significant loss of body weight (no expected body weight gain for children or stagnation of growth).

    2. There is a serious nutritional deficit.

    3. Adherence to enteral nutrition or nutritional supplements taken orally.

    4. It is associated with conditions such as a marked decline in psychosocial functioning.

B. This should not involve an absence of food or a cultural dietary tradition.

C. There should be no evidence of body weight or physical pain, and this eating disorder should not appear primarily in the presence of AN or BN.

D. The eating disorder should not be associated with a concomitant medical condition or explained better by another mental illness.Additional clinical assessments should be conducted when this disorder is linked to another condition or disorder.

2.2.3.4 Anorexia Nervosa (AN)

Eating disorders are a type of mental illness in which one's eating habits are seriously impaired. The two most common diagnoses in this group are AN and BN, both of which are accompanied by substantial physical and mental symptoms (76).

AN is the third most frequent chronic condition among young people, having first been documented in 1874. The average age of emergence for AN is around 15 years, and girls are 10 times more likely than boys to have it (70).

AN is a severe mental disease marked by severe dietary restriction or other weight-loss strategies, as well as a fear of gaining too much weight or having a distorted body image, or both (e.g., excessive physical activity, purging). Also, AN is distinguished from avoidant-restrictive eating disorder by concerns about weight and shape. AN also causes major impairments in cognitive and emotional functioning (77).

Patients with AN, who have a major degradation in body image, are reported to be extremely fearful of gaining weight. With this fear, individuals use laxatives and diuretics to reduce weight, and they exercise excessively. They do, however, exhibit obsessive behaviors like as weighing themselves frequently, monitoring calories, and only eating a tiny amount of food. Physical changes are visible in people who lose a lot of weight in a short period of time. Hair and tooth loss are common symptoms, as are hair dryness, body hair growth, and a considerable drop in body temperature. Patients with anorexia nervosa often have the attitude that they are unaware of their condition, do not accept it, and even if they are aware and accept it, they do not want to alter it and oppose therapy because they are terrified of gaining weight. This circumstance triggers a chain of events that can lead to death (42).

Although the treatment results of the patients are variable, the mortality rate in AN is high. Although persons with AN respond to treatment, only half of those who

have the disease can recover, with 30% making a partial recovery and 20% improving or worsening their condition. Mortality from physical causes or suicide is around 5-18%. A positive prognosis is connected with AN onset at a young age, family support, early diagnosis, and treatment; vomiting, extreme weight loss, bulimia, chronicity, and obsessive compulsive personality features are connected with a bad prognosis (78).

AN's medical issues influence all organs and systems, and this is usually caused by malnutrition, weight loss, and cleansing activities (79). Gastrointestinal symptoms that impact the entire GI tract are particularly common (80).

The DSM-5 classification system divides anorexia nervosa into two categories. The "Restrictive Form" is the first type of AN. The Restrictive Type is characterised by actions such as restricted eating, not eating at all, or engaging in extreme sports for three months without a binge eating episode. In this type, weight loss is seen with almost no eating and excessive exercise (70).

The "Binge Eating and Purging Form" is the second type of AN. Unlike the first type, this one involves three months of recurring binge eating and purging (70).

The DSM-5 Diagnostic criteria for Anorexia Nervosa are as follows (70):

A. Having the lowest body weight regarding age, gender, and development because the individuals are not acquiring enough energy for their requirements.

B. Fear of gaining weight and participating in actions that keep you from gaining weight despite being underweight.

C. Body image malformation, with an overabundance of importance placed on body weight and shape.

The lowest level of body weight of the individual is another factor used to identify the degree of dysfunction and the treatment approach. Body Mass Index Values are used in the DSM-5 to determine the severity of the condition. As a result, the following criteria were employed in the evaluation (70):

- Not heavy: BMI $\geq$ 17 kg/ m^2
- Moderate: BMI 16- 16.99 kg/ m^2
- Heavy: BMI 15- 15.99 kg/ m^2
- Extremely: BMI <15 kg/ m^2

2.2.3.5 Bulimia Nervosa (BN)

Bulimia nervosa is a disorder marked by binge eating, recurrent eating attacks, and incorrect weight-loss compensatory actions (81). Individuals have been reported to be unable to quit eating despite efforts and fears during attack periods (82). BN can ocur with normal and/or overweight. The average onset age for BN, which ranks second among the most common eating disorders, is late adolescence or early adulthood (70). If the weight falls below the BN threshold, AN with the precipitating overpurging subtype is diagnosed (83).

To avoid weight gain, the individual willfully participate in undesirable compensating behaviors such vomiting, laxative use, diuretic use, fasting, and extreme exercise (84). Binge eating and incorrect compensatory behaviors occur at least once per week for an average of three months (55). Body size and weight have a significant affect on people's self-confidence (56).

The following are the DSM-5 diagnostic criteria for BN (70):

A. Binge eating bouts on a regular basis. Both of the following factors contribute to a binge eating episode:

1. Consuming significantly more food in a distinct time period (within any two hours) than most people would consume at the same time period under similar circumstances.

2. During this time, you may lose control of your eating habits (a person's sense that they can't stop eating or control what and how much they consume.)

B. Inappropriate compensatory actions, such as compulsive self-induced vomiting, diuretics, abuse of laxatives or other drugs, not eating at all, or exercising excessively, to prevent weight gain.

C. At least once a week over the past three months, both binge eating episodes and inappropriate compensatory actions have occurred.

D. Inexplicably being influenced by body weight and shape in self-assessment.

E. Bulimia nervosa not occurring only during episodes of AN.

For objectively determine the extent of the disorder, there are DSM-5 criteria for BN as well as for AN (70):

• Mild: Inappropriate compensatory behavior (use of laxative, diuretic drugs, vomiting, excessive exercise, not eating at all) 1-3 times a week on average.

• Moderate: Inappropriate compensatory behavior (use of laxative, diuretic drugs, vomiting, excessive exercise, not eating at all) 4-7 times a week on average.

• Severe: Inappropriate compensatory behavior (use of laxative, diuretic drugs, vomiting, excessive exercise, not eating at all) 8-13 times a week on average.

• Extreme: Inappropriate compensatory behavior (use of laxatives, diuretics, vomiting, excessive exercise, not eating at all) on average 14 or more times a week.

It is a table in which BN and AN behavior patterns, which try to manage body weight, are determinative. Unlike the AN image, however, the patient's body weight is at normal or slightly above normal range. Patients suffer from uncontrollable eating episodes. They eat a lot of high-calorie items in a short amount of time. They feel a brief sensation of relief following these episodes. However, they tend to act like vomiting and using laxatives, with or without warning, due to their dread of gaining weight and feelings of guilt caused by what they ate. The depressed and anxious feeling that follows sets off new eating attacks, creating a vicious cycle. Impulsivity is a prevalent feature in BN patients, and it is linked to impulse control problems such kleptomania and substance misuse. Both eating disorders result in substantial biological consequences and biochemical changes, as one could assume (77). The medical conditions encountered in AN and BN are summarized in Table 2.2 (76,85).

Table 2.2 Medical Conditions Seen in Anorexia Nervosa and Bulimia Nervosa (76,85).

Medical Conditions in Eating Disorders	Anorexia Nervosa	Bulimia Nervosa
Physical examination findings	Appearance under age, delay in growth and pubertal development, low body temperature, dry skin, lanugo, alopecia, acrocyanosis, dehydration	Erosion of dental enamels, enlargement of parotid gland, dehydration, scars due to vomiting reflex on the back of the hand
Cardiovascular system	Bradycardia, hypotension, Q-T prolongation, S-T depression, edema	Electrocardiography abnormalities
Gastrointestinal tract	Decreased motility, constipation, pancreatitis, increased liver enzymes, increased amylase, acute gastric dilation	Esophagitis, pancreatitis, prolonged gastric emptying
Hematological findings	Anemia, leukopenia, thrombocytopenia	
Biochemical parameters	Hypokalemia, hypnatremia, hypocalcemia, hypophosphotemia, increased ALT, AST and cholesterol levels	Hypokalemia, hyponatremia, hypomagnesemia, hypocalcemia, metabolic alkalosis, metabolic acidosis
Skeletal system	Decreased bone density, osteopenia	
Endocrine system	Cortisol ⇧ FSH, LH ⇩ Estradiol ⇩ ST3 ⇩ ST4 N/ ⇩ TSH N/ ⇩ GH ⇧ /N IGF-1 ⇩ Leptin ⇩	Cortisol N/ ⇧ FSH,LH N/ ⇩ Estradiol N/ ⇩ ST3 N/ ⇩ ST4 N/ ⇩ TSH N ⇧ GH N/ ⇩ IGF-1 N/ ⇩ Leptin N/

Genetic factors play a role in the emergence of all eating disorders, either directly or indirectly. Genetics is effective in the etiology of AN and BN, according to family and twin studies. Indirectly, genetically determined variables that enhance the risk of eating disorders, such as personality traits, mood, anxiety disorders, and hypothalamic dysfunction, play a part in the etiology (86).

A good grasp of the central regulatory systems that regulate hunger is required for a biological understanding of eating disorders. There are three major systems at work here. The brain stem and hypothalamus' homeostatic system integrates peripheral

metabolic signals from the gastrointestinal tract to regulate appetite, satiety, and autonomic neural activity. The drive system is a neuronal circuit located all through mesolimbic cortex and striatum. This structure controls the eating-reward mechanisms that help you find and eat food. The self-regulatory system, on the other hand, is a system that controls the life purpose, value and meaning of appetite from top to bottom. Eating disorders are formed and maintained by abnormal changes in these three systems (67). On the other hand, hunger brought on by eating disorders has harmful impacts for the brain, which needs a lot of glucose. Eating disorders that develop at a critical age of brain reorganization, such as adolescence, can have serious effects by altering brain structure. The brain plasticity regulator brain-derived growth factor (BDNF) has been demonstrated to decrease in anorexic patients during the acute phase (87).

Neurochemical eating disorders; It's linked to the noradrenergic, serotonergic, dopaminergic, and opioid neurotransmitter systems, as well as neuromodulatory systems like corticotropin-releasing hormone (CRH) (88). It is well known that epinephrine and serotonin in the hypothalamus suppress hunger, while norepinephrine stimulates food intake (89). Clomipramine and fluoxetine, both of which work on the serotonin pathway, are beneficial in preventing relapse in AN patients and may also help to lessen obsessive thoughts about weight gain and eating behaviors. Reduced serotonin levels in the CSF have been linked to impulsivity, aggression, and suicidal behavior. Serotonergic dysfunctions are prominent in the etiology of BN, which is characterized by impulsive eating attacks and vomiting, similar to AN (86).

Abnormalities in the reward system are a fundamental feature of both AN and BN, and this seems to be related to the dopaminergic system, which plays a role in self-stimulation and addiction (4) For example, it has been reported that the frequency of alcohol and substance use increases in BN patients (90).

Neuroendocrine and metabolic variables take part in the etiology of eating disorders, as well as affecting eating behavior under stress, such as dieting excessively. Many of the neuroendocrine alterations seen in eating disorders are linked to calorie restriction, weight loss, and eating behavior. As a result of normal eating habits and nutritional rehabilitation programs, these modifications revert to normal. For example, while CRH secretion increases in anorectic patients during the period of dietary

restriction, it returns to its original state when patients regain their weight in the normal range. Amenorrhoea clinical picture occurs with the decrease of gonadotropin-releasing hormone (GnRH) secretion from the hypothalamus in anorectic patients. Serum ghrelin and leptin levels are also important metabolic peptides studied in the field of eating disorders (86,89).

Eating disorders are long-term chronic illnesses with a wide range of treatment outcomes. While AN has a high mortality rate of 5-18%, it is reported that the prognosis of BN is better than AN, with a mortality rate of 6% and a 70% recovery rate (82,91).

2.2.3.6 Binge Eating Disorder (BED)

BED is distinct from anorexia nervosa because it does not involve food rejection, and from bulimia nervosa because it does not involve food burning, compensatory, or removal; it is a type of eating disorder with its own diagnostic criteria in the DSM-5. Binge eaters believe they can't stop themselves from eating far more than they can ordinarily ingest in one sitting. This binge eating causes physical discomfort as well as a guilt in the individual (92).

The onset of binge eating disorder is commonly in late adolescence or early adulthood. Obesity is frequently connected with BN and BED (93).

Spitzer et al. (1993) were the first to develop a diagnostic criterion for binge eating disorder. Binge eating disorder has five criteria, according to Spitzer et al. These include (70,94):

1) A decline in people's business and social functioning,

2) An excessive preoccupation with body shape and weight,

3) The presence of general psychopathology,

4) Spending excessive time on diet/nutrition in adults

5) A history of depression, alcohol/drug use, or treatment for past emotional problems

Binge Eating Disorder was classed as "Eating Disorders Not Otherwise Specified" in the 4th edition of the DSM-4 in 1994, and as "Nutrition and Eating Disorders" in the DSM5 in 2013 (70).

The DSM-5 diagnostic criteria for Binge Eating Disorder are as follows (80):

A.Binge eating episodes regularly. During these binge eating episodes, both of the following are present:

1. Consuming significantly more food than one would ordinarily consume in a particular length of time (for example, any two-hour period) under similar conditions and for the same amount of time.

2. Believing that you have no control over what you eat during an episode.

B. Three (or more) of the following are present in eating episodes:

1. Eating at an unusually fast pace.

2. Don't eat until you feel uncomfortably full.

3. Consuming large quantities of food without feeling hungry.

4. Eating alone because the person feels ashamed of overeating.

5. Feeling guilty, disgusted, or depressed after the episode.

C. Having a strong aversion to binge eating.

D. D. Binge eating episodes occur at least once per week for 3 months on average.

E. Unlike bulimia nervosa, binge eating does not involve recurring inappropriate compensatory behaviors. It can occur who don't have BN or AN.

As in AN and BN, criteria are determined in the DSM-5 to determine the severity of binge eating disorder (70):

- Mild: Having a binge eating episode 1-3 times per week on average.
- Moderate: Having a binge eating episode 4-7 times per week on average.
- Heavy: Having a binge eating episode 8-13 times per week on average.
- Extreme: Having 14 or more binge eating episodes per week.

The most frequent eating disorder in adults is binge eating disorder. Furthermore, research reveal that people with BED have more psychopathology than others who don't eat or eat infrequently. Obesity is not a criterion or a condition for binge eating disorder, despite the fact that it was created with obese people in mind. But it is extremely common (between 1.3 % and 30.1 %) among people looking for a weight-loss option. However, studies on BED, BN, and obesity reveal that the pathology levels of BED and BN are more similar (95).

2.2.3.7 Other Specified Feeding or Eating Disorder (OSFED)

Atypical Anorexia Nervosa

In spite of considerable weight loss, the person's body weight is within or above the normal body weight limitations, even if all other criteria for AN are met (96).

Bulimia Nervosa (Low frequency and/or limited duration)

Binge eating and inappropriate compensatory behaviors appear less than once a week and/or for less than three months on average, even when all of the BN criteria are met (110).

Binge Eating Disorder (Low frequency and/or limited duration)

Even if all of the criteria for binge eating disorder are filled, binge eating happens on average once per week and/or once every three months (70).

Purging Disorder

In the absence of binge eating, repetitive purging activity (e.g., self-induced vomiting; use of diuretics, laxatives, or other drugs) to modify body weight or shape (70).

Night Eating Syndrome

Recurrent nocturnal eating episodes characterized by excessive consumption of food after waking up from sleep or after dinner. Individuals are conscious of what they eat and recall it. External affects such as changes in a person's sleep-wake cycle or local social rules cannot explain night eating behavior. Night eating causes severe distress and/or deterioration in a person's functional status. This disordered eating behavior isn't defined by BED or another mental disorder, and it's not caused by another medical state, such as substance abuse, or a pharmaceutical side effect (70).

2.2.3.8 Unspecified Feeding or Eating Disorder (UFED)

The phrase "unspecified feeding and eating disorder" is used when indications specific to a feeding and eating disorder create clinically significant distress or damage in socially, occupational, or some other essential areas of functioning but do not meet all criteria for any of these (70).

The unspecified feeding and eating disorder classification can be used when a therapist decides not to specify the reason for not matching the criteria for a specific

feeding and eating disorder. It also refers to situations in which there is inadequate evidence to provide a more definitive diagnosis (70).

Early detection and treatment of eating disorders can save a person's life. The diagnostic criteria and approach to eating disorders should be well-known, especially in health institutions that provide primary care services, and the issue should be treated with the sensitivity it deserves (56,97). For a successful treatment, a multidisciplinary team is required. Individuals' physical qualities, emotional condition, familial and social problems should be evaluated by people who are experts in different fields (physician, psychiatrist, dietician, nurse) (98,99).

A basic treatment strategy has yet to be implemented. Various psychotherapy methods, family therapy, medicine, and, if necessary, inpatient care should all be implemented while keeping the patient's individual condition in mind. Treatment should focus on achieving a normal, healthy, individualized, and stable body weight, as well as controlling abnormal eating behaviors and preventing recurrence. Medical therapies relating to diet and somatic state correction should also be incorporated in this framework (56,99).

In circumstances where outpatient treatment has failed, hospitalization criteria should be considered (Table 2.3).

Table 2.3 Hospitalization criteria for eating disorders (56,98)

○ 75% or less of the expected body weight for age and sex
○ Dehydration
○ Electrolyte imbalances (hypokalaemia, hyponatremia and hypokalemia)
○ Cardiac disorders (severe bradycardia, prolonged Q-T interval)
○ Deterioration in physiological parameters: • Severe bradycardia (daytime HR<50/min; nighttime HR<45/min) • Hypothermia (body temperature <35.6 °C) • Decrease in blood pressure (BP: 20/10 mm/Hg)
○ Delay in growth and development
○ Patients who could not get results in outpatient treatment
○ Refusal to eat, uncontrollable eating behavior and vomiting,
○ Need for medical treatment due to malnutrition
○ Presence of significant depression or other major psychiatric problems requiring inpatient treatment

Diets, visual dissatisfaction, social media use, depressive symptoms, perfectionism, sleep disorders, inability to cope with social problems, and emotional problems have all been found to enhance the deterioration of eating behaviors and unhealthy weight loss/gain. Eating disorders are frequent in the young population and can be fatal, thus early diagnosis, treatment, and management are critical. The examination and treatment of eating disorders necessitates collaboration among experts in the field. Success will be enhanced by a multidisciplinary approach, family compliance to therapy, cooperation, and problem management (100–102).

2.3 Eating Mechanisms

Through neuronal and hormonal circuits, the central nervous system regulates energy metabolism. According to a study, eating h baviorseare controlled by two separate systems: homeostatic and hedonic (56).

2.3.1 Homeostatic Eating

The hypothalamus plays a central role in the integration of hormonal and neurological signaling pathways that regulate food intake and body weight. The arcuate nucleus neurons located here are particularly crucial in this process (103). Hunger and satiety are created by specific neuron centers in the hypothalamus.

Neurons respond to impulses from the upper centers of the brain and the nucleus tractus solitarius (NTS) in the brain stem to display feelings of fullness and/or hunger. Appetite stimulants and suppressants are hormones produced in adipose tissue and digestive organs that pass through the blood-brain barrier and reach the hypothalamus through circulation. Estrogen, insulin, leptin, adiponectin, ghrelin, and neuropeptide Y are the key hormones that impact appetite stimulating and appetite inhibiting communication (104).

Stimulation of estrogen receptors, which affect the cells that regulate food intake, causes a change in gene activity in the hypothalamus. Changes in estrogen levels have been associated with changes in eating behavior in clinical studies (103).

It is emphasized that leptin, one of the most essential factors influencing food intake, is linked to excessive eating behavior (56). Leptin is a hormone secreted by adipose tissue in the body that helps to prevent obesity by reducing food intake and appetite. Arcuate nuclei in the hypothalamus respond to leptin and suppress appetite. Neuropeptide Y is involved in the control of various pituitary hormones, mostly in boosting hunger, and works in the opposite way of the leptin mechanism (103).

The ghrelin hormone, secreted by the gastric fundus, is a lipopeptide hormone that initiates eating and promotes appetite (105). Before each meal, the hormone ghrelin, which regulates body weight and eating behavior, increases in blood levels and stimulates appetite (103).

2.3.2 Hedonistic Eating

Food consumption has been linked to the need for energy and nutrients, as well as the pleasure derived from food, according to current research. Food sensory qualities

such as taste, smell, and appearance are among the most significant factors to consider in food selection. Eating behavior that occurs psychologically without feeling hungry can be seen in addition to physiological hunger (106). The corticolimbic neural network and psychological impacts regulate this hedonistic aspect of eating behavior (107).

Hedonistic eating is defined as a person's excessive desire to eat tasty food without the need for energy and the pleasure felt thereafter (49,106). People who tend to eat hedonistically choose foods that are pleasing to the palette and will make them happy by providing pleasure rather than those that contain adequate and balanced nutrients (108).

It has been proposed that those who are addicted to a certain food or substances like cigarettes and alcohol may have a specific dopamine deficiency (109). It is defined as the realization of behaviors and self-reward mechanism by the dopaminergic system (110). When D1 and D2 receptors are insufficient, this condition is known as reward deficiency syndrome. Excessive eating of tasty foods has been identified as an alternate way to increase dopamine activation in those with dopamine deficiency. These individuals with reward deficiency syndrome feel addicted to foods in order to make themselves happy and constitute a risk factor for obesity (109). Obese people are more likely to suffer from reward deficiency syndrome, which is caused by a lack of D2 receptors. While the flavor of the food is relevant to both hungers, homeostatic hunger can be examined if there is an energy deficit (111). Consumption of delicious foods inhibits homeostatic mechanisms by stimulating hedonic mechanisms, and increases food consumption leads to obesity (106).

Obesity prone hedonic diet; Emotional eating is linked to eating behaviors that cause weight gain, such as binge eating and a preference for fat-rich foods (109). Another study discovered that transitioning from a high-fat (%41) to a low-fat diet (25%) causes negative mood effects in people (56).

2.4 Emotional Appetite

2.4.1 Definition of Appetite

For all life cycles, nutrition is an essential human need. Food provides energy as well as essential elements such as vitamins and minerals, which allow the body to construct and break cells and maintain cellular respiration (112). Individual food consumption is influenced by a variety of factors, including appetite (113).

Hunger, thickness, and satiety are the three components of appetite, which are the urge to fulfill a biological need. Satiety is the sense that indicates fullness during and after a meal, whereas hunger is the sensation that drives food consumption. Between-meal fullness is referred to as saturation (114).

Appetite is a generic term that refers to the desire to eat in response to hunger. When an individual feels the thickness and not hungry, however, some foods might trigger appetite. Appetite is found in all higher life forms and helps to sustain metabolic needs by adjustment adequate energy intake. The digestive system is regulated by the interaction between adipose tissue and the brain (115).

Appetite regulation is complicated and remain unclear. The brain, digestive system, endocrine system, and emotional nerves are all connected through control systems. These mechanisms control hunger in both the short and long term. Sensors that react to the physical presence or absence of food in the gut, as well as different components of the meal, such as fat and protein, are thought to affect appetite in the short term. The gut secretes numerous hormones in react to signals from these sensors. The hormone ghrellin, for example, is produced by the stomach in react to hunger and enhances appetite. Peptide-YY suppresses appetite and is secreted by the ileum and colon in response to food intake. The small intestine secretes cholecystokinin, which lowers appetite when fat and protein are present. The pancreas, on the other hand, secretes insulin in reaction to high blood sugar levels, which inhibits appetite (116). Before, during, and after a meal, many hormones are released, which affect feeding behavior and how much to eat. The composition of the body can control appetite in the long run. Through the hormone leptin, which is released by fat cells, signals from the fat mass inhibit appetite. There is some evidence that lean mass can increase cravings, but the mechanism is unknown (117).

These short- and long-term systems are homeostatic, ensuring that the body's nutritional status is maintained by assisting it in meeting its energy and nutritional requirements. Pleasure signals, also known as hedonic systems, can override all of these homeostatic mechanisms. The smell of a favorite food or the promise of a good treat, for example, can stimulate appetite and cause a person to eat when they don't 'need' to. Mood is an important aspect of the hedonic system, but it affects appetite in different ways for different people: some people eat more when they are sad or anxious, while others eat less when they are sad or anxious. Social and environmental signals, such as walking by a food store, can also increase appetite (118).

2.4.2 Factors Effective in Controlling Appetite

Factors effective in appetite control can be considered as gastrointestinal system, central nervous system, endocannabinoid system, family-related factors, vitamins and minerals. These are discussed in detail under the headings below.

2.4.2.1 Gastrointestinal System

The gastrointestinal tract plays a very important function in appetite regulation and comprehension. The stomach, pancreas and intestines contain hormones that trigger more or less eating, and these play a key role in appetite control. As previously stated, the ghrelin hormone, in particular, is critical in the gastrointestinal context. The hormone ghrellin is produced when a person is hungry, and it stimulates them to eat more. The pancreas secretes leptin or insulin when either is consumed in sufficient amounts, signaling the body to eat less (119).

Ghrellin stimulates growth hormone secretion from the anterior pituitary and the hypothalamohypophysis-adrenal axis, increases gastric motility, and causes vasodilation through a positive inotropic impact on the heart (120).

Ghrellin is a peripherally active appetite stimulating gut hormone. Ghrellin levels rise during hunger and fall after eating, implying that grellin is involved in the initiation of eating. In humans, ghrelin levels are conversely linked to body weight and rise after weight loss (121). Furthermore, lower ghrelin levels associated with obesity may act as a feedback mechanism to reduce appetite. Injections of ghrelin into the

systemic circulation increase food intake in rodents and humans, and chronic administration has been found to cause obesity in rodents (122).

Apart from ghrellin, the gastrointestinal system, which is the body's largest endocrine organ, is ability to express more than 30 gut hormone genes, resulting in the distribution of further than 100 bioactive peptides. The release of gut hormones and neurotransmitters is stimulated by hunger and the existence of food in the upper gastrointestinal system. The commencement and maintenance of food intake, as well as the ending of meals, are all linked to these neurohumoral signaling (123).

2.4.2.2 The Central Nervous System (CNS)

The interaction of the digestive system, adipose tissue, and the brain regulates appetite (124). While stress may increase appetite, irregular appetite leads to AN, cachexia, BN, overeating, and emotional eating (125). The hypothalamus, brain stem, and midbrain are all involved in the regulation of appetite in the CNS.

The hypothalamus is the main organ that influences appetite and regulates food intake. The midbrain's reward-related limbic system communicates with the brain stem and other central nervous system areas (124). The hypothalamus is a sensor and a biological clock that stimulates hunger by secreting a variety of hormones. Hunger arises when the body's nutrient stores are depleted: carbohydrates are the short-term reservoir stores, while fat is the long-term reservoir store (126). Short-term hunger control is regulated by glucose and lipostat, while long-term appetite control is regulated by a combined impact over time (142). The hypothalamus is in charge of converting and combining neuronal and humoral signals further into body's coordinated dietary and energy consumption responses (124).

The midbrain and forebrain receive information from the peripheral nervous system via the brain stem (127). It regulates mechanical processes such as chewing and swallowing, as well as appetite and food intake, by communicating directly with the gut via neuronal pathways. The brain stem can regulate many parts of feeding behavior without feedback from the hypothalamus (125). It also aids in maintaining a healthy energy balance. The sensory vagus nerves transport satiety signals from the gastrointestinal tract to the fourth ventricle's postrema area (124).

The midbrain, on the other hand, is in charge of hedonic nutrition (the consumption of tasty meals), which has the ability to overcome satiety signals via the reward system (125).

2.4.2.3 The Endocannabinoid System (ECS)

The endocannabionid system is known to have a role in appetite regulation, food intake, and energy metabolism. The effects of endocannabionide were assumed to be restricted to the central nervous system at first. Endocannabinoids can act as neurotransmitters between neurons in various parts of the brain. They act as retrograde messengers on CB1 at presynaptic glutamatergic terminals in the hypothalamus, preventing the excitatory neurotransmitter glutamate from being released and suppressing neuroendocrine function in general. One of the most important consequences of the effect of the endocannabinoid system on the hypothalamus is that it affects neuroendocrine function. The fundamental physiological function of the endocannabinoid system, from an evolutionary standpoint, appears to be to shift the energy balance to energy storage. This is considered to increase appetite, resulting in overeating and fat storage (128).

2.4.2.4 Family-Related Factors

Nutrients and energy are provided by foods. People's food preferences and appetites change throughout their lives as a result of biological, social, and environmental variables. Family is one of the factors that influences hunger. Many studies have shown that the family environment has an impact on children's and teenagers' health - related behaviors, but the processes that underpin this influence remain unknown. According to research, giving role modeling, healthy meals, and encouragement to engage in healthy eating behaviors can be part of a process that creates and promotes excellent health behaviors (129).

Since the family is more than the sum of the individuals, it can be considered as a system. Daily family life affects expectations as a result of individual experience, evaluation of health-related issues, and typical values, behavior routines and interaction patterns within the family. Children's imitation of the actions of others, and especially

their parents' and caregivers' learning through observation, can explain the types of food they are directed to and their appetite (130).

The behavior and characteristics of their parents have an impact on their children. It has been observed that the control feeding methods of preschool parents change in response to their children's weight. Bottle feeding is used to suppress weaker kids with a lower appetite and to restrict stronger babies with a higher appetite (131). Parents may also exert more restrictive or repressive control over children who are less interested in or sensitive to eating, which may alter their appetite in the future (132).

Parents who are overweight, have trouble limiting their own food intake, or are concerned about the risk of their children being overweight can, on the other hand, control their children's feeding practices to keep them from gaining too much weight. Large portions, according to parents, influence and increase total energy intake in children with a poor appetite (133). Children acquire obesogenic eating behaviors such as emotional feeding, encouragement to eat, emotional eating, excessive eating tendency and food approach when their parents try to restrict them in order to reduce weight and preserve health (134).

2.4.2.5 Effect of Vitamins and Minerals

Evidence indicating the relevance of physical exercise and a macronutrient-balanced eating in weight maintenance; likewise, vitamins and minerals with a limited range of action that can impact energy balance over time are highlighted. Excessive use of vitamins and supplements, vitamin B6, vitamin B12, or Cr has been linked to weight increase in overweight or obese people, according to studies. And this suggests that vitamins and minerals are effective in appetite (135).

The part of vitamins and minerals in the adjusment of body energy storage remains unknown. They are thought to play a role in the production and release of neurotransmitters in the CNS, which regulates food intake control. Vitamin B6 deficiency, which causes a decrease in brain serotonin production, might cause an increase in appetite and possibly food consumption, as well as promote a positive energy balance. Micronutrients' position as enzyme cofactors required for energy conversion within cells, on the other hand, suggests that they may have an impact on energy expenditure regulation. Vitamin C and E deficiency have been linked to

increased body fat and central obesity in studies supporting this theory. Furthermore, overweight and obese people appear to have high percentages of vitamin C and B2 deficiency, low vitamin D bioavailability, low vitamin A, C, and E serum concentrations, and folic acid deficiency (136).

2.4.3 Definition of Emotional Appetite

Emotions play an essential role in everyday living. They not just to shape our thinking, but they also trigger a number of physiological changes and act as a potent motivator for our actions (137).

Emotional appetite is defined as the desire to eat even if the individual is not hungry in emotional states such as grief, happiness, or loneliness, and emotional states such as anxiousness, fear, grief, and happiness influence food consumption, diet, and food choice (138).

Emotional eating behavior is based on two main assumptions (139). First, negative emotions increase the state of eating (they experience an intense desire to eat), which eventually leads to overeating. Second, eating helps to lessen the severity of negative emotions (137). Individual variances and emotional characteristics, of course, have varying effects on eating behaviors. Psychological changes associated to food, on the other hand, are regarded to have a positive effect on mood fluctuations. Foods having a high carbohydrate content, in particular, are the most desired foods in this context (140).

Emotional eating is the act of consuming high-calorie, sugary, high-fat foods in order to avoid, control, or cope with negative emotions. After an emotional eating episode, emotional eaters frequently feel guilty about their eating behaviors and have negative thoughts about their physical appearance (141).

Although emotional eating is originally characterized as eating in reaction to unpleasant emotions, there are studies showing that a positive mood also elicits increased food intake (142). As a result, they now consider positive emotions to be a part of emotional eating (143).

Individuals who have emotional eating may consume in reaction to psychological anxiety cues rather than physiological hunger cues. Emotional eating is also linked to high-calorie, high-fat food consumption, poor weight loss outcomes, weight gain, and obesity (144). In many populations, it is also defined as a component that triggers overeating in BN and binge eating disorder (145).

2.5 Emotional Eating

Emotional eating is described as eating in reaction to a strong emotion, regardless of physiological hunger, meal timing, or social necessity (146). Emotional hunger, unlike physical hunger, comes on suddenly, and the person generally prefers high-sugar, high-salt, and high-fat foods regardless of the food (147).

Individuals utilize emotion regulation mechanisms, either consciously or unconsciously, to control their emotional states, which alter in response to the input they receive. Acceptance, avoidance, problem management, reassessment, rumination, and suppression are the most common emotion control strategies, while there are more. Symptoms associated with emotion management strategies include substance use disorders, anxiety, depression, and changes in eating attitudes. Although emotion regulation includes emotion management, over use of emotion regulation strategies can lead to psychological and mental disorders. Furthermore, suppressing and inhibiting emotions might, paradoxically, result in an rise in the incidence and intensity of emotion. Emotional repression is especially common among people who suffer from eating disorders (148,149).

2.5.1 Theories on Explaining Emotional Eating

Psychosomatic theory, internal-external obesity theory, restraint theory, and escape theory are four types of theories that explain emotional eating behavior.

2.5.1.1 Psychosomatic Theory

Emotional eating is mostly discussed in terms of "psychosomatic theory." People who engage in emotional eating behavior, according to the psychosomatic theory (150), eat in response to their emotions rather than their internal hunger signals, such as hunger and satiety sensations. Emotional eating occurs when a person can't tell the difference between hunger and other unpleasant internal sensations, or when they use food to cope with emotional distress. To put it another way, emotional eating is an unsuitable

reaction to stress (151). According to Brunch (1973), there are two main reasons for the eating behavior that develops as a result of the individual's negative emotions. To begin with, eating behavior comforts the person's unpleasant emotions, and negative emotions, in turn, trigger eating behavior (152). Eating, the content of the food consumed, and the carbohydrate and fat content of the food are all linked to the mood-altering neurotransmitter serotonin, according to studies, and all tasty foods increase mood by activating the production of endorphins in the brain (147). It is well known that the increase in tryptophan levels following protein-rich meals has an emotional effect (153).

Macht and Simons (2000), support the theory that negative emotions trigger binge eating behavior in their experimental study. The emotional states that persons encountered in daily life were studied in an experimental study with 23 women, and the subjective eating motivation linked with these events was investigated. The findings revealed that eating motivation increased during times of negative emotions, and that food was also utilized as an emotional tool in the non-clinical population. The findings of this study support Benton's two key hypotheses that eating behavior occurs when people are unable to cope with their emotional states (154).

Emotions have been demonstrated to affect eating frequency (155), amount swallowed, eating speed, effective reaction motivation, food selection, chewing, metabolism, and digestion in research considering the effects of emotions such as happiness, fear, anger, and sadness on eating attitudes. However individual characteristics (gender, restrictive eating behavior, the link between learnt emotion and eating) and emotion features influence the effect of emotions on these variables (154).

2.5.1.2 Internal-External Obesity Theory

Schacter (1968) developed the internal-external obesity theory in his study to further explain and test the psychosomatic theory. This theory, like psychosomatic theory, claims that obese people's eating practices are relatively insensitive to internal physiological inputs, such as stomach movements. Unlike psychosomatic theory, which emphasizes emotional and psychological aspects, this theory discusses environmental stimuli as a determinant of eating behavior. Obese people are considered to be more sensitive to stimulants such food scent, appearance, and color. The fact that obese

people are more susceptible to these stimuli is treated as a general personality trait rather than a feature related to eating behavior in the theory (156,157).

Food deprivation triggers a variety of physiological responses in the body, including changes in blood components and increased gastric motility. Individuals are more likely to consume and seek food as a result of these changes. These physiological reactions throughout the abstinence phase can be avoided. The significance of these emotions in a person's desire to eat is a topic of debate. Schachter (1968), discovered that among obese people, there is almost no association between eating behavior and internal physiological state; this suggests that these actions are closely linked to events that can be classified as eating conditions. In other words, in obese people, external stimuli trigger eating behavior. In someone who is in the normal weight range, eating habit is strongly tied to their physiological state; nevertheless, in obese people, the opposite is true. When their eating habits do not draw attention or there is something they do not like to eat, obese people do not eat anything. Even if it hasn't been eaten recently, it can eat food that has a pleasing appearance, smells pleasant, and is something it enjoys. These external stimuli can impact normal persons as well, but in obese people, these stimuli directly impair motivation (156).

2.5.1.3 Restraint Theory

The fact that the inner-external theory could not always be confirmed influenced the development of constraint theory. Herman and Mack (1975) introduced restraint theory, which was further refined by Herman and Polivy (1980) (158,159).

People restrict their eating behaviors and diets, according to Herman and Mack, in order to acquire the ideal image portrayed by society's beauty norms. As a result, in contrast to the theories of externality and psychosomatics, the restriction theory emphasizes diets. Consciously restricting food consumption, according to this theory, activates several physiological defenses in the body. When you think about limiting your food intake, your desire to eat increases as well. As a result, an extreme and intensive diet might lead to emotional eating (158,159).

Overeating is a common paradox that occurs as a result of calorie-based restriction, such as dieting. Despite the fact that weight loss is the primary incentive for

dieting, the majority of diets fail to achieve long-term weight loss (160). Because calorie restriction is worthless if you eat only once in a while. Self-destructive and self-destructive activities are inconsistent because they defy human behavior's established logic. Normal people do not appear to be capable of hindering or harming themselves under any conditions. As a result, self-destructive behaviors occur either as a result of making poor choices to escape unsafe situations or as a result of mistakenly perceiving a cause-effect relationship. Emotional eating impulses are influenced by self-destructive behaviors in this way, according to restraint theory (30).

Individuals with a restricted eating style, for example, eat more when confronted with emotions like fear and sadness than others who do not. Macht emphasizes that the increase in eating behaviors of people who restrict their food intake and those who increase their eating behaviors as a result of emotional eating are two different things. While those who engage in emotional eating behaviors experience positive emotional changes after eating, restricted people do not, and they are even negatively affected by weight gain, anxiety and guilt. Furthermore, emotional eaters enhance their eating behaviors solely in reaction to unpleasant feelings, whereas restricted individuals provide motivation to eat with emotional and cognitive demands regardless of their emotional quality (140).

2.5.1.4 Escape Theory

According to the Escape Theory, overeating in reaction to negative emotions is an attempt to divert or escape from the ego-threatening input that creates unwanted self-awareness. According to this theory, when emotional eaters are confronted with threatening information about themselves, they try to avoid unpleasant consequences and negative effects by escaping from their self-awareness. These people are prone to overeating because they focus their attention on something external, such as food. Following the eating of food, people may experience an increase in good emotions. They enjoy eating it for a variety of reasons, including the flavor and scent, or simply because it is a "forbidden" substance (161).

2.5.2 Emotional Eating Behavior Mechanisms

The physiological and psychological factors that play a role in emotional eating behavior are separated into two categories. These are described further down under the topics.

2.5.2.1 Physiological Mechanisms

When stress is taken into consideration, cortisol level becomes another important factor in the deterioration of eating behavior. Cortisol is a hormone generated by the adrenal gland that has a circadian rhythm in terms of its amount and rate of secretion throughout the day, as well as changes in its release in response to stress (162). Cortisol release is known to rise during stressful situations; studies show that stress can boost cortisol release by up to 10 times (163). Research has supported up the possibility that an increase in cortisol release can lead to a drop in blood glucose levels.

In this context, it is well understood that increasing cortisol levels in response to stress create blood sugar imbalance, which is characterized by blood sugar rises and falls. Individuals tend to eat behavior as a result of this imbalance, with the fall in blood sugar, which is an example of a physiological approach to the relationship between stress and eating. By disclosing a metabolic issue with an increase in cortisol level, stress can lead to excessive eating behavior and repetitive eating episodes. This condition is caused by a blood sugar imbalance brought on by stress and cortisol. There are studies that show a link between obesity, cortisol levels, and blood sugar levels (39,164).

A substantial number of research demonstrate that meal-related physiological changes regulate mood and trigger emotional eating. As a result of these investigations, it has been discovered that changes in people's mood occur most frequently when they consume foods high in carbohydrates (165). Because diets heavy in carbs and low in protein raise tryptophan levels in the blood and boost serotonergic system activity in the brain (166).

With an increase in serotonin levels in the brain, a person's emotional mood improves after eating. Studies show that persons who consume high-carbohydrate, low-protein diets are less stressed than those who consume high-protein foods, and that their stress levels drop with carbohydrate-rich foods consumption (166).

Changes in endocrine hormone levels are another factor that influences a person's well-being. High-fat foods have an effect on the hypothalamic-pituitary-adrenal axis, lowering stress levels. According to studies, those with high stress levels had lower stress levels after eating foods high in sugar and fat, and people who score high on the emotional eating scale prefer these foods with high sugar and fat content (167).

Another system that can be used to explain the physiological basis of emotional eating behavior is endogenous opioids. It's hypothesized to be involved in the stress-related preference for fatty and sugary foods. Endogenous opioids are activated by highly appealing meals, which are vital for both support and stress response (168). Endorphins and enkephalins, which circulate widely throughout organ systems and are produced in the brain, have a variety of physiological functions. Opioid antagonists can prevent the actions of these enforphins and enkephalins, which operate on opioid receptors (169).

It can be considered in the context of physiological mechanisms in genetics. Obesity is generally understood to be influenced by genetic variables throughout one's life. While the early studies on the genetics of obesity focused on metabolic processes, the hypothesis that genes induce obesity and have an impact on eating behaviors has gained popularity in recent years. In fact, genetic variety may be one reason why, in today's obesity-prone environment, only some people are sensitive to obesity and overeating (170).

According to studies, the relationship between physiological systems and emotional eating has a significant flaw. Emotional alterations must occur as a result of an individual's eating and mixing of the consumed foods into the blood (166).

2.5.2.2 Psychological Mechanisms

In the presence of sugar-containing foods, babies lick their lips, smile, and their facial expressions change positively (166). In emotional eating situations, those with negative feelings are shown to prefer sweet flavors. Macht and Mueller (2007) had 117 adults view a sad movie as part of their research. They noticed that majority of the participants preferred to eat chocolate rather than drink water after seeing the film. Furthermore, when the researchers repeated the experiment, they gave the individuals

two different flavors of chocolate this time and discovered that the better-tasting chocolate was more helpful in increasing mood. Furthermore, it was discovered that people who engaged in emotional eating had higher emotional alterations than those who did not (171).

The positive effect of sugary foods can be explained by the hedonic eating theory, which is found in emotional eating, according to another study. As a result, foods that provide pleasure have a more positive impact on mood. In the mechanisms that play a role in emotional eating behavior, there is also a model that examines both physiological and psychological mechanisms. Macht's three-stage model is as follows (166):

- High-energy foods affect metabolism in various physiological ways;
- The mood state is influenced by neurotransmitter systems and hormones.
- Additionally, the flavor and taste of foods elicit pleasant emotions and have a positive impact on their emotional state.

Emotional eating is a type of eating that is used to control emotion in healthy people. It might take the shape of small snacks to balance mood, or it can take the form of eating crises-attacks, as in binge eating disorder and bulimia nervosa. According to Macht's three-stage model, there are 3 levels of emotional eating. The following are the levels (166):

1. Impulsive, uncontrolled eating
2. Habitual foods
3. Foods that are occasionally consumed in small amounts.

This model is visualized in Figure 2.1 below.

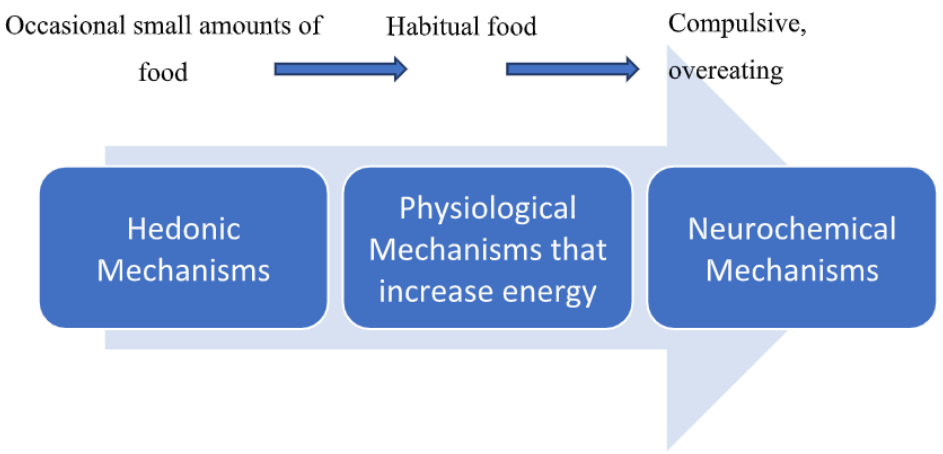

Figure 2.1 The Three-Stage Macht Model (15)

According to the three-stage Macht model (15);

1. In the first step, the individuals eat a small amount of food to raise their mood and to make theirselves happy. Snacking is usually done on delectable and high-energy items like candies and chocolate. The hedonic process comes in at this point, and it only happens occasionally.
2. In the second step, individuals develop a habit of eating to regulate their emotions. The hedonic eating mechanism is active, and physiological mechanisms are active as well. When food is eaten, the energy level rises and tension-stress decreases.
3. In the third step, individuals engage in impulsive eating behavior, also called as "emotional binge eating,".

   This step involves consuming a large amount of food and relaxing. Physiological mechanisms, in addition to the psychological effects of hedonic mechanisms, play a part in this step.

When we look at studies on emotionally immature people, where emotional eating behavior is common, we can notice the following concept patterns and behaviors (172):

- They plan their future behavior based on the lessons they've learnt in the past.
- If they regret their previous behavior, they feel shame and guilt.
- They are confused by the passage of time, and this confusion influences their impulses. As a result, they behave in accordance with their immediate desires, and their experiences evolve over time.

- They are unable to foresee the future.

These individuals, who also have trouble controlling their emotions, are prone to emotional eating and are unable to cope with it. Turner et al. (2010) studied at how positive emotions influenced food intake and chocolate snacking in both uncontrolled and controlled groups. They discovered that whereas controlled persons ate these meals in inverse proportion to their positive mood, while uncontrolled people were under the positive mood impact, they ate more chocolate snacks (173).

2.5.3 Coping Strategies for Emotional Eating

The first step in dealing with emotional eating is to avoid the feelings and events that trigger it, such as stress. In addition to stress, the following emotions and situations should be avoided (174):

- Boredom: A common trigger of emotional eating is boredom or a lack of things to do. When people don't have enough stimulation or activity in their life, they resort to food to fill the hole.
- Habits: These are often influenced by past events or a person's childhood. Two examples include ice cream after a nice report card and baking cookies with grandparents. When a person reaches adulthood, they wants to treat theirself with ice cream after a successful achievement, such as a good report card, and they do so.
- Fatigue: When fatigued, eating is a casual conduct, especially if the person is tired of completing an unpleasant task. Food is now used to satisfy emotions rather than as a way to avoid doing something you don't want to do.
- Social influences: Everyone has a friend who encourages them to eat pizza at midnight, have dinner or a drink after a long day at work, or eat as a reward for a good day. As social influencers, friends might convince them to eat.

In addition to keeping these feelings and situations away, things that can be done to stop emotional eating events and break the vicious circle can be listed as follows (175):

1. Hunger should be learned: Before reaching for a food, people should consider why they are doing so. When you're particularly hungry, you could have

symptoms like wheezing. If hunger cues aren't as obvious as it should be, focusing issues and moodiness may occur. If none of these signals appear, physiological hunger has not been triggered, and eating behavior should be avoided because it is entirely emotional.

2. A diary should be kept: Individuals should write down what they eat each day and what emotions they experience while eating. This way, in addition to recording what you eat when you're truly hungry, it'll be clear that you eat more when you're upset or angry. When a person can identify the emotions that lead to emotional eating, he or she can develop different coping mechanisms. When they discover this using their journal, for example, an individual who likes to eat when worried can take efforts to make it a habit to go for a walk when anxious.
3. A support network should be established: Individuals are more likely to succeed when they are surrounded by family and friends who are also trying to change their eating habits. It can also be beneficial to join a support group.
4. Other hobbies must be discovered: individuals must find an activity that they enjoy; this can boost self-confidence, which is often lacking in those who engage in emotional eating. Doing yoga, playing a musical instrument, or painting, for example, can help me avoid snacking out of boredom. Individuals may discover a new passion and are less prone to seek emotional satisfaction elsewhere.
5. Professional help should considered: When an individual can no longer manage with emotional eating on their own, they should seek professional treatment to change their behavior. In this case, psychotherapies like cognitive behavioral therapy or medications like antidepressants and appetite suppressants can help.

Identifying the causes and conditions that generate emotional eating behavior is the most essential step in managing with it. As a result, determining the triggers must come first, followed by the treatment process above. In order to cope with emotional eating behavior, it is also important to learn about hunger. The individual must understand the distinction between emotional and physical hunger. Because emotional hunger is so powerful, it's easy to mix it up with physical hunger. There are, however, some indicators that can help you distinguish between physical and emotional vulnerability (176). The differences between emotional hunger and physical hunger are summarized in the Table 2.4 below.

Table 2.4 Differences between Emotional and Pyhsical Hunger (176)

Emotional Hunger	**Physical Hunger**
Emotional hunger comes suddenly.	Physical hunger develops with time.
Emotional hunger craves a sudden sense of satisfaction.	Physical hunger can wait.
Emotional hunger is characterized by a relaxed and resilient desire for food.	Physical hunger can be satisfied in a variety of ways.
Emotional hunger is not satisfied even though the stomach is full.	Physical hunger ends when the stomach is full.
Emotional hunger triggers feelings of shame, powerlessness, and guilt.	Physical hunger does not cause a bad feeling after the feeling of fullness.

Aside from that, there are a variety of recommended solutions for dealing with emotional eating. For example, fiction and poetry books that reveal the imagination have been found to be useful not just in psychiatric disorders but also in emotional eating, in addition to self-help therapy and personal development content. Bibliotherapy is also utilized in eating disorders to enhance the treatment of reading, despite the lack of evidence in this field (177).

Although further research into the long-term effects of mindful eating training is needed, meditation training on eating awareness has been found to be useful in those with binge eating disorder, emotional eating, and weight loss difficulties (96).

Eating awareness allows a person to consider what, how, and where they consume while eating, to recognize the impact of external circumstances on eating behavior, and to make food judgments (178).

Intuitive eating training, like mindful eating, focuses on the factors that lead to eating behavior, such as hunger and satiety, and is used as a strategy to help people cope with emotional eating (22). As a result, a well-thought-out therapy strategy, as well as strategies that aid in increasing awareness and emotionality, are critical in treatment. Motivational interviews, for example, have been found to be effective in the treatment of emotional eating and binge eating (179).

2.6 Nutrition's Impact on Health and Food Choice

Healthy eating; It is to enjoy the food consumed, to eat a varied and balanced diet, to take all the nutrients in the amounts that are required for the individual and to maintain the ideal body weight. The aim of healthy nutrition is to provide adequate and balanced nutrition. Nutrition is one of the factors affecting chronic diseases, including obesity and diabetes. A healthy diet can help prevent noncommunicable diseases like diabetes, heart disease, and cancer. Similarly, an unhealthy diet and lack of physical activity bring global health risks (180).

Individuals who eat adequately and in a balanced way appear to be healthy in every sense. Otherwise, the person has an unhealthy appearance, heavy motions, is reluctant, has no appetite, and is exhausted. Furthermore, mental retardation, state imbalances, and movements are signs of malnutrition that may develop in the future (181).

What drinks and foods will be consumed where, when, how, and with whom is determined by eating behavior and food selection. Obesity, appetite, emotional state, body image, religious and cultural beliefs, past experiences, socio-demographic factors, hormones, environment, and genetics all have an impact on eating behaviors and attitudes, and thus food choice (182).

2.6.1 Factors Influencing Food Choices

People's food consumption and choice patterns can change due to psychological and social desires, opportunities, education, eating habits, and traditions, in addition to physiological factors (183).

Food consumption appears to be very important when it comes to mood-regulating behaviors. Eating behaviors and mood have a complex interaction; mood is thought to be regulated by changing food amount and preferences (184).

Psychological eating style is an important risk factor especially if there are individuals who tend to gain weight in societies and if the environment has obesogenic characteristics; emotional state and psychological factors in food selection regulate eating behaviors (185).

Flavor is a measure of how much enjoyment a person derives from consuming a particular food. The sensory qualities of meals, such as flavor, aroma, structure, and appearance, play a role. It's no surprise, then, that food is frequently eaten for its enjoyment effect rather than for its nutritional value. Several research have looked into the impact of flavor on human appetite and food intake. Food intake rises as the taste improves, but there is no convincing evidence of the effect of palatability on appetite in the period following consumption. In the short term, increasing food diversity can boost food and energy intake while also changing the energy balance. Taste has a important influence on eating behaviors. In fact, taste is the total among all sensory stimuli created by eating. This includes not only the meal's taste, but also its smell, appearance, and structure. The impact of these sensory elements on spontaneous food selection is hypothesized. From a young age, flavor and familiarity influence food choices (186).

Beyond personal preferences, a variety of complicated circumstances have a significant impact on food choices. Age, gender, culture, education, income, health condition, cooking expertise and skills, as well as personal preferences, all influence food patterns at the individual level (187). One of the key influences of food selection is the price of the food. The person's income and economic status affect whether the price is prohibitive. People with low incomes are more likely to have an unbalanced diet with a low consumption of fruit and vegetables. Store accessibility, which is impacted by factors such as transport and geographic region, is another important physical element influencing food choice (186).

Research shows that education level can affect feeding behavior in adulthood. This is because people don't take actions when they are unsure how to utilize health-related information. Furthermore, nutritional information is disseminated from a number of sources and is often seen as conflicting or inaccurate, which reduces interest in changing.

What individuals consume is formed by conditions that are essentially social and cultural. In terms of food and nutritional intake, population studies demonstrate considerable variations between social classes (186). Differences in the traditional eating and preparation of particular dishes result from cultural influences. Sociocultural factors, in contrast, might shift throughout time. When people migrate to a new country,

they usually embrace some of the eating patterns of the local culture (187). As attitudes and habits are developed via interacting with one another, social factors influence food choices as well.

Attitudes regarding food and health, ambition, and beliefs are all psychological impacts. Food preferences can be influenced by early life experiences such as maternal nutritional status, infant feeding practices, and foods received as a child (186).

Personal preferences are influenced by cultural aspects such as household lifestyle habits including tv viewing and sleeping, home and social values, social pressures, economic status, media platforms, and race/ethnicity. The local environment has a huge influence as well (187).

Food choices are heavily influenced by the family. Adopting dietary practices that are suitable to family and friends can help the person and influence the eating patterns of others, since they can be a source of inspiration in creating and maintaining dietary changes (186).

2.6.2 The Influence of Emotional Moods on Food Choice

Emotional eating seems to have a significant impact on eating behaviors, but it's hard to say how it influences nutrition (163). Eating behavior is affected differently by positive and negative emotions. Fear, anger, and melancholy all cause fast and irregular eating, which leads to an increase in junk food consumption. These individuals can adjust their emotional states, yet they are unable to enjoy food.

Positive emotions, on the other hand, promote healthy eating habits and the enjoyment of food (18,188,189). Emphasizing that food consumption and emotions are related, Mehrabian et al. also observed that individuals consume more food when they feel bored, tired and depressed. On the other hand, they observed that individuals consume less food in fear, discomfort and stressful situations (190). According to Lyman (1982), a predisposition for healthy food consumption is linked to pleasant emotions, while a proclivity for junk food consumption is linked to negative emotions (189). Despite individual variances, unpleasant emotional states such as anxiety, anger, depression, and stress have been demonstrated to increase food consumption and disrupt

eating habits (24). Happiness and other pleasant emotions, on the other hand, boost the selection and intake of healthful foods (191).

Hereby when it comes to the connection between emotions and food choices, the studies have shown that when people are under stress, such as during exams or when they have a lot of cognitive work to do, their energy intake increases and they prefer to eat high-calorie sweet and salty foods instead of fruits, vegetables and meat. According to Oliver and Wardle's research (2011), 73% of individuals, regardless of gender or diet, turn to sweeter, higher-fat snacks in response to emotional stress. Anxiety is linked to increased alcohol consumption and saturated fat consumption, such as margarine (167). Another study also found a link between daily distress and increased consumption of unhealthy foods rather than routine meals and vegetables. In addition, it was observed that the frequency of meals increased in the face of stress (155).

Furthermore, it has been shown that when people are stressed, they eat less fruit, vegetables, and fish-type foods, especially veggies. According to the results of another study examining food types according to their stress levels, it is known that individuals tend to eat more fast-food type foods during periods of high stress, and consume more cheese and foods with high sugar content (192). It is well established that intense emotions suppress food intake when examining changes in eating attitude as a function of emotion intensity. For example, when stress is intense, chronic, and linked to a physical problem, food intake appears to drop dramatically (140). Less intense daily stress, such as interpersonal issues and work-related difficulties, is known to increase unhealthy food intake and pose a health risk (155).

Gender is one of the most important characteristics that influences food choices and eating habits, both of which are linked to obesity. Females concern more about their appearance, shape, and weight than males (193). As a result, females have more restrictive eating habits (194). According to the studies both gender follows distinct nutrition plans. Females were found to consume more fruits, vegetables, and dairy items, whereas males consumed less red meat. As a result, they eat a lot of protein and fiber in their meals. Males' diets, on the other hand, are rich in fat and alcohol (195). Females can control their weight status by exercising restraint in their eating habits, according to this research (196). As a result, females are more likely than males to

develop psychological eating disorders while attempting to regulate their body image and weight (90,197). Furthermore, they were found to have more overeating and restrained eating habits than males and had higher emotional eating and cognitive restraint scores (198).

In another study in which women's dieting rate was found to be higher than men, it was found that women's eating habits were more controlled than men in normal situations. Women lowered their sugar consumption and increased their intake of high-fat foods as a result of this management (199,200). Thus, Epel et al. (2007) emphasized that women's high cortisol levels, which increase under stress, lead them to eat sweeter and high-fat foods (201).

Studies demonstrated that emotion regulation is associated with eating disorders (202). People who utilize maladaptive emotion control mechanisms following traumatic events have been seen to respond to emotional states, particularly binge eating attacks (32,203). The emotion management deficits most related with emotional eating are limitations in emotion regulation and a lack of emotional clarity. Limitations in emotion control, in particular, are strongly linked to inability to perceive emotion, inability to name the feeling one is experiencing, and inability to accept the emotional response (204). In eating disorders like AN and BN, emotional eating and a feeling of lack of control are prevalent (145). When it comes to eating disorders, it's clear that there's a link between binge eating disorder and emotional eating; those diagnosed with binge eating disorder typically exhibit emotional eating behavior as well. Furthermore, emotional eating, in combination with perceived stress, is believed to be an important determinant of binge eating disorder (205).

Despite the fact that emotional eating is not listed as an illness in the DSM-5, research have shown that it is associated with psychiatric disorders like anorexia nervosa and bulimia nervosa, as well as binge eating disorder (32,145). In terms of the association between stress, BMI, and waist circumference, the fact that emotional eating occurs as a reaction to a negative situation is also considered as significant (205). Obesity patients demonstrate emotional eating attitudes, according to studies (29,39). Furthermore, with the inclusion of emotional eating in obesity and BMI research in recent years, therapeutic interventions for obesity have begun to gain importance (20).

Emotional eating is often associated with overeating and it has been linked to obesity and bulimic tendencies in studies (206–208). Dieters who eat when they are in a negative mood are more likely to consume more, according to research (209). Recent research has produced evidence that support both viewpoints, demonstrating that negative mood regulates diet and bulimic eating and is linked to body dissatisfaction (210,211). Although emotional eating is a behavior that has been noticed and studied in people who have obesity problems in general, it should be highlighted that there are also persons who have not had obesity problems recently and whose BMI is within normal limits who experience emotional eating (180,206,212). It has only lately become a research topic because it predisposes to obesity and bulimic eating habits. Emotional eating has also been recommended as a useful tool for detecting eating disorders in non-clinical samples (206).

In general, it is well understood that emotions play a significant role in food selection, and that negative moods such as stress, anxiety, or psychiatric problems are connected to an increased risk of obesity and alcohol misuse (213,214). Emotional eating occurs when people eat in response to negative emotions, which raises the likelihood of overeating (215). According to a meta-analysis, obesity raises the risk of depression, and depression is a risk factor for obesity (216). People with depressed symptoms have a tendency for "comfort food," which includes high-energy-dense foods like sweet, high-fat foods (217). A higher-energy-dense diet was linked to a 2.56-fold increased risk of stress in a prior study (218). Furthermore, it has been claimed that stressful situations, such as COVID-19-related home confinement, can increase the risk of emotional eating (219). Similarly, eating behavior has been seen to differ by gender, with women having a more controlled and emotional eating tendency (220).

2.7 Sugary Food Consumption

2.7.1 Definition of Sugar

Sugar is a sweetening agent derived from plants such as sugar cane, sugar beet, grapes, and dates. In the diet, there are two forms of sugar. The first are sugars that occur naturally in foods (such as lactose in milk, fructose in fruit). The second is sugar added to foods during preparation and processing, which is known as added (additional)

sugar. Sugar is found in sugary drinks (cola, carbonated drinks, lemonade, ready-made fruit juices), candies (hard candy, soft candy, caramel, Turkish delight, etc.), cakes, pies, cookies, pastry desserts, milk desserts, ice cream, sweet yoghurt, jam, marmalade, sugary instant milk, chocolate, and sugar-added cereal products (221).

Sugar derived from sugar cane was used as a medication and sweetener in ancient times to supply energy to the body, although it has no nutritional value. Sugar beets are made to produce sugar in our country. The sucrose content of Turkish table sugar is 99.9% (1,221).

2.7.2 Types of Sugar

- Sucrose/Sucrose: It is a disaccharide carbohydrate composed of glucose and fructose that is also known as table sugar or tea sugar. Sucrose consumption should not exceed 10% of total calorie intake on a daily basis (222).
- Fructose: It often known as fruit sugar, is a monosaccharide present in honey and many plants. It's a sweeter version of sucrose that's 1.8 times sweeter. Fructose is absorbed slower than glucose and processed more quickly in the liver. It has been determined that consumption of more than 40-300 g / day may cause hypertriglyceridemia. 1 gram of fructose provides 4 kcal of energy (223). The FAO/WHO recommends that daily fructose consumption not exceed 15-20% of total energy (222).

  According to the findings of a study on fructose consumption, daily fructose intake of less than 50 g was considered moderate, 50-100 g fructose consumption was considered high, and fructose consumption of more than 150 g was considered very high. In the same study, it was discovered that eating a small amount of fructose (less than 50 grams) helps to keep blood sugar levels in the normal range. It has been observed that consuming more than 50 grams can produce a rise in blood sugar and blood fats (224).

- High fructose corn syrup: It is a type of sugar formed as a result of processing the starch obtained from corn. While sucrose is made by halving glucose and fructose, corn syrup with a high fructose content is made by combining 10% glucose and 90% fructose (223).

- Maltose: It is a type of sugar obtained by the combination of two glucose molecules (225).
- Honey: It is a natural sugar consisting of 35% glucose and 40% fructose (225).

2.7.3 Added Sugar

Sugar added within the cooking or preparation of a nutrient is known as added sugar (226). It became a focus area in recent nutrition interventions and studies to limit added sugar because the energy it delivers is not nutritious (227). According to studies, people's nutritional nature in their meals has deteriorated as a result of increased added sugar consumption, and people begin to gain weight in tandem with increased calorie intake (228,229).

As stated by the United States Department of Agriculture (USDA), sugar is a group of mono and disaccharides that contains glucose, fructose, galactose, lactose, sucrose, and maltose (230). It can be found in fruits as well as dairy foods naturally, but it can also be provided to meals through processing. As reported by the National Health and Nutrition Examination Survey (NHANES) research, daily total calorie consumption of young people in the U.S accounts for 16% of added sugar, whereas daily total calorie consumption of elders accounts for 13% (226).

This definition includes the following sweeteners: sugar [granulated (sucrose), brown, maple, powder]; mono- and disaccharides [e.g., glucose (dextrose), fructose, lactose, maltose]; single ingredient syrups (high fructose corn syrup, maple, light corn, dark corn, malt, sorghum); honey and molasses; Maltodextrine. However sugar alcohols excluded in the added sugar class, in some foods, they are utilized as a sweetening agent. They aren’t considered sugar by the Australian and New Zealand food standards codes because they are not included in mono and disaccharides (231).

On the other hand, concentrated fruit juice is classified as added sugar under this definition, which is consistent with USDA (232) and Somerset (233); nevertheless, diluted fruit juice concentrations aren’t classified as added sugar (232,233). Fruit juice concentrate is considered an added sugar by the FDA, whereas non-concentrated fruit juice isn't involved in the additional sugar category (234). Because the structure and composition of diluted fruit ater concentrations are similar to that of normal fruit juice.

Because their sugar concentration is lower in proportion to their weight; this case neutralizes diluted fruit juice concentrates as sweeteners. Foods produced with lower calorie sweeteners, on the other hand, are considered added sugar-free (235).

Extrinsic and intrinsic sugar are terminology used by the UK Department of Health. Intrinsic sugar (naturally occurring sugar) is found on the cell walls of plants and coexists with other nutrient groups. Extrinsic sugar is sugar that is not found on the cell walls of plants and includes sugar attached to convenience food along with organic sugar wellsprings as honey, fruit juice and etc. For example, lactose is classified as a non-milk extrinsic sugar since it has a different metabolic reaction than the other two sugar types (236).

Aside from these criteria, WHO refers to added sugar as "free sugar." Free sugar and added sugar are both defined as syrups and sugars that are attached to foods; although, added sugar contains free sugar fruit juice and its concentrate (237). Free sugar is defined as sugar that occurs naturally in fruit juice and is consumed as a fruit soft drink.

Table 2.5 Definitions of Added Sugar and Carbohydrates (238)

Term	Definition
Sugar	Monosaccharides (glucose, fructose, galactose) and disaccharides (sucrose, lactose, maltose) are chemically described. Sugars are found organically in foods and beverages, as well as those attached within manufacturing and preparation.
Free Sugar	Monosaccharides and disaccharides are sugars that are organically provide in fruit juices, juice concentrates, honey, and syrups and are attached to foods and drinks by the producer, consumer, or cook. Lactose that is organically contained in milk and its products is eliminated from this definition.
Added Sugar	Syrups or other caloric sweeteners are being used

	to sweeten other foods. Sugars found naturally in foods like fruit and milk aren't in additional sugar category.
Monosaccharides	The simplest type of carbohydrates are the three basic hexoses: glucose, fructose, and galactose, which are the monomers that constitute biologically existing disaccharides, oligosaccharides, and polysaccharides.
Disaccharides	Sucrose, lactose, and maltose are all examples of monosaccharides produced by a condensation reaction.
Sucrose	Many plants, primarily sugar cane and sugar beets, contain a crystalline disaccharide comprising fructose and glucose. It is refined, extracted and commonly applied as table sugar.
Dextrose	The most prevalent isomer of glucose is Dextrorotatory-glucose.
Levulose	Dextrorotatory-fructose, often known as D-fructose, is a dextrorotatory molecule that revolves light to the left.
Glucose Syrups	Nutritional saccharides generated of edible starch, mainly corn mostly in U. S. and potato or wheat in the European Union.
Agave Syrup	Commercially produced sweetener made from many agave plant species; processing is likewise of glucose-fructose syrups, however fructose concent is far more at 84 %.
Glucose-fructose or fructose-glucose syrup (High-fructose corn syrup in the U.S.)	Aqueous solutions of nutritional saccharides generated from edible starch in which at least 42% of the dextrose (D-glucose) has been isomerized to fructose Glucose syrups including over than 5% fructose (dry matter) must be labeled as glucose-fructose syrup or fructose-glucose syrup, as well as dried glucose-fructose syrup or dried fructose-glucose syrup, to indicate the glucose or fructose constituent is at a higher percentage.

2.7.3.1 Roles of Added Sugar in Food

Additional sugar has equal chemical form as sugar occurring organically in food (239). The human organism might be unable to differentiate between the sources of nutrients in food and may expose foods with chemically alike structures to the same processing procedures. Sugar can be added to foods for a variety of purposes, the most common of which are to impart a sweet taste and enhance the flavor of the food. Sugar is preferred by food companies because it enriches the structure and texture of foods in addition to increasing flavor. Sugar gives baked foods a crisp texture and inhibits crystallization in frozen foods, reducing degradation. Caramelization and Maillard reactions, as well as high heat generated by sugar reactions, contribute to the texture and flavor of the food. Sugar binds to water molecules at the same time, lowering the humidity rate of the food and extending its shelf life (235).

2.7.3.2 The Amounts of Added Sugars in Food

In a laboratory setting, there is no system to tentatively divide the sugar organically present in food from the sugar added within processing. Consequently, the sugar quantity stated on food stamps around the world displays the sugar organically present in the food and beverage, as well as the sugar attached by food companies within manufacturing and packaging (240). Table 2.6 shows the total and added sugar content of the foods most often consumed in Australia, according to a research led by Jimmy Chun Yu et al. (2015) (235).

Looking at the contents list will reveal whether or not the package includes added sugar (239). Whether a product contains no fruit or milk, the total sugar on the nutrient label is reviewed equal to the quantity of additional sugar; even so, when a product includes fruit or milk, additional sugar in the subject matter isn't considered equal to sugar, and the existence of sugar can determined by searching at the list of ingredients. Table 2.7 contains information on how to compute total carbohydrate and added sugar on a nutritional label (240).

Simply put, whether a product doesn’t include fruit or milk, total sugar is assumed to be added by the food manufacturer. If it includes fruit or milk, the existence of added sugar can just be determined by looking at the ingredients list. Only the food company can indicate the amount of added sugar (239).

Table 2.6 Total and added amount of sugar of the most commonly consumed foods in Australia (235)

Food Name	Added Sugar Content (g/100 g)	Total Sugar Content (g/100 g)
Bar, cherry & coconut centre, dark chocolate-coated	47.2	48.6
Bar, fudge centre, milk chocolate-coated	73.6	78.1
Bar, nougat, caramel & peanut centre, milk chocolatecoated	42.6	47.8
Biscuit, savoury cracker, puffed, flavoured	1.9	1.9
Biscuit, savoury cracker, puffed, flavoured	26.1	26.1
Biscuit, sweet, chocolate coated	27.6	27.6
Bread, from white flour	0.0	3.3
Breakfast cereal, flakes of corn, unfortified	9.39	9.3
Breakfast cereal, puffed or popped rice, cocoa coating, added vitamins B1, B2, B3 & folate & Fe	44.0	44.0
Breakfast cereal, whole wheat, biscuit, added vitamins B1, B2 & B3	2.8	2.8
Cake, banana, iced, homemade	31.5	34.8
Cake, fruit, rich style, iced	42.0	46.3
Cake, lamington, with dairy cream filling	26.3	26.8
Chocolate, milk, with nuts	37.6	44.8
Cordial base, lime fruit juice	40.2	40.9
Crisp or chip, potato, flavoured	0.8	1.7
Doner kebab, lamb in flat white bread with lettuce,	0.7	2.4

tomato, onion & sauce		
Doughnut, dusted with cinnamon & sugar	13.7	13.7
Extruded snack, cheese-flavoured	0.4	2.5
Hamburger, beef pattie with cheese, lettuce, onion & sauce, takeaway style	1.6	3.2
Ice cream, regular fat, chocolate flavour	12.0	18.0
Mayonnaise, full fat, commercial	14.4	14.4
Milk, cow, fluid, flavoured, chocolate, regular fat	3.9	8.2
Mousse, chocolate mud, commercial	16.9	18.8
Muffin, English-style, dried fruit, toasted	8.8	10.5
Pie, meat	0.0	0.9
Pizza, ham & pineapple topping, tomato sauce, take away style	1.0	2.7
Sauce, barbecue, commercial	39.2	40.2
Sauce, tomato, commercial	20.7	23.3
Scone, white flour, plain	6.5	6.5
Soft drink, cola flavour	8.8	8.8
Soup, chicken noodle, prepared with water	0.0	0.6
Sugar confectionery, jelly varieties	50.6	50.6
Tart, jam	18.9	34.6
Yoghurt, extra creamy (~4.5% fat), vanilla flavoured	8.4	12.0

Table 2.7 Calculation of total energy intake, total sugar intake, and percentage sugar intake (240)

TOTAL ENERGY INTAKE
Total energy intake is determined as the sum of energy consumed from carbohydrates (including sugars), protein, fat and alcohol; energy is measured in kilocalories.
Daily total energy consumption can be calculated by summing the energy (kilocalories) content of all foods consumed during the day
If food energy unknown, one can calculate the energy intake from grams of protein, fat, carbohydrates, and alcohol consumed, as follows: *Total energy (kilocalories) = grams protein x 4 kcal/g + grams fat x 9 kcal/g + grams carbohydrate x 4 kcal/g + grams alcohol x 7 kcal/g*
TOTAL SUGARS INTAKE
Total sugars intake is determined as the sum of sugars consumed from all foods
Daily total sugars intake can be calculated by summing the sugars (in grams) content of all foods consumed during the day
PERCENTAGE SUGARS INTAKE
The percentage sugars intake is determined as the percentage of total energy intake from sugars
The percentage sugars intake is calculated by spliting the calories from sugars by the total energy intake and multiplying by 100, as follows: *Percentage sugars intake = (grams sugars x 4 kcal/g)/total energy (kilocalories) x 100*

Furthermore, added sugars contribute almost 270 calories a day to the average American diet, accounting for nearly 13% of total calories ingested. Sugar-sweetened beverages, such as sweetened coffee and tea, fruit drinks, soft drinks, energy/sports drinks, and alcoholic beverages, are the main sources of added sugars. Nearly half of all additional sugars consumed by Americans comes from sugar-sweetened beverages. According to some research, total sugarsweetened beverage consumption is decreasing (241). Despite that, present consumption stages in all age ranges are still higher than what health experts recommend (237,241,242). Moreover, added sugar can be disguised in food under many names. Table 2.8 shows several examples of added sugars that can be labeled as an component.

Table 2.8 Different Names of aAdded Sugar (243)

Names for Added Sugars on Food Labels
Sugar
Brown sugar
White granulated sugar
Confectioner’s powdered sugar
Invert sugar
Dextrose
Fructose
High-fructose corn syrup (HFCS)
Lactose
Corn syrup
Corn syrup solids
Malt syrup
Maltose
Honey
Molasses
Maple syrup
Pancake syrup
Raw sugar
Sucrose
Anhydrous dextrose
Nectars (e.g., peach nectar, pear nectar)

Additionally, different names for added sugars are also permissible, but the FDA (Food and Drug Administration) does not recognize them as ingredient names. These contain glucose, liquid fructose, cane juice, sugar cane juice, evaporated corn sweetener, crystal dextrose, and fruit nectar (243).

2.7.3.3 Physiology of Added Sugar in the Body

The most common type of sugar used by population is sucrose, sometimes called table sugar. Sucrose is a disaccharide having a molecule that makes it saturated as fructose and glucose. Both carbohydrate types are classified as monosaccharides; in other words, they are considered simple sugars. Fructose, which is found naturally in vegetables and fruits, accounts for 10% of the US population's nutrition (244).

Although fructose and glucose have the same calorie value, their metabolic routes are distinct. Either glucose and fructose unite the portal vein and arrive the liver following their eating, digestion, and absorption; the liver functions as a central regulator, assuring glucose levels reach another tissues and organs after consuming meals. Increase in glucose in the portal vein imitates insulin discharge, allowing glucose to pass over adipose tissue and muscle; glycogen production arises lipoprotein lipase entrance in adipose tissue and muscle, as well as amino acid intake and fatty acid synthesis in adipose tissue (245). Unlike glucose, fructose doesn't stimulate insulin secretion, it simulates novo lipogenesis following absorption in the liver (246). The de novo lipogenesis pathway boosts saturated fatty acid synthesis. Although this pathway fat ratio isn't chosen for those with muscle body mass in a healthy range, it is commonly used in obese patients with insulin resistance. This pathway is significant because VLDL, or very low-intensity lipoprotein, accounts for %50 of saturated fat production (247).

Fructose joins the portal vein after absorption in the small intestine and is metabolized in liver cells. When 1g/kg fructose reaches the liver, it causes a 0.5 mM increase in blood sugar, whereas the same quantity of glucose causes a 10 mM increase (248). While insulin regulates glucose metabolism, fructose metabolism is handled differently. It works 10 times quicker compared to glucokinase, 25-fructokinase, hexokinase, and fructokinase collects fructose-1-phosphate. As a conclusion, fructose metabolism differs compared to glucose metabolism. And they both are metabolized in the glucose and gluconeogenesis pathways (249).

Due to two different pathways, fructose metabolism differs from glucose metabolism. First, practically all fructose is processed in the liver; second, the first enzymatic step is used, whereas glucose and fructose are processed in separate ways. Fructose travels into the portal vein after absorption in the intestine and is transformed to fructose-1-phosphate in the liver by the fructokinase enzyme. Glyceraldehyde and dihydroxyacetone containing 3 carbon atoms of fructose-1-phosphate are split into phosphate (DHAP). With the participation of DHAP, glyceraldehyde is transformed to glyceraldehyde-3-phosphate, which enters numerous pathways and it is turned within common energy substrates. Fructose is processed without the requirement for insulin

release and does not raise plasma glucose levels, despite the fact that this metabolic process is not insulin-dependent (250).

As a result, consuming a lot of fructose can cause triglyceride production to increase (278). As 25 percent of the energy comes through HFCS or fructose versus sucrose, an increase in postprandial triglyceride levels is observed (251).

As is shown in Figure-3, dense fructose consumption and phosphorylation can lead to ATP depletion within the cell. Because fructokinase converts fructose to fructose-1-phosphate, it gets the phosphate it requires from ATP. The production of uric acid, which causes many metabolic complications as a result of ATP depletion, has increased (252).

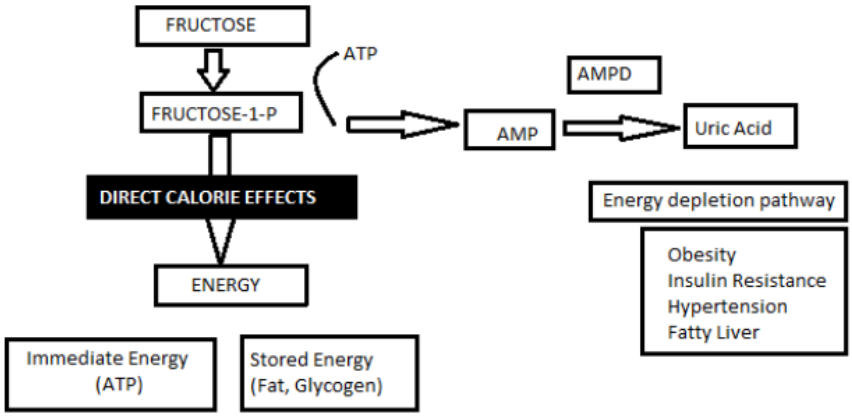

Figure 2.2 Fructose Metabolism (252)

Sucrose is a disaccharide formed of half fructose and half glucose monosaccharides (50:50). During the processing or digestion of practically any food, it is swiftly degraded into monosaccharides as a result of a number of natural reactions (251).

Sugars made from corn starch have similar amounts of glucose and fructose as sucrose. Both of these substances are quickly absorbed in the digestive system and enter the bloodstream. These two sugars are metabolized in the same way once they enter the bloodstream. According to an American Dietetic Association (ADA) statement from

2008, the nutritional value of these two sugars is equivalent, and each gram includes 4 kkcal. Starch-based sugar is made by hydrolyzing corn starch with acids and enzymes under the right circumstances, and it has the same glucose and fructose structure as sucrose (253).

It's commonly offered as glucose syrup, fructose-glucose syrup, or glucose-fructose syrup, based on how much glucose/fructose it contains. In other words, corn sugar is a type of sugar that is included in our country's and EU's sugar legislation, and it is not a synthetic chemical substance. "High fructose corn syrup is nutritionally comparable to sucrose," according to a review issued by the American Dietetic Association (ADA) in December 2008. Both sweeteners have the same number of calories per gram (4 calories per gram) and are made up of almost equal quantities of fructose and glucose. When absorbed and entering the bloodstream, the two sweeteners are indistinguishable." statement is mentioned (227).

Corn sugar, like all natural sugars, is included in the definition of sweeteners in the United States (and sucrose). Corn syrup is the most frequent name for them. In the European Union, fructose is referred to as "isoglucose." "Fructose-glucose syrup" means it contains more fructose than glucose; "glucose-fructose syrup" means it contains less fructose (227).

Starch-based sugars have been examined alongside sucrose (tea sugar) in our country's legislation, as in all other countries, and are included in the definition of sugar (254).

Excess added sugar consumption is connected with a variety of health concerns. Dental cavities, obesity, cardiovascular disease, type 2 diabetes mellitus, fructose and nonalcoholic fatty liver, and cancers of the colon, pancreatic, breast, and ovary are among the health problems (251,255,256).

2.7.4 Sugar Consumption and Its Relationship with Diseases

2.7.4.1 Sugar and Dental Health

In the United States, sugar, particularly sugar-sweetened beverages (SSBs), is taken in large quantities in people's daily diets (257). Tooth decay, obesity, and type 2 diabetes are all linked to SSBs (242,258). Fruit juice, sports drinks, energy drinks, aromatized milk, and calorie sweeteners are all examples of sugar-sweetened fizzy drinks (259).

SSBs are a main source of added sugar, accounting for a significant portion of the American diet. SSBs are primarily consumed by young people and people with low income since they are easily accessible and inexpensive, and their marketing is influenced by attention-drawing images and selling strategies (260).

Sugar-sweetened beverages have a particularly negative impact on dental health in the United States. Amongst the most chronic illnesses in the U.S is tooth decay (261). There have been strong linkages discovered between the excess of sugar intake and the arise in tooth decay among the public in tandem with sugar consumption (262). The major reasons of dental decay include high sugar levels in the diet, with sugary drinks accounting for the vast majority of the sugar consumed by children (263).

2.7.4.2 Sugar Overweight and Obesity

The obesity problem has been linked to a rise in the intake of SSBs (264). One teaspoon of sugar includes 16 calories; a standard 20-ounce soda includes 15 to 18 teaspoons of sugar, for a total of 240 calories from added sugar (265). Individuals who take sugar in fluid form don't feel nearly full as if they ate the equal number of calories from solid food, and that results in excessive sugar consumption (266). Furthermore, half of Americans consume SSBs; one in every 4 persons consumes no less than 200 calories a day from these beverages; and 5% consume no less than 567 calories, and that is equivalent to 5 cans of soda (260). Sugarsweetened beverages are becoming one of the leading calorie sources in the diets of younger generation, which is a major source of concern (226 calories per day) (267).

Sugar-sweetened beverage use has been associated with a rise in abdominal fat, and that raises the odds of diabetes and heart disease (268). Plenty of research show that enhanced added sugar intake is linked to total and abdominal obesity (262,269–271). Furthermore, foods high in fructose and high-fructose corn syrup have been connected to an enhanced threat of obesity, as the effects of excessive intake may accumulate over time and contribute to the accumulation of excess fat (258,272).

As reported by Lustig (2010), “Fructose is like alcohol, fructose is metabolized directly into fat – not cellular energy, like glucose”. (273). It shows that fructose may increase the pathways via as the body converts excess carbohydrates into fatty acids, a process termed "lipogenesis" (273,274)

Duffey et al. (2016) investigated the impact of substituting water for SSBs on calorie consumption and obesity incidence. They replaced one 8-ounce SSB with an 8-ounce serving of water in accordance with the daily intake of American adults aged 19 and older. Replacing one drink with water lowered the amount of calories from beverages from 17% to 11% in U.S. adults who consume one serving of SSBs each day. Using previously released randomized controlled trials (RCT) and metaanalyses of stable weight loss, the researchers predicted a reduction in obesity and a rise in normal BMI among the wider population (275).

Sugar added to beverages or consumed through sweetened beverages causes increase in body weight in youngsters and adults, according to experimental and observational research. This circumstance is also highly associated to conditions such as oral and dental health, cardiovascular diseases, diabetes, and metabolic syndrome (276). According to studies in Turkey, 68.8% of young people consumed sugar added tea and coffee, 33.2% consumed cola drinks, 46.4% consumed fruit juice, and 49.2% consumed foods such as sugar and chocolate (277); 30% preferred milk and fruit juice as a drink at breakfast (278); 10.6% of students consumed cola, and 19.9% consumed fruit juice (279). Another study in Turkey discovered that 11.5% of young people consume sweetened carbonated beverages or cola drinks on a daily basis (280).

Sugar-sweetened fruit juices, soft drinks, and carbonated beverages have replaced healthful drinks like milk and ayran in recent years (281). Many factors

influence the intake of sweetened beverages by university students, but little is known about the factors that determine beverage preferences. It is necessary to plan and implement dietary habits, particularly for the intake of sweetened beverages by young people, in order to better comprehend these factors. This component is thought to be essential to examine meanwhile evaluating the danger of chronic diseases linked to nutrition and health-promoting and preventive practices.

2.7.4.3 Sugar and Cardiovascular Disease

Adults' daily added sugar consumption should not exceed 160 calories per day for men and 100 calories per day for women, according to the American Heart Association. Furthermore, moderate evidence from the DGAC (Dietary Guideline) shows a connection between sugar consumption and heart disease (242). In 2015, the Scientific Advisory Committee on Nutrition (SACN) produced a study that showed no link between risk factors for heart disease and sugar consumption (282). Consequently, the findings of researches in that area are complicated (283).

Sugar intake in diet has varying impacts on fatty acids. In excess of 20% of total calorie consumption from added sugar has been shown in multiple studies to produce a rise in fasting triglyceride, which is a key health risk for cardiovascular patients (251,284). Despite that, other systematic research and metaanalysis researches show that swapping fructose for other carbohydrates has had no effect on fasting or postprandial triglyceride levels (224,285). Other research with 355 females and males who consumed 8% and 30% of their caloric intake from Sucrose or HFCS showed a 10% rise in triglyceride levels (286).

Other research found that when a group of youngsters were given high fructose corn syrup in various doses for 16 days, their postprandial triglyceride levels increased (287). However, it should be noted that while evaluating this finding, a short-term intervention was carried out.

In experiments conducted on both humans and animals, data revealing a relationship and influence of numerous metabolic parameters as decreased glucose tolerance within high amounts of sugar in intake and patients with cardiovascular problems, distorted platelet function, insulin resistance, and high uric acid levels were

obtained. All of these dangerous biochemical facts, however, can be arranged again by following a sugar-restricted diet (288).

Hyperglycemia with adverse effects of sugar intake pointed out that it can raise glycated LDL levels and intravascular clot formation, resulting in vein inflammation (289). It has been discovered that individuals with cardiovascular diseases have enhanced levels of oxidized LDL (290).

Furthermore, fructose raises AGE (Advanced Glycation End Products) levels (291); in other words, it may aid in the establishment of atherosclerosis by allowing defective macrophages to penetrate the inner face of arterial walls (292). Fructose added to foods has also been shown to play a part in Leptin resistance (293). Saturation hormone leptin lowers hunger and maintains energy balance. As a result, it plays an important function in maintaining body weight regulation. Leptin resistance is one of the primary causes of obesity (262,263), and in this situation, it also serves as an indirect risk factor for cardiovascular disease (263).

Consumption of fructose or sucrose has been shown to enhance myocardial oxygen demand and clot formation (288). It has been seen that in the rats fed with sucrose developed atheroma. When rats were fed sucrose instead of starchy diet, their aorta veins were destroyed and their blood lipid levels were significantly higher (294). Finally, sucrose causes a significant increase in 11hydroxycorticosteroids, which can raise the risk of cardiovascular disease (295).

In studies investigating the impact of added sugar on LDL cholesterol, different results have been achieved; while some researchers have discovered findings indicating a rise in LDL cholesterol, others have been unable to obtain data pointing that rise. Although, it should be noted that some investigators who have reached the same conclusion is steadily arising, demonstrating that high doses of added sugar increase LDL cholesterol (296,297).

2.7.4.4 Sugar and Type 2 Diabetes

Insulin resistance, whether it develops with type 2 diabetes or not, is influenced by the loss of β-cell functions and the repair of these losses. The early phase of β-cell insulin secretion is impaired when it enters the metabolic syndrome stage.

The difficulties improve when the risks in a person with impaired glucose tolerance are reduced (such as insulin resistance, improved blood pressure and obesity). However, if the risk factors are not addressed, type 2 diabetes develops (298). Type 2 diabetes, impaired insulin secretion, increased glucose synthesis, and insulin resistance are the three primary metabolic diseases. In people who are prone to type 2 diabetes, however, interactions between insulin resistance, genetic factors, and pancreatic cell dysfunction are increasingly essential (299).

There is a lot of confusion and misinformation about type 2 diabetes and the intake of added sugar. Consumption of sucrose produces rapid weight gain and increases blood pressure, hyperglycemia, insulin sensitivity, and blood lipid and uric acid concentrations, according to recent animal studies (300). It is believed that fructose, rather than glucose, in the sucrose molecule, is the agent responsible for the onset of this disease. Two key impacts of fatty acids in the body are thought to raise the risk of diabetes (280). Increased fatty acids in hepatic triglyceride production and free fatty acid concentration, particularly in the liver, increase peripheral fat uptake, which is likely to promote insulin insensitivity in peripheral tissues. The second mechanism is that fructose metabolism increases uric acid production. Uric acid has been shown to influence insulin accessibility to peripheral tissues, uric acid blood flow, and endothelial tissue function in cell culture and animal experiments (301).

Intake of SSBs can significantly raise the threat of developing type 2 diabetes (251,302,303). Regular intake of SSBs, regardless of obesity status, is strongly linked to type 2 diabetes. Imamura et al reviewed the findings of 17 observational researches, taking into account design and quality to reduce bias, and none of the investigations were sponsored by industry. SSB consumption was connected to the development of type 2 diabetes regardless of weight status. Furthermore, use of unnaturally sweetened drinks and fruit juice was linked to type 2 diabetes, but the indication was insufficient. Romaguera et al. (2013) studied the link between SSB use and type 2 diabetes using

data from eight European cohorts on juice, sugar-sweetened soft drinks, and artificially sweetened soft drinks. Drinking at least one 12-ounce serving size of sugar-sweetened soft drink each day enhanced the risk of getting type 2 diabetes by 22%, according to the study. When total energy consumption and BMI were taken into account, the elevated risk dropped to 18%. This finding could imply that the impact of SSBs on diabetes extends more than just body weight (302).

In 2016, researchers did an epidemiological investigation to see if there was a link connecting sugar-sweetened beverage intake and the risk of prediabetes and insulin resistance. People who consumed SSBs on a regular basis, about one can of soda per day, had a 46% higher risk of prediabetes than low or nonconsumers throughout a 14-year period. Higher consumption of sugar-sweetened beverage was also linked to enhanced insulin resistance, which is a risk factor for the development of type 2 diabetes (304).

Furthermore, excessive sugar consumption, particularly sugar-sweetened beverages, has been associated to generally insufficient diet and nutrition. According to new study exhibited at the European Association for the Study of Diabetes (EASD) annual meeting, increased intake of SSBs is connected with reduced intakes of foods that are typically considered healthy. Whole wheat, vegetables, yoghurt and fish consumption disparities among high and low consumers of SSBs were identified. Individuals who had more SSBs ate fewer of these nutritious foods. Because this research was cross-sectional, no generalizations concerning the accurate impact on health could be formed (305).

2.7.4.5 Sugar and Fatty Liver

Nonalcoholic fatty liver disease (NAFLD) is defined by an aggregation of triglycerides in liver cells that is independent to alcohol intake and can cause liver damage. NAFLD is a silent disease; around 25% of people with the disease have no indications in the initial stages. Iantao et al discovered a link between increased added sugar intake and the development of NAFLD. It was discovered that people who consume more than one SSB a day have a higher prevalence of NAFLD than those who do not consume any SSBs (306).

Consumption of fructose and fructose-containing sweeteners has been shown to raise the risk of NAFLD, the most frequent liver disease in the United States (307,308). Furthermore, it is a important independent risk factor for cardiovascular disease. Cardiovascular problems and NAFLD seem to have a considerably stronger link than cardiovascular diseases and high cholesterol, hypertension, diabetes, metabolic syndrome, smoking or gender (307).

Intake of added sugar, sucrose and high fructose corn syrup (HFCS), increases the development of NAFLD and consequently the risk of cardiovascular disease (309).

Obesity and overweight people are more likely to acquire NAFLD, and individuals with NAFLD are more likely to develop chronic circumstances comprising cardiovascular disease and type 2 diabetes (306). Further proof on the function of fructose sugar in the development of NAFLD came from animal research (297,310). Fructose's lipogenic and proinflammatory effects are linked to its potential to arise intracellular and serum uric acid levels, as well as transient ATP depletion caused by its fast phosphorylation in the cell (297).

Despite fructose doesn’t raise insulin levels in metabolic pathways immediately, insulin resistance raises fasting glucose and insulin levels over time (311). According to Dirlenwanger et al. (2000), fructose increases hepatic and extrahepatic insulin resistance in adults (312). In a 10-week study, it was discovered that those who had a beverage containing fructose gained much more visceral fat than those who consumed a beverage containing glucose (287). Increased visceral fat is thought to induce insulin resistance because visceral fat excess is inherited diabetogenic (313). Decreased insulin sensitivity leads to a decrease in lipoprotein lipase activity in saturated adipose tissue and an increase in visceral adipose tissue, leading in an increase in lipid absorption in hypertrophied adipocytes, according to Stanhope and Havel's research (287).

2.7.4.6 Sugar and Blood Pressure

Additional sugar with rising intake in a diet has been discovered to raise blood pressure in research with limited but developing results (314,315). Different sugar groups have been found to arise the likelihood of resulting high blood pressure in animal researches with rats fed high doses of fructose, and in human investigations with

acute injections in large dosages, daily ≥1 intake of SSBs was found to increase the odds of resulting high blood pressure. Nonetheless, human researches has found it to be conflicting (316,317), and the long-term effect of simple sugar consumption on blood pressure is unclear (318).

2.7.4.7 Sugar and Hedonic Pathway

The pleasure centers of the brain are the ventral tegmental and nucleus accumbens. People's saturation signals and motives are influenced by the pleasure they get from eating food, regardless of their energy needs (227). It has been discovered that sucrose infusion directly given to the nucleus accumbens area increases dopamine and opioid synthesis, as well as food consumption (228).

Sugary and fatty foods stimulate opioids and the pomanini nucleus accumbens, leading to reward-driven eating (319,320). Chronic hyperinsulinemia prevents dopamine from being cleared from the nucleus accumbens, which might lead to an increase in calorie intake (321). Chronic activation of the amygdala area as a result of stress promotes an increase in cortisol release and the continual consumption of good food as a substitute for drugs (322,323).

In multiple research involving children, stress and SSB levels were found to rise in direct proportion to the consumption of sugary foods and snacks (167,324). Dietary limitations are common among 9-year-old children, according to a controlled study, and children who are stressed are more willing to consume foods with high sugar content for comfort (325).

2.7.4.8 Sugar and Cancer

Excess added sugar consumption has been linked to cancers of the gastrointestinal tract, especially the colon and pancreas, according to certain research. Fuchs et al. investigated at how SSB consumption affected cancer relapse and mortality in individuals with stage III colon cancer. As part of an adjuvant chemotherapy experiment sponsored by the National Cancer Institute in the United States, the participants completed a diet frequency questionnaire. In this study, patients with stage III colon cancer who consumed a lot of sugar-sweetened beverages had a higher risk of cancer recurrence and mortality (326). Furthermore, a community-based case–control

research in Japan discovered that sugar consumption was linked to a higher threat of colorectal cancer in both smokers and non-drinkers among males (327). Furthermore, higher blood glucose levels have been linked to a higher risk of pancreatic cancer, with some research suggesting that high fructose and sucrose consumptions may play a part in pancreatic cancer etiology (328,329). To promote cell proliferation, cancer cells prefer to metabolize fructose. As a result, it seems that lowering refined fructose consumption or blocking fructose-mediated effects in cancer patients may disrupt and reduce tumor growth (329).

Another study discovered that men and women who consume a lot of total added sugar have no enhanced threat of pancreatic cancer. Bao et al. came to the conclusion that previous research findings were limited and inconsistent (330).

According to several researches, there is a relation among additional sugar intake and the risk of breast and ovarian cancer in women (331,332). High consumption of sugar-sweetened fruit/soft drinks was linked to a increased risk of breast cancer, according to Wong et al. (2015) women who consumed more than 0.5 servings of regular soft drinks per day had a higher risk of premenopausal breast cancer (331). Furthermore, diets with a high glycemic index have been linked to a higher risk of breast cancer. Mice fed a quantity of fructose and sucrose equivalent to that seen in a typical American diet developed breast cancer more than mice fed a low sugar diet, according to Jiang et al (332). Furthermore, foods high in added sugar enhance insulin levels in the blood, which can lead to hyperinsulinemia, which has been closely related to a higher risk of endometrial cancer (333,334). In particular, there is evidence that consuming a lot of added sugar contributes to the development of ovarian cancer (334). These data indicate that a low-sugar diet may reduce the incidence of breast, endometrial, and ovarian cancer.

2.7.5 Dietary Recommendation for Sugar

Young adulthood is a vital stage in the life cycle when many health and nutrition habits are developed (270). In the United States, average sugar consumption by all age groups, particularly adolescents and young adults, exceeds WHO recommendations, exceeding not just the proposed 5% limit, but also the present 10% added sugar limit (242). Young adults' calorie intake from ordinary soda and fruit drinks dropped between

1999 and 2008. Young adults, on the other hand, increased their average energy consumption of sports/energy drinks the most (from 119 to 229 kcal/day). Unfortunately, across all age groups, young adults have some of the most unhealthy dietary patterns, with low intake of vegetables and fruits and high intake of fast food and SSBs (335,336). SSBs are the most common source of empty calories in the diets of American teenagers and young adults. 2 Soda pop is the most popular sugar-sweetened beverage among those age groups. Between 2000 and 2008, young adults' soda consumption decreased slightly, but their use of sports and energy drinks increased (337). According to the research, significant steps must be taken to minimize young people's consumption of sugar-sweetened beverages.

Identifying the leading sources of added sugars, such as SSBs and sugary snacks, could also assist health practitioners target educational initiatives for healthy food and beverage choices (338).

According to the Institute of Medicine's Dietary Reference Intake (DRI) research (2002), added sugar consumption need to be under 25% of daily total energy intake. The fact that foods with a lot of added sugar have more calories and don't have enough micronutrients leads to this restriction (339). The fact that added sugar is nutritionally deficient qualifies it as a "empty calorie." (256). When people consume a lot of empty calories in their diets, they become deficient in micronutrients and consume a lot of calories.

WHO guidelines for adults and children published in 2015 propose limiting added sugar in food and minimizing intake of beverages with high added sugar content (340). These restrictions are emphasized as effective practices for public health, oral hygiene, type 2 diabetes, and obesity management (256). According to a WHO (2015) guideline, an individual's daily energy intake should not exceed the calorie, with 10% of that amount made up of added sugar (340). Whereas this suggested limit is lower in both youngsters and adults, it reveals that the risk of chronic non-contagious illnesses (e.g. obesity, oral hygiene problems) can be lowered and it is certainly worthwhile to live a healthy lifestyle (237). This energy value is equivalent to 25 kg sugar for an adult with a healthy BMI.

Despite the fact that institutions make suggestions in a variety of quantities related to added sugar intake, the US and UK governments' guidelines published in 2015 reveal very significant interpretations regarding daily added sugar consumption restrictions in both countries. Both countries' standards include recommendations about the benefits of reducing added sugar consumption to living a healthy life. While the US government recommends that added sugar should not account for more than 10% of daily energy in accordance with WHO standards, this level has been reduced to 5% in the UK public guidelines (236,242).

The committee noted that, as a consequence of the suggestions to limit added sugar in the food guidelines issued for the general public in 2015, individuals' long-term consumption patterns led them to choose reduced-calorie sweeteners in their diet and nutrition to added sugar. The committee, on the other hand, resists the advice to replace additional sugar and long period of time for usage with low-calorie sweeteners unless convincing evidence. It is predicted that the taste, texture, and shelf life of sugar will change as a result of its removal from food (341). The FDA, on the other hand, considers artificial and low-calorie sweeteners to be safe for weight loss, and the Academy of Nutrition and Dietetics advises that they can be adapted to healthy nutrition (242,248).

Excessive added sugar consumption is especially dangerous for young individuals. As a result, it's vital to analyze attitudes toward added sugar and consumption trends so that public health experts and awareness programs can address the problem. This can help to raise public knowledge of the health dangers associated with added sugar, as well as provide information on how to cut down on added sugar usage.

2.8 Nutritional Concerns in University Students

In terms of eating habits, university students are one of the most significant groups to consider. In an environment where young people's nutritional quality is already essential, their particular qualities in nutrition should be studied in the young group. Some basic features, such as being away from their families, entering a new social environment, and changing their daily activities, can have a significant impact on their nutrition and other vital issues.

Below are some of the factors that influence the eating habits of young individuals, especially university students (342).

- Primary factors; personal eating choices, family's eating style, parents' role models in eating choices, media and social norms,
- Personal factors; behaviors, beliefs, knowledge, self-esteem, meal and snack pattern weight control, and
- Social factors; family, friends and other close circle.

One of the first groups to transition from childhood to adulthood is university students. Students are separated from their families as they begin their university studies and become susceptible to external influences. As a result, a process begins in which they must make independent decisions. Nutrition is one of the most fundamental decisions they will have to make on their own. Economic power is influencing efforts to keep up with this new order. Students with more financial resources can better control their diets. Another factor that makes this period's eating habits essential is that they can have an impact on life after education. Because a person's personality settles to a degree after university education, the habits are attempted to be maintained. As a result, adequate diet should be prioritized during this period (343).

University students are one of the most risky groups to endure inadequate and unbalanced nutrition in Turkey, where it is a major social concern. University students in our country do not have a regular eating routine. This mass, also, is malnourished and imbalanced. The absence of eating habits among Turkish university students can be ascribed to two factors. These are economic insufficiency and ignorance. This process is made more difficult by the fact that university students' first semesters overlap with their puberty. As a result, particular factors such as rapid physical growth and development, lifestyle changes, smoking, a desire to diet, and participation in sports can influence university students' nutritional habits (344).

Stress among college students, particularly freshmen adjusting to campus life, is a serious issue that has a negative impact on their general health. Freshmen, particularly those who live on campus, are under pressure to make friends, manage their finances, handle the requirements of a larger schoolwork, and do all of this with little guidance or direction. When students attempt to balance these new expectations with their search for identity, autonomy, and purpose, stress rises. Exhaustion, inadequate self-care, and

decreased immunity are all symptoms of stress. According to the American College Health Association (2011), 63% of college students feel "hopeless" at times, 94% feel "overwhelmed," and 48% of females and 39% of men report feeling so depressed that it was difficult to function (345).

Gender and race may influence how stress is perceived. In a research by Cruz et al. (2013), women reported higher levels of stress than men (346). Furthermore, Welle and Graf (2011) discovered that stress tolerance and coping differed significantly by gender and ethnicity. This shows that men and women deal with stress in different ways, and that health education and stress management programs may not be appropriate for all college students.

Stress levels in college students can vary depending on their age or living situation. Perceived stress levels have often dropped as one's age in years has increased. Pressure to succeed, starting college, and a change in living situation were all common college stressors. A change in sleeping habits caused 94.8% stress in addition to these stressors. Furthermore, 64.9% of students said they don't spend nearly enough time with their parents. Nearly half of college students (42.3%) said they had problems with their roommate. Getting eight or more hours of sleep, having adequate free time, eating a healthy diet, avoiding substance abuse, and participating in an extracurricular sport were all popular coping techniques used by college students to lower perceived stress (345). Only 60% of college students believe that physical activity is an effective stress-reduction strategy (346).

Furthermore, it has been claimed that stressful situations, such as COVID-19-related home confinement, can increase the risk of imbalanced diet, unhealthy eating habits and tendency to emotional eating (219).

3. MATERIALS AND METHODS

3.1 Location, Time and Sample Selection of the Study

The universe of this study consists of 15,000 students studying at Yeditepe University. For the purpose of the research, stratified sampling method was used. It consists of 14 faculties in total, including Medicine, Dentistry, Pharmacy, Health Sciences, Education, Arts and Science, Fine Arts, Law, Economics and Administration Sciences, Communications, Engineering, Architecture, Faculty of Commerce and School of Applied Sciences. The sample size calculation was done with a sampling error of 0.05 and a confidence interval of %95, and it was determined that the involvement of 380 students would be sufficient. The study was completed with 546 students from Yeditepe University undergraduate students who volunteered to engage in the study online between December and June 2021. The sample number of university students studying at Yeditepe University according to their faculties was determined by the simple random sampling method. The study was initiated after the 'Ethics Committee Approval' dated 03.12.2021 from the Yeditepe University Non-Interventional Research Ethics Committee (Appendix 1).

3.2 Study Design

The questionnaire form will be applied in 2 stages in order to compare the eating habits of the participants depending on their mood before and during the pandemic. The research is based on volunteerism and 27 questions (such as age, gender, department, body weight, height, meal consumption, chronic disease status, cigarette-alcohol consumption, sleep duration, etc.), Eating Attitude Test short form (EAT-26), Emotional Appetite Questionnaire (EMAQ) and Food Frequency Questionnaire (FFQ) of sugary foods were used (Appendix 2, Appendix 3). In the selection of the sample, attention was paid to the selection of only undergraduate students. Students who have received any other education other than undergraduate education will not be included in the study. The questionnaire form will only be applied to students who study at Yeditepe University online from home. The scale that will determine the frequency of consumption of sugary foods, prepared by the research coordinator by researching the necessary resources, will be evaluated by questioning 20 types of food in 2 stages, comparing the pre-pandemic and the pandemic process to university students who receive online undergraduate education from home. Participants will be contacted via e-

mail/media communication tools and will be asked to fill out the questionnaire for their diet before and during the pandemic.

Since it corresponded with the COVID-19 process, which is a global epidemic, the students participating in the research were surveyed online with "Google Forms". Height and body weights of individuals were taken with their own statements and measurements.

3.3 Data Collection

3.3.1 Eating Attitude Test short form (EAT-26)

Eating attitudes of the participants were evaluated with EAT-26. EAT-26 is a self-filled scale that can be used to screen for the risk of eating disorders (347). Garner and Garfinkel (1979) developed the Eating Attitude Test-40 (348), which was later shortened to 26 items by Garner, Olmstad, Bohr, and Garfinkel (1982) (349). EAT-26 test; It is evaluated with the sum of the scores of 26 items. The scale consisting of 26 items offers options between “always” and “never”. The 6 -grade Likert type (always, often, often, sometimes, rarely, never), is a scale based on self -notification consisting of 26 items. Always; 3 points, very often; 2 points, often scored as 1 point, while other options get 0 points. A score between 0 and 53 can be obtained from the test, however, 20 points are used as the cut-off point for the EAT-26. According to the score results, individuals who score 20 and above are called as individuals with "impaired eating behavior", while individuals with a score below 20 are considered as individuals with "normal eating behavior". The Turkish validity and reliability study of the test was performed by Ergüney et al. (347). There are 3 sub-scores for EAT-26. These are dieting behavior, bulimic behavior and oral control behavior scores. Dieting score, 1,6,7,10,11,12,14,16,17,22,23,24,26 questions in the EAT-26 scale; bulimic behavior score of 3,4,9,18,21 and 25th questions; oral control behavior score is 2,5,8,13,15,19,20. the scores of the questions obtained by collecting (348). Necessary permissions for the use of the scale were obtained from the authors.

3.3.2 Emotional Appetite Questionnaire (EMAQ)

The EMAQ scale was developed by Nolan et al. (2010) to measure the impact of one's emotions and situations on one's appetite, and Demirel et al. (2014) translated it into Turkish (150,350). It has 22 components and is sized in 2 forms. One is "Positive Emotions and Situations" and "Negative Emotions and Situations". The other one is "Positive/Negative Emotion" and "Positive/Negative Situation" (Table 3.1). Preference can be established based on the measurement of sub-dimension. The options for the effects of people's mood on their appetite range from 1 (less) to 9 (more). The options "Not Appropriate" and "I Don't Know the Answer" on the scale are left to the individual's choice. The average score was coded according to the answers supplied by the serial average method in our study so that the students who answered "It does not apply" and "I don't know the answer" did not affect the results in any direction. Although the scale has no cut-off point, it has been explained that a mood state of 1-4 reduces appetite, a mood state of 5 has no effect on appetite, and a mood state of 6 to 9 induces an increase in appetite. In our study, positive emotions and positive situations, and negative emotions and negative situations were examined under the same title.

Table 3.1 Emotional Appetite Questionnaire items

	Positive/Negative	Emotion/Situations
Sad	Negative	Emotion
Bored	Negative	Emotion
Confident	Positive	Emotion
Angry	Negative	Emotion
Anxious	Negative	Emotion
Happy	Positive	Emotion
Frustrated	Negative	Emotion
Tired	Negative	Emotion
Depressed	Negative	Emotion
Frightened	Negative	Emotion
Relaxed	Positive	Emotion
Playful	Positive	Emotion
Lonely	Negative	Emotion
Entuhsiastic	Positive	Emotion
When under pressure	Negative	Situation
After a heated argument	Negative	Situation
After a tragedy of someone close to you	Negative	Situation
When falling in love	Positive	Situation
After ending a relationship	Negative	Situation
When engaged in an enjoyable hobby	Positive	Situation
After losing money or property	Negative	Situation
After receieving good news	Positive	Situation

3.3.3 Food Frequency Questionnaire (FFQ)

The Food Frequency Questionnaire (FFQ) was prepared by researching various sources to determine the frequency of sugary food and beverage consumption, added sugar intake, and 20 kinds of food were questioned. Sugar-added foods are determined as the frequency per day, week or month. The sugar-containing foods consumed by the students in the last month were questioned how often they consumed with six options as "every day", "5-6 days a week", "3-4 days a week", "1-2 days a week", "once every 15 days", "once a month" and "never". The scale was evaluated by asking two-stage questions to compare the pre-pandemic and the pandemic process.

3.4 Statistical Analysis

NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) program was used for statistical analysis. While evaluating the study data, descriptive statistical methods (Mean, Standard Deviation, Median, Frequency, Ratio, Minimum, Maximum) as well as the distribution of the data were evaluated with the Shapiro-Wilk Test. Kruskall-Wallis test in the comparison of quantitative data of three or more groups; Mann-Whitney U Test was used for comparison of two groups. Chi-square analysis was used to determine the relationship between qualitative data. Significance was evaluated at $p<0.01$ and $p<0.05$ levels.

4. RESULTS

This chapter contains the analyses that were used to assess the current study's hypotheses, as well as the findings of those studies. Descriptive statistics were used to determine the participants' demographic features, acquire information about their eating habits, physical activity, sleep states and examine their susceptibility to eating disorders and emotional eating, as well as how frequently they consumed sugary foods.

Table 4.1 Demographic Characteristics of Students

		Mean±SD	Min-Max (Median)
Age		21.7±2.1	18-43 (22)
BMI		22.86±3.85	14.82-40.57 (22.39)
		n	**%**
Gender	**Female**	350	64.1
	Male	196	35.9
Faculty of Education	**Faculty of Dentistry**	46	8.4
	Faculty of Pharmacy	19	3.5
	Faculty of Health Sciences	47	8.6
	Faculty of Medicine	39	7.1
	Other Faculties	395	72.3
Household	**At home with family**	261	47.8
	At dorm with friens	98	17.9
	At home with friends	90	16.5
	Alone	97	17.8
Smoking Status	**Yes**	238	43.6
	No	269	49.3
	Quitted smoking	39	7.1
Number of Cigarettes Smoked per Day	**Less than 10**	117	49.2
	1 Pack	98	41.2
	More than 1 Pack	23	9.7
Alcohol Use	**Yes**	348	63.7
	No	198	36.3
Frequency of Alcohol Use	**1-2 Times a week**	132	37.9
	3-4 Times a week	36	10.3
	5 Times a week or more	4	1.1
	1-2 a month	176	50.7
Chronic Disease	**Yes**	50	9.2
	No	496	90.8

In this study, demographic factors were considered as gender, where and with whom they lived, smoking and alcohol usage, chronic disease condition, and the faculties they get education. As can be seen in Table 4.1, the students participating in the research were distributed as 350 females (64.1%) and 196 males (35.9%).

Of the students, 8.4% (n=46) faculty of dentistry, 3.5% (n=19) faculty of pharmacy, 8.6% (n=47) faculty of health sciences, 7.1% (n=39) faculty of medicine and 72.3% (n=395) of them stated that they were studying at other faculties. Of the participants, 47.8% (n=261) were at home with their family, 17.9% (n=98) were at dorm with friends, 16.5% (n=90) were at home with friends, and 17% were 8 (n=97) live alone.

The rate of smoking among students is 43.6% (n=238), the rate of those who quit smoking is 7.1% (n=39), and the rate of non-smokers is 49.3% (n=269). Among the participants, the rate of smokers according to the number of daily cigarettes was 49.2% (n=117) less than 10, 41.2% (n=98) 1 pack and 9.7% (n=23).) is more than 1 pack.

While 63.7% (n=348) of the participants use alcohol, 36.3% (n=198) stated that they do not.

Considering the alcohol consumption rates of the participants, 37.9% (n=132) consume alcohol 1-2 times a week, 10.3% (n=36) consume it 3-4 times a week, 1.1% (n=4) said that they consumed 5 or more times a week and 50.7% (n=176) said they consumed 1-2 times a month.

While 9.2% (n=50) of the participants had a chronic disease, 90.8% (n=496) did not.

Table 4.2 Eating Habits of Students

		n	%
Number of Main Meals	**1 Main meal**	14	2.6
	2 Main meals	306	56.0
	3 Main meals	204	37.4
	4 Main meals	14	2.6
	5 Main meals	8	1.4
Number of Snacks	**1 Snack**	126	34.1
	2 Snacks	164	44.4
	3 Snacks	70	19.0
	4 Snacks	9	2.4
Frequency of Eating Out	**Everyday**	41	7.5
	4-6 times a week	129	23.6
	1-3 times a week	241	44.1
	2-3 times a month	123	22.5
	Never	12	2.2
Meal Consumed Outside	**Breakfast**	7	1.3
	Lunch	162	30.3
	Dinner	338	63.3
	Snacks	27	5.1
Type of Food Consumed Outside	**Fast Food**	352	65.9
	Kebap varieties	49	9,0
	Grill varieties	64	11.7
	Homemade meals	46	8.4
	Salad varieties	23	4.2

As it is shown in the table 4.2 above, when the ratios of students are analyzed according to the number of main meals, 2.6% (n=14) of students have 1 main meal, 56% (n=306) have 2 main meals, 37.4% (n=204) have 3 main meals, 2.6% (n=14) have 4 main meals, 1.4% (n=8) have stated that they consume 5 or more main meals.

When the ratios of the participants according to the number of snacks are analyzed, 34.1% (n=126) of the participants have 1 snack, 44.4% (n=164) have 2 snacks, 19% (n=70) 3 snacks, 2.4% (n=7) stated that they have 4 or more snacks.

The distribution of the participants according to the frequency of eating out is 7.5% (n=41) every day, 23.6% (n=129) 4-6 times a week, 44.1% (n=n) =241) 1-3 times

a week, 22.5% (n=123) 2-3 times a month, and 2.2% (n=12) never eat out. Considering the distribution of the participants according to the meals they consume outside, 1.3% (n=7) have breakfast, 30.3% (n=162) have lunch, 63.3% (n=338) have dinner and 5.1% (n=27) stated that they consume snacks outside. Besides that, the distribution of the participants according to the type of food consumed outside, 65.9% (n=352) consume fast food, 9% (n=49) consume kebab types, 11.7% (n=64) consume grilled meat types, 8.4% (n=46) consume home-cooked meals and 4.2% (n=23) stated that they consumed salad varieties.

Continuation of Table 4.2

		n	%
Meal Skip Status	**Yes**	472	86.4
	No	74	13.6
Meal Skip Time	**Morning**	283	60.0
	Mid-morning	249	52.8
	Noon	184	39.0
	Afternoon	210	44.5
	Evening	41	8.7
	Night	105	22.2
Meal Skip Reason	**Not enough time**	288	61.1
	No one to prepare	168	35.7
	Inability to wake up early	194	41.2
	Lack of appetite	143	30.4
	To lose weight	79	16.8
	Lack of economic opportunities	53	11.3
	Other	26	5.5
Being Busy With Other Things While Consuming Meals	**Yes**	481	88.1
	No	65	11.9
Meal Consumption Speed	**Slow**	59	10.8
	Medium	296	54.2
	Fast	171	31.3
	Very Fast	20	3.7
Change in the Number of Meals During the COVID-19 Pandemic	**Increased**	258	47.3
	Decreased	84	15.4
	No Change	204	37.4
Weight Change During the COVID-19 Pandemic	**Gained Weigth**	353	64.7
	Lost Weight	106	19.4
	No Change	87	15.9

When we look at the rate of students according to their skipping meals, 86.4% (n=472) skipped meals, while 13.6% (n=74) did not. The distribution of the participants according to the time of skipping the meal, 60% (n=283) skipped in the morning, 52.8% (n=249) skipped mid morning, 39% (n=184) skipped at noon, 44.5% (n=210) skipped at afternoon, 8.7% (n=41) skipped in the evening and 22.2% (n=105) stated that they skipped at night.

Considering the distribution of the participants according to the reason for skipping meals, 61.1% (n=288) said they could not find time, 35.7% (n=168) had noone to prepare, 41.2% (n=194) could not wake up in the morning, 30.4% (n=143) had loss of appetite, 16.8% (n=79) to lose weight, 11.3% (n=53) lack of economic opportunities and 5.5% (n=26) stated that they skipped meals due to other reasons.

When we look at the distribution of students according to the state of being busy with other activities while consuming meals, 88.1% (n=481) were busy with other activities while consuming their meals, while 11.9% (n=65) are not.

The distribution of the participants according to their meal consumption speed were, 10.8% (n=59) stated that they consumed their meal slow, 54.2% (n=296) consumed moderate, 31.3% (n=171) consumed fast and 3.7% (n=20) of them stated that they consumed it very fast.

When the distribution of the change in the number of meals during the COVID-19 pandemic is examined, 47.3% (n=258) of the participants stated that the number of meals increased during COVID-19 pandemic, 15.4% (n=84) decreased and 37.4% (n=258) stated that it did not change.

As shown in Table 4.2, 64.7% (n=353) of the students stated that they gained weight, 19.4% (n=106) of them stated that they lost weight, and 15.9% (n=87) of them stated that their weight did not change during the COVID-19 pandemic.

Table 4.3 Physical Activity and Sleep Duration of Students

		n	%
Regular Physical Activity Status	**Yes**	285	52.2
	No	261	47.8
Frequncy of Physical Activity	**Everyday**	21	7.4
	At least 3 times a week	87	30.5
	At least 1-2 times a week	146	51.2
	1-2 times a month	31	10.9
Sleep Duration per Day	**Less than 6 hours**	70	12.8
	6-8 hours	335	61.4
	8-10 hours	128	23.4
	10 hours or more	13	2.4

In the distribution of the participants according to their regular physical activity, 52.2% (n=285) stated that they do regular physical activity, while 47.8% (n=261) stated that they don't. Of the students who do physical activity, 7.4% (n=21) do every day, 30.5% (n=87) do at least 3 days a week, 51.2% (n=146) do 1-week 2 days and 10.9% (n=31) stated that they do physical activity 1-2 days a month.

Considering the sleep duration of the participants, 12.8% (n=70) slept less than 6 hours, 61.4% (n=335) slept 6-8 hours, 23.4% (n=128) slept 8-10 hours and 2.4% (n=13) stated that they slept 10 hours or more per day.

Table 4.4 Evaluation of Students' Eating Attitudes Test

		n	%
EAT-26	**Not Prone to Eating Disorders (<20)**	461	84.4
	Prone to Eating Disorders (≥20)	85	15.6

When the eating attitude test assessment was carried out, it was determined that 15.6% (n=85) of the students were prone to eating disorders according to their EAT-26 scores (Table 4.4).

Table 4.5 Distribution of the Change in Eating Attitude Test Scores of Students During the COVID-19 Pandemic

		n	%
The Change in Eating Attitudes Test Scores During the COVID-19 Pandemic	**Increased**	305	55.9
	Decreased	27	4.9
	No Change	214	39.2

While 55.9% (n=305) of the students stated that the scores of the eating attitude test increased, 4.9% (n=27) stated that it decreased and 39.2% (n=214) stated that it didn't change during the pandemic period (Table 4.5).

Table 4.6 Evaluation of the Students' Emotional Appetite Questionnaire

		n	%
EMAQ	**Tendency to Eat Less**	271	49.6
	No Change	135	24.7
	Tendency to Eat More	140	25.6

While 49.6% (n=271) of the participants stated that their appetite decreased in emotions and situations, 24.7% (n=135) stated that it did not affect them and 25.6% (n=140) stated that their appetite increased (Table 4.6).

Table 4.7 Distribution of the Change in Emotional Appetite Questionnaire Points of Students During COVID-19 Pandemic

		n	%
The Change in Emotional Appetite Questionnaire Points During the COVID-19 Pandemic	**Increased**	247	45.2
	Decreased	18	3.3
	No Change	281	51.5

As seen in Table 4.7, 45.2% (n=247) of the students stated that their emotional appetite questionnaire scores increased, 3.3% (n=18) stated that it decreased and 51.5% (n=281) stated that it didn't change during the pandemic.

Table 4.8 Measurement Averages of University Students

		Mean±SD	***Min-Max (Median)***
Dieting		6.57±5.4	0-26 (5)
Bulimia ve Food Preoccupation		3.89±1.77	0-11 (3)
Oral Control		2.63±2.48	0-14 (2)
EAT-26		13.09±7.69	2-50 (12)
Negative Emotions and Situations		4.85±1.72	1-9 (5)
Positive Emotions and Situations		5.08±1.37	1-9 (5.25)
EMAQ		4.94±1.46	1-9 (5)
		n	**%**
EAT-26	**Prone to Eating Disorders**	461	84.4
	Not Prone to Eating Disorders	85	15.6
EMAQ	**Lack of Appetite**	271	49.6
	No Change	135	24.7
	Increased Appetite	140	25.6

Dieting value ranged from 0 to 26, with an average of 6.57±5.4. Bulimia and food preoccupation values ranged from 0 to 11, with an average of 3.89±1.77. Oral control value ranged from 0 to 14, with a mean of 2.63±2.48. Eating attitude test value ranged from 2 to 50, with an average of 13.09±7.69. While 84.4% (n=461) of the participants do not prone to eating disorders, 15.6% (n=85) is prone. Negative emotions and states values ranged from 1 to 9, with an average of 4.85±1.72. Positive emotions and states values ranged from 1 to 9, with an average of 5.08±1.37. The emotional appetite questionnaire value ranged from 1 to 9, with an average of 4.94±1.46. While 49.6% (n=271) of the participants stated that their appetite decreased in emotional states, 24.7% (n=135) stated that it did not affect them and 25.6% (n=140) stated that their appetite increased.

Table 4.9 Frequency Distribution of Students' Consumption of Sugary Foods

		Everyday	1-2 times a week	3-4 times a week	5-6 times a week	Once every 15 days	Once a month	Never
Sugar (Powder, Cut) Usage	**n (%)**	70 (%12.8)	130 (%23.8)	119 (%21.8)	42 (%7.7)	35 (%6.4)	35 (%6.4)	115 (%21.1)
Candy varieties (Turkish Delight, Jellybeans) Usage	**n (%)**	24 (%4.4)	129 (%23.6)	94 (%17.2)	20 (%3.7)	79 (%14.5)	120 (%22)	80 (%14.7)
Breakfast Cereals (Muesli, Granola)	**n (%)**	22 (%4)	167 (%30.6)	107 (%19.6)	41 (%7.5)	62 (%11.4)	73 (%13.4)	74 (%13.6)
Honey, Jam, Molasses etc.	**n (%)**	41 (%7.5)	155 (%28.4)	94 (%17.2)	35 (%6.4)	92 (%16.8)	64 (%11.7)	65 (%11.9)
Cocoa Hazelnut Butter, Peanut Butter, Cream Chocolate etc.	**n (%)**	26 (%4.8)	164 (%30)	102 (%18.7)	41 (%7.5)	97 (%17.8)	67 (%12.3)	49 (%9)
Biscuits, Wafers, Cakes and Cookies etc.	**n (%)**	38 (%7)	175 (%32.1)	147 (%26.9)	53 (%9.7)	70 (%12.8)	40 (%7.3)	23 (%4.2)
Dairy Desserts, Ice Cream etc.	**n (%)**	19 (%3.5)	165 (%30.2)	104 (%19)	44 (%8.1)	129 (%23.6)	63 (%11.5)	22 (%4)
Dough and Sorbet Desserts (Baklava, Tulumba, Şekerpare etc.)	**n (%)**	13 (%2.4)	116 (%21.2)	54 (%9.9)	24 (%4.4)	120 (%22)	145 (%26.6)	74 (%13.6)
Fruit Milk and Yogurt etc.	**n (%)**	27 (%4.9)	132 (%24.2)	110 (%20.1)	43 (%7.9)	79 (%14.5)	69 (%12.6)	86 (%15.8)
Instant Fruit Juices	**n (%)**	14 (%2.6)	122 (%22.3)	60 (%11)	20 (%3.7)	92 (%16.8)	99 (%18.1)	139 (%25.5)
Fizzy Drinks (Cola, Fanta, Soda, etc.)	**n (%)**	42 (%7.7)	113 (%20.7)	80 (%14.7)	50 (%9.2)	102 (%18.7)	68 (%12.5)	91 (%16.7)
Fruity Mineral Water, Soda, etc.	**n (%)**	34 (%6.2)	98 (%17.9)	77 (%14.1)	48 (%8.8)	71 (%13)	94 (%17.2)	124 (%22.7)
Instant Packaged Coffee (2 in 1, 3 in 1 etc.) and Instant Cold Coffee	**n (%)**	67 (%12.3)	109 (%20)	75 (%13.7)	39 (%7.1)	69 (%12.6)	64 (%11.7)	123 (%22.5)
Creamy-Caramel Coffee Varieties	**n (%)**	19 (%3.5)	104 (%19)	82 (%15)	30 (%5.5)	86 (%15.8)	70 (%12.8)	155 (%28.4)
Light Biscuits, Crackers etc.	**n (%)**	21 (%3.8)	102 (%18.7)	60 (%11)	29 (%5.3)	105 (%19.2)	103 (%18.9)	126 (%23.1)
Sauces (Ketchup, Mayonnaise, Mustard etc.)	**n (%)**	26 (%4.8)	162 (%29.7)	85 (%15.6)	47 (%8.6)	126 (%23.1)	60 (%11)	40 (%7.3)
Salad Dressings (Pomegranate Sour etc.)	**n (%)**	25 (%4.6)	133 (%24.4)	106 (%19.4)	42 (%7.7)	102 (%18.7)	63 (%11.5)	75 (%13.7)
Canned Products and Instant Soups	**n (%)**	15 (%2.7)	94 (%17.2)	66 (%12.1)	19 (%3.5)	112 (%20.5)	92 (%16.8)	148 (%27.1)
Instant Drink Mixtures (Energy Drink, Sports Drink, Smoothie, etc.)	**n (%)**	20 (%3.7)	78 (%14.3)	62 (%11.4)	19 (%3.5)	86 (%15.8)	71 (%13)	210 (%38.5)
Sweetener, Gum etc.	**n (%)**	25 (%4.6)	52 (%9.5)	48 (%8.8)	22 (%4)	44 (%8.1)	91 (%16.7)	264 (%48.4)

Frequency distribution rates of the use of sugar cubes by the participants; 12,8% (n=70) stated that they consumed every day, 23,8% (n=130) consumed 1-2 times a week, 21,8% (n=119) consumed 3-4 times a week, 7,7% (n=42) consumed 5-6 times a week, 6,4% (n=35) consumed once every 15 days, 6,4% (n=35) consume once a month and 21.1% (n=115) consumed none. According to the frequency distribution rates of the participants' consume of candy varieties, 4.4% (n=24) consumed it every day, 23.6% (n=129) consumed 1-2 times a week, 17.2% (n=94) consumed 3-4 times a week, 3.7% (n=20) consumed 5-6 times a week, 14.5% (n=79) consumed once in 15 days, 22% (n=120) consumed once a month 1 time and 14.7% (n=80) stated that they didn't consume it. According to the frequency distribution rates of breakfast cereal use, 4% (n=22) consumed it every day, 30.6% (n=167) consumed it 1-2 times a week, 19.6% (n=107) consumed 3-4 times a week, 7.5% (n=41) consumed 5-6 times a week, 11.4% (n=62) consumed once in 15 days, 13.4% (n=73) stated that they consumed it once a month and 13.6% (n=74) stated that they didn't consume it. Honey, jam, molasses, etc. usage frequency distribution rates; 7.5% (n=41) consumed daily, 28.4% (n=155) consumed 1-2 times a week, 17.2% (n=94) consumed 3-4 times a week , 6.4% (n=35) consumed 5-6 times a week, 16.8% (n=92) consumed once in 15 days, 11.7% (n=64) consumed once a month and 11.9% (n=65) stated that they didn't consume. Usage of cocoa hazelnut paste, peanut butter, cream chocolate etc. of the students, 4.8% (n=26) consumed daily, 30% (n=164) consumed 1-2 times a week, 18.7% (n=102) consumed 3-4 times a week, 7% 5% (n=41) consumed 5-6 times a week, 17.8% (n=97) consumed once in 15 days, 12.3% (n=67) consumed once a month and 9% (n=49) stated that they didn't consume. Biscuits, wafers, cakes, cookies, etc. usage frequency distribution rates; 7% (n=38) consumed daily, 32.1% (n=175) consumed 1-2 times a week, 26.9% (n=147) consumed 3-4 times a week, % 9.7% (n=53) consumed 5-6 times a week, 12.8% (n=70) consumed once in 15 days, 7.3% (n=40) consumed once a month and 4.2% (n=23) stated that they didn't consume. Milk desserts, ice cream, etc. usage frequency distribution ratios of the students; 3.5% (n=19) stated that they consume daily, 30.2% (n=165) consume 1-2 times a week, 19% (n=104) consume 3-4 times a week, 8.1% (n=44) consumed 5-6 times a week, 23.6% (n=129) consumed once in 15 days, 11.5% (n=63) consumed once a month and 4% (n=22) stated that they didn't consume. Frequency distribution rates of the participants' use of pastry and syrup desserts; 2.4% (n=13) stated that they consumed daily, 21.2% (n=116) 1-2 times a week, 9.9% (n=54)

3-4 times a week, 4.4% (n=24) 5-6 times a week, 22% (n=120) once in 15 days, 26.6% (n=145) once a month and 13.6% (n=74) stated that they didn't consume. Participants' fruit milk and yoghurt etc. usage frequency distribution rates; 4.9% (n=27) stated that they consumed every day, 24.2% (n=132) 1-2 times a week, 20.1% (n=110) 3-4 times a week , 7.9% (n=43) 5-6 times a week, 14.5% (n=79) once in 15 days, 12.6% (n=69) once a month consumed and 15.8% (n=86) stated that they didn't consume.

Frequency distribution rates of the participants' use of ready-made fruit juices; 2.6% (n=14) stated that they consumed daily, 22.3% (n=122) 1-2 times a week, 11% (n=60) 3-4 times a week, 3.7% (n=20) 5-6 times a week, 16.8% (n=92) once in 15 days, 18.1% (n=99) once a month and 25.5% (n=139) stated that they didn't consume. According to the frequency distribution rates of the use of carbonated beverages, 7.7% (n=42) stated that they consumed it every day, 20.7% (n=113) 1-2 times a week, 14.7% (n=42) 80) 3-4 times a week, 9.2% (n=50) 5-6 times a week, 18.7% (n=102) once in 15 days, 12.5% (n= 68) once a month and 16.7% (n=91) stated that they didn't consume. Participants can drink mineral water with fruit, soda, etc. consumption frequency distribution rates; 6.2% (n=34) consumed it every day, 17.9% (n=98) 1-2 times a week, 14.1% (n=77) 3-4 times a week, 8.8% (n=48) 5-6 times a week, 13% (n=71) once every 15 days, 17.2% (n=94) once a month and 22.7% (n=124) stated that they didn't consume. According to the frequency distribution rates of the use of instant packaged coffee and instant cold coffee, 12.3% (n=67) stated that they consumed it every day, 20% (n=109) 1-2 times a week, 13.7% (n=75) 3-4 times a week, 7.1% (n=39) 5-6 times a week, 12.6% (n=69) once in 15 days, 11.7% (n=64) once a month and 22.5% (n=123) stated that they didn't consume. Frequency distribution rates of participants' use of creamy-caramel coffee varieties; 3.5% (n=19) stated that they consumed daily, 19% (n=104) 1-2 times a week, 15% (n=82) 3-4 times a week, 5.5%' i (n=30) 5-6 times a week, 15.8% (n=86) once every 15 days, 12.8% (n=70) once a month and 28.4% (n=155) stated that they didn't consume at all.

Light biscuits, crackers etc. according to the frequency distribution rates of use, 3.8% (n=21) stated that they consumed it every day, 18.7% (n=102) 1-2 times a week, 11% (n=60) 3-week 4 times, 5.3% (n=29) 5-6 times a week, 19.2% (n=105) once every

15 days, 18.9% (n=103) once a month and 23.1% (n=126) stated that they didn’t consume. Ketchup, Mayonnaise, Mustard etc. according to the frequency distribution rates of use, 4.8% (n=26) stated that they consumed every day, 29.7% (n=162) 1-2 times a week, 15.6% (n=85) 3-4 times a week , 8.6% (n=47) 5-6 times a week, 23.1% (n=126) once in 15 days, 11% (n=60) once a month and 7%, 3 (n=40) stated that they didn’t consume. Participants' pomegranate syrup, etc. usage as a salad dressings, 4.6% (n=25) stated that they consumed every day, 24.4% (n=133) 1-2 times a week, 19.4% (n=106) 3-4 times a week once, 7.7% (n=42) 5-6 times a week, 18.7% (n=102) once every 15 days, 11.5% (n=63) once a month and 13.7% (n=75) stated that they didn’t consume at all. The usage of canned products and instant soups of the participants, 2.7% (n=15) stated that they consume daily, 17.2% (n=94) 1-2 times a week, 12.1% (n=66) 3-4 times a week, 3.5% (n=19) 5-6 times a week, 20.5% (n=112) once every 15 days, 16.8% (n=92) once a month and 27.1% (n=148) stated that they didn’t consume at all. Energy drinks, sports drinks, smoothies, etc. as a use of ready-to-drink mixes of the students, 3.7% (n=20) stated that they consumed daily, 14.3% (n=78) 1-2 times a week, 11.4% (n=62) 3-weekly 4 times, 3.5% (n=19) 5-6 times a week, 15.8% (n=86) once every 15 days, 13% (n=71) once a month and % 38.5 (n=210) stated that they didn’t consume. Sweetener, chewing gum, etc. usage of the participants, 4.6% (n=25) stated that they consume daily, 9.5% (n=52) 1-2 times a week, 8.8% (n=48) 3-4 times a week, 4% (n=22) 5-6 times a week, 8.1% (n=44) once every 15 days, 16.7% (n=91) once a month and 48.4% '(n=264) stated that they didn’t consume.

Table 4.10 Distribution of the Change in Consumption Frequency of Sugary Foods of Students During COVID-19 Pandemic

		Increased	Decreased	No Change
Sugar (Powder, Cut)	**n (%)**	247 (%45.2)	54 (%9.9)	245 (%44.9)
Candy (Turkish Delight, Jellybeans)	**n (%)**	236 (%43.2)	51 (%9.3)	259 (%47.4)
Breakfast Cereals (Muesli, Granola)	**n (%)**	250 (%45.8)	44 (%8.1)	252 (%46.2)
Honey, Jam, Molasses etc.	**n (%)**	206 (%37.7)	31 (%5.7)	309 (%56.6)
Cocoa Hazelnut Butter, Peanut Butter, Cream Chocolate etc.	**n (%)**	260 (%47.6)	41 (%7.5)	245 (%44.9)
Biscuits, Wafers, Cakes and Cookies etc.	**n (%)**	310 (%56.8)	43 (%7.9)	193 (%35.3)
Dairy Desserts, Ice Cream etc.	**n (%)**	253 (%46.3)	51 (%9.3)	242 (%44.3)
Dough and Sorbet Desserts (Baklava, Tulumba, Şekerpare etc.)	**n (%)**	185 (%33.9)	56 (%10.3)	305 (%55.9)
Fruit Milk and Yogurt etc.	**n (%)**	171 (%31.3)	75 (%13.7)	300 (%54.9)
Instant Fruit Juices	**n (%)**	141 (%25.8)	59 (%10.8)	346 (%63.4)
Fizzy Drinks (Cola, Fanta, Soda, etc.)	**n (%)**	234 (%42.9)	64 (%11.7)	248 (%45.4)
Fruity Mineral Water, Soda, etc.	**n (%)**	135 (%24.7)	53 (%9.7)	358 (%65.6)
Instant Packaged Coffee (2 in 1, 3 in 1 etc.) and Instant Cold Coffee	**n (%)**	209 (%38.3)	50 (%9.2)	287 (%52.6)
Creamy-Caramel Coffee Varieties	**n (%)**	172 (%31.5)	59 (%10.8)	315 (%57.7)
Light Biscuits, Crackers etc.	**n (%)**	133 (%24.4)	56 (%10.3)	357 (%65.4)
Sauces (Ketchup, Mayonnaise, Mustard etc.)	**n (%)**	214 (%39.2)	44 (%8.1)	288 (%52.7)
Salad Dressings (Pomegranate Sour etc.)	**n (%)**	179 (%32.8)	34 (%6.2)	333 (%61)
Canned Products and Instant Soups	**n (%)**	146 (%26.7)	51 (%9.3)	349 (%63.9)
Instant Drink Mixtures (Energy Drink, Sports Drink, Smoothie, etc.)	**n (%)**	130 (%23.8)	49 (%9)	367 (%67.2)
Sweetener, Gum etc.	**n (%)**	71 (%13)	84 (%15.4)	391 (%71.6)

When the frequency of consumption of sugar cubes during the pandemic period of the participants was examined, 45.2% (n=247) stated that they increased their consumption, 9.9% (n=54) stated that it decreased and 44.9% (n=245) stated that it didn't change. According to the frequency of candy consumption of the participants during the pandemic, 43.2% (n=236) stated that they increased its consumption, 9.3% (n=51) stated that it decreased and 47.4% (n=259) stated that it didn't change. According to the frequency of breakfast cereal consumption of the participants during the pandemic period, 45.8% (n=250) stated that increased their consumption, 8.1% (n=44) decreased and 46.2% (n=252) remained unchanged. During the pandemic period of the participants, honey, jam, molasses etc. usage frequency, 37.7% (n=206) stated that their consumption increased, 5.7% (n=31) decreased and 56.6% (n=309) stated that it didn't change. According to the frequency of cocoa hazelnut paste, peanut butter, cream chocolate etc. consumption of the students during the pandemic period, 47.6% (n=260) stated that their consumption increased, 7.5% (n=41) decreased and 44.9% (n=245) stated that it didn't change. When the frequency of their consumption of biscuits, wafers, cakes and cookies etc. was examined during the pandemic period, 56.8% (n=310) stated that they increased their consumption, 7.9% (n=43) decreased and 35.3% (n=193) stated that it didn't change. According to the frequency of milk desserts, ice cream, etc. consumption during the pandemic period of the participants, 46.3% (n=253) stated that they increased their consumption, 9.3% (n=51) decreased and 44.3% (n=242) stated that it didn't change. 33.9% (n=185) of the participants stated that they increased the use of pastry and syrup desserts during the pandemic period, 10.3% (n=56) stated that it decreased and 55.9% (n=305) stated that it didn't change. 31.3% (n=171) of the participants stated that they increased the consumption of fruit flavored milk and yogurt etc. during the pandemic period stated that they increased its consumption, 13.7% (n=75) stated that it decreased and 54.9% (n=300) stated that it did not change. 25.8% (n=141) of the participants stated that their consumption of ready-made fruit juices increased during the pandemic period, 10.8% (n=59) stated it decreased, and 63.4% (n=346) stated it didn't change. 42.9% (n=234) of the participants stated that theit consumption of carbonated drinks increased during the pandemic period, 11.7% (n=64) stated that it decreased and 45.4% (n=248) stated that it did not change. 24.7% (n=135) of the participants used mineral water with fruit, soda, etc. during the pandemic period stated that their consumption increased, 9.7% (n=53) decreased, and 65.6% (n=358) did not change. 38.3% (n=209) of the participants stated

that they increased the consumption of packaged coffee and instant cold coffee during the pandemic period, 9.2% (n=50) stated that they decreased and 52.6% (n=287) stated it didn't change. 31.5% (n=172) of the participants stated that they increased the use of creamy-caramel coffee varieties during the pandemic period, 10.8% (n=59) stated that it decreased and 57.7% (n=315) stated it didn't change. 24.4% of the participants (n=133) stated that their consumption of light biscuits, crackers, etc. increased during the pandemic period, 10.3% (n=56) stated it decreased and 65.4% (n=357) stated that it didn't change. 39.2% (n=214) of the participants stated that the consumption of ketchup, mayonnaise, mustard, etc. increased during the pandemic period, 8.1% (n=44) stated it decreased and 52.7% (n=288) stated it didn't change. 32.8% of the participants (n=179) stated that their consumption of pomegranate syrup, salad dressings etc. increased during the pandemic period, 6.2% (n=34) stated it decreased and 61% (n=333) stated it didn't change. 26.7% (n=146) of the participants stated that their usage of canned products and instant soups increased, 9.3% (n=51) stated it decreased, and 63.9% (n=349) stated that it didn't change during the pandemic period. 23.8% (n=130) of the participants stated that they increased the consumption of ready-made drink mixes during the pandemic period, 9% (n=49) stated that they decreased and 67.2% (n=367) stated that they did not change. 13% (n=71) of the participants stated that they increased the consumption of sweetener, chewing gum, etc. during the pandemic period, 15.4% (n=84) stated it decreased and 71.6% (n=391) stated it didn't change.

Table 4.11 Comparison of Students' Demographic Characteristics with EAT-26

		Dieting			***Bulimia and Food Preoccupation***			***Oral Control***			***EAT-26***		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Gender	*Female*	6.64±5.29	0-26 (6)	0.456	3.99±1.85	1-11 (3)	0.167	2.89±2.46	0-14 (2)	***0.001****	13.52±7.39	2-50 (12)	***0.008****
	Male	6.45±5.6	0-26 (5)		3.71±1.6	0-10 (3)		2.16±2.46	0-14 (2)		12.32±8.15	2-50 (10)	
Faculty of Education	*Faculty of Dentistry*	6.07±4.33	0-17 (6)	0.085	3.7±1.68	1-8 (3)	0.710	2.67±2.31	0-9 (3)	0.910	12.43±5.9	3-27 (12)	0.462
	Faculty of Pharmacy	4.47±4.46	0-12 (4)		3.58±1.54	1-7 (3)		2.42±1.84	0-7 (2)		10.47±6.06	2-21 (9)	
	Faculty of Health Sciences	4.89±4.03	0-15 (4)		4.11±1.75	2-10 (3)		2.85±2.55	0-10 (2)		11.85±5.58	2-28 (12)	
	Faculty of Medicine	6.18±4.76	0-18 (5)		3.79±1.49	2-7 (3)		2.18±1.88	0-6 (2)		12.15±5.9	3-27 (11)	
	Other faculties	6.97±5.7	0-26 (6)		3.91±1.82	0-11 (3)		2.65±2.57	0-14 (2)		13.53±8.26	2-50 (12)	
Households	*At home with family*	5.36±4.41	0-18 (5)	***0.001****	3.78±1.46	1-10 (3)	0.144	2.36±2.07	0-10 (2)	***0.005****	11.5±5.78	2-28 (11)	***0.001****
	At dorm with friends	8.61±6.32	0-26 (8)		4.1±2.3	1-11 (3)		3.42±2.86	0-14 (3)		16.13±9.49	3-50 (14)	
	At home with friends	6.76±5.68	0-26 (5)		3.64±1.73	1-10 (3)		2.39±2.56	0-14 (2)		12.79±8.12	2-50 (10)	
	Alone	7.59±5.76	0-26 (6)		4.22±1.9	0-10 (4)		2.77±2.84	0-14 (2)		14.58±8.61	2-50 (13)	
Smoking Status	*Yes*	7.53±5.67	0-26 (6)	***0.001****	4.08±2.03	1-11 (4)	0.190	2.72±2.54	0-14 (2)	0.753	14.33±8.01	2-50 (13)	***0.001****
	No	5.68±5.07	0-26 (5)		3.71±1.5	0-10 (3)		2.58±2.45	0-14 (2)		11.97±7.38	2-50 (11)	
	Quitted Smoking	6.87±5.01	0-19 (6)		4±1.59	1-8 (4)		2.41±2.37	0-10 (2)		13.28±6.71	2-37 (12)	
Number of Cigarettes Smoked per	*Less than 10 cigarettes*	7.85±5.6	0-25 (7)	***0.039****	4.24±2.12	1-11 (4)	0.455	2.81±2.57	0-12 (2)	0.107	14.9±7.98	2-46 (14)	***0.019****
	1 Pack	7.76±5.81	0-26 (7)		4.06±2.02	1-10 (3)		2.78±2.55	0-14 (2)		14.59±8.08	2-50 (13.5)	

Day	*More than 1 pack*	4.91±4.94	0-16 (3)		3.57±1.5	1-7 (3)		1.83±2.33	0-9 (1)		10.3±6.98	2-27 (8)	
Alcohol Usage	*Yes*	7.23±5.65	0-26 (6)	***0.001****	3.93±1.87	0-11 (3)	0.791	2.73±2.43	0-14 (2)	***0.043****	13.89±7.81	2-50 (12)	***0.001****
	No	5.42±4.72	0-25 (5)		3.82±1.56	1-10 (3)		2.44±2.57	0-13 (2)		11.69±7.28	2-46 (10.5)	
Frequency of Alcohol Usage	*1-2 times a week*	7.69±5.77	0-22 (6.5)	0.569	3.69±1.51	1-8 (3.5)	0.560	2.51±2.2	0-10 (2)	0.580	13.89±7.35	2-39 (12.5)	0.885
	3-4 times a week	7.31±5.5	0-17 (5.5)		3.78±1.33	2-7 (3)		2.69±2.56	0-8 (2)		13.78±7.74	2-27 (14)	
	5 times a week or more	8.25±6.18	0-13 (10)		4.5±1.73	2-6 (5)		3.5±4.04	0-7 (3.5)		16.25±11.06	2-25 (19)	
	1-2 times a month	6.84±5.61	0-26 (6)		4.13±2.18	0-11 (3)		2.89±2.52	0-14 (2)		13.86±8.14	3-50 (12)	
Chronic Ilness Status	*Yes*	6.56±4.75	0-17 (6.5)	0.692	4.16±1.42	1-7 (4)	0.055	2.96±2.44	0-10 (2)	0.202	13.68±6.33	3-27 (13)	0.218
	No	6.57±5.47	0-26 (5)		3.86±1.8	0-11 (3)		2.59±2.49	0-14 (2)		13.03±7.82	2-50 (12)	

Dieting value didn’t show a statistically significant difference according to gender ($p>0.05$). Bulimia and food preoccupation values didn’t show a statistically significant difference according to gender ($p>0.05$). It was found statistically significant that the oral control values of female participants were higher than male participants ($p=0.001$; $p<0.05$). The fact that the total value of the eating attitude test of the female participants was higher than the male participants was found to be statistically significant ($p=0.001$; $p<0.05$).

Dieting value didn’t show a statistically significant difference according to the faculty of students ($p>0.05$). Bulimia and food preoccupation values didn’t show a statistically significant difference according to the faculty of students ($p>0.05$). Oral control value didn’t show a statistically significant difference according to the faculty of students ($p>0.05$). Total score of eating attitude test value didn’t not show a statistically significant difference according to the faculties of students ($p>0.05$).

Dieting value differed statistically significant according to the accommodation status of the students ($p=0.001$; $p<0.05$). It was found that the dieting value of the participant group who stayed at home with their family was lower than those who stayed at the dorm with their friends ($p=0.001$; $p<0.05$). It was statistically significant that the dieting value of the participant group living at home with their family was lower than those who were alone ($p=0.001$; $p<0.05$). It was found that the dieting value of the participant group who stayed in the dormitory with their friends was higher than those who stayed at home with their friends ($p=0.001$; $p<0.05$). The bulimia and food preoccupation value didn’t show a statistically significant difference according to the accommodation status of the students ($p>0.05$). According to the accommodation status of the students, the oral control value showed a statistically significant difference ($p=0.005$; $p<0.05$). It was found that the oral control value of the participant group living at home with their family was lower than those living in the dormitory with friends ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the participant group who stayed in the dormitory with their friends was higher than those who stayed at home with their friends ($p=0.001$; $p<0.05$). The oral control value of the group of students staying in the dormitory with their friends was higher than those of the students alone ($p=0.001$; $p<0.05$). According to the accommodation

status of the students, the value of the eating attitude test showed a statistically significant difference ($p=0.001$; $p<0.05$). It was found statistically significant that the total value of the eating attitude test of the student group living at home with their family was lower than those of the students living in the dormitory with their friends ($p=0.001$; $p<0.05$). It was found statistically significant that the total value of the eating attitude test of the student group living at home with their families was lower than those who were alone ($p=0.001$; $p<0.05$). It was found statistically significant that the total value of the eating attitude test of the student group staying at the dormitory with their friends was higher than those who stayed at home with their friends ($p=0.001$; $p<0.05$).

Dieting value differed statistically significantly according to smoking status ($p=0.001$; $p<0.05$). It was found statistically significant that the dieting value of the smokers group was higher than the non-smokers ($p=0.001$; $p<0.05$). Bulimia and food preoccupation values didn't differ statistically significantly according to smoking status ($p>0.05$). Oral control value didn't show a statistically significant difference according to smoking status ($p>0.05$). According to smoking status, the total value of the eating attitude test showed a statistically significant difference ($p=0.001$; $p<0.05$). The fact that the total value of the eating attitude test of the smokers group was higher than the non-smokers was found to be statistically significant ($p=0.001$; $p<0.05$).

Diet value differed statistically significant according to the number of cigarettes smoked per day ($p=0.039$; $p<0.05$). It was found statistically significant that the dieting value of the group who smoked less than 10 cigarettes was higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$). It was statistically significant that the dieting value of the group that smoked 1 pack a day was higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$). The bulimia and food preoccupation value didn't show a statistically significant difference in smokers according to the number of cigarettes smoked per day ($p>0.05$). Oral control value didn't show a statistically significant difference according to the number of cigarettes smoked per day ($p>0.05$). According to the number of cigarettes smoked per day, the total value of the eating attitude test showed a statistically significant difference ($p=0.019$; $p<0.05$). It was found statistically significant that the total value of the eating attitude test of the group who smoked less than 10 cigarettes was higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$). It was found statistically significant that the total value of the eating

attitude test of the group who smoked 1 pack a day was higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$).

It was found statistically significant that the dieting value of the students who used alcohol was higher than those who did not use alcohol ($p=0.001$; $p<0.05$). Bulimia and food preoccupation values didn't show a statistically significant difference according to alcohol use ($p>0.05$). The oral control value of the alcohol user group was found to be higher than the non-alcoholic group ($p=0.001$; $p<0.05$). The fact that the total value of the eating attitude test of the participants who used alcohol was higher than those who did not use it was found to be statistically significant ($p=0.001$; $p<0.05$).

Dieting value didn't show a statistically significant difference according to the frequency of alcohol use ($p>0.05$). Bulimia and food preoccupation values didn't show a statistically significant difference according to the frequency of alcohol use ($p>0.05$). Oral control value didn't show a statistically significant difference according to the frequency of alcohol use ($p>0.05$). The total value of the eating attitude test didn't show a statistically significant difference according to the frequency of alcohol use ($p>0.05$).

Table 4.12 Comparison of Students' Nutrition Habits with EAT-26

		Dieting			*Bulimia and Food Preoccupation*			*Oral Control*			*EAT-26*		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Number of Main Meals	***1 Main Meal***	6.64±4.91	0-14 (6.5)	0.092	3.93±1.73	1-7 (4)	0.218	4.79±2.99	1-10 (4)	***0.001****	15.36±7.66	4-27 (16.5)	***0.015****
	2 Main Meal	6.87±5.4	0-26 (6)		3.87±1.82	0-11 (3)		2.7±2.38	0-14 (2)		13.44±7.36	2-50 (12)	
	3 Main Meal	5.82±5.04	0-26 (5)		3.79±1.54	1-10 (3)		2.16±2.13	0-14 (2)		11.77±6.96	2-50 (11)	
	4 Main Meal	9.07±8.64	1-26 (5)		5.5±2.74	3-10 (4)		4.79±4.9	1-14 (2)		19.36±15.42	5-50 (13)	
	5 Main Meal	9.63±5.85	2-19 (11)		4.38±2	2-8 (4)		4.38±3.42	0-10 (4)		18.38±10.35	7-37 (17.5)	
Number of Snacks	***1 Snack***	7.18±5.7	0-22 (6)	0.114	3.62±1.35	1-7 (3)	***0.006****	2.92±2.24	0-8 (2)	***0.001****	13.72±7.12	2-34 (13)	***0.012****
	2 Snacks	7.01±5.17	0-20 (6)		3.9±1.83	0-11 (4)		2.31±2.05	0-9 (2)		13.21±6.64	2-33 (12)	
	3 Snacks	5.26±4.38	0-22 (5)		4.1±1.7	1-10 (4)		1.87±2.44	0-12 (1)		11.23±7.49	2-43 (10)	
	4 Snacks	5.22±2.64	1-10 (5)		6.78±2.82	3-10 (7)		3.44±1.74	1-6 (4)		15.44±5.59	6-24 (16)	
Frequency of Eating Out	***Everyday***	7.44±6.23	0-22 (5)	0.151	4.93±2.16	2-10 (4)	***0.001****	3.44±3.07	0-12 (3)	0.399	15.8±9.56	3-43 (16)	0.377
	4-6 times a week	7.36±5.25	0-26 (6)		3.62±1.73	0-10 (3)		2.46±2.49	0-14 (2)		13.44±7.56	2-50 (12)	
	1-3 times a week	6.37±5.63	0-26 (6)		3.86±1.61	1-10 (3)		2.55±2.39	0-14 (2)		12.78±7.78	2-50 (12)	
	2-3 times a month	5.99±4.81	0-26 (5)		4±1.88	1-11 (3)		2.65±2.39	0-14 (2)		12.64±6.92	2-50 (11)	
	Never	5.17±4.15	0-12 (5.5)		2.83±0.72	2-4 (3)		3±2.8	0-10 (2.5)		11±6.61	2-22 (11.5)	
Meal Consumed Outside	***Breakfast***	10.29±4.82	4-17 (11)	***0.021****	4.71±2.14	3-9 (5)	0.416	3.43±2.88	0-7 (2)	0.633	18.43±7.46	8-25 (22)	***0.044****
	Lunch	5.62±4.61	0-22 (5)		3.99±1.68	1-10 (4)		2.5±2.52	0-13 (2)		12.1±6.91	2-43 (10)	
	Dinner	7.04±5.68	0-26 (6)		3.86±1.8	0-11 (3)		2.64±2.43	0-14 (2)		13.54±7.89	2-50 (12)	
	Snacks	6.04±5.91	0-22 (6)		4.04±1.97	2-10 (3)		2.89±2.72	0-10 (2)		12.96±9.28	2-39 (12)	
Type of Food	***Fast Food***	6.16±5.2	0-22 (5)	0.083	3.87±1.58	0-10 (3)	***0.003****	2.5±2.26	0-10 (2)	0.649	12.53±6.86	2-39 (12)	0.219
Consumed Outside	***Kebap variety***	6.9±5.76	0-25 (6)		4.37±1.64	2-10 (4)		2.59±3	0-13 (1)		13.86±9.4	3-46 (12)	
	Grill varities	7.47±5.69	0-26 (6)		4.25±2.48	1-11 (3)		2.86±2.59	0-14 (2)		14.58±8.31	2-50 (12.5)	
	Homemade meals	7.41±5.75	0-26 (6)		3.22±1.86	1-10 (3)		3±2.95	0-14 (2)		13.63±9.28	2-50 (11)	
	Salad variety	8.78±6.07	0-26 (10)		4.09±2	1-10 (4)		3.04±3.13	0-14 (2)		15.91±10.02	2-50 (15)	

Dieting value didn’t show a statistically significant difference according to the number of main meals of the participants ($p>0.05$). The bulimia and food preoccupation value didn’t show a statistically significant difference according to the number of main meals ($p>0.05$). The oral control value differs statistically significant according to the number of main meals of the students ($p=0.001$; $p<0.05$). The oral control value of the student group who consumed 1 main meal was found to be statistically significant compared to those who had 2 main meals ($p=0.001$; $p<0.05$). The oral control value of the student group who consumed 1 main meal was found to be higher than those who had 3 main meals ($p=0.001$; $p<0.05$). The oral control value of the group of students who consumed 2 main meals was found to be statistically significant compared to those who had 3 main meals ($p=0.001$; $p<0.05$). It was found that the oral control value of the student group who consumed 3 main meals was lower than those who had 5 main meals ($p=0.001$; $p<0.05$). According to the number of main meals of the participants, the total value of the eating attitude test showed a statistically significant difference ($p=0.015$; $p<0.05$). The fact that the total value of the eating attitude test of the student group who consumed 2 main meals was higher than those who had 3 main meals was found to be statistically significant ($p=0.001$; $p<0.05$).

Dieting value didn’t show a statistically significant difference according to the number of snacks ($p>0.05$). Bulimia and food preoccupation values differed statistically significant according to the number of snacks ($p=0.006$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation value of the student group who consumed 1 snack was lower than those who had 4 snacks ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation values of the group of students who consumed 2 snacks were lower than those who had 4 snacks ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation value of the group of students who consumed 3 snacks was lower than those who had 4 snacks ($p=0.001$; $p<0.05$). According to the number of snacks of the participants, the oral control value showed a statistically significant difference ($p=0.001$; $p<0.05$). The oral control value of the student group who consumed 1 snack was found to be statistically significant compared to those who had 2 snacks ($p=0.001$; $p<0.05$). The oral control value of the student group who consumed 1 snack was higher than those who had 2 snacks was found to be statistically significant ($p=0.001$; $p<0.05$). The oral control value of the student group who consumed 1 snack was higher than

those who had 3 snacks was found to be statistically significant (p=0.001; p<0.05). The oral control value of the group of students who consumed 2 snacks was higher than those who had 3 snacks was found to be statistically significant (p=0.001; p<0.05). The oral control value of the group of students who consumed 3 snacks was lower than those who had 4 snacks was found to be statistically significant (p=0.001; p<0.05). According to the number of snacks of the participants, the total value of the eating attitude test showed a statistically significant difference (p=0.012; p<0.05). The fact that the total value of the eating attitude test of the student group who consumed 1 snack was higher than those who had 3 snacks was found to be statistically significant (p=0.001; p<0.05). The fact that the eating attitude test value of the group of students who consumed 2 snacks was higher than those who had 3 snacks was found to be statistically significant (p=0.001; p<0.05). The fact that the total value of the eating attitude test of the student group who consumed 3 snacks was lower than those who had 4 snacks was found to be statistically significant (p=0.001; p<0.05).

Dieting value didn't show a statistically significant difference according to the frequency of eating outside the home (p>0.05). According to the frequency of eating outside the home, bulimia and food preoccupation values showed statistically significant differences (p=0.001; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the student group who ate out every day were higher than those who had food 4-6 times a week (p=0.001; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the students who ate out every day were higher than those who did it 1-3 times a week (p=0.001; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the students who ate out every day were higher than those who did it 2-3 times a month (p=0.001; p<0.05). Oral control value didn't show a statistically significant difference according to the frequency of eating outside the home (p>0.05). Eating attitude test didn't show a statistically significant difference according to the frequency of eating outside the home (p>0.05).

Dieting value differed statistically significantly according to the meal consumed outside (p=0.021; p<0.05). It was statistically significant that the diet value of the group

who had breakfast outside was higher than those who consumed lunch (p=0.001; p<0.05). It was found statistically significant that the dieting value of the breakfast group was higher than those who consumed snacks (p=0.001; p<0.05). It was statistically significant that the dieting value of the lunch group was lower than those who consumed dinner (p=0.001; p<0.05). The bulimia and food preoccupation value ddidn't show a statistically significant difference according to the meal consumed outside (p>0.05). Oral control value didn't show a statistically significant difference according to the meal consumed outside (p>0.05). Eating attitude test value shows statistically significant difference according to the meal consumed outside (p=0.044; p<0.05). The eating attitude test value of the breakfast group was found to be higher than those who had lunch (p=0.001; p<0.05). The eating attitude test value of the lunch group was found to be lower than those who had dinner (p=0.001; p<0.05).

Dietary value didn't show a statistically significant difference according to the type of food consumed outside (p>0.05). According to the type of food consumed outside, bulimia and food preoccupation values showed statistically significant differences (p=0.003; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the fast food consuming group were lower than those consuming kebab types (p=0.001; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the student group consuming fast food were higher than those consuming home-cooked meals (p=0.001; p<0.05). The bulimia and food preoccupation values of the student group consuming kebab types were found to be higher than those consuming home-cooked meals (p=0.001; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the student group consuming grilled varieties were higher than those consuming home-cooked meals (p=0.001; p<0.05). It was found statistically significant that the bulimia and food preoccupation values of the student group consuming home-cooked meals were lower than those consuming salad varieties (p=0.001; p<0.05). Oral control value didn't show a statistically significant difference according to the type of food consumed outside of the participants (p>0.05). According to the type of food consumed outside, the total value of the eating attitude test didn't show a statistically significant difference (p>0.05)

Continuation of Table 4.12

		Dieting			*Bulimia and Food Preoccupation*			*Oral Control*			*EAT-26*		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Meal Skipping Status	*Yes*	6.8±5.52	0-26 (6)	***0.025****	3.91±1.75	0-11 (3)	0.244	2.73±2.57	0-14 (2)	***0.043****	13.45±7.84	2-50 (12)	***0.008****
	No	5.11±4.3	0-16 (4.5)		3.76±1.89	1-10 (3)		1.96±1.71	0-8 (2)		10.82±6.22	2-28 (10)	
Being Busy With Other Things While Consuming Meals	*Yes*	6.55±5.28	0-26 (5)	0.794	3.88±1.72	0-11 (3)	0.986	2.52±2.3	0-14 (2)	0.073	12.94±7.17	2-50 (12)	0.876
	No	6.72±6.26	0-26 (5)		4±2.07	1-10 (3)		3.46±3.46	0-14 (3)		14.18±10.77	2-50 (11)	
Meal Consumption Speed	*Slow*	4.73±4.65	0-20 (3)	***0.003****	3.69±1.3	1-7 (3)	***0.001****	3.95±2.37	0-9 (4)	***0.001****	12.37±6.43	3-33 (11)	0.206
	Medium	6.39±5.42	0-26 (5)		3.65±1.66	0-10 (3)		2.7±2.52	0-14 (2)		12.73±7.93	2-50 (11)	
	Fast	7.53±5.53	0-26 (7)		4.31±2.04	1-11 (4)		2.13±2.29	0-14 (2)		13.98±7.8	2-50 (13)	
	Very Fast	6.55±4.63	0-15 (5)		4.5±1.15	3-7 (5)		1.95±2.35	0-7 (1)		13±6.1	4-25 (12)	
Change in the Number of Meals During the COVID-19 Pandemic	*Increased*	7.47±5.91	0-26 (6)	***0.011****	3.93±1.8	1-11 (4)	0.312	2.35±2.47	0-14 (2)	***0.005****	13.75±8.42	2-50 (12)	0.287
	Decreased	5.88±5.14	0-26 (4)		4±1.64	1-10 (3)		3.24±2.89	0-14 (2)		13.12±7.96	3-50 (12)	
	No Change	5.72±4.62	0-26 (5)		3.8±1.78	0-10 (3)		2.73±2.27	0-14 (2)		12.25±6.47	2-50 (11)	
Weight Change During the COVID-19 Pandemic	*Gained Weight*	7.44±5.63	0-26 (7)	***0.001****	3.97±1.84	0-11 (4)	0.275	2.35±2.38	0-14 (2)	***0.001****	13.76±8.05	2-50 (12)	***0.004****
	Lost Weight	5.51±4.43	0-26 (4)		3.77±1.58	1-10 (3)		3.34±2.72	0-14 (3)		12.62±6.89	3-50 (12)	
	No Change	4.36±4.66	0-22 (3)		3.72±1.66	2-10 (3)		2.87±2.4	0-12 (2)		10.95±6.71	2-43 (9)	

It was found statistically significant that the dieting value of the students who skipped meals was higher than those who did not skip meals ($p=0.001$; $p<0.05$). Bulimia and food preoccupation values did not show a statistically significant difference according to the meal skipping status of the participants ($p>0.05$). It was found that the oral control value of the group of students who skipped meals was higher than those who did not skip meals ($p=0.001$; $p<0.05$). The fact that the total value of the eating attitude test of the students who skipped meals was higher than those who did not skip meals was found to be statistically significant ($p=0.001$; $p<0.05$).

Dieting value didn't show a statistically significant difference according to students' preoccupation with other activities while consuming meals ($p>0.05$). Bulimia and food preoccupation values didn't show a statistically significant difference according to the state of being busy with other activities while consuming meals ($p>0.05$). Oral control value didn't show a statistically significant difference according to the state of being busy with other activities while consuming meals ($p>0.05$). The total value of the eating attitude test didn't show a statistically significant difference according to the participants' being busy with other activities while consuming their meals ($p>0.05$).

Dieting value showed statistically significant difference according to the meal consumption speed of the participants ($p=0.003$; $p<0.05$). It was statistically significant that the dieting value of the group of students who stated that they consumed their meals slow was lower than those who consumed moderately ($p=0.001$; $p<0.05$). It was found statistically significant that the dieting value of the group of students who consumed slowly was lower than those who consumed fast ($p=0.001$; $p<0.05$). It was found statistically significant that the dieting value of the students who consumed moderately was lower than those who consumed fast ($p=0.001$; $p<0.05$). Bulimia and food preoccupation values differed statistically significant according to the meal consumption rate of the participants ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation values of the students who consumed slowly were lower than those who consumed very fast ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation values of the students who consumed moderately were lower than those who consumed fast ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and

preoccupation values of the students who consumed moderately were lower than those who consumed very fast ($p=0.001$; $p<0.05$). According to the meal consumption rate of the participants, the oral control value showed a statistically significant difference ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the group of students who consumed at a slow rate was higher than those who consumed moderately ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the slow consuming group was higher than the fast ones ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the group of students who consumed slowly was higher than those who consumed very fast ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the students who consumed moderately was higher than those who consumed fast ($p=0.001$; $p<0.05$). The total value of the eating attitude test according to the meal consumption rate didn't show a statistically significant difference ($p>0.05$).

Dieting value showed statistically significant difference according to the change in the number of meals during the COVID-19 pandemic ($p=0.011$; $p<0.05$). It was found statistically significant that the dieting value of the student group who said that the number of meals increased during the COVID-19 pandemic period was higher than those who said that it decreased ($p=0.001$; $p<0.05$). It was found statistically significant that the dieting value of the student group who said that the number of meals increased during the COVID-19 pandemic was higher than those who said that the number of meals did not change ($p=0.001$; $p<0.05$). Bulimia and food preoccupation value didn't show a statistically significant difference according to the change in the number of meals during the COVID-19 pandemic ($p>0.05$). The oral control value showed a statistically significant difference according to the change in the number of meals during the COVID-19 pandemic ($p=0.005$; $p<0.05$). It was found statistically significant that the oral control value of the student group who said that the number of meals increased during the COVID-19 pandemic was lower than those who said that it decreased ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the student group who said that their number of meals increased during the COVID-19 pandemic was lower than those who said that the number of meals did not change ($p=0.001$; $p<0.05$). The total value of the eating attitude test didn't show a statistically significant difference according to the change in the number of meals during the Covid-19 pandemic ($p>0.05$).

The dieting value of the students according to the weight change during the COVID-19 pandemic showed a statistically significant difference ($p=0.001$; $p<0.05$). It was found statistically significant that the dieting value of the students who gained weight during COVID-19 pandemic was higher than those who lost weight ($p=0.001$; $p<0.05$). It was found statistically significant that the dieting value of the students who gained weight was higher than those who did not change ($p=0.001$; $p<0.05$). It was found that the dieting value of the students who lost weight was higher than those who did not change ($p=0.001$; $p<0.05$). Bulimia and food preoccupation values didn't show a statistically significant difference according to weight change during the COVID-19 pandemic ($p>0.05$). The oral control value showed a statistically significant difference according to the weight change of the students during the COVID-19 pandemic ($p=0.001$; $p<0.05$). It was found that the oral control value of the students who gained weight was lower than those who lost weight ($p=0.001$; $p<0.05$). It was found that the oral control value of the students who gained weight was lower than those who did not change ($p=0.001$; $p<0.05$). The total value of the eating attitude test showed a statistically significant difference according to weight change during the COVID-19 pandemic ($p=0.004$; $p<0.05$). The fact that the total value of the eating attitude test of the students who gained weight was higher than those who did not change was found to be statistically significant ($p=0.001$; $p<0.05$). It was found statistically significant that the total value of the eating attitude test of the students who lost weight was higher than those who did not change ($p=0.001$; $p<0.05$).

Table 4.13 Comparison of Students' Physical Activity and Sleep Status with EAT-26

		Dieting			***Bulimia and Food Preoccupation***			***Oral Control***			***EAT-26***		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Regular Physical Activity Status	*Yes*	6.93±5.38	0-26 (6)	0.064	3.96±1.91	0-11 (3)	0.848	2.64±2.43	0-14 (2)	0.637	13.52±7.78	2-50 (12)	0.095
	No	6.18±5.4	0-26 (5)		3.82±1.6	1-10 (3)		2.62±2.54	0-14 (2)		12.62±7.58	2-50 (11)	
Frequency of Physical Activity	*Everyday*	6.52±4.4	0-14 (7)	0.198	4.19±1.83	2-10 (4)	0.097	3.33±2.8	0-8 (2)	***0.042****	14.05±7.7	2-28 (14)	0.306
	At least 3 times a week	7.06±5.82	0-26 (5)		4.02±1.98	1-10 (3)		2.8±2.65	0-14 (2)		13.89±8.6	2-50 (13)	
	1-2 times a week	7.25±5.22	0-18 (7)		3.78±1.91	0-11 (3)		2.57±2.03	0-8 (2)		13.6±7.02	2-28 (12.5)	
	1-2 times a month	5.32±5.41	0-26 (4)		4.45±1.71	2-10 (4)		2±3.1	0-14 (1)		11.77±8.9	2-50 (10)	
Average Sleep Time per Day	*Less than 6 hours*	6.37±4.99	0-22 (5.5)	0.792	4.34±2.2	0-11 (4)	***0.002****	2.54±2.78	0-12 (1)	0.704	13.26±7.49	2-43 (12)	
	6-8 hours	6.62±5.33	0-26 (6)		3.73±1.61	1-10 (3)		2.61±2.4	0-14 (2)		12.97±7.41	2-50 (12)	
	8-10 hours	6.7±5.91	0-26 (5)		3.9±1.78	1-10 (3)		2.7±2.52	0-14 (2)		13.3±8.57	2-50 (12)	
	10 hours or more	5±4.36	0-13 (4)		5.46±1.9	2-7 (7)		2.69±2.72	0-7 (2)		13.15±7.43	2-25 (15)	

Dieting value didn't show a statistically significant difference according to regular physical activity status ($p>0.05$). The bulimia and preoccupation values didn't show a statistically significant difference according to the regular physical activity status of the students ($p>0.05$). Oral control value didn't show a statistically significant difference according to regular physical activity status ($p>0.05$). The total value of the eating attitude test didn't show a statistically significant difference according to regular physical activity ($p>0.05$).

Dieting value didn't show a statistically significant difference according to the frequency of physical activity ($p>0.05$). Bulimia and food preoccupation values didn't show a statistically significant difference according to the frequency of physical activity ($p>0.05$). According to the frequency of physical activity, the oral control value showed a statistically significant difference ($p=0.042$; $p<0.05$). It was found statistically significant that the oral control value of the students who did physical activity every day was higher than those who did 1-2 days a month ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the group of students who did physical activity at least 3 days a week was higher than those who did 1-2 days a month ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the group of students who did physical activity 1-2 days a week was higher than those who performed physical activity for 1-2 days a month ($p=0.001$; $p<0.05$). The total value of the eating attitude test didn't show a statistically significant difference according to the frequency of physical activity ($p>0.05$).

Dieting value didn't show a statistically significant difference according to daily sleep duration ($p>0.05$). Bulimia and food preoccupation values differ statistically significant according to daily sleep duration ($p=0.002$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation values of the students who slept less than 6 hours were higher than those who slept for 6-8 hours ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation values of the students who slept less than 6 hours were lower than those who slept for 10 hours or more ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation value of the students who slept for 6-8 hours was lower than those who slept for 10 hours or more ($p=0.001$; $p<0.05$). It was found statistically significant that the bulimia and food preoccupation values of the students who slept 8-

10 hours were lower than those who slept for 10 hours or more ($p=0.001$; $p<0.05$). Oral control value didn't show a statistically significant difference according to the daily sleep duration of the participants ($p>0.05$). The total value of the eating attitude test according to daily sleep duration didn't show a statistically significant difference ($p>0.05$).

Table 4.14 Comparison of Students' Demographic Characteristics with EMAQ

		BMI			***Negative Emotions and Situations***			***Positive Emotions and Situations***			***Total Score of EMAQ***		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Gender	*Female*	21.68±3.63	14.82-40.57 (21.08)	***0.001****	4.7±1.77	1-9 (4.62)	***0.004****	4.91±1.38	1-9 (5)	***0.001****	4.78±1.48	1-9 (4.71)	***0.001****
	Male	24.97±3.27	17.99-37.62 (24.84)		5.13±1.6	1.23-8.23 (5.35)		5.38±1.3	1.25-8.75 (5.63)		5.23±1.39	1.29-8.43 (5.33)	
Faculty of Education	*Faculty of Dentistry*	22.15±4.77	16.42-37.62 (20.93)	***0.002****	4.3±1.47	1.38-7.92 (4.31)	***0.001****	4.6±1.08	1.38-6.5 (4.63)	***0.001****	4.42±1.13	1.57-6.57 (4.36)	***0.001****
	Faculity of Pharmacy	22.77±3.7	18.07-29.32 (22.15)		4.17±1.71	1.38-7.77 (3.77)		4.64±1.52	2.13-8.13 (4.38)		4.35±1.4	1.9-7.9 (4.33)	
	Faculty of Health Sciences	22.14±4.31	17.01-34.6 (20.7)		4.57±1.45	1.62-8.46 (4.46)		5.19±1.11	2.63-7.88 (5.13)		4.81±1.1	2.14-7.57 (4.9)	
	Faculty of Medicine	21.94±3.4	16.23-29.98 (21.3)		4.33±1.33	1.46-7.31 (4.54)		5.08±0.96	1.25-6.75 (5.13)		4.62±1.06	1.38-6.95 (4.62)	
	Other faculties	23.13±3.7	14.82-40.57 (22.66)		5.03±1.78	1-9 (5.31)		5.14±1.44	1-9 (5.38)		5.07±1.55	1-9 (5.24)	
Households	*At home with parents*	22.68±4	16.41-40.57 (21.98)	0.115	4.71±1.66	1-9 (4.69)	0.083	5.08±1.37	1-9 (5.13)	***0.001****	4.85±1.42	1-9 (4.86)	0.060
	At dorm with friends	22.54±3.88	14.82-35.55 (21.89)		4.85±1.86	1.08-7.92 (5)		5.02±1.37	1-7.88 (5.38)		4.91±1.57	1.05-7.9 (5.12)	
	At home with friends	23.11±2.82	17.15-29.32 (22.82)		5.18±1.68	1.38-8.23 (5.73)		5.42±1.3	1.63-8.75 (5.5)		5.27±1.46	1.52-8.43 (5.43)	

	Alone	23.46±4.17	17.01-37.62 (22.49)		4.94±1.75	1.46-8.08 (5.08)		4.82±1.41	1.88-8.13 (4.88)		4.89±1.46	1.71-8 (5.05)	
Smoking Status	*Yes*	22.96±3.81	14.82-39.67 (22.49)	0.131	5.03±1.83	1-9 (5.46)	***0.032****	5.2±1.5	1-9 (5.5)	***0.009****	5.1±1.6	1-9 (5.33)	***0.011****
	No	22.65±3.82	16.23-40.57 (21.77)		4.71±1.61	1.38-8.31 (4.69)		5.03±1.25	1.38-8.75 (5)		4.83±1.33	1.52-8.43 (4.81)	
	Quitted smoking	23.71±4.2	16.82-37.62 (23.67)		4.71±1.69	1.31-8.46 (4.46)		4.66±1.28	1.5-6.88 (5)		4.69±1.4	1.38-7.05 (4.81)	
Number of Cigarettes Smoked per Day	*Less than 10 cigarettes*	22.34±3.06	16.42-30.49 (22.2)	0.129	4.71±1.62	1.31-8.46 (4.65)	0.643	4.63±2.23	1.23-7.92 (4.38)	0.796	5.27±1.46	1.63-9 (5.5)	0.716
	1 Pack	23.82±4.8	14.82-39.67 (23.16)		5.11±1.77	1-8 (5.62)		4.99±1.25	1.38-8.75 (5)		5.09±1.96	1.38-8.13 (5.13)	
	More than 1 Pack	23.12±3.14	18.69-29.64 (22.02)		5.03±1.81	1.62-9 (5.31)		5.15±1.45	1-8.13 (5.38)		4.82±1.34	1.38-8.43 (4.81)	
Alcohol Usage	*Yes*	23.1±3.86	14.82-39.67 (22.57)	***0.023****	5.05±1.71	1-9 (5.27)	***0.001****	5.18±1.38	1-9 (5.38)	***0.004****	5.1±1.46	1-9 (5.19)	***0.001****
	No	22.46±3.8	16.23-40.57 (21.62)		4.5±1.69	1.31-8.46 (4.42)		4.9±1.34	1.25-8.75 (5)		4.65±1.43	1.38-8.43 (4.67)	
Frequency of Alcohol Consumption	*1-2 times a week*	23.56±3.46	14.82-34.69 (23.26)	***0.008****	5.36±1.72	1.23-9 (5.85)	***0.001****	5.35±1.42	1.38-9 (5.63)	***0.001****	5.36±1.51	1.29-9 (5.69)	***0.001****
	3-4 times a week	22.98±3.27	16.42-28.41 (22.9)		5.46±1.95	1.92-7.85 (6.15)		5.69±1.43	2.25-8.75 (5.94)		5.55±1.67	2.05-8.19 (6.02)	
	5 times or more a week	28.1±6.61	22.31-37.62 (26.23)		3.83±3.42	1-7.92 (3.19)		3.56±3.38	1-8.13 (2.56)		3.73±3.39	1-8 (2.95)	
	1-2 times a month	22.65±4.09	16.44-39.67		4.76±1.55	1.08-8.08		4.98±1.22	1-8 (5.13)		4.85±1.25	1.05-7.1	
			(22.07)			(4.92)						(4.93)	
Chronic Ilness Status	*Yes*	21.63±2.03	18-43 (21)	***0.048****	4.46±1.65	1-8.46 (4.5)	0.086	4.51±1.49	1-7 (4.81)	***0.005****	4.48±1.42	1-7.05 (4.74)	***0.032****
	No	24.77±5.78	17.75-40.57 (22.88)		4.89±1.72	1.23-9 (5)		5.13±1.35	1.25-9 (5.25)		4.98±1.46	1.29-9 (5.02)	

The lower BMI value of the female group compared to the male group was found to be statistically significant (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of female participants were lower than male participants (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the female group were lower than those of the male group (p=0.001; p<0.05). The fact that the emotional appetite questionnaire total value of female participants was lower than that of male participants was found to be statistically significant (p=0.001; p<0.05).

BMI value differed statistically significantly according to the faculty of education (p=0.002; p<0.05). The lower BMI value of the faculty of dentistry group was found to be statistically significant (p=0.001; p<0.05). The lower body mass index value of the health sciences faculty group was found to be statistically significant (p=0.001; p<0.05). The lower body mass index value of the medical faculty group was found to be statistically significant (p=0.001; p<0.05). Negative emotions and situations values differed statistically significant according to the faculty of students (p=0.001; p<0.05). The fact that the negative emotions and sittuations values of the faculty of dentistry group were lower than the other ones was found to be statistically significant (p=0.001; p<0.05). The fact that the negative emotions and situations values of the pharmacy faculty group were lower than the other ones was found to be statistically significant (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the health sciences faculty group were lower than the other ones (p=0.001; p<0.05). The negative emotions and situations values of the medical faculty group were found to be lower than the other ones, which was statistically significant (p=0.001; p<0.05). The value of positive emotions and situations differs statistically significantly according to the faculty of students (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the faculty of dentistry group were lower than those of the faculty of health sciences (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the dental faculty group were lower than those of the medical faculty group (p=0.001; p<0.05). The fact that the positive emotions and situations values of the faculty of dentistry group were lower than the other ones was found to be statistically significant (p=0.001; p<0.05). The emotional appetite questionnaire total value differs

statistically significantly according to the faculty of students (p=0.001; p<0.05). The fact that the total emotional appetite questionnaire value of the faculty of dentistry group was lower than the others was found to be statistically significant (p=0.001; p<0.05). The fact that the total emotional appetite questionnaire value of the pharmacy faculty group was lower than the others was found to be statistically significant (p=0.001; p<0.05). The fact that the emotional appetite questionnaire total value of the medicıne faculty group was lower than the others was found to be statistically significant (p=0.001; p<0.05).

BMI value didn't show a statistically significant difference according to accommodation status (p>0.05). The value of negative emotions and situations according to the accommodation status of the students didn't show a statistically significant difference (p>0.05). According to the accommodation status of the students, the values of positive emotions and situations showed a statistically significant difference (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the student group living at home with their family were lower than those living at home with their friends (p=0.001; p<0.05). The positive emotions and situations values of the group living at home with friends were found to be statistically significant compared to those living alone (p=0.001; p<0.05). The emotional appetite questionnaire total value didn't show a statistically significant difference according to the accommodation status of the students (p>0.05).

BMI value didn't show a statistically significant difference according to smoking status (p>0.05). Negative emotions and situations values differ statistically significant according to smoking status (p=0.032; p<0.05). It was found statistically significant that the negative emotions and ituations values of the smoker group were higher than those of the non-smokers (p=0.001; p<0.05). According to the smoking status, the values of positive emotions and situations showed a statistically significant difference (p=0.009; p<0.05). It was found statistically significant that the positive emotions and situations values of the smokers group were higher than those of the non-smokers (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the smokers group were higher than those of the quitters (p=0.001; p<0.05). Emotional appetite questionnaire total value differs statistically significant according to smoking status (p=0.011; p<0.05). The emotional

appetite questionnaire total value of the smokers group was found to be higher than the non-smokers ($p=0.001$; $p<0.05$).

BMI value didn't show a statistically significant difference according to the number of cigarettes smoked per day ($p>0.05$). According to the number of cigarettes smoked per day, the value of negative emotions and situations didn't show a statistically significant difference ($p>0.05$). According to the number of cigarettes smoked per day, the value of positive emotions and situations didn't show a statistically significant difference ($p>0.05$). According to the number of cigarettes smoked per day, the emotional appetite questionnaire total value didn't show a statistically significant difference ($p>0.05$).

The BMI value of the alcohol user group was found to be higher than the non-drinkers, which was statistically significant ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who used alcohol were higher than those who did not use alcohol ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the students who used alcohol were higher than those who did not use alcohol ($p=0.001$; $p<0.05$). The emotional appetite questionnaire total value of the students who used alcohol was found to be higher than those who did not use alcohol ($p=0.001$; $p<0.05$).

The emotional appetite questionnaire total value of the alcohol user group was found to be higher than the non-alcoholic group ($p=0.001$; $p<0.05$). According to the frequency of alcohol use, the value of negative emotions and situations showed a statistically significant difference ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who consumed alcohol 1-2 times a week were higher than those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$). The negative emotions and situations values of the group who consumed alcohol 3-4 times a week were found to be higher than those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$). According to the frequency of alcohol use, the value of positive emotions and situations differs statistically significant ($p=0.001$; $p<0.05$). The positive emotions and situations values of the group who consumed alcohol 1-2 times a week were found to be higher than those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$). The positive emotions and situations

values of the group who consumed alcohol 3-4 times a week were found to be higher than those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$). According to the frequency of alcohol use, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.001$; $p<0.05$). The emotional appetite questionnaire total value of the group who consumed alcohol 1-2 times a week was found to be statistically significant compared to those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$). The emotional appetite questionnaire total value of the group who consumed alcohol 3-4 times a week was found to be higher than those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$).

It was found statistically significant that the BMI value of the group with chronic disease was higher than those without chronic disease ($p=0.001$; $p<0.05$). Negative emotions and states values do not show a statistically significant difference according to chronic disease status ($p>0.05$). The positive emotions and states values of the group with chronic disease were found to be lower than those without it, which was statistically significant ($p=0.001$; $p<0.05$). The fact that the emotional appetite questionnaire total value of the group with chronic disease was lower than those without it was found to be statistically significant ($p=0.001$; $p<0.05$).

Table 4.15 Comparison of Students' Eating Habits with EMAQ

		BMI			***Negative Emotions and Situations***			***Positive Emotions and Situations***			***Total Score of EMAQ***		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Number of Main Meals	***1 Main Meal***	21.1±4.45	17.99-34.6 (19.42)	***0.012****	3.39±1.44	1.08-5.69 (3.27)	***0.001****	3.76±1.59	1-5.88 (3.56)	***0.001****	3.53±1.33	1.05-5.71 (3.6)	***0.001****
	2 Main Meals	22.89±3.91	14.82-39.67 (22.18)		4.93±1.68	1.23-8.23 (5.08)		4.98±1.37	1.38-8.75 (5.13)		4.95±1.45	1.29-8.43 (5.05)	
	3 Main Meals	22.89±3.63	16.51-40.57 (22.56)		4.97±1.72	1.38-9 (5)		5.38±1.23	1.88-9 (5.38)		5.13±1.39	1.57-9 (5.05)	
	4 Main Meals	21.75±3.59	17.3-29.32 (21.6)		3.54±1.23	1.85-5.46 (3.46)		5±1.19	2-6.5 (5.06)		4.1±1.05	1.95-5.57 (4.33)	
	5 Main Meals	26.11±4.7	20.7-35.55 (25.51)		3.6±2.16	1-6.46 (4.23)		3.63±2.18	1-6 (4.5)		3.61±2.15	1-6.24 (4.45)	
Number of Snacks	***1 Snack***	22.59±3.71	14.82-37.62 (22.13)	0.269	5.06±1.48	1.77-7.92 (5.04)	0.128	5.3±1.1	2-8.13 (5.38)	0.724	5.15±1.22	1.86-8 (5.19)	0.168
	2 Snacks	22.95±3.76	16.23-39.67 (22.51)		5.25±1.63	1.62-8.46 (5.38)		5.23±1.32	1.38-8 (5.38)		5.24±1.38	1.67-8.1 (5.31)	
	3 Snacks	23.65±3.99	17.3-40.57 (22.7)		5.34±1.52	1.46-8.31 (5.58)		5.25±1.25	1.88-8.13 (5.25)		5.31±1.28	1.67-8.24 (5.24)	
	4 Snacks	23.02±6.22	17.15-34.6 (20.55)		3.92±1.97	1.38-7.23 (3.77)		4.74±1.46	1.88-6.88 (5.13)		4.23±1.59	1.57-7.1 (4.05)	
Frequency of Eating Out	***Everyday***	22.97±3.82	16.65-33.6 (22.64)	0.619	4.35±1.92	1-7.23 (4.62)	***0.005****	4.53±1.62	1-6.88 (5)	***0.027****	4.42±1.64	1-7.1 (4.57)	***0.003****
	4-6 times a week	22.9±3.41	14.82-32.77 (22.49)		5.15±1.7	1.31-8.15 (5.62)		5.18±1.24	1.5-8.75 (5.5)		5.16±1.42	1.38-8.19 (5.52)	
	1-3 times a week	22.9±3.84	16.42-39.67 (22.5)		4.96±1.72	1.38-9 (5)		5.21±1.44	1.25-9 (5.25)		5.06±1.51	1.38-9 (5)	
	2-3 times a month	22.65±4.13	16.23-40.57 (21.45)		4.49±1.64	1.31-8.46 (4.31)		4.9±1.23	1.5-7.88 (5)		4.65±1.3	1.38-8.05 (4.62)	
	Never	23.43±5.73	17.75-34.6 (21.96)		4.94±1.38	3.46-7.77 (4.31)		4.97±1.22	3.5-8.13 (4.81)		4.95±1.21	3.52-7.9 (4.71)	
Meal Consumed Outside	***Breakfast***	25.79±2.6	20.94-29.05 (26.23)	0.061	4.21±2.95	1-7.23 (5)		4.21±2.38	1-6.88 (4.88)	0.127	4.21±2.6	1-7.1 (5)	***0.043****
	Lunch	22.76±3.57	16.51-40.57 (22.49)		4.6±1.61	1.38-8.46 (4.88)	***0.046****	4.92±1.22	1.25-8 (5.13)		4.73±1.34	1.38-8.1 (4.9)	

	Dinner	22.9±3.95	14.82-39.67 (22.42)		5.01±1.74	1.08-9 (5.08)		5.18±1.4	1-9 (5.38)		5.08±1.49	1.05-9 (5.14)	
	Snacks	22.01±3.21	17.93-29.02 (21.16)		4.46±1.74	1.77-8.31 (4)		4.93±1.57	1.38-8.13 (4.88)		4.64±1.48	2.33-8.24 (4.52)	
Type of Food Consumed Outisde	***Fast Food***	22.91±4	14.82-40.57 (22.37)	0.107	4.85±1.75	1.08-9 (4.92)	0.241	5.12±1.39	1-9 (5.13)	***0.038****	4.96±1.48	1.05-9 (4.93)	0.162
	Kebap varieties	23.97±4.21	16.44-37.62 (23.78)		4.46±1.75	1-7.46 (4.62)		4.7±1.42	1-7 (5)		4.55±1.57	1-7.29 (4.81)	
	Grill varieties	21.95±2.66	17.01-29.53 (22)		4.75±1.94	1.23-8.31 (4.65)		5.16±1.37	1.38-8.13 (5.38)		4.91±1.61	1.29-8.24 (4.95)	
	Homemade meals	22.84±3.12	16.42-32.54 (22.69)		5.33±1.27	1.92-8.08 (5.46)		5.34±0.96	2-7.5 (5.5)		5.33±1.08	1.95-7.57 (5.48)	
	Salad varieties	22.04±3.15	16.65-30.45 (21.8)		4.95±1.37	2.15-7.92 (5)		4.47±1.61	1.88-7.88 (4.5)		4.77±1.27	2.05-7.57 (4.81)	

BMI value differed statistically significantly according to the number of main meals ($p=0.012$; $p<0.05$). It was found statistically significant that the BMI value of 1 main meal group was lower than those of 2 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index value of 1 main meal group was lower than those of 3 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index value of 1 main meal group was lower than those of 5 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index values of the 2 main meals groups were lower than those of the 5 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index values of the 3 main meals groups were lower than those of the 5 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index values of the 4 main meals groups were lower than those of the 5 main meals ($p=0.001$; $p<0.05$). According to the number of main meals of the participants, the values of negative emotions and situations showed a statistically significant difference ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the student group who consumed 1 main meal were lower than those who had 2 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the student group who consumed 1 main meal were lower than those who had 3 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who consumed 2 main meals were higher than those who had 4 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who consumed 3 main meals were higher than those who had 4 main meals ($p=0.001$; $p<0.05$). According to the number of main meals of the participants, the values of positive emotions and situations showed a statistically significant difference ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and states values of the student group who consumed 1 main meal were lower than those who had 2 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the student group who consumed 1 main meal were lower than those who had 3 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the student group who consumed 1 main meal were lower than those who had 4 main meals ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the students who consumed 2 main meals were lower than those who had 3 main meals

(p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the students who consumed 3 main meals were higher than those who had 5 main meals (p=0.001; p<0.05). According to the number of main meals of the participants, the total value of the emotional appetite questionnaire showed a statistically significant difference (p=0.001; p<0.05). The fact that the emotional appetite questionnaire total value of the student group who consumed 1 main meal was lower than those who had 2 main meals was found to be statistically significant (p=0.001; p<0.05). The fact that the emotional appetite questionnaire total value of the student group who consumed 1 main meal was lower than those who had 3 main meals was found to be statistically significant (p=0.001; p<0.05). The emotional appetite questionnaire total value of the student group who consumed 2 main meals was found to be statistically significant compared to those who had 4 main meals (p=0.001; p<0.05). The emotional appetite questionnaire total value of the student group who consumed 3 main meals was found to be statistically significant compared to those who had 4 main meals (p=0.001; p<0.05).

BMI value didn't show a statistically significant difference according to the number of snacks (p>0.05). Negative emotions and situations values of students didn't show a statistically significant difference according to the number of snacks (p>0.05). Positive emotions and situations values didn't show a statistically significant difference according to the number of snacks (p>0.05). The emotional appetite questionnaire total value didn't show a statistically significant difference according to the number of snacks (p>0.05).

BMI value didn't show a statistically significant difference according to the frequency of eating outside the home (p>0.05). According to the frequency of eating outside the home, the values of negative emotions and situations showed a statistically significant difference (p=0.005; p<0.05). It was statistically significant that the negative emotions and situations values of the students who eat out every day were lower than those who did it 4-6 times a week (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the students who ate out 4-6 times a week were higher than those who did it 2-3 times a month (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the students who ate out 1-3 times a week were higher than those who did it 2-

3 times a month (p=0.001; p<0.05). According to the frequency of eating outside the home, the value of positive emotions and situations showed a statistically significant difference (p=0.027; p<0.05). It was found statistically significant that the positive emotions and situations values of the students who eat out every day were lower than those who did it 4-6 times a week (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the students who eat out every day were lower than those who did it 1-3 times a week (p=0.001; p<0.05). It was found statistically significant that the students who ate out 4-6 times a week had higher positive emotions and sştuations values than those who ate out 2-3 times a month (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the students who ate out 1-3 times a week were higher than those who did it 2-3 times a month (p=0.001; p<0.05). According to the frequency of eating outside the home of the participants, the total value of the emotional appetite questionnaire showed a statistically significant difference (p=0.003; p<0.05). It was found statistically significant that the emotional appetite questionnaire total value of the student group who ate out every day was lower than those who did it 4-6 times a week (p=0.001; p<0.05). It was found statistically significant that the emotional appetite questionnaire total value of the student group who ate out every day was lower than those who did it 1-3 times a week (p=0.001; p<0.05). The emotional appetite questionnaire total value of the student group who ate out 4-6 times a week was found to be higher than those who did it 2-3 times a month (p=0.001; p<0.05). The emotional appetite questionnaire total value of the student group who ate out 1-3 times a week was found to be statistically significant compared to those who did it 2-3 times a month (p=0.001; p<0.05).

BMI value didn't show a statistically significant difference according to the meal consumed outside (p>0.05). According to the meal consumed outside, the value of negative emotions and states showed a statistically significant difference (p=0.046; p<0.05). It was statistically significant that the negative emotions and states values of the lunch group were lower than those of the dinner group (p=0.001; p<0.05). According to the meal consumed outside, the value of positive emotions and situations didn't show a statistically significant difference (p>0.05). The emotional appetite questionnaire total value differed statistically significantly according to the meal consumed outside (p=0.043; p<0.05). The emotional appetite questionnaire total value

of the lunch group was found to be lower than those of the dinner group ($p=0.001$; $p<0.05$).

BMI value didn't show a statistically significant difference according to the type of food consumed outside ($p>0.05$). Negative emotions and situations values didn't show a statistically significant difference according to the type of food consumed outside ($p>0.05$). Positive emotions and situations values differed statistically significant according to the type of food consumed outside ($p=0.038$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the student group consuming fast food were higher than those consuming salad varieties ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the student group consuming kebab types were lower than those consuming home-cooked meals ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the student group consuming grilled varieties were higher than those consuming salad varieties ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the student group consuming home-cooked meals were higher than those consuming salad varieties ($p=0.001$; $p<0.05$). Emotional appetite questionnaire total value didn't show a statistically significant difference according to the type of food consumed outside of the participants($p>0.05$).

Continuation of table 4.15

		BMI			*Negative Emotions and Situations*			*Positive Emotions and Situations*			*Total Score of EMAQ*		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Meal Skip Status	*Yes*	22.94±3.91	14.82-40.57 (22.49)	0.228	4.87±1.74	1-9 (5)	0.281	5.05±1.38	1-9 (5.25)	0.533	4.94±1.49	1-9 (5)	0.493
	No	22.36±3.35	17.31-33.95 (21.92)		4.71±1.57	1.62-8.31 (4.77)		5.28±1.29	2-8.75 (5.13)		4.93±1.32	2.14-8.24 (4.95)	
Being Busy With Other Things While Consuming Meals	*Yes*	22.99±3.87	14.82-40.57 (22.49)	***0.039****	4.94±1.72	1-9 (5.08)	***0.001****	5.14±1.37	1-9 (5.25)	***0.003****	5.02±1.46	1-9 (5.05)	***0.001****
	No	21.94±3.57	16.44-33.95 (21.8)		4.18±1.57	1.08-7.69 (4.31)		4.64±1.32	1-7.63 (4.88)		4.35±1.37	1.05-7.57 (4.38)	
Meal Consumption Speed	*Slow*	21.01±3.11	14.82-34.6 (20.31)	***0.001****	4.08±1.55	1.38-8.08 (4.08)	***0.001****	4.72±1.1	2-7.88 (4.88)	***0.003****	4.32±1.25	1.86-8 (4.29)	***0.001****
	Medium	22.47±3.38	16.23-38.1 (22.07)		4.82±1.72	1.31-8.31 (5)		5.08±1.39	1.25-8.75 (5.25)		4.92±1.49	1.38-8.43 (5)	
	Fast	23.93±4.36	16.41-40.57 (23.31)		5.21±1.69	1.08-9 (5.46)		5.26±1.34	1-9 (5.38)		5.23±1.41	1.05-9 (5.33)	
	Very Fast	25.02±4.33	19.05-35.92 (24.5)		4.58±1.83	1-7.15 (5.04)		4.58±1.77	1-8 (4.94)		4.58±1.61	1-7.48 (4.88)	
Change in Number of Meals During the COVID-19 Pandemic	*Increased*	23.46±3.46	16.41-38.1 (23.27)	***0.001****	5.54±1.66	1-9 (5.92)	***0.001****	5.5±1.36	1-9 (5.63)	***0.001****	5.52±1.44	1-9 (5.86)	***0.001****
	Decreased	22.46±4.26	17.01-39.67 (21.1)		4.16±1.59	1.08-7.46 (4.35)		4.32±1.26	1-7 (4.56)		4.22±1.33	1.05-7.29 (4.38)	
	No Change	22.27±4.03	14.82-40.57 (21.45)		4.27±1.51	1.38-7.69 (4.31)		4.85±1.24	1.38-8 (5)		4.49±1.25	1.52-7.1 (4.48)	
Weight Change During the COVID-19 Pandemic	*Gained Weight*	23.97±3.85	16.65-40.57 (23.44)	***0.001****	5.28±1.69	1-8.31 (5.62)	***0.001****	5.26±1.43	1-8.75 (5.5)	***0.001****	5.27±1.48	1-8.43 (5.52)	***0.001****
	Lost Weight	21.03±2.94	14.82-30.45 (20.73)		3.95±1.46	1.08-8.46 (4.04)		4.65±1.23	1-8 (4.75)		4.22±1.19	1.05-7.05 (4.4)	
	No Change	20.62±2.89	16.23-33.6 (20.06)		4.24±1.52	1.38-9 (4.31)		4.85±1.13	1.88-9 (5)		4.47±1.24	1.57-9 (4.48)	

BMI value didn’t show a statistically significant difference according to meal skipping status ($p>0.05$). According to the participants' meal skipping status, the values of negative emotions and situations didn’t show a statistically significant difference ($p>0.05$). Positive emotions and situations values didn’t show a statistically significant difference according to meal skipping status ($p>0.05$). The emotional appetite questionnaire total value didn’t show a statistically significant difference according to the meal skipping status of the participants ($p>0.05$).

It was found statistically significant that the BMI value of the group who was busy with other tasks while consuming the meals was higher than those who did not ($p=0.001$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who were busy with other activities while consuming their meals were higher than those who did not ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the students who were busy with other tasks while consuming their meals were higher than those who did not ($p=0.001$; $p<0.05$). It was found statistically significant that the emotional appetite questionnaire total value of the student group who were busy in other situations while consuming their meals was higher than those who did not ($p=0.001$; $p<0.05$).

BMI value differed statistically significantly according to meal consumption speed ($p=0.001$; $p<0.05$). The body mass index value of the slow group was found to be lower than the medium group ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index value of the slow group was lower than the fast group ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index value of the slow group was lower than the very fast group ($p=0.001$; $p<0.05$). The body mass index value of the middle group was found to be lower than the fast ones ($p=0.001$; $p<0.05$). It was found statistically significant that the body mass index value of the middle group was lower than the very fast ones ($p=0.001$; $p<0.05$). According to the participants' meal consumption speed, the values of negative emotions and situations showed a statistically significant difference ($p=0.001$; $p<0.05$). It was statistically significant that the negative emotions and situations values of the students who consumed at a slow pace were lower than those of the moderate ones ($p=0.001$; $p<0.05$).

It was statistically significant that the negative emotions and situations values of the students who consumed their meals slowly were lower than those who consumed

fast (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the students who consumed at a moderate rate were higher than those who consumed fast (p=0.001; p<0.05). Positive emotions and situations values differed statistically significant according to meal consumption rate (p=0.003; p<0.05). It was found statistically significant that the positive emotions and situations values of the students who consumed at a slow pace were lower than those of the moderate ones (p=0.001; p<0.05). It was found statistically significant that the group of students who consumed at a slow pace had lower positive emotions and situations than those who consumed fast (p=0.001; p<0.05). According to the participants' meal consumption speed, the total value of the emotional appetite questionnaire showed a statistically significant difference (p=0.001; p<0.05). It was statistically significant that the emotional appetite questionnaire total value of the slow consuming student group was lower than the moderate ones (p=0.001; p<0.05). It was statistically significant that the emotional appetite questionnaire total value of the group of students who consumed at a slow pace was lower than those who consumed fast (p=0.001; p<0.05). It was statistically significant that the emotional appetite questionnaire total value of the students who consumed moderately was lower than those who consumed fast (p=0.001; p<0.05).

According to the change in the number of meals during the COVID-19 pandemic, the BMI value showed a statistically significant difference (p=0.001; p<0.05). The BMI value of the group who said their number of meals increased during COVID-19 pandemic was found to be statistically significant compared to those who said it decreased (p=0.001; p<0.05). It was found statistically significant that the body mass index value of the group who said it increased was higher than those who said it did not change (p=0.001; p<0.05). According to the change in the number of meals during the COVID-19 pandemic, the value of negative emotions and situations showed a statistically significant difference (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the students who stated that the number of meals increased during the pandemic period were higher than those who said that the number of meals decreased (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the student group who said that the number of meals increased during the pandemic period were higher than those who said that the number of meals did not change (p=0.001; p<0.05).

According to the change in the number of meals during the COVID-19 pandemic, the values of positive emotions and situations showed statistically significant differences (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the student group who said that the number of meals increased during the COVID pandemic were higher than those who said that the number of meals decreased (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the student group who said that the number of meals increased during the COVID pandemic were higher than those who said that the number of meals did not change (p=0.001; p<0.05). It was found statistically significant that the positive emotions and situations values of the student group who said that the number of meals decreased during the COVID pandemic were lower than those who said that the number of meals did not change (p=0.001; p<0.05). According to the change in the number of meals during the COVID-19 pandemic, the total value of the emotional appetite questionnaire showed a statistically significant difference (p=0.001; p<0.05). It was found statistically significant that the emotional appetite questionnaire total value of the student group who said that the number of meals increased during the pandemic period was higher than those who said that it decreased (p=0.001; p<0.05). It was found statistically significant that the emotional appetite questionnaire total value of the student group who said that the number of meals increased during the COVID pandemic was higher than those who said that the number of meals did not change (p=0.001; p<0.05).

It was found statistically significant that the BMI value of the weight gain group during the COVID-19 pandemic was higher than the weight loss group (p=0.001; p<0.05). The BMI value of the weight gain group was found to be higher than those who did not change (p=0.001; p<0.05). Negative emotions and situations values showed statistically significant differences according to weight change during the COVID-19 pandemic (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the students who gained weight were higher than those who lost weight (p=0.001; p<0.05). It was found statistically significant that the negative emotions and situations values of the students who gained weight were higher than those who did not change (p=0.001; p<0.05). Positive emotions and situations values showed statistically significant differences according to weight change in the COVID-19 pandemic (p=0.001; p<0.05). It was found statistically significant that the

positive emotions and situations values of the students who gained weight were higher than those who lost weight ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and states values of the students who gained weight were higher than those who did not change ($p=0.001$; $p<0.05$). Emotional appetite survey total value showed statistically significant difference according to weight change in the COVID-19 pandemic ($p=0.001$; $p<0.05$). It was found statistically significant that the emotional appetite questionnaire total value of the students who gained weight was higher than those who lost weight ($p=0.001$; $p<0.05$). The fact that the emotional appetite questionnaire total value of the students who gained weight was higher than those who did not change was found to be statistically significant ($p=0.001$; $p<0.05$).

Table 4.16 Comparison of Students' Physical Activity and Sleep Status with EMAQ

		BMI			***Negative Emotions and Situations***			***Positive Emotions and Situations***			***Total Score of EMAQ***		
		Mean±SD	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**	***Mean±SD***	**Min-Max (Median)**	**p**
Regular Physical Activity Status	*Yes*	22.26±3.18	16.23-30.45 (22.02)	***0.003****	4.94±1.75	1-8.31 (5)	0.218	5.18±1.35	1-8.75 (5.25)	0.081	5.03±1.46	1-8.24 (5.1)	0.120
	No	23.52±4.37	14.82-40.57 (22.66)		4.75±1.69	1.31-9 (4.85)		4.97±1.39	1.5-9 (5)		4.84±1.46	1.38-9 (4.95)	
Frequncy of Physical Activity	*Everyday*	22.21±3.49	16.65-29.94 (20.7)	0.440	4.41±1.93	1-8.31 (4.77)	***0.02****	4.71±1.79	1-8.13 (5)	***0.032****	4.53±1.75	1-8.24 (4.9)	***0.023****
	At least 3 times a week	22.27±3.42	16.23-30.45 (21.8)		4.58±1.73	1.08-8.15 (4.38)		4.99±1.46	1-8.75 (5.13)		4.74±1.5	1.05-8.19 (4.71)	
	1-2 times a week	22.11±3.01	16.51-30.07 (21.83)		5.23±1.72	1.23-8.15 (5.38)		5.25±1.2	1.38-8 (5.38)		5.24±1.4	1.29-8.1 (5.38)	
	1-2 times a month	23±3.07	17.99-28.96 (22.77)		4.94±1.59	1.92-7.92 (5.15)		5.67±1.18	3.13-8.13 (5.63)		5.22±1.29	2.38-8 (5.33)	
Average Sleep Time per Day	*Less than 6 hours*	23.2±4.45	16.42-39.67 (22.43)	0.403	4.4±1.84	1.23-8.08 (4.38)	***0.045****	4.49±1.37	1.38-8.13 (4.5)	***0.001****	4.43±1.53	1.29-8 (4.38)	***0.015****
	6-8 hours	22.95±3.74	16.23-40.57 (22.49)		4.98±1.65	1.31-9 (5.15)		5.2±1.24	1.5-9 (5.25)		5.06±1.39	1.38-9 (5.19)	
	8-10 hours	22.57±3.84	14.82-34.6 (21.48)		4.83±1.71	1.08-8.15 (4.85)		5.08±1.46	1-8.13 (5.25)		4.92±1.48	1.05-8.1 (4.93)	
	10 hours and more	21.64±2.97	16.82-26.23 (21.3)		4.21±2.35	1-8.23 (3.69)		5.2±2.54	1-8.75 (6.13)		4.59±2.3	1-8.43 (4.62)	

It was found statistically significant that the BMI value of the group who did regular physical activity was lower than those who did not ($p=0.001$; $p<0.05$). Negative emotions and situations values didn't show a statistically significant difference according to the regular physical activity status of the participants ($p>0.05$). Positive emotions and situations values didn't show a statistically significant difference according to regular physical activity status ($p>0.05$). Emotional appetite questionnaire total value didn't show a statistically significant difference according to regular physical activity status ($p>0.05$).

BMI value didn't show a statistically significant difference according to physical activity frequency ($p>0.05$). According to the frequency of physical activity, the value of negative emotions and situations showed a statistically significant difference ($p=0.02$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who did physical activity at least 3 days a week were lower than those who did 1-2 days a week ($p=0.001$; $p<0.05$). According to the frequency of physical activity, the value of positive emotions and situations showed a statistically significant difference ($p=0.032$; $p<0.05$). It was found statistically significant that the values of positive emotions and situations of the student group who did physical activity every day were lower than those who did 1-2 days a month ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the students who did physical activity at least 3 days a week were lower than those who did 1-2 days a month ($p=0.001$; $p<0.05$). According to the frequency of physical activity, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.023$; $p<0.05$). It was found statistically significant that the emotional appetite questionnaire total value of the student group who did physical activity at least 3 days a week was lower than those who did 1-2 days a week ($p=0.001$; $p<0.05$).

BMI value didn't show a statistically significant difference according to daily sleep duration ($p>0.05$). According to the daily sleep duration of the participants, the values of negative emotions and situations showed a statistically significant difference ($p=0.045$; $p<0.05$). It was found statistically significant that the negative emotions and situations values of the students who slept less than 6 hours were lower than those who slept for 6-8 hours ($p=0.001$; $p<0.05$). According to the daily sleep duration of the students, the values of positive emotions and situations showed a statistically significant

difference ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the students who slept less than 6 hours were lower than those who slept for 6-8 hours ($p=0.001$; $p<0.05$). It was found statistically significant that the positive emotions and situations values of the students who slept less than 6 hours were lower than those who slept for 8-10 hours ($p=0.001$; $p<0.05$). According to the daily sleep duration of the participants, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.015$; $p<0.05$). It was found that the emotional appetite questionnaire total value of the student group who slept less than 6 hours was lower than those who slept for 6-8 hours ($p=0.001$; $p<0.05$). It was found that the emotional appetite questionnaire total value of the student group who slept less than 6 hours was lower than those who slept for 8-10 hours ($p=0.001$; $p<0.05$).

Table 4.17 Correlation Analysis of Students' Measurements

		1	2	3	4	5	6	7	8	9	10	11
1.Age	r	1										
	p	.										
2.Height	r	.092*	1									
	p	.032	.									
3.Weight	r	.175**	.704**	1								
	p	.000	.000	.								
4.Body Mass Index	r	.192**	.345**	.893**	1							
	p	.000	.000	.000	.							
5.Dieting	r	-0.008	-0.054	.144**	.246**	1						
	p	.860	.210	.001	.000	.						
6.Bulimia and Food Preoccupation	r	0	-0.026	0.062	.101*	.274**	1					
	p	0.389	.543	.146	.019	.000	.					
7.Oral Control	r	-.126**	-.128**	-.261**	-.269**	.393**	.077	1				
	p	.003	0.003	.000	.000	.000	.072	.				
8.Total score of EAT-26	r	-0.046	-.102*	0	.098*	.922**	.443**	.625**	1.000			
	p	.285	.017	0.717	.022	.000	.000	.000	.			
9.Negative Emotions and Situations	r	.130**	0.036	.254**	.331**	.197**	-0.053	-.177**	.100*	1		
	p	.002	.404	.000	0	.000	.214	.000	.019	.		
10.Positive Emotions and Situations	r	.133**	.130**	.221**	.237**	0	-0.061	-.134**	0.023	.631**	1	
	p	.002	.002	.000	.000	0.119	.153	.002	.584	.000	.	
11.Total score of EMAQ	r	.134**	.071	.268**	.332**	.177**	0	-.172**	.089*	.967**	.792**	1
	p	.002	.097	.000	.000	.000	0.206	.000	.037	.000	.000	.

Spearman's *p<0.05 **p<0.01

There is a positive and weakly significant correlation between BMI and dieting values (r=.246, p<0.01). There is a positive and very weak significant correlation between BMI and bulimia and food preoccupation values (r=.101, p<0.05).

There is a negative and weakly significant relationship between BMI and oral control (r=-.269, p<0.01). There is a positive and very weak significant correlation between BMI and total value of eating attitude test (r=.098, p<0.05). There is a positive

and weak correlation between BMI and negative emotions and situations (r=,331, p<0.01). There is a positive and weakly significant relationship between BMI and positive emotions and situations (r=.237, p<0.01). There is a positive and weakly significant correlation between BMI and emotional appetite questionnaire total (r=.332, p<0.01).

As a result of the analysis, there is a positive and weakly significant relationship between dieting, which is one of the 2 sub-scores of EAT-26, and bulimia and food preoccupation (r=.274, p<0.01). There is a positive and weakly significant relationship between dieting and oral control (r=.393, p<0.01). There is a positive and very high significant correlation between dieting and the total value of the eating attitude test (r=.922, p<0.01). There is a very weak and positive relationship between dieting and negative emotions and situations (r=.197, p<0.01). There is a very weak and positive correlation between dieting and emotional appetite questionnaire total (r=.177, p<0.01). There was no statistically significant relationship between dieting and positive emotions and situations (p>0.05).

There is a positive and moderately significant relationship between bulimia and food preoccupation and the total value of the eating attitude test (r=.443, p<0.01). There was no statistically significant relationship between bulimia and food preoccupation and total oral control, negative emotions and situations, positive emotions and situations, and emotional appetite questionnaire (p>0.05).

In the analysis results, there was a positive and highly significant relationship between the total value of the oral control and the eating attitude test (r=.625, p<0.01). There is a very weak and negative significant relationship between oral control and negative emotions and situations (r=-.177, p<0.01). There is a negative and very weak significant relationship between oral control and positive emotions and situations (r=-.134, p<0.01). There was a negative and very weak significant correlation between oral control and emotional appetite questionnaire total (r=-.172, p<0.01).

There is a positive and very weak correlation between the total score of the eating attitude test and negative emotions and situations, which is one of the sub-

assessments of the emotional appetite scale (r=.100, p<0.05). There is a positive and very weak significant correlation between the total score of the eating attitude test and the total emotional appetite questionnaire (r=.089, p<0.05). There was no statistically significant relationship between the total score of the eating attitude test and positive emotions and situations (p>0.05).

There is a positive and highly significant relationship between negative emotions and situations and positive emotions and situations (r=.631, p<0.01). There is a positive and highly significant relationship between negative emotions and situations and the total score of emotional appetite questionnaire (r=.967, p<0.01).

There is a positive and highly significant relationship between positive emotions and situations and the total emotional appetite questionnaire (r=.792, p<0.01).

5. DISCUSSION

Many vital changes such as home isolation brought by the COVID-19 pandemic have confronted most individuals, including university students, with negative emotions such as fear, anxiety and stress. The sample of university students was chosen because there is a period in which vital, psychological and social factors change, especially with the beginning of the university process, and there is a period in which the tendency to eating disorders and emotional eating tendencies increases. Sudden and big changes experienced in this process affect the emotional states of the students as well as their eating habits in connection with this.

The COVID-19 pandemic has managed to affect the whole world in a short time. In addition to the physical problems it caused, this epidemic became an unbearable psychological pressure and caused mood disorders (351). Ahorsu et al. (2020), argued that the COVID-19 pandemic process commonly causes fear and anxiety in individuals. They stated that the news of the epidemic, which is constantly heard and watched during the pandemic process, is effective in increasing stress levels. It has been stated that the feelings of fear and anxiety that arise due to this also pave the way for emotional eating behaviors (352). In this study, the susceptibility to eating disorder, emotional eating tendencies and their interrelationships were examined in a process where students who received online undergraduate education at Yeditepe University experienced negative emotional states such as stress during the COVID-19 pandemic period, and also the frequency of consumption of sugary foods was investigated.

This thesis was conducted with 546 university students with a mean age of 21.7±2.1 years, studying at different faculties at Yeditepe University. In this study; 350 (64.1%) of the students in the sample group were female and 196 (35.9%) were male. The body mass index of the students ranged from 14.82 to 40.57, with an average of 22.86±3.85 and the majority of the group was normal according to the BMI classification of WHO (353). Of the students, 8.4% faculty of dentistry, 3.5% faculty of pharmacy, 8.6% faculty of health sciences, 7.1% faculty of medicine and 72.3% of them stated that they were studying at other faculties. 47.8% of the participants live at home with their families. 43.6% of the participants smoke and 49.2% of the smokers smoke less than 10 cigarettes. 63.7% of the participants consumed alcohol and 50.7% of the

students who consumed alcohol stated that they drank 1-2 times a month. 9.2% of the participants have a chronic disease.

Considering the number of meals of the students, 56% consume 2 main meals and 44.4% consume 2 snacks per day. Özdoğan et al. (2012), in the study in which they examined the meal patterns of university students, it was observed that, unlike this study, students generally consumed 3 main meals (354). 44.1% of the students stated that they ate out 1-3 times a week, 63.3% of them preferred to have dinner out most and 65.9% of them stated that the most preferred type of food was fast food when they ate out. 47.3% of the students stated that the number of meals increased and 64.7% of them stated that they gained weight during the COVID-19 period. In this study, 86.4% of the students stated that they skipped meals and the most skipped meal was breakfast with a rate of 60%. According to the literature, skipping breakfast, especially, affects school success in school-age children and university students negatively, and may result in inadequate and unbalanced nutrition (5). In general, it is seen that the rate of skipping meals among university students is high. When questioned why they skipped meals, 61.1% of students said they couldn't find time and 41.2% said they couldn't get up in the morning. The reason for this situation can be explained by the fact that students' classes start early in the morning. 44.1% of the students stated that they ate out 1-3 times a week and the most consumed meal outside was dinner with a rate of 63.3%. The most preferred type of food outside of the participants was found to be fast food with a rate of 65.9%. According to another study, it was found that 71.4% of university students have fast food consumption habits (355). In another study of Papadaki et al. (2007), in Athens, students reduce their consumption of fruit, vegetables, seafood, legumes and olive oil, and increase their intake of sugary foods, alcohol and fast food after they start university (356). Of the participants, 88.1% were engaged in other activities while consuming their meals, and 54.2% stated that they consumed their meals moderately and 31.3% consumed their meals fast. When the distribution of the change in the number of meals compared to the pre-COVID-19 pandemic is examined, 47.3% of the participants stated that the number of meals increased, 15.4% decreased and 37.4% stated that it did not change. 64.7% of the students stated that they gained weight, 19.4% of them stated that they lost weight, and 15.9% of them stated that their weight did not change during the pandemic. In another study conducted during the COVID-19 pandemic, similar to our study, it was concluded that the rate of those who experienced

weight gain was 54.3%, while the rate of those who stated that there was no change in their weight changes was 30%, while the rate of those who lost weight was 15.7%. In line with this information, it is seen that most of the participants have an increase in their appetite and therefore they experience weight gain during this period (357).

When we look at the physical activity and sleep durations of the participants, 52.2% stated that they do physical activity regularly and 7.4% of the participants stated that they do sports every day, 30.5% stated at least 3 days a week, 51.2% stated 1-2 times a week and 10.9% said that they do physical activity 1-2 days a month. 61.4% of the students stated that they sleep 6-8 hours.

The value of the eating attitude test ranged from 2 to 50, and the average of the students was found to be 13.09±7.69. The majority of the group showed a healthy eating attitude. When the eating attitude test was evaluated, it was determined that 15.6% of the students were prone to eating disorders according to their EAT-26 scores. Similarly, in the study conducted by Oğur and Aksoy (2016), 13.3% of university students were found to be prone to eating behavior disorder (358). The rate of susceptibility to eating disorders detected in this study was found to be higher than in this similar study. It can be thought that this is related to the negative moods of the students during the COVID-19 pandemic process. In support of this idea, 55.9% of the students stated that their eating attitude test scores increased during the COVID-19 pandemic period, while 4.9% stated that it decreased and 39.2% stated that it did not change.

The values of the emotional appetite questionnaire and its sub-scores range from 1 to 9, the average of the negative mood and situations values of the students is 4.85±1.72, the average of the positive emotions and situations values is 5.08±1.37, and the total value of the emotional appetite questionnaire is 4.94±1.46. According to these findings, students tend to eat less in negative emotions or situations, and they tend to eat more in positive emotions and situations. In another study conducted by Bourdier et al. (2017) on 401 university students, it was observed that 60.1% of the participants did not change their food intake in response to positive and negative emotions/states; In 28.7% of them, it was observed that there was a decrease in food intake in response to negative emotions / situations, and no change in food intake in response to positive emotions / situations (359). In another study cunducted by Muscogiuri et al. (2020) stated that

during the COVID-19 process, people relax by eating and eat more than normal with the increase of emotional eating (360). In addition, 49.6% of the participants stated that their appetite decreased in emotions and situations, 24.7% stated that it didn't affect them and 25.6% reported increased appetite in general. 45.2% of the students stated that their emotional appetite questionnaire scores increased, 3.3% stated that it decreased and 51.5% stated that it didn't change during the COVID-19 pandemic compared to pre-pandemic process. In another study, similar rates to this study, when the changes in appetite of the participants during the COVID-19 epidemic process are examined, it is seen that the rate of those who have increased appetite is 45%, the rate of those who have decreased appetite is 10.7%, and the rate of those who state that their appetite has not changed is 44.3% (357).

The use of cube or granulated sugar of the participants was 12.8% daily, 7.7% 5-6 times a week, 21.8% 3-4 times a week, 23.8% 1-2 times a week, 6.4% once in 15 days, 6.4% once a month and 21.1% never consumed it. According to TBSA 2019 data, 55.8% of adult women consume table sugar 6-7 times a week, while 31.4% do not consume it at all (361). Participants stated that they never consumed candy, breakfast cereals and honey, jam, molasses with rates of 14.7%, 13.6% and 11.9%, respectively. Considering the most frequent consumption rates, the situation is as follows; candy, breakfast cereal and honey, jam, and molasses consumption were 1-2 times a week at a rate of 23.6%, 30.6% and 28.4% respectively. Similarly, in another study, it was seen that 20.6% of the participants consumed honey, jam and molasses once a week (362). 9%, 4.2% and 4% of the participants stated that they never consumed; cocoa hazelnut paste, peanut butter, cream chocolate etc., biscuits, wafers, cakes and cookies etc. and dairy desserts, ice cream respectively. Considering the most frequent consumption rates, 30%, 32.1% and 30.2% of the participants consume these foods 1-2 times a week, respectively. 13.6% and 15.8 of the participants, respectively; stated that they never consume pastry and syrup desserts, fruit milk and yoghurt. Considering the most frequent consumption rates of these foods, 26.6% and 24.2% of the participants rated these foods respectively; stated that they consume it once a month and 1-2 times a week.

25,5%, 16,7% and 22,7% of the participants stated that they never consumed following foods; prepared fruit juices, carbonated drinks (cola etc.) and fruit mineral

water respectively. Considering the most frequent consumption rates, 22,3%, 20,7% and 17,9% of the participants consume these foods 1-2 times a week, respectively. In contrast to this research, Park et al. (2015) in their study among US adults living in different states, 30.1% of the participants reported that they consumed a sugary beverage once a day (363). 22.5% of the participants stated that they do not consume instant packaged coffee and instant cold coffee. Considering the most frequent consumption rates of the participants, 20% stated that they consume 1-2 times a week. 28.4% of the participants stated that they didn't consume creamy caramel coffee varieties. Looking at the most frequent consumption rate, 19% of the participants stated that they consume creamy caramel coffee varieties 1-2 times a week. In a study conducted in Kayseri (2002), students consumed fruit juice once a month. In this study, fruit juice was consumed more frequently 1-2 times a week (364). In a study conducted in London (2018), it was reported that students consume sugary drinks 2-3 times a week (365). 38.5% of the participants consumed energy drinks, sports drinks, smoothies, etc. stated that they do not consume ready-made drink mixes. Considering the most frequent consumption rates of the participants, 15.8% stated that they consume once in 15 days. Park et al. (2015) in the study to determine the change in sugary drink consumption in 4 different regions of the USA; found that two out of three adults (64%) consumed SSB at least once a day, and sweetened coffee/tea was the most commonly consumed sugary beverage among US adults. This is followed by carbonated drinks, fruit juices and energy drinks (363).

23.1% of the participants stated that they did not consume light biscuits, crackers etc. Considering the most frequent consumption rates of the participants, 19.2% stated that they consume once in 15 days. 7.3% of the participants stated that they never consume ketchup, mayonnaise, mustard, etc. Considering the most frequent consumption rates of the participants, 29.7% stated that they consume 1-2 times a week. 13.7% of the participants stated that they never consumed salad dressings. Considering the most frequent consumption rates of the participants, 24.4% stated that they consume 1-2 times a week. 27.1% of the participants stated that they never consumed canned products and instant soups. Considering the most frequent consumption rates of the participants, 17.2% stated that they consume 1-2 times a week. 48.4% of the participants stated that they never consumed sweeteners, chewing gum, etc. In the study of Öztürk (2017) on adult individuals with diabetes, it was determined that only 3% of

individuals use sweeteners (362). Unlike these studies, almost half of the students use sweeteners. However, when we look at the frequency of use, they stated that they consume it at most once a month.

During the COVID-19 pandemic, 45.2%, 47.6%, 56.8% and 46.3% of the participants stated that they increased their consumption of sugar, cocoa hazelnut paste, peanut butter, creamy chocolate, etc., biscuits, wafers, cakes and cookies, etc. and milk desserts respectively. 47.4%, 46.2%, 56.6%, 55.9%, 54.9%, 63.4%, 45.4%, 65.6%, 52.6%, 57.7%, 65.4%, 52.7%, 61%, 63.9%, 67.2%, and 71.6% of the participants stated that their consumption of candy, breakfast cereal, honey, jam, molasses, etc., cake and sorbet desserts, fruit milk and yogurt, etc., ready-made fruit juices, carbonated drinks, mineral water with fruit, soda, etc., ready-made drink mixes, instant packaged coffee and cold coffee, cream-caramel coffee varieties, light biscuits, crackers, etc., ketchup, mayonnaise, mustard, etc. sauces, salad dressings, canned products and instant soups, sweetener, chewing gum, etc. didn't change during COVID-19 pandemic. According to these results, with the life differences brought by the COVID-19 process, students' stress, anxiety, etc. It is thought that emotional changes are effective in increasing the frequency of consumption of foods such as sugar, cocoa hazelnut paste, peanut butter, creamy chocolate, etc., biscuits, wafers, cakes and cookies, etc. and milk desserts. In some studies, it is observed that individuals tend to increase their consumption of high-calorie and high-fat foods when they feel stressed, while there are also studies reporting that individuals' food consumption decreases when they are under stress (199,366). This increase has been attributed in part to the relationship between carbohydrate intake and serotonin brain activity. Because serotonin is a neurotransmitter in the central nervous system that has the capacity to change moods and behaviors such as anxiety, depression and anger (367). According to a survey conducted by Çoşkun (2013), 89 % who took part in the study did not use sweeteners. Similarly, 48.4% of the students in our study said they never use sweeteners, and 71.6 % said their sweetener intake did not change throughout the epidemic. This circumstance can be interpreted as university students prefer sugary foods to sweeteners (368).

The BMI values of the women participating in the study were found to be lower than men ($p=0.001$; $p<0.05$). Dieting value and bulimia and preoccupation values, which are the 2 subscales of EAT-26, didn’t show a statistically significant difference

according to gender (p>0.05). It was found statistically significant that female participants had higher EAT-26 total value and oral control value, which is the other subscale of EAT-26, compared to men (p=0.001; p<0.05). Similarly, in another study conducted with university students, the EAT-26 test values of women were found to be significantly higher than men (369). It was found statistically significant that the negative emotions and situations, positive emotions and situations, and emotional appetite questionnaire total value of the female group were lower than the male group (p=0.001; p<0.05). In the study conducted by Demirel et al. (2014), unlike this study, it was determined that gender did not have a statistically significant effect on EMAQ scores (150). In the study conducted by Nolan et al. (2010) on 232 university students, it was found that male students tended to eat significantly more than female students in positive emotions and situations (350).

BMI values showed a statistically significant difference according to the faculties of students (p=0.002; p<0.05). The BMI value of the dentistry, health sciences and medical faculties group were found to be lower than the other faculties (p=0.001; p<0.05). This is assumed to be attributable to the fact that students in health-related departments have a higher levels of nutrition knowledge and experience than students in other faculties. EAT-26 total value and dieting, bulimia and preoccupation and oral control values did not show a statistically significant difference according to the faculty (p>0.05). The value of negative emotions and states differed statistically significant according to the faculties (p=0.001; p<0.05). The fact that the negative emotions and states values of the dentistry, pharmacy, health sciences and medical faculties group were lower than the other faculties were found to be statistically significant (p=0.001; p<0.05). Positive emotions and states values differed statistically significant according to the faculties (p=0.001; p<0.05). The fact that the positive emotions and states values of the faculty of dentistry group were lower than those of health sciences, medicine and other faculties was found to be statistically significant (p=0.001; p<0.05). The emotional appetite questionnaire total value differed statistically significant according to the faculties (p=0.001; p<0.05). The fact that the total emotional appetite questionnaire value of the dentistry, pharmacy and medical faculty groups was lower than the other groups was found to be statistically significant (p=0.001; p<0.05). This shows that students studying in dental, pharmacy, health sciences and medical faculties have less

emotional eating tendencies, especially in negative emotions and situations, compared to other faculties.

The BMI value of the students didn't show a statistically significant difference according to the people they live with ($p>0.05$). Dieting values of the students differed statistically significant according to the people they live with ($p=0.001$; $p<0.05$). The dieting value of the student group living at home with their family was found to be lower than those living in the dormitory with friends and alone ($p=0.001$; $p<0.05$). Apart from this, it was found that the dieting value of the student group living in the dormitory with their friends was higher than those living at home with their friends ($p=0.001$; $p<0.05$). The bulimia and food preoccupation values of the students ddin't show a statistically significant difference according to the people they live with ($p>0.05$). The oral control values of the students differed statistically significant according to the people they live with ($p=0.005$; $p<0.05$). The oral control value of the student group living at home with their family was found to be lower than those living in the dormitory with friends ($p=0.001$; $p<0.05$). It was found statistically significant that the oral control value of the dormitory group with friends was higher than those of the group staying at home with friends ($p=0.001$; $p<0.05$). The oral control value of the dormitory group with friends was statistically significant compared to those who were alone ($p=0.001$; $p<0.05$). The total value of the eating attitude test showed a statistically significant difference according to the people living with the students ($p=0.001$; $p<0.05$). The eating attitude test value of the student group living at home with their family was found to be lower than those living in the dormitory with friends and alone ($p=0.001$; $p<0.05$). In this study, the level of eating attitudes of those living alone and with friends in the dormitory was found to be higher than those living at home with their family. The negative emotions and situations values and emotional appetite questionnaire total values of the students didn't show a statistically significant difference according to the people they live with ($p>0.05$). On the contrary, the positive emotions and situations values of the students showed a statistically significant difference according to the people they live with ($p=0.001$; $p<0.05$). The positive emotions and situations values of the student group living at home with their family were found to be lower than those living at home with their friends ($p=0.001$; $p<0.05$). The positive emotions and situations values of the student group living at home with friends were higher than those who were alone ($p=0.001$; $p<0.05$). Similar to this study,

in another study conducted with university students, the scores of the students studying in the nutrition and dietetics department of the faculty of health sciences in the negative emotions and situations sub-dimension included in the emotional appetite questionnaire were found to be lower than the students studying in other departments.

BMI value didn't show a statistically significant difference according to the smoking status of the students ($p>0.05$). On the other hand, in the study conducted by Sikorski et al. (2014), it was stated that there was a relationship between smoking and BMI, and it was determined that the BMI of smokers was lower than those of non-smokers (370). In a study by Tian et al. (2014), they stated that those who quit smoking had an increase in body weight (371). Dieting values differed statistically significant according to the smoking status of the students ($p=0.001$; $p<0.05$). The dietary value of the smoking student group was higher than the non-smokers ($p=0.001$; $p<0.05$). According to smoking status, bulimia and food preoccupation and oral control values didn't show a statistically significant difference ($p>0.05$). According to the smoking status of the students, the total value of the eating attitude test showed a statistically significant difference ($p=0.001$; $p<0.05$). The total value of the eating attitude test of the smoking student group was found to be higher than the non-smokers ($p=0.001$; $p<0.05$). Similar to this study, in a study conducted by Makino et al. (2006) with high school students, it was stated that the frequency of eating disorders was higher in smokers than in non-smokers (372). According to the smoking status of the students, the values of negative and positive emotions and situations showed statistically significant differences ($p=0.032$; $p<0.05$). Negative and positive emotions and situations values of the smoking student group were found to be higher than the non-smokers ($p=0.001$; $p<0.05$). According to the smoking status of the students, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.011$; $p<0.05$). The emotional appetite questionnaire total value of the smokers group was higher than the non-smokers ($p=0.001$; $p<0.05$).

When we look at the number of cigarettes that students smoke daily, the BMI value didn't show a statistically significant difference according to the number of cigarettes smoked per day ($p>0.05$). The dieting value of the students according to the number of cigarettes smoked per day showed a statistically significant difference ($p=0.039$; $p<0.05$). The dieting value of the group of students who smoked less than 10

cigarettes was higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$). The dieting value of the student group who smoked 1 pack of cigarettes was found to be higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$). According to the number of cigarettes smoked per day, bulimia and food preoccupation and oral control values did not show a statistically significant difference ($p>0.05$). According to the number of cigarettes smoked per day, the total value of the eating attitude test shows a statistically significant difference ($p=0.019$; $p<0.05$). The eating attitude test values of the groups of students who smoked less than 10 and 1 pack of cigarettes were found to be higher than those who smoked more than 1 pack ($p=0.001$; $p<0.05$). According to the number of cigarettes smoked per day, the values of negative and positive emotions and states and the total value of the emotional appetite questionnaire didn't show a statistically significant difference ($p>0.05$). In parallel with the smoking status of the students, the state of using more cigarettes also showed an increase in the tendency towards eating attitudes, but it did not have a significant effect on the emotional eating tendency.

The BMI value of the students who consumed alcohol was found to be higher than those who did not consume alcohol ($p=0.001$; $p<0.05$). Studies show that individuals who use alcohol have an increased risk of being overweight and obese, and therefore alcohol consumption has an effect on BMI (373,374). Dieting and oral control values of the alcohol user group were found to be higher than those who did not ($p=0.001$; $p<0.05$). Differently, bulimia and food preoccupation values didn't show a statistically significant difference according to alcohol use ($p>0.05$). The eating attitude test value of the students who consumed alcohol was found to be higher than those who did not consume alcohol ($p=0.001$; $p<0.05$). Likewise, the negative and positive emotions and situations, and emotional appetite questionnaire total values of the student group who consumed alcohol were found to be higher than those who did not ($p=0.001$; $p<0.05$).

BMI values differed statistically significant according to the frequency of alcohol use by the students ($p=0.008$; $p<0.05$). The BMI value of the group of students who consumed alcohol 1-2 times a week and 5 or more times a week were found to be higher compared to those who consumed 1-2 times a month ($p=0.001$; $p<0.05$). Dieting, bulimia and food preoccupation, oral control and eating attitude test values did not show

a statistically significant difference according to the alcohol consumption frequency of the students ($p>0.05$). On the other hand, the negative emotions and states values showed a statistically significant difference according to the frequency of alcohol consumption of the students ($p=0.001$; $p<0.05$). In some studies conducted on adolescents, it has been reported that alcohol consumption is higher among those with eating disorder symptoms (375,376). The negative emotions and situations value of the group who consumed alcohol 1-2 times a week and 3-4 times a week were found to be higher compared to those who consumed alcohol 1-2 times a month. Similarly, the values of positive emotions and situations differed statistically significant according to the frequency of alcohol use by the students ($p=0.001$; $p<0.05$). The value of positive emotions and situations of the group who consumed alcohol 1-2 times a week and 3-4 times a week were fount to be higher compared to those who consume alcohol 1-2 times a month ($p=0.001$; $p<0.05$). According to the frequency of alcohol use by the students, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.001$; $p<0.05$). Emotional appetite questionnaire total values of those who consumed alcohol 1-2 times a week and 3-4 times a week were higher than those who consumed alcohol 1-2 times a month ($p=0.001$; $p<0.05$).

BMI values differed statistically significantly according to the number of main meals of the students ($p=0.012$; $p<0.05$). The BMI value of the group consuming 1 main meal was found to be lower than those consuming 2, 3 and 5 main meals ($p=0.001$; $p<0.05$). The BMI values of the groups that consumed 2, 3 and 4 main meals were found to be lower than those who had 5 main meals ($p=0.001$; $p<0.05$). Dieting and food and preoccupation values did not show a statistically significant difference according to the number of main meals ($p>0.05$). On the contrary, the oral control value differs statistically significantly according to the number of main meals of the students ($p=0.001$; $p<0.05$). Oral control values of the group consuming 1 main meal were higher than those consuming 2 and 3 main meals ($p=0.001$; $p<0.05$). The oral control value of the group consuming 2 main meals was found to be higher than those who had 3 main meals ($p=0.001$; $p<0.05$). On the other hand, the oral control value of the group consuming 3 main meals was found to be lower than those consuming 5 main meals ($p=0.001$; $p<0.05$). Eating attitude test value showed statistically significant difference according to the number of main meals ($p=0.015$; $p<0.05$). Eating attitude test value of the group consuming 2 main meals was found to be higher than those consuming 3 main

meals (p=0.001; p<0.05). According to the number of main meals, the value of negative emotions and situations differed statistically significantly (p=0.001; p<0.05). The negative emotions and situations values of the group consuming 1 main meal were found to be lower than those consuming 2 and 3 main meals (p=0.001; p<0.05). On the other hand, negative emotions and situations values of the groups consuming 2 and 3 main meals were found to be higher than those consuming 4 main meals (p=0.001; p<0.05). According to the number of main meals, the value of positive emotions and situations differed statistically significantly (p=0.001; p<0.05). Positive emotions and states values of the group consuming 1 main meal were found to be lower than those consuming 2, 3 and 4 main meals (p=0.001; p<0.05). Similarly, the positive emotions and situations values of the group consuming 2 main meals were found to be lower than those consuming 3 main meals (p=0.001; p<0.05). On the other hand, positive emotions and situations values of the group consuming 3 main meals were found to be higher than those consuming 5 main meals (p=0.001; p<0.05). According to the number of main meals, the total value of the emotional appetite questionnaire showed a statistically significant difference (p=0.001; p<0.05). The emotional appetite questionnaire total value of the group consuming 1 main meal was found to be lower than those consuming 2 and 3 main meals (p=0.001; p<0.05). On the other hand, the emotional appetite questionnaire total value of the groups consuming 2 and 3 main meals was found to be higher than those consuming 4 main meals (p=0.001; p<0.05).

BMI and dieting values of the students didn't show a statistically significant difference according to the number of snacks (p>0.05). Bulimia and food preoccupation values differed statistically significantly according to the number of snacks (p=0.006; p<0.05). The bulimia and food preoccupation values of the group consuming 1, 2 and 3 snacks were found to be lower than those who consumed 4 snacks (p=0.001; p<0.05). Oral control value differed statistically significantly according to the number of snacks (p=0.001; p<0.05). The oral control value of the group consuming 1 snack was found to be higher than those consuming 2 and 3 snacks (p=0.001; p<0.05). Similarly, the oral control value of the group that consumed 2 snacks was found to be higher than the group that had 3 snacks (p=0.001; p<0.05). Likewise, the value of the eating attitude test showed a statistically significant difference according to the number of snacks (p=0.012; p<0.05). The eating attitude test value of the group consuming 1 and 2 snacks was found to be higher than those consuming 3 snacks (p=0.001; p<0.05). On the other

hand, the eating attitude test value of the group consuming 3 snacks was found to be lower than those consuming 4 snacks ($p=0.001$; $p<0.05$). Negative and positive emotions and situations and emotional appetite questionnaire values did not show a statistically significant difference according to the number of snacks ($p>0.05$).

The BMI value didn't show a statistically significant difference according to the frequency of students eating out ($p>0.05$). Dieting, oral control and eating attitude test values didn't show a statistically significant difference according to the frequency of eating outside the home ($p>0.05$). However, bulimia and food preoccupation values showed a statistically significant difference according to the frequency of eating outside the home ($p=0.001$; $p<0.05$). The bulimia and food preoccupation value of the group who ate out every day was higher than those who ate 4-6 times a week, 1-3 times a week, and 2-3 times a month ($p=0.001$; $p<0.05$). According to the frequency of eating outside the home, the value of negative emotions and situations showed a statistically significant difference ($p=0.005$; $p<0.05$). The negative emotions and situations values of the group who ate out every day were lower than those who ate 4-6 times a week ($p=0.001$; $p<0.05$). In a different direction, the negative emotions and situations values of the group who ate out 4-6 times a week were found to be higher than those who ate out 2-3 times a month ($p=0.001$; $p<0.05$). Similarly, the negative emotions and situations values of the group who ate out 1-3 times a week were higher than those who ate out 2-3 times a month ($p=0.001$; $p<0.05$). According to the frequency of eating outside the home, the value of positive emotions and situations showed a statistically significant difference ($p=0.027$; $p<0.05$). The positive emotions and situations values of the group who ate out every day were found to be lower than those who ate 4-6 times a week and 1-3 times a week ($p=0.001$; $p<0.05$). On the contrary, the positive emotions and situations values of the groups who ate out 4-6 times a week and 1-3 times a week were higher than those who ate out 2-3 times a month ($p=0.001$; $p<0.05$). According to the frequency of eating outside the home, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.003$; $p<0.05$). The emotional appetite questionnaire total value of the everyday group was found to be lower than those who ate 4-6 times a week and 1-3 times a week ($p=0.001$; $p<0.05$). On the other hand, the emotional appetite questionnaire total values of the groups who ate out 4-6 times a week and 1-3 times a week were higher than those who ate 2-3 times a month ($p=0.001$; $p<0.05$).

The BMI values of the students didn't show a statistically significant difference according to the meal consumed outside ($p>0.05$). Dieting value differed statistically significant according to the meal consumed outside ($p=0.021$; $p<0.05$). The dieting value of the group who had breakfast outside was found to be higher than those who consumed lunch and snacks ($p=0.001$; $p<0.05$). The dieting value of the lunch group was found to be lower than those who consumed dinner ($p=0.001$; $p<0.05$). According to the meal consumed outside, bulimia and food preoccupation and oral control values didn't show a statistically significant difference ($p>0.05$). Eating attitude test value showed statistically significant difference according to the meal consumed outside ($p=0.044$; $p<0.05$). The eating attitude test value of the breakfast group was found to be higher than those who consumed lunch ($p=0.001$; $p<0.05$). The eating attitude test value of the lunch group was found to be lower than those who had dinner, which was statistically significant ($p=0.001$; $p<0.05$). According to the meal consumed outside, the value of negative emotions and situations showed a statistically significant difference ($p=0.046$; $p<0.05$). The negative emotions and situations values of the dinner group were higher than those who consumed lunch ($p=0.001$; $p<0.05$). According to the meal consumed outside, the value of positive emotions and situations didn't show a statistically significant difference ($p>0.05$). The emotional appetite questionnaire total value differed statistically significantly according to the meal consumed outside ($p=0.043$; $p<0.05$). Emotional appetite questionnaire total value of the dinner group was higher than those who had lunch ($p=0.001$; $p<0.05$).

The BMI value of the students didn't show a statistically significant difference according to the types of food consumed outside ($p>0.05$). Dieting, oral control and eating attitude test values didn't differ statistically according to the type of food consumed outside ($p>0.05$). Bulimia and food preoccupation values differed statistically significantly according to the type of food consumed outside ($p=0.003$; $p<0.05$). The bulimia and food preoccupation value of the group who preferred fast food was found to be lower than those who consumed kebab types ($p=0.001$; $p<0.05$). The bulimia and food preoccupation values of the groups who preferred fast food, kebab types and grilled varieties were found to be higher than those who consumed home-cooked meals ($p=0.001$; $p<0.05$). At the same time, the bulimia and food preoccupation value of the home cooking group was found to be lower than those who consumed salad varieties

(p=0.001; p<0.05). According to the type of food consumed outside, the value of negative emotions and situations didn't show a statistically significant difference (p>0.05). According to the type of food consumed outside, the values of positive emotions and situations differed statistically significantly (p=0.038; p<0.05). The positive emotions and situations values of the groups consuming fast food and grilled varieties were found to be higher than those consuming salad varieties (p=0.001; p<0.05). Positive emotions and situations values of the home cooking group were found to be higher than those who consumed kebab and salad varieties (p=0.001; p<0.05). According to the type of food consumed outside, the total value of the emotional appetite questionnaire didn't show a statistically significant difference (p>0.05).

BMI value did not show a statistically significant difference according to meal skipping status (p>0.05). Dieting, oral control and eating attitude test values of the students who skipped meals were found to be higher than those who did not skip meals (p=0.001; p<0.05). In another study, similar to this study, it was found that the most frequently skipped main meal by adolescents was breakfast. It was determined that nearly half (47.2%) of the adolescents participating in the study had an "Eating Attitude Test-26" score of 20 and above. This shows that adolescents are at risk for eating disorders (377). In the study of Makino et al. (2006), it was reported that those who scored ≥20 on the EAT-26 test had more irregular meal consumption habits compared to those who scored <20 (372). However, bulimia and food preoccupation values didn't show a statistically significant difference according to meal skipping status (p>0.05). Similarly, the sum values of negative and positive emotions and situations and emotional appetite questionnaire didn't show a statistically significant difference according to meal skipping status (p>0.05).

The BMI value of the students who were busy with other tasks while consuming their meals was found to be higher than those who did not (p=0.001; p<0.05). Eating attitude test total and sub-score values didn't show a statistically significant difference (p>0.05). On the contrary, negative and positive emotions and situations, and emotional appetite questionnaire total values of the student group who were busy with other tasks while consuming their meals were found to be higher than those who did not (p=0.001; p<0.05).

BMI value differed statistically significantly according to meal consumption speed ($p=0.001$; $p<0.05$). The BMI value of the slow eater group was found to be lower than those who ate moderate, fast and very fast ($p=0.001$; $p<0.05$). In support of this, the BMI value of the group who ate moderately was found to be lower than those who ate fast and very fast ($p=0.001$; $p<0.05$). Dieting value showed statistically significant difference according to meal consumption speed ($p=0.003$; $p<0.05$). The dieting value of the slow eater group was found to be lower than those who ate moderate and fast ($p=0.001$; $p<0.05$). In support of this, the dieting value of the group that ate at a moderate rate was found to be lower than those who consume fast ($p=0.001$; $p<0.05$). Bulimia and food preoccupation values differed statistically significant according to meal consumption rate ($p=0.001$; $p<0.05$). The bulimia and food preoccupation value of the group who ate slowly was lower than those who ate very quickly ($p=0.001$; $p<0.05$). The bulimia and food preoccupation value of the group who ate moderately was lower than those who ate fast and very fast ($p=0.001$; $p<0.05$). Oral control value also showed a statistically significant difference according to meal consumption rate ($p=0.001$; $p<0.05$). The oral control value of the slow eaters group was found to be higher than the moderate, fast and very fast eaters ($p=0.001$; $p<0.05$). In support of this, the oral control value of the group who ate at a moderate speed was found to be statistically significant compared to those who eat fast ($p=0.001$; $p<0.05$). Eating attitude test value didn't show a statistically significant difference according to meal consumption speed ($p>0.05$). Negative emotions and situations values differed statistically significant according to meal consumption speed ($p=0.001$; $p<0.05$). The negative emotions and situations values of the slow eater group were found to be lower than those who consumed moderately and fast ($p=0.001$; $p<0.05$). On the contrary, the negative emotions and situations values of the group who ate at a moderate speed were found to be higher than those who ate fast ($p=0.001$; $p<0.05$). Positive emotions and situations values differed statistically significant according to meal consumption speed ($p=0.003$; $p<0.05$). Positive emotions and situations values of the slow eaters group were found to be lower than the moderate and fast eaters ($p=0.001$; $p<0.05$). Emotional appetite questionnaire total value differed statistically significant according to meal consumption speed ($p=0.001$; $p<0.05$). The emotional appetite questionnaire total value of the slow eaters group was found to be lower than the moderate and fast eaters ($p=0.001$; $p<0.05$). In support of this, the emotional appetite questionnaire total value of the moderate eaters group was found to be lower than the fast eaters ($p=0.001$; $p<0.05$).

BMI value showed statistically significant difference according to the change in the number of meals of the students during the COVID-19 pandemic ($p=0.001$; $p<0.05$). The BMI value of the group who said that the number of meals increased was found to be higher than those who said that it decreased and did not change ($p=0.001$; $p<0.05$). Dieting value showed a statistically significant difference according to the change in the number of meals during the pandemic process ($p=0.011$; $p<0.05$). The dieting value of the group who stated that the number of meals increased was found to be higher than those who said that it decreased and did not change ($p=0.001$; $p<0.05$). On the contrary, bulimia and food preoccupation value didn't show a statistically significant difference according to the change in the number of meals ($p>0.05$). According to the change in the number of meals of the students, the oral control value showed a statistically significant difference ($p=0.005$; $p<0.05$). The oral control value of the group who stated that the number of meals increased was found to be lower than those who said that it decreased and did not change ($p=0.001$; $p<0.05$). The total value of the eating attitude test didn't show a statistically significant difference according to the change in the number of meals during the pandemic process ($p>0.05$). According to the change in the number of meals during the pandemic process, the values of positive and negative emotions and situations showed statistically significant differences ($p=0.001$; $p<0.05$). The negative and positive emotions and situations values of the group who stated that the number of meals increased was found to be higher than those who stated that they decreased and did not change ($p=0.001$; $p<0.05$). At the same time, the positive emotions and situations values of the group who stated that the number of meals decreased was found to be lower than those who said that the number of meals did not change ($p=0.001$; $p<0.05$). According to the change in the number of meals, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.001$; $p<0.05$). The emotional appetite questionnaire total value of the group who said that the number of meals increased during the pandemic process was found to be higher than those who said that it decreased and did not change ($p=0.001$; $p<0.05$).

BMI value showed a statistically significant difference according to weight change during the COVID-19 process ($p=0.001$; $p<0.05$). The BMI value of the group who gained weight was higher than those who lost weight and those who did not change

(p=0.001; p<0.05). Dieting value showed statistically significant difference according to weight change during the COVID-19 process (p=0.001; p<0.05). The dieting value of the weight gain group was found to be higher than those who lost weight and those who did not change (p=0.001; p<0.05). In addition, the dieting value of the group who lost weight was higher than those who did not change (p=0.001; p<0.05). Bulimia and food preoccupation values didn't show a statistically significant difference according to weight change during the COVID-19 process (p>0.05). Oral control value shows statistically significant difference according to weight change (p=0.001; p<0.05). The oral control value of the weight gain group was found to be lower than those who lost weight and those who did not (p=0.001; p<0.05). Eating attitude test value showed statistically significant difference according to weight change during the COVID-19 process (p=0.004; p<0.05). Eating attitude test total values of both weight gain and weight loss groups were higher than those without change (p=0.001; p<0.05). The value of negative emotions and situations according to weight change during the COVID-19 process showed a statistically significant difference (p=0.001; p<0.05). The negative emotions and situations values of the weight gain group were higher than those who lost weight and those who did not (p=0.001; p<0.05). Similarly, the values of positive emotions and situations differed statistically significantly according to weight change (p=0.001; p<0.05). Positive emotions and situations values of the weight gain group were found to be higher than those who lost weight and those without change (p=0.001; p<0.05). Emotional appetite survey total value showed statistically significant difference according to weight change in the COVID-19 process (p=0.001; p<0.05). The emotional appetite questionnaire total value of the weight gain group was higher than those who lost weight and those without change (p=0.001; p<0.05). It is thought that as a result of the increase in the number of meals and snacking rates due to stress during the quarantine period, nutritional habits have changed, and this situation causes weight gain. Supporting these results, Daly and Robinson (2021) observed that 56% of individuals have a more frequent snacking habit during the COVID-19 process (378). In this case, it is thought to be associated with weight gain. Di Renzo et al. (2020) conducted a study to determine the change in the eating habits of individuals as the COVID-19 epidemic increased the duration of stay at home in Italy. This study was conducted with 3533 individuals between the ages of 12-86 on an online environment. More than half of the participants stated that there were significant changes in their feelings of hunger and fullness, and about 34% stated that their appetite increased.

Accordingly, 40% of the participants experienced a slight weight gain during the COVID-19 process, while an 8% excess weight gain was observed (379). Carducci et al. (2021), on the other hand, stated that the eating habits of individuals who stay indoors for a long time may change and this may significantly increase their appetite-related weight gain (380).

The BMI value of the group of students who regularly engaged in physical activity was found to be lower than those who did not ($p=0.001$; $p<0.05$). The value of EAT-26 and its subscores and emotional appetite questionnaire and its subscores did not show a statistically significant difference according to regular physical activity ($p>0.05$). In a study conducted by Ünalan et al. (2009), it was observed that the rate of eating disorders is higher in individuals who regularly do sports (381). In another study, positive emotions and situations showed a significant difference compared to regular exercise, while other subscores did not show any difference. Those who do not exercise regularly have significantly higher scores on positive emotions and situations than those who exercise regularly (382).

In the evaluation of students according to the frequency of physical activity, their BMI values didn't show a statistically significant difference ($p>0.05$). Likewise, dieting, bulimia and food preoccupation and eating attitude test total values didn't show a statistically significant difference according to the physical activity frequency of the students ($p>0.05$). The oral control value differed statistically significant according to the frequency of physical activity ($p=0.042$; $p<0.05$). The oral control values of the student groups who did physical activity every day, at least 3 days a week and 1-2 days a week were found to be higher than those who did 1-2 days a month ($p=0.001$; $p<0.05$). According to the physical activity frequency of the students, the values of negative emotions and situations showed a statistically significant difference ($p=0.02$; $p<0.05$). The negative emotions and situations values of those who did physical activity at least 3 days a week were found to be lower than those who did 1-2 days a week ($p=0.001$; $p<0.05$). Similarly, the values of positive emotions and situations differed statistically significant according to the physical activity frequency of the students ($p=0.032$; $p<0.05$). The values of positive emotions and situations of the groups who did physical activity every day of the week and at least 3 times a week were found to be lower than those who did 1-2 days a month ($p=0.001$; $p<0.05$). According to the physical activity

frequency of the students, the total value of the emotional appetite questionnaire showed a statistically significant difference ($p=0.023$; $p<0.05$). It was found that the emotional appetite questionnaire total value of those who did physical activity at least 3 days a week was lower than those who did 1-2 days a week ($p=0.001$; $p<0.05$).

When the daily sleep duration of the students was examined, their BMI values did not show a statistically significant difference ($p>0.05$). Total values of dieting, oral control and eating attitude tests did not show a statistically significant difference according to the daily sleep duration of the students ($p>0.05$). According to the results obtained from another study, it has been determined that the sleep quality of the majority of university students is bad, and a substantial portion of them is at risk for eating disorders, and this situation is effective in the student's sleep during the lesson (383). Bulimia and food preoccupation values differed statistically significant according to daily sleep duration ($p=0.002$; $p<0.05$). The bulimia and food preoccupation values of the student groups who slept less than 6 hours and more than 10 hours were found to be higher than those who slept for 6-8 hours ($p=0.001$; $p<0.05$). The bulimia and food preoccupation values of the student groups who slept less than 6 hours and slept 8-10 hours were found to be lower than those who slept for 10 hours or more ($p=0.001$; $p<0.05$). According to the daily sleep duration of the students, the values of negative emotions and situations showed a statistically significant difference ($p=0.045$; $p<0.05$). Negative emotions and situations values of students who slept less than 6 hours were found to be lower than those who slept for 6-8 hours ($p=0.001$; $p<0.05$). Positive emotions and situations values differed statistically significant according to daily sleep duration ($p=0.001$; $p<0.05$). The positive emotions and situations values of the student group who slept less than 6 hours were found to be lower than the groups that slept for 6-8 hours and 8-10 hours ($p=0.001$; $p<0.05$). Similarly, the emotional appetite questionnaire total value differed statistically significant according to the daily sleep duration of the students ($p=0.015$; $p<0.05$). It was found that the emotional appetite questionnaire total value of the student group who slept less than 6 hours was lower than those who slept for 6-8 hours and 8-10 hours ($p=0.001$; $p<0.05$).

According to the results of the correlation analysis, there is a positive and very weak relationship was found between dieting, which is one of the sub-scores of the eating attitude test, and negative emotions and situations, which is one of the sub-scores

of emotional appetite (r=.197, p<0.01), and there is a very weak positive relationship between dieting and the total of score of emotional appetite questionnaire (r =.177, p<0.01). There was no statistically significant relationship between dieting and positive emotions and situations (p>0.05). There was no statistically significant relationship between bulimia and food preoccupation, which is one of the sub-scores of the eating attitude test, and negative emotions and situations, positive emotions and situations, and emotional appetite questionnaire (p>0.05). There is a very weak negative relationship was found between (r=-.177, p<0.01) oral control and negative emotions and situations, which is one of the sub-scores of the eating attitude test, and very weak negative relationship was found between oral control and positive emotions and situations (r=-. 134, p<0.01), and a very weak negative correlation was found between oral control and total score of emotional appetite questionnaire (r=-.172, p<0.01). There is a very weak positive correlation was found between the eating attitude test total score and one of the sub-scores of the emotional appetite scale, negative emotions and situations (r=,100, p<0.05). There is a very weak positive correlation was found between the eating attitude test total score and the emotional appetite questionnaire (r=.089, p<0.05). There was no statistically significant relationship between the total score of the eating attitude test and positive emotions and states (p>0.05).

As a result of a study evaluating the eating attitude test to investigate the validity of the emotional appetite questionnaire, a negative significant relationship was found between the negative emotions and situations averages of the emotional appetite questionnaire and the total average points of the eating attitude test. It was concluded that in such clinical situations where the total scores of the eating attitude test increase, the decrease in the negative emotions and situations sub-score of the emotional appetite questionnaire indicates that both scales can measure the same feature and as a result, the eating behavior decreases. In the same study, positive and significant correlations were found between the mean scores of the eating attitude test and the positive emotions and situations sub-scores of the emotional appetite questionnaire (152). In this study, unlike these results, it was observed that with the increase in the total scores of the eating attitude test, the mean scores of the negative emotions and situations sub-scores of the emotional appetite questionnaire also increased. Although the eating attitude test is generally used as an auxiliary tool in diagnosing AN and BN, it can also be used as an aid in defining eating behavior in people who do not have ED (348). As we mentioned

before, according to the basic theory explaining eating behavior, individuals use eating as an emotional defense mechanism when they encounter distressing situations and cope with the distressed situation in this way (23). In addition, it has been observed that negative emotions such as stress, depression, anxiety and anger impair the eating attitudes of individuals by increasing food consumption (24). When we look at the relationship between the mean scores of the eating attitude test and the positive emotions and situations sub-scores of the emotional appetite questionnaire in our study, no significant relationship was found, unlike this study. In the light of this information, it is thought that it is important to detect eating disorders, which are increasing gradually, in university students, who are especially sensitive in this respect, and to take the necessary precautions.

6. CONCLUSIONS

According to the results of the study, the mean of the eating attitude test with a cut-off score of ≥ 20 was found to be 13.09±7.69 in the students. Correspondingly, while the majority of the students showed a healthy eating attitude, 15.6% were found to be prone to eating disorders by getting 20 points or more. And 55.9% of the students stated that their eating attitude test scores increased during the COVID-19 pandemic period compared to the pre-pandemic period.

Eating attitude test scores according to the demographic information, nutritional habits, physical activity and sleep status of the students, there were differences in gender, accommodation status, smoking status and the number of cigarettes smoked per day, alcohol consumption status, number of main meals and snacks, meal preferred out, meal skipping, and weight change during the COVID-19 period. According to these differentiations, the eating attitude test scores were found to be higher in women, those stayed in the dormitory with their friends, smokers and those who smoked less than 10 cigarettes a day, those who used alcohol, those who consumed 4 main meals, those who consumed 4 snacks, those who preferred to have breakfast out, those who skipped meals, and those who stated that they gained weight during the COVID-19 process.

When we examine the 3 sub-scores of the eating attitude test, the dieting sub-scores of the students, differed according to accommodation status, smoking status and the number of cigarettes smoked per day, alcohol consumption status, meal preferred out, skipping meals, meal consumption speed, change in the consumption of the number of meals and change in weight during COVID-19 period status. According to these differentiations, dieting subscores were found to be higher in those stayed in the dormitory with their friends, smokers and those who smoked less than 10 cigarettes a day, those who used alcohol, those who preferred to have breakfast out, those who skipped meals, those who stated that they consume their meals fast, and those who stated that they gained weight and increased the number of meals during the COVID-19 process.

The bulimia and preoccupation sub-scores of the students differed according to the number of snacks, the frequency of eating out, the type of food consumed, the speed of food consumption and the duration of sleep. According to these differentiations, bulumia and food preoccupation sub-scores were found to be higher in those who consumed 4 snacks a day, those who ate out everyday, those who preferred salad varieties out, those who stated that they consume their meals very fast and those who slept more than 10 hours.

The oral control sub-scores of the students differed according to gender, accommodation, alcohol consumption, number of main meals and snacks, meal preferred out, meal skipping, meal consumption speed, frequency of physical activity, change of the number of meals and change in weight during COVID-19 period status. According to these differentiations, oral control sub-scores were found to be higher in women, those who stayed in the dormitory with their friends, those who used alcohol, those who consumed 4 main meals a day, those who consumed 4 snacks a day, those who skipped meals, those who stated that they consume their meals slow, those who did physical activity everyday, those who stated that they lost weight and decreased the number of meals during the COVID-19 process.

When we look at the values of the emotional appetite questionnaire and its sub-scores, they range from 1 to 9, the average of the negative emotions and situations values of the students is 4.85±1.72, the average of the positive emotions and situations values is 5.08±1.37, and the total value of the emotional appetite questionnaire is 4.94±1.46. According to these findings, students tend to eat less in negative emotions and situations, and they tend to eat more in positive emotions and situations. And 49.6% of students stated that their emotions and situations scores during the COVID-19 pandemic period increased compared to the pre-pandemic period. In other words, almost half of the students stated that their appetite increased during the pandemic, depending on the emotions and situations they experienced. In parallel with this situation, during the COVID-19 period, 47.3% of the students stated that the number of meals they consumed increased and 64.7% stated that they gained weight.

Emotional appetite questionnaire scores according to the demographic information, nutritional habits, physical activity and sleep status of the students, there were differences in gender, faculties studied, smoking status, alcohol consumption status and the frequency of alcohol intake, chronic disease status, number of main meals, frequency of eating out, meal preffered out, busy with other activities while eating, meal consumption speed, change in number of meals and weight during COVID-19 period and frequency of physical activity and sleep duration status. According to these differentiations, emotional appetite questionnaire scores were found to be higher in men, those studying in faculties not related to the field of health, smokers, those who used alcohol and used it 3-4 times a week, those who don't have chronic diseases, those who consumed 3 main meals, those who ate out 4-6 times a week, those who preferred dinner out, those who were busy with other activities while eating, those who consumed their meals fast, those who increased the number of meals and gained weight during COVID-19 process, those who did physical activity 1-2 times a week and those who slept 6-8 hours a day.

When we analyzed the results of the 2 sub-scores of the emotional appetite questionnaire, the negative emotions and situations sub-scores showed differences in the same statuses (except for chronic disease status) of the students in the same way as the emotional appetite questionnaire total scores. On the other hand, the positive emotions and situations sub-scores of the students, in addition to the situations that affect the negative emotions and situations scores, also differed in the statuses of the students' accommodation, chronic disease, and the type of food consumed out, but did not differ according to the meals preferred outside. According to these differentiations, positive emotions and situations sub-scores were found to be higher in men, those studying in faculties not related to the field of health, those who stayed home with their friends, smokers, those who used alcohol and used it 3-4 times a week, those who have no chronic diseases, those who consumed 3 main meals, those who ate out 1-3 times a week, those who preferred home-cooked meals out, those who were busy with other activities while eating, those who consumed their meals fast, those who increased the number of meals and gained weight during COVID-19 process, those who did physical activity 1-2 times a week and those who slept more than 10 hours a day.

In the light of these data, the eating attitudes and emotional eating tendencies of university students who transition to a new life order and try to adapt to a different order during the COVID-19 period are influenced and shaped by their socio-demographic characteristics, nutritional habits, physical activity and sleep status differences. When we look at the limitations of the study, there is no homogeneous distribution between students who are prone to eating disorders and those who are not. For this reason, it can be recommended that an equal number of groups should be formed in order to more clearly determine the changes in the eating attitude test scores according to the socio-demographic, nutritional habits, physical activity and sleep status differences between the 2 groups and to more clearly see the emotional eating tendency in groups with and without eating disorders. In addition, taking a long time to answer the scale questions due to the length of the scales may be a limitation in terms of distraction of the participants and reliability of their answers.

As a result of this study, a weakly positive and significant correlation was found between the eating attitude test scores, its dieting sub-score, and the emotional appetite questionnaire, its negative emotions and situations sub-score. As their output, it has been observed that an increase in the tendency to eat in negative emotions and situations increases the risk of developing eating disorders. As a different result compared to dieting sub-score of the eating attitude test, there was a weak negative and significant correlation between the oral control sub-score, and the emotional appetite questionnaire and its sub-scores. As an outcome, in this study, it was found that the increase in the oral control sub-scores, which includes questions about restriction and control of food intake, was associated with a decrease in emotional eating tendency. In other studies in the literature, eating in response to emotion has been found to be associated with binge eating disorder and bulimia nervosa, apart from obesity (384–386). Emotional eating has also been recommended as a useful tool for detecting eating disorders in non-clinical samples (206).

One of the few points that can be suggested for future studies is to shorten the questions and consequently to remove the scales of the variables that are not found to be relevant. More studies are needed in our country and in the world to evaluate the relationship between abnormal eating attitudes and emotional eating tendencies in a more comprehensive way. Further studies on the relationship between EAT and EMAQ

are important in terms of early detection of individuals with ED predisposition and taking necessary precautions early.

In line with these results, it is thought that it is necessary to conduct more studies on the factors that will make a difference in the eating attitudes and emotional eating tendencies of university students, and to provide more education on healthy eating behavior to individuals in this sensitive process where eating behaviors change.

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8. APPENDIXES

8.1 Appendix 1 (Informed Consent Form)

BİLGİLENDİRİLMİŞ GÖNÜLLÜ OLUR FORMU

ÇALIŞMANIN ADI: COVID-19 Pandemisi Sürecinde Üniversite Öğrencilerinin Yeme Tutum ile Duygusal Yeme Eğilimlerinin Şekerli Besin Tüketim Sıklığıyla İlişkisi

Aşağıda bilgileri yer almakta olan bir araştırma çalışmasına katılmanız istenmektedir. Çalışmaya katılıp katılmama kararı tamamen size aittir. Katılmak isteyip istemediğinize karar vermeden önce araştırmanın neden yapıldığını, bilgilerinizin nasıl kullanılacağını, çalışmanın neleri içerdiğini, olası yararları ve risklerini ya da rahatsızlık verebilecek yönlerini anlamanız önemlidir. Lütfen aşağıdaki bilgileri dikkatlice okumak için zaman ayırınız. Eğer çalışmaya katılma kararı verirseniz, ***Çalışmaya Katılma Onayı*** *Formu'nu imzalayınız. Çalışmadan herhangi bir zamanda ayrılmakta özgürsünüz. Çalışmaya katıldığınız için size herhangi bir ödeme yapılmayacak ya da sizden herhangi bir maddi katkı/malzeme katkısı istenmeyecektir.*

ÇALIŞMANIN KONUSU VE AMACI: Bu çalışma, COVID-19 pandemi döneminde uygulanmaya başlanan kısıtlamalar ile evden online eğitim alan Yeditepe Üniversite'si öğrencilerinin yeme tutum ile duygusal yeme eğilimlerinin şekerli besin tüketim sıklığına olan etkisini incelemek amacıyla oluşturulmuştur. Çalışmanın, sadece Yeditepe Üniversite'sinden 400 lisans öğrencisine yapılması planlanmıştır.

ÇALIŞMA İŞLEMLERİ: Araştırmaya katılan gönüllülerin anket formu ile yeme tutum ve duygusal iştah testlerine doğru cevapları vermek ve besin tüketim sıklığını doğru bir şekilde doldurmak dışında bir sorumluluğu bulunmamaktadır. Araştırma nedeniyle ortaya çıkabilecek herhangi bir zarar/risk bulunmamaktadır.

ÇALIŞMADA YER ALMAMIN YARARLARI NELERDİR?

Bu araştırma yalnızca bilimsel amaçlıdır. COVID-19 pandemi döneminde uygulanmaya başlanan kısıtlamalar ile evden online eğitim alan öğrencilerin yeme tutum ile duygusal yeme eğilimlerinin şekerli besin tüketim sıklığına olan etkisini incelemek amacıyla oluşturulmuştur. Böylece tez çalışmasından sağlanan sonuçlar ile pandemi sürecinin getirmiş olduğu stres gibi olumsuz duygu değişimleriyle ortaya çıkabilen veya artış gösterebilen duygusal yeme eğilimi ve yeme bozukluğuna yatkınlık durumlarının üniversite öğrencilerinde yaygınlığının saptanmasında ve şekerli besin tüketimiyle artış gösterebilecek birçok kronik hastalığa yol açabilecek bir hastalık durumunun yaygınlık ve risk oranı tespitine yardımcı olması böylece gerekli bilimsel önlemlere ışık tutacak bir çalışma olması beklenmektedir.

BU ÇALIŞMAYA KATILMAMIN MALİYETİ NEDİR?

Çalışmaya katılmakla parasal yük altına girmeyeceksiniz ve size de herhangi bir ödeme yapılmayacaktır. ÇALIŞMAYA KATILMALI MIYIM? Bu çalışmada yer alıp almamak tamamen size bağlıdır. Şu anda bu formu imzalasanız bile istediğiniz herhangi bir zamanda bir neden göstermeksizin çalışmayı bırakmakta özgürsünüz. Çalışmaya katılım gönüllülük esasına dayalıdır. Araştırma hakkında tam olarak bilgilendirildikten sonra, kararınızı özgürce verebilir ve düşünebilirsiniz. Kararınız ne olursa olsun, araştırmacılar sizin tam sağlık halinizin sağlanmasına ve korunmasına yönelik görevlerini bundan sonra da eksiksiz yapacaklardır.

KİŞİSEL BİLGİLERİM NASIL KULLANILACAK?

Çalışmanın araştırıcısı kişisel bilgilerinizi, araştırmayı ve istatiksel analizleri yürütmek için kullanacaktır ve her türlü bilginiz gizli tutulacaktır. Yalnızca gereği halinde, sizinle ilgili bilgileri etik kurullar ya da resmi makamlar inceleyebilir. Çalışmanın sonunda, kendi sonuçlarınızla ilgili bilgi istemeye hakkınız vardır. Çalışma sonuçları çalışma bitiminde tıbbi literatürde yayınlanabilecektir ancak kimliğiniz açıklanmayacaktır.

SORU VE PROBLEMLER İÇİN BAŞVURULACAK KİŞİLER:

ADI: Ece ERCİYAS

GÖREVİ: Yardımcı Araştırmacı

TELEFON: [redacted]

ÇALIŞMAYA KATILMA ONAYI

Yukarıdaki bilgileri ilgili araştırmacı ile ayrıntılı olarak tartıştım ve kendisi bütün sorularımı cevapladı. Bu bilgilendirilmiş olur belgesini okudum ve anladım. Bu araştırmaya katılmayı kabul ediyor ve bu onay belgesini kendi hür irademle imzalıyorum. Bu onay, ilgili hiçbir kanun ve yönetmeliği geçersiz kılmaz. Araştırmacı, saklamam için bu belgenin bir kopyasını çalışma sırasında dikkat edeceğim noktaları da içerecek şekilde bana teslim etmiştir.

Gönüllü Adı Soyadı:		*Tarih ve İmza:*
Telefon:		

8.2 Appendix 2 (Scales)

I. GENEL BİLGİLER

1) Yaşınız:.....(yıl)
2) Cinsiyetiniz:
    1. Kadın
    2. Erkek
3) Hangi bölümde okuyorsunuz? .....
4) Kimlerle birlikte yaşıyorsunuz?
    1. Aileyle birlikte evde
    2. Arkadaşlarla birlikte yurtta
    3. Arkadaşlarla birlikte evde
    4. Yalnız
5) Sigara içiyor musunuz?
    1. Evet
    2. Hayır
    3. Bıraktım
6) 5. Soruya cevabınız “Evet” ise günde kaç adet sigara içiyorsunuz?
    1. Günde 10 adetten az
    2. Günde 1 paket
    3. Günde 1 paketten fazla
7) Alkollü içecek tüketme alışkanlığınız var mı?
    1. Evet
    2. Hayır
8) 6. Soruya cevabınız “Evet” ise tüketme sıklığınız nedir?
    1. Haftada 1-2 kez
    2. Haftada 3-4 kez
    3. Haftada 5 kez ve üstü
    4. Ayda 1-2 kez
9) Hekim tarafından tanısı konulmuş kronik bir hastalığınız/hastalıklarınız var mı?
    1. Evet
    2. Hayır
10) 8. Soruya cevabınız “Evet” ise bu hastalık/ hastalıklar nedir? .....
11) Düzenli olarak fiziksel aktivite yapıyor musunuz?
    1. Evet
    2. Hayır
12) 10. Soruya cevabınız “Evet” ise ne kadar sıklıkta fiziksel aktivite yapıyorsunuz?
    1. Hergün
    2. Haftada en az 3 gün
    3. Haftada 1-2 gün
    4. Ayda 1-2 gün
13) Günde ortalama uyku süreniz kaç saattir?
    1. <6 saat
    2. 6-8 saat
    3. 8-10 saat
    4. ≥10 saat

II. BESLENME ALIŞKANLIKLARI

1) Gün içerisinde kaç öğün tüketiyorsunuz? (Örneğin 3 ana 3 ara öğün) .....
2) Covid-19 salgını öncesine göre öğün sayınız nasıl değişti?
    1. Pandemi öncesine göre arttı
    2. Pandemi öncesine göre azaldı
    3. Değişmedi
3) Gün içerisinde öğün atlar mısınız?
    1. Evet
    2. Hayır
4) 16. soruya cevabınız "Evet" ise hangi öğün/öğünleri atlarsınız? (Birden fazla seçeneği işaretleyebilirsiniz.)
    1. Sabah
    2. Kuşluk
    3. Öğle
    4. İkindi
    5. Akşam
    6. Gece
5) 16.soruya cevabınız "Evet" ise öğün atlama sebebiniz nedir?
    1. Zaman bulamama
    2. Hazırlayanın olmaması
    3. Sabahları uyanamama
    4. İştahsızlık
    5. Zayıflamak için
    6. Ekonomik olanakların yetersizliği
    7. Diğer (Belirtiniz).....
6) Ev dışında/dışından hangi sıklıkta yemek yersiniz?
    1. Hergün
    2. Haftada 4-6 kez
    3. Haftada 1-3 kez
    4. Ayda 2-3 kez
    5. Ayda 2'den az
7) Daha çok hangi öğün veya öğünleri dışarıda/dışarıdan yiyorsunuz?
    1. Sabah kahvaltısı
    2. Öğle yemeği
    3. Akşam yemeği
    4. Ara öğünler
8) Dışarıda/ dışarıdan yediğinizde genellikle ne tür yiyecekler tercih ediyorsunuz?
    1. Fast-food
    2. Kebap türleri
    3. Izgara çeşitleri
    4. Ev yemekleri
    5. Salata çeşitleri
9) Öğünlerinizi tüketirken televizyon izlemek, müzik dinlemek, kitap okumak gibi başka işlerle meşgul olur musunuz?
    1. Evet
    2. Hayır
10) Sizce herhangi bir öğünü tüketme hızınız nasıldır?
    1. Yavaş
    2. Orta
    3. Hızlı
    4. Çok hızlı
11) Boyunuz.....cm
12) Kilonuz.....kg

13) Covid-19 sürecinde ağırlık değişiminiz oldu mu?

1. Kilo aldım
2. Kilo verdim
3. Değişim olmadı

14) Değişim olduysa kaç kilo değişti? .....kg

III. YEME TUTUM TESTİ (YTT-26)

Bu bir test değildir; "doğru" veya "yanlış" yanıt yoktur. İçtenlikle yanıtlamanız önemlidir. Her soruda size uygunluk derecesine karşılık gelen kutunun içerisine "X" işareti koyarak cevaplayınız.

YEME TUTUM TESTI-26		Her zaman	Genellikle	Sıklıkla	Bazen	Nadiren	Hiçbir zaman
1	Şişman olmaktan çok korkarım						
2	Aç olduğum halde yemek yemekten kaçınırım						
3	Her an kendimi yemek yemeği düşünürken bulurum						
4	Çatlayıncaya kadar yemek yerim						
5	Tabağımdaki yiyeceklerimi küçük parçalara ayırırım						
6	Yediklerimin enerji içeriğini bilerek yerim						
7	Ekmek, pirinç, patates gibi yüksek karbonhidrat içeren yiyeceklerden özellikle uzak dururum						
8	Çevremdekilerin benim daha fazla yememi istediklerini hissederim						
9	Yedikten sonra kusarım						
10	Yedikten sonra müthiş bir suçluluk hissi duyarım						
11	Zihnim daha fazla zayıf olmamı söyler						
12	Egzersiz yaparken kalorilerin yandığını düşünürüm						
13	Çevremdekiler benim çok zayıf olduğumu düşünür						
14	Aklımda hep vücudum yağlandığı düşüncesi vardır						
15	Çevremdekilere göre yemek yemem daha uzun sürer						

16	İçerisinde şeker olan yiyeceklerden kaçınırım						
17	Diyet ürünleri tüketmek daha cazip gelir						
18	Yiyeceklerin benim hayatımı kontrol ettiğini düşünürüm						
19	Yediğim yiyecekler benim kontrolüm altındadır						
20	Çevremdekiler beni yemek yemeğe zorlar						
21	Ne yemem gerektiği üzerinde çok düşünürüm ve zaman harcarım						
22	Tatlı yedikten sonra kendimi rahatsız hissederim						
23	Beslenme alışkanlıklarımı düzeltmem gereken konularla ilgilenirim						
24	Midemin boş olmasını severim						
25	Yeni çıkmış yüksek kalorili yiyecekleri denemekten çok hoşlanırım						
26	Yedikten sonra kusma dürtüsü hissederim						

1) Yukarıda dolduğunuz yeme tutum testinin pandemi öncesindeki sıklık durumuna göre nasıl değiştiğini düşünüyorsunuz?

1. Pandemi öncesine göre arttı
2. Pandemi öncesine göre azaldı
3. Değişmedi

IV. DUYGUSAL İŞTAH ANKETİ (DİA)

Lütfen yemek yeme davranışınızın belirli duygular, durumlar ve şartlar ile nasıl etkilendiğini aşağıdaki tablodan bir numarayı işaretleyerek belirtiniz. Tablo 1 ile 9 arasında değişmektedir,

1. Normalden çok **daha az** yemek yediğinizi

5. Yemek yemenizde bir **değişiklik olmadığını**

9. Normalden çok **daha fazla** yemek yediğinizi belirtmektedir.

UD: Soru sizin için uygun değilse

CB: Cevabı bilmiyorsanız işaretleyiniz

Aşağıdakiler sizin **DUYGULARINIZI** ifade ediyor:												
Normal ile kıyaslandığında, yemek yemeniz: **Daha Az** **Aynı** **Daha Fazla**												
SİZ:												
-- üzgün	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- sıkılmış	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- güvenli	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- kızgın	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- kaygılı	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- mutlu	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- yılgın	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- yorgun	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- karamsar	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- korkmuş	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- rahat	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- neşeli	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- yalnız	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB
-- hevesli	(olduğunuzda)	1	2	3	4	5	6	7	8	9	UD	CB

Aşağıdakiler sizin içinde bulunduğunuz **ŞARTLARI** ifade ediyor:											
Normal ile kıyaslandığında, yemek yemeniz: **Daha Az** **Aynı** **Daha Fazla**											
SİZ:											
-- Baskı altında iken	1	2	3	4	5	6	7	8	9	UD	CB
-- Hararetli bir tartışmadan sonra	1	2	3	4	5	6	7	8	9	UD	CB
-- Size yakın olan biri felakete uğradıktan sonra	1	2	3	4	5	6	7	8	9	UD	CB
--Aşık olduğunuzda	1	2	3	4	5	6	7	8	9	UD	CB
-- Bir ilişkiyi bitirdikten sonra	1	2	3	4	5	6	7	8	9	UD	CB
--Keyif veren bir hobi ile meşgul olduğunuz sırada	1	2	3	4	5	6	7	8	9	UD	CB
-- Para veya bir eşyanızı kaybettikten sonra	1	2	3	4	5	6	7	8	9	UD	CB
--İyi haberler aldıktan sonra	1	2	3	4	5	6	7	8	9	UD	CB

1) Yukarıda doldurduğunuz duygusal iştah anketinin pandemi öncesindeki duygular ve şartlara göre puan olarak nasıl değiştiğini düşünüyorsunuz?
    1. Pandemi öncesine göre arttı
    2. Pandemi öncesine göre azaldı
    3. Değişmedi
2) Cevabınız "Arttı" veya "Azaldı" ise hangi madde/maddelerin değiştiğini yazınız. (Örneğin 1, 2, 3) .....

V. ŞEKERLİ BESİN TÜKETİM SIKLIĞI FORMU

1) Her besin için son 1 aydaki (pandemi dönemindeki) tüketim sıklığını belirtiniz.

BESİNLER	Her gün	Haftada 1-2 kez	Haftada 3-4 kez	Haftada 5-6 kez	15 günde 1	Ayda 1	Hiç
Şekerli Yiyecekler ve İçecekler							
Şeker (toz, kesme)							
Şekerlemeler, lokum, jelibon vb.							
Kahvaltılık gevrek, müsli, granola							
Bal, reçel, pekmez vb.							
Kakaolu fındık ezmesi, fıstık ezmesi, krem çikolata vb.							
Bisküvi, gofret, kek ve kurabiye							
Sütlü tatlılar, dondurma							
Hamurlu ve şerbetli tatlılar (baklava, tulumba, şekerpare vb.)							
Meyveli süt ve yoğurt							
Hazır meyve suları							
Gazlı içecekler (kola, fanta, gazoz vb.)							
Meyveli maden suyu, soda							
Hazır paketli kahve (2si1 arada, 3ü1 arada vb.) ve hazır soğuk kahveli içecekler							
Kremalı-karamelli kahve vb. çeşitler							
Light bisküvi, kraker vb. atıştırmalıklar							
Ketçap, maynonez, hardal vb. soslar							
Nar ekşisi vb. salata sosları							
Konserve ürünler ve hazır çorbalar							
Hazır içecek karışımları (Enerji içeceği, sporcu içeceği, smoothie vb.)							
Tatlandırıcı (stevia vb.) ve sakız							

2) Aşağıdaki besinlerin tüketim sıklıklarını pandemi öncesi alışkanlıklarınızı düşünerek pandemi dönemine göre kıyaslayınız.

BESİNLER	Pandemi döneminde tüketim sıklığını arttırdım	Değişmedi	Pandemi döneminde tüketim sıklığını azalttım
Şeker (toz, kesme)			
Şekerlemeler, lokum, jelibon vb.			
Kahvaltılık gevrek, müsli, granola			
Bal, reçel, pekmez vb.			
Kakaolu fındık ezmesi, fıstık ezmesi, krem çikolata vb.			
Bisküvi, gofret, kek ve kurabiye			
Sütlü tatlılar, dondurma			
Hamurlu ve şerbetli tatlılar (baklava, tulumba, şekerpare vb.)			
Meyveli süt ve yoğurt			
Hazır meyve suları			
Gazlı içecekler (kola, fanta, gazoz vb.)			
Meyveli maden suyu, soda			
Hazır paketli kahve (2si1 arada, 3ü1 arada vb.) ve hazır soğuk kahveli içecekler			
Kremalı-karamelli kahve vb. çeşitler			
Light bisküvi, kraker vb. atıştırmalıklar			
Ketçap, mayonez, hardal vb. soslar			
Nar ekşisi vb. salata sosları			
Konserve ürünler ve hazır çorbalar			
Hazır içecek karışımları (Enerji içeceği, sporcu içeceği, smoothie vb.)			
Tatlandırıcı (stevia vb.) ve sakız			

8.3 Appendix 3 (Curriculum Vitae)

Personal Information

Name	Ece	**Surname**	Erciyas

Education Status

Degree	**Department**	**Name of the School**	**Year of Graduation**
Postgraduate	Nutrition and Dietetics Phytotherapy	Yeditepe University	2018-Now 2018-2020
Undergraduate	Nutrition and Dietetics	Acıbadem Mehmet Ali Aydınlar Üniversitesi	2014-2018
High School		Hasan Sabriye Gümüş Anatolian High School	2010-2014

Foreign Languages	**Language Scores**
English (YÖKDİL)	75

Computer Knowledge

Program	**Usage**
Microsoft Office	Very good
SPSS	Moderate

Others (Projects / Certificates / Awards)

9th National Healthy Life Congress Gastroenterology Dietitian Certificate (October 2020)
9th National Healthy Life Congress Cardiology Dietician Certificate (October 2020)
7th National Healthy Living Symposium Certificate (April 2018)
EREPS-Sports Nutrition Certificate (January 2018)
Occupational Health and Safety Training Certificate (2017)
6th National Healthy Life Symposium 1st Nutrition and Sports Congress for Life Certificate (May 2017)
Istanbul Metropolitan Municipality Fire Brigade Department Emergency Aid and Lifesaving Directorate-First Aid Volunteers Training Participation Certificate (February 2012)