

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

**EFFECT OF MINDFUL EATING AND PHYSICAL
ACTIVITY ON WEIGHT CHANGE AFTER
LIPOSUCTION OPERATION**

MASTER OF SCIENCE THESIS

ZEYNEP DİLARA KILAVUZ

Istanbul-2021

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APPROVAL

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DECLARATION

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, I have cited all the information and comments that were not obtained through the thesis study, and that I have included these sources in the sources list, and that I have not acted in violation of patent and copyright rights during the thesis study and writing.

29.06.2021

Zeynep Dilara KILAVUZ

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LIST of SYMBOLS and ABBREVIATIONS

%	symbol of percentage
kg	unit of mass in kilograms
m	unit of length in meters
AT	Adaptive Thermogenesis
BBFAA	Global Physical Activity Questionnaire
BMI	body mass index
ERD	Energy Restricted Diet
FFM	Fat free mass
MEQ	Mindful Eating Questionnaire
GPAQ	Global Physical Activity Questionnaire
ISAPS	International Society of Aesthetic Plastic Surgery
MPVA	Moderate or Vigorous-Intensity Physical Activity
PA	Physical Activity
REE	Resting Energy Expenditure
RMR	Resting Metabolic Rate
SAT	Subcutaneous Adipose Tissue
VAT	Visceral Adipose Tissue
YFÖ	Mindful Eating Questionnaire
SD	Standard Deviation
WC	Waist Circumference

ABSTRACT

Kılavuz, Z. Dilara. (2021). Effect of Mindful Eating And Physical Activity on Weight Change After Liposuction Operation. Yeditepe University, Institute of Health Science, Department of Nutrition and Dietetics, MSc Thesis, İstanbul.

Although liposuction is one of the most frequently performed aesthetic operations, studies on the preservation of the body contour in the following period are very limited. In our study, the effects of these factors were examined in 56 patients, considering that mindful eating and physical activity level are important components in weight control.

In our study, the difference between the pre-operative weights of the individuals and their current weights was as a percentage change; It has been associated with mindful eating and physical activity.

As a result of our study, no direct relationship was found between maintaining the contour (not gaining weight) after liposuction and eating awareness and physical activity. However, it has been observed that the amount of fat removed during liposuction is an important factor in maintaining body contours and even losing weight. This situation can be thought that regardless of eating awareness and physical activity, the degree of the operation (the amount of fat removed) may increase the importance people attach to the operation and cause them to better manage the subsequent process. Although our study has a limited number of participants, it can guide future studies since it is one of the pioneering studies on this subject. Considering the limited publication in this area, more studies should be conducted on the relationship between nutrition and liposuction.

Key words: Liposuction, Mindful Eating, Physical Activity

ÖZET

Kılavuz, Z. . (2021). Yeme Farkındalığı ve Fiziksel Aktivitenin Liposuction Operasyonu sonrası Ağırlık Değişimine Etkisi. Yeditepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik ABD, Master Tezi, İstanbul.

Liposuction, plastik ve rekonstrüktif cerrahi alanında en sık yapılan operasyonlardan biri olmasına rağmen ameliyat ile ulaşılan vücut formunun sonraki dönemde korunması hakkına yapılan çalışmalar oldukça kısıtlıdır. Çalışmamızda liposuction operasyonu geçiren 56 kişide yeme farkındalığı ve fiziksel aktivite derecesinin bu dönemdeki kilo kontrolüne etkisi incelenmiştir. Her bireyin operasyon öncesi ağırlığı ile çalışmaya alındıkları gündeki ağırlıkları arasındaki fark, yüzdelik değişim olarak; yeme farkındalığı ve fiziksel aktivite ile ilişkilendirilmiştir. Yaptığımız çalışma neticesinde liposuction sonrası vücut formunun korunması (kilo alınmaması) ile yeme farkındalığı ve fiziksel aktivite arasında doğrudan bir ilişki bulunamamıştır. Ancak liposuction sırasında alınan yağ miktarının vücut kontürünün korunmasında ve hatta kilo verilmesinde önemli bir faktör olduğu gözlemlenmiştir. Bu durum yeme farkındalığı ve fiziksel aktiviteden bağımsız olarak operasyonun derecesinin (alınan yağ miktarı) kişilerin operasyona verdiği önemi artırarak sonrasındaki süreci daha iyi yönetmelerinde neden olabileceği düşünülebilir. Çalışmamız katılımcı sayısını kısıtlı olmasına rağmen bu konudaki öncül çalışmalardan bir olması nedeniyle sonraki çalışmalara rehberlik edebilir. Bu alandaki yayın kısıtlılığı göz önünde bulundurulduğunda beslenme ve liposuction arasındaki ilişkiye yönelik daha fazla çalışma yapılmalıdır.

Anahtar Kelimeler: Liposuction, Yeme Farkındalığı, Fiziksel Aktivite

1. INTRODUCTION and PURPOSE

Liposuction, which is one of the most common surgical procedures for aesthetic purposes today, basically aims to provide body contour by removing unwanted fat. While according to the 2019 data of Plastic Surgery Static Report, with 265,209 operations, liposuction is the second most performed plastic surgery intervention in America(1); according to the 2018 data of The International Society of Plastic Surgery (ISAPS), it is the most performed surgical procedure in the world with 1,732,620 operations achieved as a result of an increase of 10.1% compared to previous year (2).

On the other hand, "mindfulness" has been the subject of research in recent years and has become more and more popular in the field of nutrition. Mindfull eating, which is defined as combining eating behaviors and awareness, refers to the maintenance of non-judgmental awareness about the physical and emotional sensations of the person while eating or in an environment related to food (3). Köse et al. (4), who validited of the questionnaire in Turkish that we will use in our study, was further specified "Mindful Eaiting" as; rather than what is eaten under the influence of internal and external factors, is recognizing how and why eating behavior occurs rather internalizing the physical hunger and satiety signals and being aware of their feelings and thoughts, focusing on environmental factors and food to be consumed at that moment without judging food choices.

Physical activity is defined as any body movement produced by skeletal muscles that cause energy expenditure (5). Lack of physical activity has been identified as the fourth leading risk factor for global deaths, accelerating the development of diseases, causing an estimated 3.2 million deaths worldwide (6% of deaths globally) (6). On the other hand, physical activity is a key determinant of energy expenditure, and thus is fundamental to establish balance between taken and expended energy balance and maintain weight control (7). For this reason, the other parameter we will use when evaluating individuals will be the physical activity coefficient.

In this study we will examine the weight changes in relation to the Mindful eating and physical activity intensity of individuals who underwent liposuction surgery.

2. LITERATURE REVIEW

2. 1. Liposuction Operation and its History

Liposuction is an operation that has been used for cosmetic purposes since its first appearance. It has taken its place in plastic surgery as a safe, simple and effective body shaping method. The first attempt to reshape the body silhouette was made in 1921 by Dr. It is owned by Charles Dujarier. For a sick dancer who applied to Dr.Charles himself; performed this operation to improve the shape of the ankles and knees. A large subcutaneous dissection and a long skin incision removed most of the skin and soft tissue. The result of the procedure was tragic because the tissue and suture were very tight and lively. This practice resulted in tissue death and eventual amputation (8,9).

Attempts were made later in the procedure that resulted in less disaster. After a long period of trial and error, cosmetic surgeons Arpad and Giorgio Fischer (10) established the current liposuction method in 1975. They were the first to employ a blunt hollow cannula connected to a suction source, as well as cross-suction across several incision sites. This “blind” method allowed for better and more predictable aesthetic results with far fewer complications.

Fischer's method was refined and popularized by Dr. Illouz and Fournier. Illouz (11) created adapted apparatus for conducting liposuction in 1977, two years after the Fischers' effort, and extended the procedure to the entire body. To decrease the part of nerves, lymphatic vessels, and blood vessels, smaller diameter blunt cannulas were inserted.

Depending on the area to be aspirated, he utilized three different sizes of blunt-tipped cannulas: the largest (10 mm) for the flanks, hips, and buttocks, the middle for the knees, ankles, and belly, and the smallest for the face. He improved the procedure

and invented the wet method. This method made it easier for the surgeon performing the operation to protect the superficial flap and remove only the deep layer (12).

Fournier, who was also based in Paris at the time, was a proponent of the "dry method," in which no fluid was injected prior to the surgery. Fournier taught and inspired others using this approach all throughout the world (13).

Then, in the early 1980s, a large number of additional surgeons traveled to France to examine the techniques. The blunt cannula technique has become the most widely used liposurgical procedure in the United States and throughout the world, and in 1982, the American Lipo-Suction Association brought together surgeons from both the United States and other nations to create a teaching program (14,15).

During these procedures, liposuction was usually done under general anesthesia. By 1987, a California dermatologist named Jeffrey Klein had documented the use of extremely dilute anesthetic in huge quantities, allowing greater volumes of liposuction to be performed entirely under local anaesthetic without the requirement for sedation or general anesthesia (16).

The liposuction procedure conducted without general anesthesia provides a number of benefits, including a shorter hospital stay, lower expenses, and lower anesthetic risks. The primary drawback of this approach is that anesthetic infiltration takes a long time. The diameter of the cannulas used to extract the fat, on the other hand, must be slightly smaller to be tolerated by the patient, thus the time to remove a specific volume of fat is greater than with general anesthesia (17).

Liposuction began as a suction method using a vacuum pump (18). In 1988, Luiz Toledo (19), a Brazilian, was exposed to the use of disposable syringes of various sizes and shapes for adipose tissue aspiration. The major benefit of this approach is that it allows the operator more flexibility of movement throughout the treatment, making the procedure simpler and easier. Furthermore, the syringes allow you to know the precise quantity of local anesthetic that was released prior to the surgery, as well as the exact amount of fat that was taken from each region; all other data is approximated using the lipoaspirator. Toledo also recommended drawing a body map of the patient to achieve as much symmetry as feasible. To optimize the cosmetic outcome and symmetry

as much as possible, the nurses accurately marked the quantity of administered local anesthetic and adipose tissue removed from each body location (20).

The major benefit of syringe liposuction is the precision and accuracy with which oil harvest quantities can be measured, as well as the ability to inject oil. Particularly in situations when substantial amounts of fat must be removed, vacuum pump-assisted liposuction makes the surgical process more pleasant and less exhausting for the physician. As a result, vacuum pump-assisted liposuction is frequently used for big lipoplasty operations when the volume of fat to be removed takes precedence over topographical, symmetrical, and accurate fat harvest distribution (21).

In 1992, Zocchi launched ultrasonic liposuction as an alternative to standard blunt cannula aspiration in Italy (22). Scuderi is credited with inventing lipo-exercise, according to Zocchi (23).

This method involves applying ultrasounds to the adipose tissue to be aspirated, which has both heat and mechanical impacts on the surrounding adipocytes. These mechanical oscillations propagate waves from the tip of the cannula, contribute to fat breakdown through thermal effects, and must be distributed by tissue infiltration (24, 25).

In this approach, Zocchi hoped to make aspiration easier while also preserving neurovascular systems that might be damaged by cannulas. Zocchi states that the Ultrasonic technique has the advantage over traditional liposuction: more selective destruction of unwanted tissue while preserving the surrounding high-density structures; Elimination of the “liquid part” of adipose tissue (fatty acids), leaving the adipocyte wall and intercellular substance to create a smooth skin surface; skin contraction secondary to ultrasonic stimulation of the dermis; correction of cellulite; He described the procedure as requiring less physical effort from the surgeon when the fat was dissolved by ultrasound (26, 27).

Ultrasonic liposuction was once popular in South America and Europe, but following reports of skin rashes, burns, and seromas, it has mostly been abandoned (28). After the publication of studies on the interaction of laser and adipose tissue by Apfelberg (29) et al. in 1992, laser lipolysis became popular (27, 30).

Liposuction with laser assistance is a relatively new breakthrough in the treatment of lipodystrophy and adipose tissue abnormalities. The laser beam extends out to the adipose tissue it comes into touch with. The laser's effect causes the adipocyte membrane to break, allowing fatty content to leak into the extracellular fluid. The risks and outcomes of laser-assisted liposuction are comparable to those of other liposuction procedures. Laser can produce neoformations, collagen remodeling, and reticular dermis rearrangement in addition to cytolytic effects on adipocytes. This technique is especially useful for body or face regions with localized lipodystrophy (10, 31).

2.1. 1. Liposuction Types and Techniques

Continuously developing technologies contribute to the increase in the variety and success rate of liposuction procedures. These methods are applied in 5 different types, mainly Suction-assisted liposuction (SAL), the most classical type of liposuction known.

- Suction-assisted liposuction(SAL): In this technique, a mixture of liquid is injected into the area where the fat will be removed before the operation. The application can be performed under full anesthesia or local anesthesia. Then, from the 2 mm incisions opened in the region, 3 mm. The oil extraction process is started by entering with cannulas of diameter (11).
- Ultrasound-assisted liposuction(UAL): In this technique, The application of ultrasonic energy to allow more selective tissue targeting was first attributed to Zocchi. It does not damage the surrounding tissue (22).
- Power-assisted liposuction(PAL) : With the method applied using special moving cannulas, the fats that are desired to be removed in large areas are removed. (32)
- Water-assisted liposuction(WAL) : In this process, the fats are turned into a slurry with the help of water injected under the skin and suction is performed using cannulas (33).

- Radiofrequency-assisted liposuction(RFAL) : The skin, which is heated by laser under the fat absorption process with the classical vacuuming method, becomes more taut. The most obvious difference from other types of liposuction is the tension it provides on the skin (34).

2.1.2. Liposuction and Psychology

Studies on the psychology of aesthetic surgery patients have continued since the 1960s. The first three aesthetic surgical procedures performed; fat removal (lipoplasty), breast augmentation and eyelid aesthetics (blepharoplasty). The most frequently performed non-surgical procedure is botox injection. In addition, chemical peeling, skin peeling (microdermabrasion), laser, epilation and aesthetic varicose treatment (sclerotherapy) are indicated. The most common motivations behind patients' desire to have a surgical procedure are Body Deformity Disorder (BDD), body image, self-esteem, looking beautiful/young/attractive, eating disorders, dissatisfaction with life, feeling of competition and being a laughing stock. The interaction of cultural factors plays a role. A better understanding of the motivation factors of aesthetic patients will enable health-care providers to provide the highest level of service to this patient population (35). Physical, psychiatric and psychosocio-cultural factors and the media play a role in the decision to implement such an increasing number of preferred aesthetic interventions. When the literature is examined, the motivation factors that lead to aesthetic and non-aesthetic interventions are as follows.

- Looking Young/ Beautiful/ Attractive

People want a part of their body, such as the chest, nose, lips and facial lines (these are the areas of the body that undergoes the most aesthetic interventions), to appear more attractive to others. People want to change their appearance to fit societal ideals of glamor. They unrealistically compare themselves to the cultural ideals of beauty portrayed

by the media. It pushes individuals to pursue unrealistic goals, as only a small fraction of society meets this standard.

- The influence of the media

The depiction of the "ideal woman" has changed significantly over time, with the influence of the media. 20th century the ideal female depiction at the beginning; a round, full figure, slender with larger breasts and hips. While she was a woman with a body structure, this depiction changed over time; waist and hips have shrunk, breasts have grown, and a thin and muscular body has come to the fore (36). Today, mass media such as fashion, health and beauty magazines, social media, television, advertisements, billboards, movies, and music paint images of what ideal women would look like. Although the number of ideal women is very few in society, women who are influenced by celebrities want to be like them. Surgical or non-surgical interventions are resorted to by exerting some kind of pressure on the media, creating a motivation for people to be like them makes surgery attractive (35).

- A sense of competition

Plastic surgeons state that women experience competition when there is a beautiful woman in their close circle (39). This raises the question of whether women want to have plastic surgery in order to compete with another woman. To answer this question, estheticians cite as an example that even a very beautiful girl resorts to plastic surgery because she wants to be more beautiful. While some of those who apply for aesthetic interventions apply for this process because they want it, some of them apply for this process for others. In the researches, it was determined that women who separated from their spouses showed more interest in cosmetic surgery procedures, especially breast augmentation and liposuction.

- Body Image

Body image is the perception, thoughts and feelings about the body and bodily experiences (35). Having a certain consistency between the body image and the actual state of the body, being at peace with and satisfied with the body shows that the person has a

positive body image. In the opposite case, it indicates a negative body image. Changing the body image is an important motivation in the desire for plastic surgery (38, 36). Surgical procedures affect body image positively. Aesthetic surgery is considered as a coping strategy to eliminate dissatisfaction with body image. Women's significantly higher ratings of body images 6 months after the plastic surgery intervention indicate that people's satisfaction with their own appearance increased after plastic surgery (39).

- Self respect

Self-esteem is directly related to body image. Negativity in body image, self may cause a decrease in their respect (40). It is reported that low self-esteem is a motivation that leads to plastic surgery procedures.

- Eating Disorder

When body image is centered, it is revealed that people who apply for aesthetic interventions are diagnosed with eating disorders (anorexia nervosa and bulimia nervosa) more frequently. Aesthetic interventions can cause and result in eating disorders. In women who have undergone liposuction and tummy tuck surgery, eating disorders may occur

- Dissatisfaction with life

Quality of life is an important motivation factor in applying for aesthetic interventions (36). Low life satisfaction is less likely to engage in cosmetic surgery procedures.

is an important predictor (41). It has been determined that the quality of life of individuals is improved with aesthetic surgery (42). In fact, low life satisfaction and self-esteem may be associated with depression. Most plastic surgeons know that patients' hopes for surgery are unrealistic and this can lead to an increase in depression over time.

2.2. PHYSICAL ACTIVITY

The first concept that I will associate with the weight changes of individuals who have undergone liposuction is physical activity. Physical activity is, by its nature, one of the biggest components of human life. While physical activity, which includes hunting, imitation of animal movements, dance or movements similar to Far East sports, has been evaluated and applied with different understandings in different societies since the existence of human beings, it gained importance with the emergence of the negative effects of mechanization and mass production on human health, especially towards the end of the 18th century (43). Nowadays, while technological advances, business life, urbanization and other factors negatively affect human health, regular physical activity reduces the risk of mortality due to diseases such as obesity, cardiovascular diseases, diabetes and cancer, and increases the quality and duration of life that further increases its importance (44,45). With this significance, physical activity is defined as “activities that involve energy expenditure by using our muscles and joints in our daily life, increase heart and respiratory rate, can be done at different intensities and result in fatigue” (45,46).

One of the important and modifiable risk factors of non-infectious disease is physical inactivity (47). Physical inactivity is thought to be responsible for 5-10% of deaths in the European Region (48) and 15% of all-cause deaths in Turkey (49). According to the Turkey Burden of Disease Study that conducted in 2011, which shows the situation in our country, with adequate physical activity, the 4.3% of burden of disease and 10.5% of all deaths can be reduced (50). Physical activity; reduce the risk of diseases such as coronary heart disease, stroke, breast cancer, colon cancer, type 2 diabetes and osteoporosis, as well as regulating heart rhythm, lowering blood lipid levels, increasing respiratory capacity, strengthening the musculoskeletal system, reducing the risk of depression and anxiety disorder. It also has effects such as increasing self-esteem and self-confidence (49, 51).

2.2.1.Components

Physical activity results in energy expenditure and total energy consumption consists of 3 basic components (52). 60-70% of this is defined as the energy required to maintain respiration, circulation and body temperature while the body is at rest that the basal metabolic rate (BMR), the rate of which can vary with factors such as race, age, body weight, genetics, fat and muscle ratio. 10-15% of energy consumption is energy expenditure required for digestion or excretion of nutrients, increasing with food intake, 20-30% is active energy consumption resulting from physical activity or muscular activity (53).

2.2.2. Historic

Physical activity is defined as “bodily movement resulting in energy expenditure by contraction of skeletal muscles” (5). Scientifically, the measurement of an individual's response to regular physical activity or exercise dates back to the 18th century. Sir John Floyer first developed a clock in 1707 that allowed the heart rate to be measured during exercise (54). Edward Smith, in his study with prisoners working in London in 1850, measured carbon dioxide production and heart rate and stated that the punishment for strenuous activity had a biologically negative effect (55). In the first half of the 20th century, physiologists examined the acute and chronic responses on many tissues, organs, and systems, with variations according to the type, duration and intensity of exercise. Many of these studies have indicated that exercise improves some components of physical fitness, but less emphasis is placed on its impact on health (55).

Research on physical activity and public health began in the 1950s. In a study of double-decker bus drivers in London and those who walk a specific distance every day to sell tickets, it was shown that sedentary jobs had higher rates of coronary heart disease mortality, whereas physically active males had lower rates of acute coronary artery disease (56).

Significant epidemiological studies began in the 1970s and 1980s, emphasizing the value of regular activities like gardening and walking in preserving health, as well as making physical exercise a lifestyle or being active throughout the day (55,57).

2.2.3. Measurement

Physical activity is a complex behavior and various measurement methods are used to calculate daily energy consumption as a measure of physical activity (58). While there are many measurement tools used both in the laboratory and in the field in the evaluation of physical activity, technological developments, especially after 1980, have reduced the cost of measurement tools such as pedometer and accelerometer, allowing them to be widely used as an alternative to subjective methods (survey, recording, etc.) (59, 60). Studies have shown that there is no consensus on most of the methods used in energy consumption (61), and that each measurement tool used has advantages and disadvantages.

The methods for measuring physical activity are divided into three categories: criteria (gold standard) methods, objective methods, and subjective approaches. Direct calorimetry, indirect calorimetry, doubly labeled water, and direct observation are examples of criteria techniques. While objective methods such as accelerometers, pedometers, and heart rate monitoring are used, subjective approaches such as questionnaires and diaries based on interviews or self-report/evaluation are used. The first stage in measuring physical activity is to act in accordance with the study's goals by responding to questions like "do you want to evaluate a scheduled activity like exercise or overall physical activity like everyday activities?". It's also crucial to identify FA's features (type, frequency, duration, and severity), as well as its regions (occupation, home duties, transportation, and leisure) and units of measurement (kcal, MET, moderate, and severe FA) (62,63).

While determining the method to be used in physical activity measurement, the reliability, validity, sample group, acceptability of the measurement tool by the

individuals, time and cost should be taken into consideration (64, 65). In recent years, it is also among the opinions that it is important for the validity of the research to use subjective and objective measurement tools together in order to reach the right data in physical activity measurement (66).

2.2.4. Objective Methods

The rapid development of technology has brought about the emergence of objective measurement tools such as pedometer and accelerometer. This increase has provided a decrease in the cost of objective measurement tools and made them an alternative to the methods used subjectively. These instruments are gait sensitive and can continuously measure physical activity records and also give an estimated energy calculation since they can measure at different exercise intensities (55,67). With these devices, which can measure mostly sedentary behavior, detailed information about the type of activity cannot be obtained (62). In the 2003-2006 study of the National Health and Nutrition Examination Survey (NHANES), it was stated that subjective and objective instruments are complementary to each other and the popularity of accelerometers increased with this research (68). It was also stated that the use of subjective and objective measurement tools together provides more accurate data (60).

2.2.5. Pedometers

Pedometers, which first appeared in Japan and have many types from the simplest to the most complex, are measurement tools developed for counting steps. The number of steps is considered an important indicator for individuals living a sedentary life (55). Practical use, low cost, and ability to record short-term physical activities (activities often overlooked by the survey method) have made these devices popular. Pedometers, whose price can vary according to its mechanism and features (clock, memory, software, etc.), can measure vertical movements (69, 70).

2.2.6. Accelerometers

Accelerometers are devices that are more complex than pedometers, can be applied to all age groups, and can measure body movement intensity, acceleration and deceleration of the body. Accelerometers provide information about the frequency, duration and intensity of the activity by monitoring with a second or minute focus (71,72). Accelerometers; In recent years, the importance of measuring sedentary behavior has increased due to its advantages such as collecting more data, reliability of results, and ease of management.

2.2.7. Subjective Methods

Researchers prefer practical, easily applicable, low-cost subjective methods to measure FA domains such as work, transportation, household chores, and leisure time. Questionnaires differ according to how FA parameters (type, duration, frequency, severity of activity) are obtained (face-to-face interview, e-mail, telephone, etc.) and reported (activity scores, time, calories, etc.). There are two types of subjective methods (surveys and diaries) and there are many questionnaires administered by the self-report method or the interview method (73,74).

2.2.8. Activity Diary

Activity diary are accepted as the criterion method used in validation studies, which require participants to keep detailed records of all activities at certain periods. Although the type of information recorded may vary, generally the type, severity, start and end time of the activity is recorded and the MET score list is used to calculate the severity according to the activity list (75, 76, 77).

2.2.9. Survey

Recall-based FA questionnaires are generally used to monitor whether adults comply with the recommendations of national FA guidelines, whether their activity levels are adequate, and physical activity behavior changes. These surveys generally measure the FA level by using the expressions “last 24 hours”, “last seven days”, “generally”. With a form consisting of 10-20 questions on average, information on the type, frequency, duration and severity of the activity can be obtained (78).

Asked activity types include moderate-vigorous activities, sitting, climbing stairs, walking. The intensity of physical activity is usually expressed as MET and calculations are made according to activity scores (77).

In this study, the questionnaire method was used in the evaluation of physical activity in terms of easy accessibility. The questionnaire used is the "General Practice Physical Activity Questionnaire (GPPAQ)", which is used to evaluate the physical activity level of adults in primary care within the scope of the National Health Service in England. The questionnaire, which was adapted to Turkish by Ayşe Emel Kaya Noğay and Mehmet Özen for validity and reliability, was translated as Birinci Basamak İçin Fiziksel Aktivite Anketi (BBFAA).

2.2.10. General Practice Physical Activity Questionnaire"

The "General Practice Physical Activity Questionnaire" (GPPAQ), which was developed by The London School of Hygiene and Tropical Medicine in 2002 with the support of the Ministry of Health in England, to evaluate the physical activity level of adults in primary care within the scope of the National Health Service, consists of seven questions under three main headings. It is a scale that takes approximately 30-60 seconds to fill and can be transferred to electronic media in 1-2 minutes. In the first part of the scale, a question is asked about the mobility of the person in the workplace, while in the second part, the activities done in the last seven days and how many hours per week are asked. In the last part, there is a question that evaluates the normal walking speed of

the person. In questions; there are also walking, housework, gardening and hobby activities, they are not taken into account when calculating the physical activity indicator, since there is no reliable data return that will make a meaningful contribution. It is applied to individuals between the ages of sixteen and 74 and gives results at four levels: active, moderately active, less active and inactive. It guides the practitioner to interpret the person's physical activity level and make recommendations (79).

2.2.11. Physical Activity Measurement and Affecting Factors

Selection of a measuring tool according to the aim of the study depends on many factors such as the population, the reliability and validity of the measurement tool, the measurement time, time and cost, many factors such as age, gender, body weight and comorbidity can also affect it (62, 63).

When we look at the studies on PA in the literature, the rate of doing PA is determined by physical (accessibility, proximity, distance, opportunities) (80, 81), cultural (habit, perspective) (44, 82, 83) and social environment (number of participants, education level, urbanization, transportation) (84, 85, 86). People with free time compared to those who do not have free time (81), in places where the rate of urbanization is low (44, 84), in places where accessibility to recreational areas such as parks and gardens and the economic level are high, the rate of physical activity of unmarried women compared to married women (81) has a positive appears to have changed. When demographic (population, economic situation, occupation) and biological factors (age, sex, heredity) are examined (84, 86, 87, 88), it is seen that places with low population density are more active than places with high population (85), and physical inactivity increases with age (84) reported that women are more inactive than men (81). According to psychological (mood state, motivation), mental and emotional factors (enjoyment, relaxation, stress relief) the rate of doing PA changes (53, 80, 85, 86, 88, 89), smokers are more likely to quit exercise programs than non-smokers (80), it is stated that having knowledge about the activity and the desire to do the activity are the main factors affecting participation in PA (86).

2.2.12. Physical Activity and Health

While health behavior is defined as all kinds of behaviors that an individual believes and does in order to be healthy, to be protected from diseases and to ensure the continuity of well-being, a healthy lifestyle is defined as the individual's control of all behaviors that may affect his health, his decision-making ability and the appropriate health status while performing daily life activities. It is expressed as choosing and regulating behaviors and making these behaviors into habits (90). Examples of healthy lifestyle behaviors are proper regular physical activity, adequate sleep, functional communication in social relations, regular and balanced nutrition (91).

Because of its detrimental impact on health, the sedentary lifestyle, which is prevalent today, is a major public health issue (45). Physical exercise improves physiological, metabolic, and psychological characteristics, lowers the risk of numerous chronic illnesses and premature death, and aids bone, muscle, and joint health (92). Cardiovascular events (heart attacks, hypertension), type 2 diabetes, colon and breast cancer, obesity, depression and anxiety, gallbladder disorders, and osteoporotic fractures are all reduced by regular exercise (93, 94). Exercise length and intensity are linked to the positive effects of regular physical activity on health. (45).

Nowadays, the rapid increase in urbanization, less movement, socioeconomic and cultural problems caused by unplanned housing have changed the shape of people's health problems. Among the factors that negatively affect the quality of life, the returns of a sedentary lifestyle have an important place. A sedentary lifestyle brings with it many health problems. In a study conducted on 29193 people in 27 European Union member countries, including Turkey and Croatia, it was reported that leisure physical activity is a health indicator and its use for monitoring purposes can be supported (95).

It is also stated that FA has many beneficial effects such as increase in physical fitness level, endurance, strength and flexibility, increase in strength in bones

and muscles, improvement in social relations, and increase in self-confidence. (45).

Excess body weight raises the risk of chronic illness and has negative personal, societal, and financial implications. Weight gain happens when energy intake exceeds energy expenditure over an extended period of time, and the extra energy is deposited as fat tissue. Weight reduction treatments frequently target food and physical activity behaviors at the same time because weight loss necessitates an energy deficit via reduced energy intake and/or increased energy expenditure (96). Reduced calorie intake, which is the primary driver of weight reduction, can, however, be difficult to maintain over time, limiting weight loss maintenance. To enhance the success of weight reduction therapies, it's crucial to know which behaviors impact energy intake so that they may be addressed precisely.

Physical activity, food habits, and sleep habits all appear to interact to impact energy intake and weight control, according to research. The effect of physical activity on calorie intake is proportional to the amount of exercise performed. According to a comprehensive analysis of cross-sectional research, daily calorie intake surpasses energy expenditure at lower levels of physical activity where body mass is also higher. This implies that, at least for some people, increased energy expenditure increases the desire to eat as a result of dysregulated appetite regulation. At increasing levels of physical activity, however, energy expenditure and intake are more closely matched. As a result, increasing physical activity as part of a weight-loss program may have an impact on both sides of the energy equation.

Physical exercise can influence calorie intake by affecting appetite-controlling biological systems and altering body composition. It's also been suggested that when you're doing a lot of physical exercise, your hunger and energy intake are better managed. This implies that physical exercise can have an impact on both sides of the energy balance equation (97).

2.2.13. Physical Activity and Mental Health

According to TUIK 2010 data, the rate of chronic depression and other mental problems in our country is reported to be 4.2% in total (99), while studies have shown that regular PA reduces anxiety (100), depression or tendency to depression symptoms (45), improves quality of life (98), and improves social relations. It is stated that it provides healing and can be used as a tool to improve self-confidence (45, 100).

In the study of Genç et al. (101), a total of 710 (387 female, 323 male) young adults were administered the international physical activity questionnaire (UFAA) and the short-form quality of life questionnaire (SF-36). Men's SF-36 physical health score and SF-36 mental health score were higher than women's.

2.2.14. Physical activity and abdominal fat distribution

Because of its link to metabolic abnormalities like type 2 diabetes, visceral fat accumulation is a major public health concern (117). Independent of overall obesity, emerging data shows a detrimental relationship between total PA and abdominal fat, particularly visceral fat (103, 104, 118). According to several research, high-intensity PA is more beneficial than low-intensity PA in reducing abdominal fat formation (102, 105, 108, 116).

A small number of research have looked at how reallocating time spent on different intensities of PA and sedentary activity affects abdominal fat distribution, and the study samples and measurement techniques vary considerably. Furthermore, the majority of population-based research rely on self-reported PA and proxy measures of abdominal fat distribution, such as waist circumference, which do not distinguish between visceral and subcutaneous fat distribution.(107, 110, 113, 116).

Increasing total physical activity energy expenditure is linked to reduced BMI, WC, and abdominal fat deposition among Inuit in Greenland, according to a research

(120). The necessity of encouraging an upward shift in the entire PA intensity distribution and even short bouts of MVPA to avoid excessive buildup of SAT and VAT is emphasized, and it can be utilized to prevent type 2 diabetes. Finally, this study indicates that increasing total physical activity energy expenditure has an impact on belly fat distribution among Greenlandic Inuit. Being more physically active, in particular, was linked to a reduced deposition of both subcutaneous and visceral fat. However, reallocating inactive time to moderate-intensity physical activity might be quite useful in reducing abdominal obesity in the general population. Furthermore, this research suggests that even brief bouts of moderate to severe PA might affect belly fat distribution.

Philipsen and colleagues using both objective measures of physical activity and ultrasonography (110). Other research have confirmed the impact of high intensity PA on visceral fat formation. In a comprehensive review and meta-analysis, Visser and colleagues found that moderate or high intensity aerobic exercise had the greatest ability to decrease visceral adipose tissue in overweight males and females (116). Subcutaneous fat is shown to be less metabolically active than visceral fat, and it has been claimed in the literature that visceral fat is more vulnerable to the adrenal-driven adipocyte lipolysis that happens during severe exercise (109). However, both VAT and SAT have been linked to cardiovascular risk in the absence of general obesity, implying that the reduced SAT reported in this study has therapeutic significance (111).

Larsen and colleagues (2014) discovered that more physical activity was linked to less visceral fat, whereas more sedentary time was linked to pericardial fat, concluding that sitting and physical activity had distinct relationships with regional fat depositions in older individuals (106).

2.3.EATING BEHAVIOR

Eating attitudes and behaviors are affected by many factors from the birth of the individual to the last stage of his life. Among these factors are the environment, genetics, socio-economic status, the individual's mood during feeding, hormones, culture, religious beliefs, past experiences, media/social media, peer attitudes, individual's body image, appetite/anorexia, etc. concepts can be mentioned. Eating behaviors can change rapidly, and an eating attitude can be strictly adhered to. For this reason, eating behavior should be evaluated in that moment. It is possible to divide the eating behavior into subgroups depending on the purpose of realization. Basically, hunger is examined in two processes as homeostatic hunger and hedonic hunger. (121) The feeling of hunger that occurs as a result of the decrease in the glucose level in the blood and the increase in the free fatty acid level and the desire to consume food due to this are defined as homeostatic hunger (122). In other words, hunger is frequently considered to be the cause of an individual's eating behavior, which symbolizes the biological requirement for food to survive and maintain homeostasis (123). However, in the absence of a physiological need for food, our social and cultural context (for example, readily available, highly delicious meals and big portion sizes) might encourage eating (124).

In the lack of homeostatic cues, this results in eating. In other words, the motivational processes that occur for the consumption of food, independent of biological hunger, reveal feeding in a non-homeostatic manner. Hedonic hunger, on the other hand, is defined as an increase in appetite due to the taste, smell and other sensory properties of food without a biological need, and the hunger associated with the pleasure of consuming the food. Since the hedonic system may increase the desire to eat delicious food for full pleasure, it may cause excessive energy intake (125). When an individual who has just finished his/her meal is asked whether he/she wants to eat his/her favorite dessert, he/she wants to eat despite being full can be given as an example for this situation

(93). It is stated that eye hunger, which is created by visual stimuli that trigger sensory hunger, outweighs the signals of satiety and is a very strong type of hunger (126).

External motivators of ingestive behavior (e.g., eating away from distractions) have been reduced in favor of sensory characteristics of foods and internal motivators of ingestive behavior, according to two types of practices (127). The focus of these therapies is on mindful and intuitive eating.

Obesity is defined as an abnormal or excessive fat buildup that can lead to diabetes, cardiovascular illness, musculoskeletal problems, obstructive sleep apnea, and cancer. It now affects over 1.8 billion people worldwide (128). Energy-restricted diets (ERDs) are the most generally utilized treatment for obesity, and lifestyle modifications are frequently suggested. The weight-loss business in the United States is worth more than \$66 billion, and it appears that hundreds of different diets are introduced each year (129).

Despite the fact that obesity management necessitates lifestyle changes, most ERDs place a greater emphasis on macronutrient composition than on altering behavior. Recent research utilizing low-fat or low-carbohydrate diets has shown substantial weight reduction with or without exercise (130, 131). Even those with supporting scientific data, the huge number of extant diet plans demonstrate that none are particularly effective in inducing and maintaining weight reduction. Weight reduction that lasts necessitates the patient adopting and incorporating new behavioural patterns into their daily life.

“Metabolic adaptation” or “adaptive thermogenesis” is one theory connected to weight regain (AT). After calorie restriction and weight reduction, AT refers to a decrease in resting energy expenditure (REE) or resting metabolic rate (RMR). Although the exact mechanism is unknown, some believe AT is an autoregulatory function triggered by decreased sympathetic nervous system activity and low plasma levels of leptin and T3 (3,5,3'-triiodo-thyronine) (132). AT slows down weight loss and isn't entirely explained by a decrease in fat-free mass (FFM) or fat mass (133). According to Jo-

hansen et al., REE slows down during active weight reduction, even while FFM is intact (134). This need to store extra energy (fat) causes anabolism, which allows the organism to perform the same activities with less energy, resulting in a perfect scenario for weight recovery. AT appears to be an evolutionary protective mechanism that is no longer essential in a world where food is readily available and people live sedentary lives (135, 133) AT appears to be a mechanism that favors weight instability and recovery since its severity is related to the degree of energy shortage.

Calorie restriction aimed at weight loss is the objective of the majority of dietary regimens used in the treatment of obesity. In general, half of the weight lost is recovered in the first year following weight loss, and 80 percent of people return to their original weight within three to five years, or even exceed it (136). If the success of these treatments does not continue for a long time, it may cause excessive eating behavior or stressful behaviors in some people. In this respect, interventions that can be alternatives to traditional weight loss and restrictive nutrition programs are needed (137). Awareness; It has emerged as a promising alternative approach to traditional dietary approaches by focusing on habits, internal reactions, feelings and thoughts (138). The concept of mindfulness, which comes from Buddhism thought, is defined as “the process of being consciously aware of thoughts and actions in the present” (139). This is a way of thinking in which all mental activity, including emotions, is perceived but not judged. awareness-based interventions; It is based on observing thoughts and feelings, rather than evaluating and changing thoughts and feelings. Mindful eating is thought to provide a permanent solution in the treatment of obesity, as it enables the awareness of emotions and habits related to nutrition without judgment (3).

Finally, analyzing cases of abdominal liposuction might offer useful information on fat reduction in a short period of time. Despite the lack of ERDs, liposuction provides for a significant reduction in adipose tissue mass volume. This method, however, did not enhance metabolic health or prevent fat regeneration. Liposuction, on the other hand, seems to promote a compensatory rise in visceral fat (140, 141). As a result, weight loss without long-term behavioral adjustments will not result in the anticipated health gains. As a result, typical prescription weight reduction approaches (e.g., ERDs)

that do not promote long-term lifestyle changes will have little impact on health and well-being and may even be harmful in the long run

For this reason, improving eating behavior will perpetuate healthy eating behavior in the long run. In this way, the individual will not regain the fat that was given or removed with the operation (142, 143).

Mindful eating and intuitive eating are two concepts that have gained popularity in recent years. The importance of the development of intuitive eating and Mindful eating skills is emphasized in the acquisition of a healthy eating attitude and behavior of the individual, and the importance of using this skill as an intervention technique is also advocated. Although these two concepts are often confused, intuitive eating focuses on the reasons (such as hunger and satiety signals) that encourage more people to eat, whereas Mindful eating focuses on the individual's awareness of what, where, and how to eat while eating, its relationship with external factors, and the avoidance of food judgments.

2.3.1. The Concept and Principles of Intuitive Eating

These concepts were introduced to the literature a short time ago. The term intuitive eating was defined as a non-dietary approach in 1995 by Evelyn Tribole and Elyse Resch, both clinical dietitians. Tribole and Resch established this method as a bridge between a non-traditional dietary approach and the typical public health approach involving dieting to achieve ideal body weight (144). Intuitive eating is defined as the individual's way of eating by listening to and adapting to the physical hunger, satiety and satisfaction signals that his body naturally gives. This concept is also referred to as concepts such as non-diet approach, normal eating, adaptive eating, wisdom eating and conscious eating in the field of nutrition and dietetics. Intuitive eating is an adaptive dietary behavior that emphasizes eating in response to physiological hunger and satiety cues (145, 146). The basic principle of intuitive eating is to gain “body wisdom”(147).

Basic approach to intuitive eating; As long as the individual does not have any chronic disease (eg diabetes, food allergies), he instinctively makes his choices in a way that will ensure nutritional balance, and therefore there is no restriction on food consumption diversity (146, 148).

The concept of intuitive eating is based on three basic approaches: Unconditional consent to eat (when he is hungry and what food he craves), Eating for physical reasons rather than emotional reasons, Eating based on physical hunger and fullness signals (determining when and how much to eat) (149, 150). In intuitive eating, individuals who eat for physical reasons rather than emotional reasons tend to eat food only to satisfy their physical hunger, not to cope with emotional fluctuations and/or stress situations (147). It is emphasized that an individual can have a real body-food-mind harmony when intuitive Mindful eating is instilled (151).

2.3.2.The Relationship Between Intuitive Eating and Body Weight Control

Intuitive eating behavior is reported to be inversely related to body weight and body mass index (BMI), as it is seen as an alternative approach that focuses on body hunger and gives clues about which food to consume in what quantities. With this aspect, it is thought that it can be a supportive approach to the prevention and treatment of obesity (152, 153). When the effect of intuitive eating, which emphasizes focusing more on inner hunger and satiety cues to regulate eating behavior, on environmental factors such as plate and portion size was investigated, it was found that higher intuitive eating levels were associated with less food consumption (154). In intuitive eating behavior, which is based on the principle that the body instinctively maintains the variety of food necessary for maintaining health, it is expected that those who consume intuitive food will exhibit a healthier eating habit and more positive eating patterns than those who do not consume intuitive food (155). In three different studies conducted with Spanish-American, German and French adults investigating the relationship between intuitive eating and BMI, it was determined that individuals with normal BMI had higher intuiti-

ve eating scores than slightly overweight and obese individuals (156, 157, 158). In another study involving young adults with a larger participation (1349 people), similar results were obtained by observing the inverse relationship between intuitive eating and BMI (158). In a different study, eating behavior in response to hunger and fullness signals is strongly associated with lower BMI in middle-aged women (a 10-point increase in the intuitive eating scale corresponds to a 5.1 kg/m² decrease in BMI) and this association was found to be partially mediated by binge eating frequency (159). Gagnon-Girouard et al. After a 4-month intervention and 12-month follow-up, they found significant body weight reduction among participants with the intuitive eating intervention as a non-diet approach (78.84 ± 1.34 kg- 77.45 ± 1.34 kg, $p < 0.01$) (160). On the other hand, in a study conducted to determine whether the intuitive eating approach is an effective method of weight loss in overweight women aged 20-48 years, an energy-restricted diet program or BMI and waist circumference were assessed in obese adults after intuitive nutrition education (based on intuitive eating principles). No significant reductions in waist circumference and BMI were reported in the intuitive eating study group during the six-week intervention. On the contrary, it has been reported that an energy-restricted diet is more effective (161).

2.3.3. The Relationship between Intuitive Eating and Eating Behavior Disorders

It has been observed that individuals with intuitive eating ability tend to display eating behaviors that cause body weight gain at a lower level than individuals who do not consume intuitive food (148). It has been reported that intuitive eating behavior is negatively correlated with symptoms of eating disorder, body dissatisfaction, and the adoption of the ideal of being thin (146). In the study conducted with the participation of 532 German adults, male and female aged 18-91, it was found that intuitive eating score had negative relationships with emotional eating, eating attitude, binge eating, binge eating and eating disorder symptoms (157). van Dyck Z et al. As a result of the study, which included 1134 participants, 81.3% of whom were women over the age of 18, it was determined that women with eating disorders had significantly lower all intu-

itive eating subscale scores and total scores than women who were not diagnosed with eating disorders (162). In a systematic review, it has been shown that intuitive eating is associated with a lower risk of eating disorders, a more positive body image, and positive emotional functioning (163). It has been stated that intervention or education programs that support intuitive eating contribute to the development of healthy eating attitudes and behaviors and reduce the frequency of overeating or binge eating at a level that cannot be ignored. In addition, it is emphasized that intervention techniques that will gain intuitive eating skills should be developed (157).

2.4. Mindful Eating

Awareness includes being fully present at all times by creating a state of complete consciousness with one's own emotional and physical state and environment (164). In another source, it is defined as 'conscious regulation of attention in order to understand the careless awareness of existing experiences' (165). Awareness practice; It includes being consciously aware of habitual patterns related to habits, emotions and behaviors and thus allowing for adaptive responses (166). Being consciously aware of habitual behaviors enables the individual to better control their emotional reactions and to have the ability to adapt when necessary. In addition, individuals with awareness have more self-compassion, self-control, willpower and emotional regulation (167).

Mindful eating, which is defined as the combination of eating behaviors and awareness, refers to the maintenance of non-judgmental awareness of one's physical and emotional sensations while eating or in an environment related to food (3).

Kose et al. (168), on the other hand, defined it as noticing how and why the eating behavior occurs rather than what is eaten by internal and external processes, internalizing physical hunger and satiety signals and being aware of emotions and thoughts, eating by focusing on the food to be consumed at that moment without judging environmental factors and food choices. Mindful eating enables the person to recognize the types of hunger. It is aimed to teach nutrition according to cellular hunger rather than sensory (hedonic) and emotional hunger. Cellular hunger, which is formed by ho-

meostatic signals that increase or decrease the desire to eat according to hunger and satiety in the hypothalamus, which plays a primary role in the regulation of energy intake, is a state of physical hunger. Cellular hunger can be distinguished from emotional and hedonic signals. Recognition of cellular hunger and changes in food consumption are effective in controlling body weight by reducing energy intake (169). Another type of hunger that regulates food intake and body weight and affects the brain centers associated with pleasure and reward is sensory hunger (125). In addition to the interaction between taste and homeostatic hunger, which arises with the combination of smell, taste and texture that directly affects food intake, perceived pleasure and response to food can also indirectly regulate appetite control by affecting the choice of food (170). Emotional hunger; It is a state of hunger that occurs in response to emotional triggers, even if satiation is achieved (171). Emotional hunger is important in determining the need to eat. People who are fed according to their emotions cannot distinguish whether their hunger is physiological or not (171). Emotions such as stress, anxiety, depression, anger, and anger that cause emotional eating often increase food consumption and disrupt eating habits. It has been shown in studies that people with high emotional hunger are more likely to be overweight and obese compared to those with low levels of emotional hunger, and their body weight is more difficult to manage (171, 172). Emotions are also; It affects all stages of eating such as food selection, chewing speed, digestion, metabolism. It has been observed that positive emotions lead to healthy food choices, enable eating with pleasure, and control food intake (172, 173). Mindful eating increases the individual's sensitivity to hunger and satiety symptoms, eating speed, food environment, and physical symptoms of food characteristics. These interventions are necessary for the autocontrol of the desire to consume high-calorie foods (174).

Mindful eating; It is a way of eating that focuses on the food that will be consumed at that moment without being affected by environmental factors and without judging food choices, by realizing how and why eating behavior occurs rather than what is eaten, internalizing the concept of physical hunger and being aware of the effect of feelings and thoughts. The focal issue in Mindful eating is one's full awareness of eating, including the taste and texture of food (168, 175). This awareness can generally

slow down the eating rate, reduce food cravings, help control weight, and thus play an active role in maintaining body weight control (176). Another important issue in Mindful eating is the non-judgmental manifestation of physical and emotional sensations (3). Mindful eating can provide an accurate weight loss as it creates awareness about why the individual consumes food.

In order to measure the quality of attention given to the eating experience in the general population, a 4-point Likert-type Mindful eating scale with 28 questions and 5 sub-factors was developed by Baer et al. for the first time in 2006 (168, 177). Adaptation of the scale to Turkish, validity and reliability study was done by Köse et al. Made by in 2017. The scale was composed of 30 questions and 7 sub-dimensions (disinhibition, emotional eating, eating control, focus, eating discipline, awareness, interference) (201). These surveys, which will be used later, will be discussed in detail.

2.4.1. The Relationship between Mindful Eating and Body Weight Control

In developing and underdeveloped countries, overweight may be caused by over-consumption of foods rich in carbohydrates, not consuming foods at some meals, and excessive consumption of foods at some meals, since the society satisfies the feeling of fullness. In developed countries, in the segment with low socio-economic status and where there is no awareness of healthy nutrition; In addition to an unsuitable diet, decrease in physical activity as a result of the development of technology and doing many jobs with machines is an important factor in weight gain (178).

The amount of fat cells in the body increases before birth and in the first years after birth, and this increase continues until puberty. Excess weight in childhood is also reflected in adulthood. For this reason, attention should be paid to overweight in childhood and adolescence in order to prevent obesity throughout life. Considering the decrease in basal metabolic rate and the decrease in the amount of energy consumed by the age, it can be said that age is an important factor in obesity (178).

It has been reported that Mindful eating has a causal effect on eating healthier, encourages adequate and balanced nutrition with less energy intake, and helps healthy body weight loss (179). It is thought that Mindful eating can help reduce overconsumption of foods by providing focused and non-judgmental attention and awareness of current events (179). It is stated that awareness of eating this feature is a useful strategy in reducing impulsive food selection, which can at least temporarily prevent weight gain in adolescents and adults (180). Studies evaluating the relationship between Mindful eating and BMI are quite limited (175, 136).

2.4.2. The Relationship between Mindful Eating and Eating Behavior Disorders

Body perception is described as the individual's assessment of good and negative sentiments toward the parts of his or her own body and their movements. Gender, age, body structure and weight status, self-esteem, sensitivity to and significance of one's body, media pressure, and the importance society places on one's looks all influence one's body image. Physique dissatisfaction and restlessness develop when a person's own body differs from the body shape in which he wishes to view himself (181). Eating behavior disorders, on the other hand, is a disease course in which disorders in eating attitude and behavior occur as a result of the deterioration of the individual's body image. Eating disorders are caused by factors such as body dissatisfaction, weight anxiety, early maturation, low self-esteem and the desire to be perfect. It has been reported that body image and eating behavior disorders are related. (182). Especially adolescence attracts attention as a period in which body image and nutrition problems are experienced. Adolescence is the period in which there is rapid growth and development and lifelong habits are permanent. In addition, cognitive and social development is as rapid as physical development during this period. In this period, the importance given to external appearance is more pronounced and dissatisfaction with body image is more common. Unhealthy eating habits are also among the risky behaviors seen in this period. Changes and wrong diet practices can cause inadequate and unbalanced nutrition. Body dissatisfaction and eating behavior disorders are reported to be higher especially in adolescent

girls. It is known that female adolescents who cannot be accepted as obese or even have normal weight, make dietary practices in order to lose weight. The obsessive fear of being overweight and fat in eating disorders also leads to an intense increase in body image. Body image is a multidimensional construct related to attitude. It develops and changes under biological, psychological, social and cultural influences. Most of the body image disorders begin in adolescence, but can also be seen at younger ages (183, 184).

Studies have shown that Mindful eating reduces the relationship between disordered eating conditions and disordered eating behaviors. In addition, it has been found to be effective in reducing stress, weight loss, obesity and eating disorders related to body weight (185, 186).

2.4.3.Mindful Eating Intervention

Mindful eating Intervention Awareness practice enables the acquisition of healthier eating behaviors (187). Mindful eating intervention; raises awareness of the links between food, our bodies, emotions, and our minds. Mindful eating activities may be assessed in four ways (188): what, why, how much, and how The first step is to decide what you want to consume. Food selection occurs during grocery shopping, meal preparation, purchasing of ready-to-eat foods, and consumption. Consumption of less animal products is linked to a decreased risk of chronic illnesses such as cardiovascular disease and diabetes, which may motivate people to consume more plant-based foods (188). Understanding why you eat is the second component. Food choice is influenced by nutritional information, marketing, culture, resource availability, and the socioecological model (188). The third component is to be conscious of how much food you consume. This involves using food to satisfy physiological requirements. Food social norms and how food is presented have been found to influence the amount of time and subsequent intake of food. In Mindful eating, the individual's awareness of all internal and external stimuli during a meal improves his ability to manage his emotions while eating and enables him to reduce the amount of portions (188). The fourth aspect is to

see how you eat. People that eat thoughtfully do so without being distracted or rushed. Individual eats food by completely experiencing its flavor, sight, smell, sound, and texture (188). Various trainings have been designed to teach the four components of Mindful eating and to help people avoid eating behaviors and external triggers that lead to overeating. The Mindfulness-Based Mindful eating Training (MB-EAT) program is a popular way to teach Mindful eating. Traditional mindfulness meditation techniques like raisin meditation and guided meditation are used in Mindfulness-Based Mindful eating Training to address concerns including body weight and willful eating. The intervention addresses the role of hunger and satiety signals, emphasizing the consideration of these signals rather than habitual eating behavior. Each session includes guided meditations specifically on eating, meditation practices that use food to draw attention to sensations, thoughts, and emotions related to hunger, satiety, and eating triggers. The practices that start with the raisin meditation continue with the choice between only two foods; It teaches how to make food choices consciously at a random meal and restaurant afterwards (187). Mini meditations are advised as a technique to bring awareness to the 'now moment' right before a meal. Participants are instructed to take a few deep breaths, become aware of physical impulses, such as hunger, and then select how to respond. Participants can think about what foods they want to consume and how much they should eat based on their hunger level during the procedure. Participants in Mindfulness-Based Mindful eating Training will learn how to incorporate information about their health, energy, and nutrient content into their everyday meal choices. Taste buds, a crucial component of Mindfulness-Based Mindful eating Training, focuses on sensory-specific satiety mechanisms. The enjoyment of lesser servings is increased by being alert to the taste sensation at the time and then noticing when contentment or pleasure from a particular dish declines (187). An example of the sessions of Mindfulness-Based Mindful eating Training is given in table 1.

Table 1. An example of a mindfulness intervention from a nine-session mindfulness-based eating awareness training program

<i>Session 1-</i> Introduction to self-regulation model, grape exercise, group practice and mindfulness meditation
<i>Session 2-</i> Brief meditation (continues in all sessions), eating awareness; exercise(cheese and crackers); eating awareness concept, body scan concept
<i>Session 3-</i> Binge triggers and meditation, eating awareness research (oily, high-fat foods like cake)
<i>Session 4-</i> Hunger cues- physiological/emotional, hunger meditation, eating practice, mindful food choices, recovery, self-care
<i>Session 5-</i> Taste gratification signals - types and levels, gratification meditation, sitting yoga
<i>Session 6-</i> Saturation signals- types and levels, satiety meditation, random eating
<i>Session 7-</i> Forgiveness- Forgiveness meditation
<i>Session 8-</i> Inner wisdom- wisdom meditation, walking meditation
<i>Session 9-</i> Did you notice others? Where are you going from here?

Mindful eating intervention; changes their eating habits by affecting them in different ways. Individuals eat according to their physical hunger and satiety feelings with increased awareness. The feeling of fullness is perceived by the brain approximately 20 minutes after starting the meal. Mindful eating slows down the rate of eating, making individuals feel fuller with less food, and thus reduces total energy intake (190). Mindfulness training increases the ability to relax in the face of many negative events and emotions that can provoke an automatic reaction, helps to reduce the impulsivity associated with overeating, and thus reduces the unconscious eating that develops in response to non-physical cues (189). An unconscious food addiction based on environmental or external factors (for example, package size) can adversely affect an individual's ability

to be aware of what they eat. With this intervention, individuals reduce the probability of purchasing and eating remarkable foods (189). Individuals can make these gains permanent by practicing simple Mindful eating in daily life.

2.4.4. Interventions

Awareness-based interventions are intensive skill-based programs aimed at improving mindfulness practice by reducing negativity and increasing well-being in the management of depression, stress, physical function, quality of life, and chronic pain (139). These interventions are; It is increasingly being included in interventions designed to reduce food cravings, inhibit emotional eating, stop binge eating, portion control, facilitate weight loss in many conditions, and manage obesity-related eating behaviors (191).

2.4.5. Mindful Eating Intervention In Weight Management

It is recommended that mindfulness-based behavioral training and Mindful eating interventions be included in weight loss treatments. Forman et al. (192) in a randomized controlled study comparing mindfulness-based behavior therapy with standard treatment (a standard weight loss protocol including healthy diet and physical activity recommendations); The intervention group received awareness training to help increase their awareness of their perceptual, cognitive and sensory experiences. While weight loss was observed in both groups after therapy, it was found to be significantly higher in the intervention group compared to the control group (13.17% vs. 7.54%, $p=0.01$). At the 6th month control, it was observed that the group that received mindfulness training continued to maintain the weight they lost (10.98% vs. 4.83%, $p<0.01$). Mantzios et al. (193) has been found to be more effective in incorporating mindfulness-enhancing training into weight loss programs compared to a simple diet or mindfulness training alone. In another study, there was a significant decrease in weight, HbA1C, energy intake,

glycemic index and glycemic load values of diabetic and obese individuals who applied MB-EAT; however, it was determined that there was an increase in the consumption of vegetables, fruits, meat, chicken, fish and eggs ($p \leq 0.03$; 194). Portion size in weight management plays an important role in reducing energy consumption and in the treatment of obesity. Beshara et al. (195), to examine the relationship between mindfulness and portion size, participants were asked to record their daily awareness, Mindful eating, and consumption of high-energy foods. It has been determined that individuals with high awareness levels consume high-energy foods in smaller portions. It has been stated that increasing the ability to eat awareness can have a significant effect on reducing portion sizes. It has been determined that individuals who are more sensitive to reward and pleasure are more inclined to overeat delicious foods regardless of their hunger and satiety, and these individuals consume more fat. Therefore, the Mindful eating intervention was found to be less effective in reducing the consumption of a tasty snack in these individuals (196). Dunn et al. reviewed studies of the effect of Mindful eating interventions on weight loss. Weight loss continued in four of the five studies followed up after the intervention; weight gain was observed in only one of them. The inclusion of Mindful eating interventions as a component or focus in weight management programs has been shown to provide significant benefit for obesity treatment.

Arch et al. (197) in their study, the participants were divided into two groups as the mindfulness group and the distraction group, and the awareness group was told that it is important to focus their attention on sensory features such as color, texture, smell and taste while eating chocolate, and at the same time, they were asked to solve word puzzles between tasting trials. The distraction group was told that while eating the chocolate it was very important to focus their attention on the word puzzle and were told to focus on finding as many hidden words as they could. As a result, it was observed that the group focusing on sensory properties enjoyed chocolate more, and found more words in the distraction group. This study found that brief mindfulness guidelines, especially while consuming less healthy foods; confirmed the predictions that it provides less calorie intake with more pleasure. Robinson et al (198) examined energy consumption according to mindful eating patterns in slightly overweight and obese women.

The focused group, which was divided into two as the focused group and the control group, was told that they should pay attention to their appearance, smell and taste while eating their sandwiches; The control group was listened to an audio book about the cuckoo. They were asked to eat as much as they wanted from the snack given after two to three hours. Energy consumption was 30% less in the focused group (250 ± 92 kcal) compared to the control group (356 ± 185 kcal). It was concluded that consuming foods by focusing on their hedonic values strengthens the memories about the food, the next meal is interpreted in accordance with the physiological signals and the snack consumption is adjusted accordingly.

2.4.6. Mindful Eating In Emotional Eating

Emotional eating is hypothesized to be a solution that focuses the urge to eat to suppress negative feelings and thoughts. Automatic eating is also a form of emotional eating. Using food to prevent negative feelings and thoughts and not to face these feelings is a short-term escape. This may become a habit later on. Mindfulness techniques have been shown to be effective in reducing stress and less emotional eating has been reported in individuals with high Mindful eating. Therefore, as mindfulness training becomes a coping mechanism by teaching to accept negative emotions, emotional eating may decrease (199, 200). Alberts et al. (176) in the study conducted by; The effects of mindfulness intervention on problematic eating behavior were investigated. For eight weeks; Awareness of feelings and thoughts about eating, non-judgment, acceptance, steps to change daily eating and physical activity habits are covered. In the intervention group compared to the control group; cravings, emotional and external eating, body image anxiety decreased significantly, and their awareness increased. Timmerm and Brown (201) evaluated the effect of restaurant awareness intervention on weight management of obese women who ate out at least 3 times a week; Mindfulness meditations including hunger, satiety, and emotional eating signals were performed in the 6-week intervention, and it was observed that more weight loss (-0.38 $p=0.03$) and less daily calorie intake (769 kcal, $p=0.002$) occurred in the intervention group. Emotional eating

is associated with increased body mass index, increased waist circumference, and more body fat. Although emotional eating has been reported in normal-weight individuals, this situation poses a greater problem for overweight/obese individuals (176). Emotional eating has also been reported in people with normal weight who are on a diet and in women with eating disorders (201). It has been determined that mindfulness-based interventions on obesity-related eating behavior improve binge eating and emotional eating behaviors (200). Emotional eating has been shown to be effective in weight gain by causing more consumption of energy-dense foods such as sweet and fatty snacks, and less fruit and vegetable consumption. Katterman et al (202) also found a positive correlation when they evaluated mindfulness interventions related to emotional eating and weight loss. Mindfulness interventions have been reported to be effective in individuals with high emotional eating behavior. A combination of mindfulness training and behavioral strategies in weight management is thought to have more positive effects than the standard weight loss protocol alone. Reducing the connection with thoughts and feelings during food consumption; provides increased awareness. With the increase of awareness, the consumption of non-needed foods decreases and it becomes easier to make healthier food choices. For this reason, it is thought that mindfulness can be used as an effective method in permanent weight loss (202).

2.4.7. The Importance of Mindful Eating and Liposuction

The fact that individuals are fed by listening to their sensory values and emotional hunger instead of homeostatic hunger, which develops with physiological signals over time, leads to wrong habits and negative behaviors such as automatic eating, causing obesity and adiposity, and complicates the effectiveness of obesity treatment. Teaching Mindful eating; In the treatment of obesity and overweight, it provides moderate improvements in the first stage compared to traditional treatment such as calorie restriction, physical activity recommendation, pharmacotherapy and bariatric surgery. Gaining these skills to the individual can increase weight loss over time and maintain its effect

on long-term weight management. Increasing awareness of eating; It can help people to become aware of their bodies, adapt more to hunger and satiety, recognize external cues for food, gain self-sensitivity, reduce food cravings, reduce factors associated with problematic eating, and reduce reward-oriented eating. Since Mindful eating directly affects the nutritional behavior of the individual, it is essential to ensure success in long-term periods, such as maintaining the current appearance after an operation performed with body contour and weight anxiety.

In future studies, there is a need to investigate the long-term effects of Mindful eating and its relations with diseases and to establish standardization of treatment.

2.5. SURVEY

The concept of mindfulness and Mindful eating is a concept that has just been added to the literature, and although its effectiveness has been proven, it still needs to be studied. In order to measure these concepts, certain surveys are used. The 'Five-Factor Awareness Scale (203)' and the 'Conscious Awareness Scale (203)' are widely used for awareness. For Mindful eating, the 'Mindful eating Scale (3)' was created. Awareness, Baer et al. (203) using the 'Five-Factor Awareness Scale (FFMQ),' which is a 39-item scale developed by Dr. This scale includes five important factors: Observe, Identify, Act with Awareness, Judgment and React. The 'Conscious Awareness Scale' created by Brown and Ryan (204) consists of 15 items. It measures the degree of daily awareness, attention and observation. To assess Mindful eating, Framson et al. (3) The Mindful Eating Questionnaire (MEQ), consisting of 28 items, is used. Individuals who score high on this scale are considered to be aware of and responsive to the physiological indicators of hunger and satiety. They also pay attention to the characteristics of the foods consumed, such as texture and taste, the triggers of overeating, and the characteristics of the environment. These features are examined under five sub-headings of the scale: 'disinhibition, external cues, emotional response, awareness and distraction'. Disinhibition means that an individual cannot stop eating even when full. Eating with external cues, eating in response to environmental cues; Emotional eating describes eating in response to negative emotions. Awareness, while evaluating individuals' awareness of food-specific features as well as their sensory experience specific to eating; distraction assesses the degree to which individuals focus on other thoughts or rush while eating. Kose et al. (168) conducted a validity and reliability study of this scale and adapted it to Turkish.

Since Mindful eating directly affects the nutritional behavior of the individual, it is essential to ensure success in long-term periods, such as maintaining the current appearance after an operation performed with body contour and weight anxiety. The question-

naire used is one of the most frequently used questionnaires in the field of Mindful eating.

3. MATERIALS AND METHODS

3.1. Type of Research

It is a retrospective study. This is a survey study which uses human research as basis and does not require laboratory.

3.2. Time of Study and Sample Selection

This research was conducted between February-June 2021. 56 people, 42.9% male and 57.1% female, participated in the study from a private clinic. It was observed that 37.5% of the participants were in the 18-25 age group, 28.6% were in the 26-35 age group and 33.9% were in the 36+ age group. The ages of the participants ranged from 18 to 65. The mean age was calculated as 34.71 (Sd=13.79). The inclusion criteria of the study was having undergone liposuction. Fat absorption is made from the abdominal region, chest, legs and arms of the body. The exclusion criteria of the study are: Pregnancy, chronic illness, be younger than 18 years old, be over 65 years old, injection of the taken fat into different areas.

For this research, the Ethics Committee approval was obtained by the Research Ethics Committee of Yeditepe University with the decision number 1385 dated 17/02/2021 as the research project number 2102.

3.3. Data Collection and Evaluation

Data were collected by using questionnaire method. The questionnaires were distributed and collected by online. The research data composed of 2 parts which are Questionnaire Form, Mindful Eating Questionnaire(YFÖ-30) and General Practice Physical Activity Questionnaire(BBFAA). There are 33 questions in the the questionnaire form. The questionnaires to be used in this study is given in form.

3.4. Statistical Evaluation of Data

Pearson correlation coefficients were calculated to examine the relationships between Mindful eating scores and the amount of fat removed during the operation, weight change (%), age, and time after surgery (months). One-way analysis of variance was applied to compare Mindful eating scores, weight change, amount of fat intake scores and age according to physical activity level. Independent groups t-test was used to compare Mindful eating scores, weight change and amount of fat intake scores by gender. Chi-square analysis was performed to examine the relationship between gender and physical activity level. Confidence interval was determined as 95%, $p < 0.05$ values were considered statistically significant. Analyzes were performed using the SPSS 25.0 statistical package program.

There are 20 reverse items in the Mindful Eating Questionnaire(YFÖ-30). Questions 1, 7, 9, 11, 13, 15, 18, 24, 25 and 27 are scored straight. The remaining questions are scored in reverse. While scoring the scale, the arithmetic mean of the sub-dimensions and the total score is taken. A score of 3 and above from each sub-dimension of the scale indicates that the individual has the characteristic evaluated by the relevant sub-dimension. The scale also gives a total Mindful eating score.

For the General Practice Physical Activity Questionnaire(BBFAA), the questionnaire's own excel calculator was used.

3.5. Analysis of Data

Within the scope of the research, Shapiro-Wilk normality test was applied to examine the distribution of scores obtained from the Mindful eating scale. The results obtained showed that the scale scores had a normal distribution (Table 2). Considering this result, it was decided to use parametric analysis techniques.

Table 2. Normality Test Results

Variables	Shapiro-Wilk		
	Statistic	df	p
Eating without thinking	0.98	56	0.31
Emotional eating	0.97	56	0.13
Eating control	0.96	56	0.10
Awareness	0.96	56	0.10
Eating discipline	0.97	56	0.29
Mindful eating	0.98	56	0.50
Interferenece	0.96	56	0.07
YFO total	0.97	56	0.14

Pearson correlation coefficients were calculated to examine the relationships between Mindful eating scores and the amount of fat removed during the operation, weight change (%), age, and time after surgery (months). One-way analysis of variance was applied to compare Mindful eating scores, weight change, amount of fat intake scores and age according to physical activity level. Independent groups t-test was used to compare Mindful eating scores, weight change and amount of fat intake scores by gender. Chi-square analysis was performed to examine the relationship between gender and

physical activity level. Confidence interval was determined as 95%, $p < 0.05$ values were considered statistically significant. Analyzes were performed using the SPSS 25.0 statistical package program.

4. RESULTS

Table 3. Distribution of Participants by Gender

		f	%
Gender	Male	24	42.9
	Female	32	57.1
Total		56	100.0

42.9% of the participants were male and 57.1% were female. The proportions of men and women included in the study were close to each other.

Figure 1. Distribution of Participants by Gender

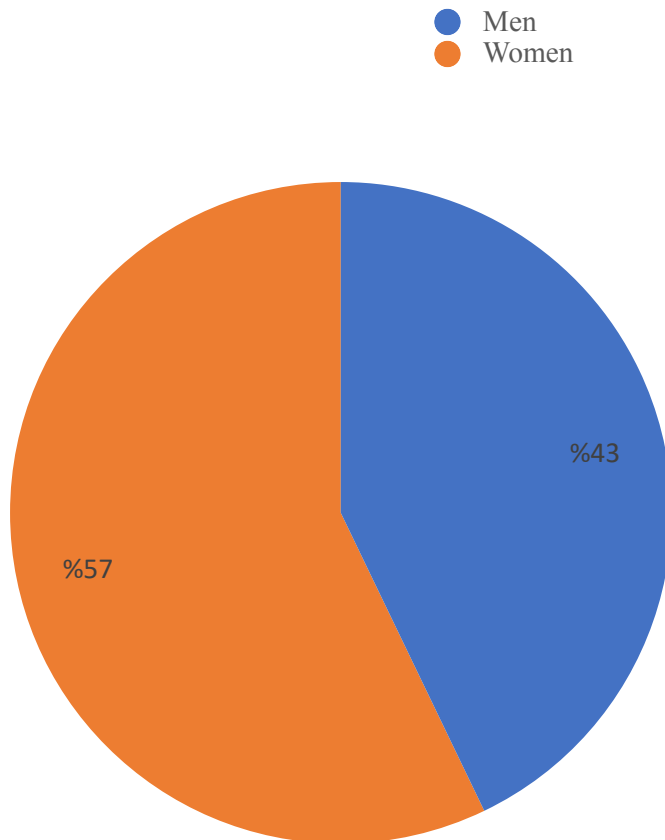


Table 4. Distribution of Participants by Physical Activity Level

		f	%
Physical activity	I	15	26.8
	MI	22	39.3
	MA	12	21.4
	A	7	12.5
Total		56	100.0

It was observed that 26.8% of the participants were inactive, 39.3% moderately inactive, 21.4% moderately active and 12.5% active physical activity level.

Figure 2. Distribution of Participants by Physical Activity Level

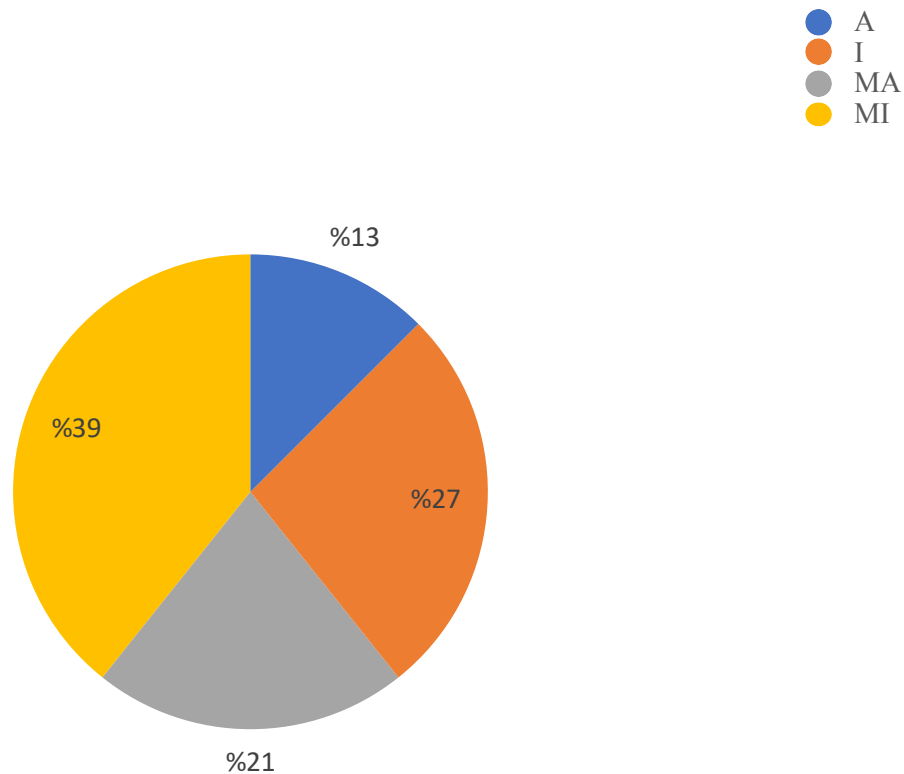


Table 5. Distribution of Participants by Age Groups

		f	%
Age	18-25	21	37.5
	26-35	16	28.6
	36+	19	33.9
Total		56	100.0

It was observed that 37.5% of the participants were in the 18-25 age group, 28.6% were in the 26-35 age group and 33.9% were in the 36+ age group.

Figure 3. Distribution of Participants by Age Groups

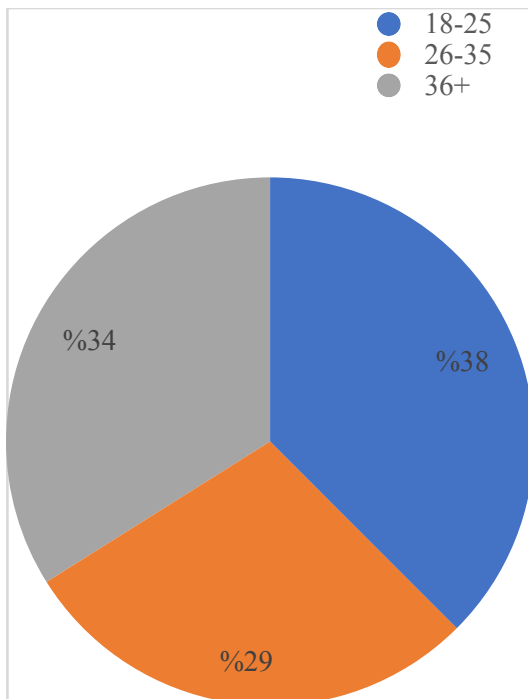


Table 6. Descriptive Values of Scores Obtained from the Mindful eating Scale

Variables	N	Minimum	Maximum	Mean	SD
Eating without thinking	56	6	25	14.30	4.43
Emotional eating	56	5	25	16.14	5.10
Eating control	56	5	20	12.50	4.15
Awareness	56	11	22	15.73	2.60
Eating discipline	56	4	19	12.04	3.21
Mindful eating	56	9	24	15.46	3.12
Interferenece	56	2	10	6.38	2.15
YFO total	56	61	127	92.55	15.33

The mean scores of mindless eating, emotional eating, eating control, awareness, eating discipline, conscious eating, interference, and YFÖ total scores were 14.30 (Sd=4.43), 16.14 (Sd=5.10), 12.50 (Ss=4.15), 15.73 (Sd=2.60), 12.04 (Sd=3.21), 15.46 (Sd=3.12), 6.38 (Sd=2.15) and it was calculated as 92.55 (Sd=15.33). Mindful eating of the participants was moderate.

Table 7. Descriptive Values for Age, Height, Weight and Amount of Fat Intake

Variables	N	Mini- mum	Maxi- mum	Mean	SD
Age	56	18	65	34.71	13.79
Size (cm)	56	155	193	172.27	9.38
Weight before surgery	56	48	145	78.94	19.87
Current weight	56	43	107	74.50	16.18
Amount of fat taken during the operation (liter)	56	0.6	5	1.54	0.77
Weight change / decrease (%)	56	-28.21	37.50	4.79	7.48
Time after surgery (months)	56	4	56	33.45	17.33

The ages of the participants ranged from 18 to 65. The mean age was calculated as 34.71 (Sd=13.79). The height of the participants ranged from 155 to 193 cm. The mean height was calculated as 172.27 (Sd=9.38) cm.

The weights observed before the operation ranged from 48 to 145, and the mean weight was calculated as 78.94 (Sd=19.87). Current weight ranged from 43 to 107, and the mean weight was calculated as 74.50 (Sd=16.18). The amount of oil taken during the operation ranged from 0.6 to 5 liters, and the average amount of oil was calculated as 1.54 (Sd=0.77) liters.

The percent weight change ranged from -28.21 to 37.50, and the average percent weight change was calculated as 4.79 (Sd=7.48). Postoperative time ranged from 4 to 56 months, and the mean time was calculated as 33.45 (Sd=17.33) months.

Table 8. Pearson Correlation Coefficients of the Relationships between the Scores Obtained from the Mindful eating Scale and the Amount of Fat Received During the Operation

Variables	Amount of fat taken during the operation (liter)
Eating without thinking	0.26
Emotional eating	0.03
Eating control	0.11
Awareness	-0.07
Eating discipline	0.49**
Mindful eating	0.22
Interferenece	0.25
YFO total	0.28*

**p<0,01; *p<0,05; N=56

When the statistically significant relationships in the table are examined, the amount of fat taken during the operation (liter) and the eating discipline ($r=0.49$; $p<0.01$) and YFF total ($r=0.28$; $p<0.05$)) scores were found to have low and moderate positive correlations. It was determined that as the amount of fat taken during the operation increased, the total scores of the eating discipline and Mindful eating scale increased.

Table 9. Scores Obtained from the Mindful eating Scale and Pearson Correlation Coefficients for the Relationships between Postoperative Time and Percent Weight Change

Variables	Weight change (%) P
Eating without thinking	0.21
Emotional eating	0.00
Eating control	0.24
Awareness	0.20
Eating discipline	0.16
Mindful eating	0.07
Interferenece	-0.10
YFO total	0.19
Time after surgery (months)	0.28*

**p<0,01; *p<0,05; N=56

When the statistically significant relationships in the table were examined, it was observed that there was a low level of positive relationship between weight change and the time passed after surgery ($r=0.28$; $p<0.05$). It was determined that the percentage of weight change increased as the time passed after the surgery increased.

Table 10. Pearson Correlation Coefficients of the Relationships between Scores from the Mindful eating Scale, Amount of Age Received, Weight Change and Age

Variables	Age P
Eating without thinking	-0.02
Emotional eating	0.16
Eating control	-0.22
Awareness	-0.20
Eating discipline	-0.13
Mindful eating	0.10
Interference	0.32*
YFO total	-0.01
Amount of fat taken during the operation (liter)	0.10
Weight change (%)	-0.44**

**p<0,01; *p<0,05; N=56

When the statistically significant relationships in the table were examined, it was observed that there was a moderately positive relationship between age and Interference scores ($r=0.32$; $p<0.05$). It was determined that as the age increased, the interference scores also increased. It was observed that there was a moderate negative relationship between age and weight change ($r=-0.44$; $p<0.01$). It was determined that the weight change decreased with increasing age.

Table 11. Mindful eating Scale Mean Scores, Standard Deviations and ANOVA Results by Physical Activity Level

Variables	Physical activity	N	Mean	SD	F	p
Eating without thinking	Inactive	15	14.40	4.63	0.24	0,87
	Moderately inactive	22	14.82	4.02		
	Moderately active	12	13.58	4.27		
	Active	7	13.71	6.130		
Emotional eating	Inactive	15	15.80	4.71	0.86	0,47
	Moderately inactive	22	17.36	4.88		
	Moderately active	12	14.50	5.71		
	Active	7	15.86	5.699		
Eating control	Inactive	15	12.27	4.11	0.39	0,76
	Moderately inactive	22	12.00	3.56		
	Moderately active	12	13.58	4.87		
	Active	7	12.71	5.219		
Awareness	Inactive	15	16.20	2.57	0.30	0,82
	Moderately inactive	22	15.36	2.63		
	Moderately active	12	15.83	2.29		
	Active	7	15.71	3.450		
Eating discipline	Inactive	15	11.93	2.96	0.32	0,81
	Moderately inactive	22	11.95	2.77		
	Moderately active	12	12.75	2.96		
	Active	7	11.29	5.407		
Mindful eating	Inactive	15	15.07	3.41	0.49	0,69
	Moderately inactive	22	16.09	3.13		
	Moderately active	12	14.92	2.31		

	Active	7	15.29	3.946		
Interference	Inactive	15	6.67	2.19	0.76	0,52
	Moderately inactive	22	6.27	1.88		
	Moderately active	12	5.58	2.61		
	Active	7	6.86	1.773		
YFO total	Inactive	15	92.40	14.32	0.12	0,95
	Moderately inactive	22	93.95	14.35		
	Moderately active	12	90.75	14.87		
	Active	7	91.57	23.136		

When the table is examined, it is seen that eating without thinking according to physical activity level ($F(3;55)=0.24$; $p>0.05$), emotional eating ($F(3;55)=0.86$; $p>0.05$), eating control ($F(3;55)=0.39$; $p>0.05$), awareness ($F(3;55)=0.30$; $p>0.05$), eating discipline ($F(3;55)=0.32$; $p>0.05$), conscious nutrition ($F(3;55)=0.49$; $p>0.05$), interference ($F(3;55)=0.76$; $p>0.05$) and YFS total ($F(3;55)=0.12$; $p>0.05$) mean scores did not show a significant difference. It was determined that the Mindful eating of the participants whose physical activity levels differed was similar.

Table 12. Weight Change, Amount of Fat Ingested and Average Age, Standard Deviations and ANOVA Results by Physical Activity Level

Variable	Physical activity	N	Mean	SD	F	p
Weight change (%)	Inactive	15	4.99	7.34	1.23	0.31
	Moderately inactive	22	2.09	9.60		
	Moderately active	12	7.91	8.75		
	Active	7	7.49	13.405		
Amount of fat taken during the operation (liter)	Inactive	15	1.39	0.70	1.47	0.23
	Moderately inactive	22	1.40	0.46		
	Moderately active	12	1.73	0.68		
	Active	7	1.99	1.523		
Age	Inactive	15	35.27	13.53	0.39	0.76
	Moderately inactive	22	36.55	15.58		
	Moderately active	12	31.25	12.12		
	Active	7	33.71	12.632		

When the table is examined, weight change according to physical activity level ($F(3;55)=1.23$; $p>0.05$), amount of fat removed during the operation ($F(3;55)=1.47$; $p>0.05$), and age ($F(3;55)=0.39$; $p>0.05$) did not show a significant difference. It was determined that the weight change, the amount of fat taken during the operation and the average age of the participants whose physical activity levels differed were similar.

Table 13. Mindful eating Scale Mean Scores, Standard Deviations and Independent Groups t-Test Results by Gender

Variables	Gender	N	Mean	SD	t	p
Eating without thinking	Male	32	15.09	4.06	1.56	0,12
	Female	24	13.25	4.77		
Emotional eating	Male	32	15.66	5.54	-0.82	0,42
	Female	24	16.79	4.49		
Eating control	Male	32	13.31	4.07	1.72	0,09
	Female	24	11.42	4.10		
Awareness	Male	32	15.97	2.44	0.78	0,44
	Female	24	15.42	2.83		
Eating discipline	Male	32	12.91	2.67	2.45	0,02
	Female	24	10.88	3.54		
Mindful eating	Male	32	16.03	3.03	1.59	0,12
	Female	24	14.71	3.14		
Interference	Male	32	6.34	2.18	0.16	0,87
	Female	24	6.25	2.07		
YFO total	Male	32	95.44	14.11	1.65	0,10
	Female	24	88.71	16.33		

When the table is examined, it is seen that eating without thinking according to gender ($t(54)=1.56$; $p>0.05$), emotional eating ($t(54)=-0.82$; $p>0.05$), eating control ($t(54)=1.72$; $p>0.05$), awareness ($t(54)=0.78$; $p>0.05$), conscious eating ($t(54)=1.59$; $p>0.05$), It was observed that the mean of interference ($t(54)=0.16$; $p>0.05$) and YFS total ($t(54)=1.65$; $p>0.05$) scores did not differ significantly. However, a significant difference was observed in the mean scores of the eating discipline according to gender ($t(54)=2.45$; $p<0.05$). The men's eating discipline mean score (Mean=16.03; SD=3.03) was significantly higher than the women's mean (Mean=14.71; SD=3.14).

Table 14. Amount of Fat Ingested by Gender and Means of Weight Change, Standard Deviations and Independent Groups t-Test Results

Variables	Gender	N	Mean	SD	t	p
Amount of fat taken during the operation (liter)	Male	32	1.63	0.81	0.94	0.35
	Female	24	1.43	0.73		
Weight change (%)	Male	32	5.74	10.66	0.86	0.39
	Female	24	3.53	7.67		

When the table is examined, was not observed that there is a significant difference between the mean amount of fat removed during the operation ($t(54)=0.94$; $p>0.05$) and the percentage of weight change ($t(54)=0.86$; $p>0.05$) according to gender.. It was determined that the average of the amount of fat taken during the operation and the percentage of weight change in the men and women participating in the study were similar.

Table 15. Examination of the Relationship Between Gender and Physical Activity Level by Chi-square Analysis

		Gender		Total	χ^2	p
		Male	Female			
Physical activity	Inactive	n	5	10	3.39	0,34
		%	20.8	31.3		
	Moderately inactive	n	10	12		
		%	41.7	37.5		
	Moderately active	n	4	8		
		%	16.7	25.0		
	Active	n	5	2		
		%	20.8	6.3		
	Total	n	24	32		
		%	100.0	100.0		

When the table was examined, it was observed that 20.8% of the men were inactive, 41.7% moderately inactive, 16.7% moderately active and 20.8% active. It was observed that 31.3% of the women were inactive, 37.5% moderately inactive, 25% moderately active and 6.3% active. There was no significant relationship between gender and physical activity level ($\chi^2=3.39$; $p>0.05$). The ratio of physical activity levels observed in men and women was similar.

Table 16. Examination of the Distribution of the Responses to the Expressions of Eating Without Thinking

Expressions of eating without thinking		Never	Rarely	Sometimes	Often	Always	Mean	SD
When I eat one of my favorite foods, I do not realize that I am full.	f	5	9	11	16	15	3.48	1.29
	%	8.9	16.1	19.6	28.6	26.8		
I suddenly realize that I am very hungry and I am ready to eat whatever I can find.	f	5	9	17	10	15	3.38	1.29
	%	8.9	16.1	30.4	17.9	26.8		
Even if I'm full, a food tempts me.	f	6	10	7	18	15	3.46	1.35
	%	10.7	17.9	12.5	32.1	26.8		
I eat until I can't eat any more at one meal.	f	16	14	10	13	3	2.52	1.28
	%	28.6	25.0	17.9	23.2	5.4		
I snack without realizing I'm eating.	f	11	12	12	16	5	2.86	1.29
	%	19.6	21.4	21.4	28.6	8.9		

The first statement of the questionnaire was “When I eat one of my favorite foods, I cannot realize that I am full.” It is seen that the answers given by the participants to the statement "often" (Mean=3.48; SD=1.29) (Table 14).

The second statement of the questionnaire, "Suddenly, I realize that I am very hungry and I can eat whatever I find." It is seen that the answers given by the participants to the statement "often" (Mean=3.38; SD=1.29) (Table 14).

The third statement of the survey was "Even if I am full, a food tempts me." It is seen that the answers given by the participants to the statement "often" (Mean=3.46; SD=1.35) (Table 14).

The fourth statement of the questionnaire, "I eat at one meal until I can't eat any more." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.52; SD=1.28) (Table 14).

The fifth statement of the questionnaire, "I snack without realizing that I am eating." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.86; SD=1.29) (Table 14).

Table 17. Examination of the Distribution of Responses to Emotional Eating Statements

Emotional eating expressions		Never	Rarely	Sometimes	Often	Always	Mean	SD
I can't stop eating when there's ice cream, cookies or chips somewhere in the house.	f	14	6	15	11	10	2.95	1.43
	%	25.0	10.7	26.8	19.6	17.9		
When I get depressed, the first thing that comes to my mind is food.	f	16	14	13	8	5	2.50	1.29
	%	28.6	25.0	23.2	14.3	8.9		
I eat when I'm bored.	f	9	14	12	12	9	2.96	1.33
	%	16.1	25.0	21.4	21.4	16.1		
I eat junk food when I feel stressed.	f	11	13	16	9	7	2.79	1.29
	%	19.6	23.2	28.6	16.1	12.5		
I eat chocolate to be happy.	f	13	14	14	9	6	2.66	1.30
	%	23.2	25.0	25.0	16.1	10.7		

The first statement of the questionnaire, "I can't stop eating when there is ice cream, cookies or chips somewhere in the house." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.95; SD=1.43) (Table 15).

The second statement of the survey, "When I get depressed, the first thing that comes to my mind is food." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.50, SD=1.29) (Table 15).

The third statement of the questionnaire, "I eat when I'm bored." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.96; SD=1.33) (Table 15).

The fourth statement of the questionnaire, "I eat junk food when I feel stressed." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.79; SD=1.29) (Table 15).

The fifth statement of the survey, "I eat chocolate to be happy." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.66; SD=1.30) (Table 15).

Table 18. Analysis of the Distribution of Responses to Eating Control Statements

Eating control		Ne- ver	Ra- rely	So- me- ti- mes	Of- ten	Al- way s	Mean	SD
I swallow my bites without chewing.	f	15	12	19	8	2	2.46	1.14
	%	26.8	21.4	33.9	14.3	3.6		
People around me say that I eat too fast.	f	14	9	11	9	13	2.96	1.51
	%	25.0	16.1	19.6	16.1	23.2		
I eat small bites.	f	9	17	15	7	8	2.79	1.28
	%	16.1	30.4	26.8	12.5	14.3		
I put it on autopilot while eating.	f	12	9	15	15	5	2.86	1.29
	%	21.4	16.1	26.8	26.8	8.9		

The first statement of the questionnaire, "I swallow my bite without chewing." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.46; SD=1.14) (Table 16).

The second statement of the survey was "People say I eat too fast." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.96; SD=1.51) (Table 16).

The third statement of the questionnaire, "I eat with small bites." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.79; SD=1.28) (Table 16).

The fourth statement of the questionnaire, "I put it on autopilot when I eat." It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.86; SD=1.29) (Table 16)

Table 19. Examination of the Distribution of Responses to Awareness Expressions

Awareness		Ne ver	Ra- rely	So me- ti- mes	Of- ten	Al way s	Mean	SD
I enjoy the look and smell of food before I eat it.	f	4	5	17	14	16	3.59	1.20
	%	7.1	8.9	30.4	25.0	28.6		
I can remember what I ate last night.	f	2	8	9	11	26	3.91	1.24
	%	3.6	14.3	16.1	19.6	46.4		
I prefer to eat foods with high protein content.	f	3	6	17	21	9	3.48	1.06
	%	5.4	10.7	30.4	37.5	16.1		
I notice subtle flavors in the foods I eat.	f	2	13	12	13	16	3.50	1.24
	%	3.6	23.2	21.4	23.2	28.6		
I savor every bite I eat.	f	3	9	20	11	13	3.39	1.17
	%	5.4	16.1	35.7	19.6	23.2		

The first statement of the questionnaire was “I enjoy the sight and smell of food before I eat it.” It is seen that the answers given by the participants to the statement "often" (Mean=3.59; SD=1.20) (Table 17).

The second statement of the questionnaire, “I can remember what I ate last night.” It is seen that the answers given by the participants to the statement "often" (Mean=3.91; SD=1.24) (Table 17).

The third statement of the survey, “I prefer to eat foods high in protein.” It is seen that the answers given by the participants to the statement "often" (Mean=3.48; SD=1.06) (Table 17).

The fourth statement of the questionnaire, “I notice subtle flavors in the foods I eat.” It is seen that the answers given by the participants to the statement "often" (Mean=3.50, SD=1,24) (Table 17).

The fifth statement of the questionnaire, “I enjoy every bite I eat.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=3.39; SD=1.17) (Table 17).

Table 20. Examination of the Distribution of the Responses to the Eating Discipline Statements

Eating discipline		Ne- ver	Ra- rely	So- me- ti- mes	Of- ten	Al- way s	Mean	SD
I know about the calories of foods.	f	9	9	15	18	5	3.02	1.23
	%	16.1	16.1	26.8	32.1	8.9		
My meal times are fixed.	f	12	17	13	7	7	2.64	1.30
	%	21.4	30.4	23.2	12.5	12.5		
I eat healthy.	f	4	10	19	18	5	3.18	1.06
	%	7.1	17.9	33.9	32.1	8.9		
If the food is too hot, I wait for it to cool down a bit.	f	8	11	11	14	12	3.20	1.37
	%	14.3	19.6	19.6	25.0	21.4		

The first statement of the questionnaire was “I know about the calories of food.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=3.02; SD=1.23) (Table 18).

The second statement of the questionnaire, “My meal times are clear.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.64; SD=1.30) (Table 18).

The third statement of the questionnaire, “I eat healthily.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=3.18; SD=1.06) (Table 18).

The fourth statement of the questionnaire, “If the food is too hot, I wait for it to cool down a bit.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=3.20, SD=1.37) (Table 18).

Table 21. Examination of the Distribution of Responses to Conscious Nutrition Statements

Mindful eating		Ne- ver	Ra- rely	So- me- ti- mes	Of- ten	Al- way s	Mean	SD
I can't have my main meal without bread.	f	11	16	12	11	6	2.73	1.29
	%	19.6	28.6	21.4	19.6	10.7		
I avoid eating foods that cause gas.	f	13	15	15	8	5	2.59	1.25
	%	23.2	26.8	26.8	14.3	8.9		
I stay away from high-calorie foods.	f	14	16	17	7	2	2.41	1.11
	%	25.0	28.6	30.4	12.5	3.6		
I diet often.	f	16	23	8	6	3	2.23	1.14
	%	28.6	41.1	14.3	10.7	5.4		
I use a spoon instead of a fork when eating.	f	16	17	6	9	8	2.57	1.43
	%	28.6	30.4	10.7	16.1	14.3		

The first statement of the questionnaire, "I can't have my main meal without bread." It is seen that the answers given by the participants to the statement "sometimes" (Mean=3.73; SD=1.29) (Table 19).

The second statement of the questionnaire, "I avoid eating gas-producing foods." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.59; SD=1.25) (Table 19).

The third statement of the survey, "I stay away from high-calorie foods." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.41; SD=1.11) (Table 19).

The fourth statement of the questionnaire, "I diet often." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.23; SD=1.14) (Table 19).

The fifth statement of the questionnaire, "I use a spoon instead of a fork when eating." It is seen that the answers given by the participants to the statement "rarely" (Mean=2.57; SD=1.43) (Table 19).

Table 22. Analysis of the Distribution of Responses to Interference Expressions

Interference		Ne- ver	Ra- rely	So- me- ti- mes	Of- ten	Al- way s	Mean	SD
I can't imagine a life without fast food.	f	15	12	10	5	14	2.84	1.55
	%	26.8	21.4	17.9	8.9	25.0		
When something is offered, I eat it without thinking.	f	6	20	14	12	4	2.79	1.12
	%	10.7	35.7	25.0	21.4	7.1		

The first statement of the survey was “I can't imagine a life without fast food.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.84; SD=1.55) (Table 20).

The second statement of the questionnaire, “When something is offered, I eat it without thinking.” It is seen that the answers given by the participants to the statement "sometimes" (Mean=2.79; SD=1.12) (Table 20).

Table 23. Examination of the Distribution of the Responses to the Mindful eating Scale Statements

		Ne ver	Rar ely	So met ime s	Oft en	Al wa ys	Mean	SD
I know about the calories of foods.	f	9	9	15	18	5	3.02	1,23
	%	16.1	16.1	26.8	32.1	8.9		
I can't have my main meal without bread.	f	11	16	12	11	6	2.73	1,29
	%	19.6	28.6	21.4	19.6	10.7		
I swallow my bites without chewing.	f	15	12	19	8	2	2.46	1,14
	%	26.8	21.4	33.9	14.3	3.6		
When I eat one of my favorite foods, I do not realize that I am full.	f	5	9	11	16	15	3.48	1,29
	%	8.9	16.1	19.6	28.6	26.8		
I can't imagine a life without fast food.	f	15	12	10	5	14	2.84	1,55
	%	26.8	21.4	17.9	8.9	25.0		
People around me say that I eat too fast.	f	14	9	11	9	13	2.96	1,51
	%	25.0	16.1	19.6	16.1	23.2		
I avoid eating gas-producing foods.	f	13	15	15	8	5	2.59	1,25
	%	23.2	2.8	26.8	14.3	8.9		
I enjoy the look and smell of food before I eat it.	f	4	5	17	14	16	3.59	1,20
	%	7.1	8.9	30.4	25.0	28.6		
I can remember what I ate last night.	f	2	8	9	11	26	3.91	1,24
	%	3.6	14.3	16.1	19.6	46.4		
When something is offered, I eat it without thinking.	f	6	20	14	12	4	2.79	1,12
	%	10.7	35.7	25.0	21.4	7.1		
	f	14	16	17	7	2		

I stay away from high-calorie foods.	%	25.0	28.6	30.4	12.5	3.6	2.41	1,11
I prefer to eat foods with high protein content.	f	3	6	17	21	9	3.48	1,06
	%	5.4	10.7	30.4	37.5	16.1		
I notice subtle flavors in the foods I eat.	f	2	13	12	13	16	3.50	1,24
	%	3.6	23.2	21.4	23.2	28.6		
I suddenly realize that I am very hungry and I am ready to eat whatever I can find.	f	5	9	17	10	15	3.38	1,29
	%	8.9	16.1	30.4	17.9	26.8		
I savor every bite I eat.	f	3	9	20	11	13	3.39	1,17
	%	5.4	16.1	35.7	19.6	23.2		

Table 24. Examination of the Distribution of the Responses to the Eating Awareness Scale Statements

		Ne ver	Rar ely	So met ime s	Oft en	Alw ays	Mean	SD
I diet often.	f	16	23	8	6	3	2.23	1.14
	%	28.6	41.1	14.3	10.7	5.4		
Even if I'm full, a food tempts me.	f	6	10	7	18	15	3.46	1.35
	%	10.7	17.9	12.5	32.1	26.8		
My meal times are fixed.	f	12	17	13	7	7	2.64	1.30
	%	21.4	30.4	23.2	12.5	12.5		
I use a spoon instead of a fork when eating.	f	16	17	6	9	8	2.57	1.43
	%	28.6	30.4	10.7	16.1	14.3		
I eat until I can't eat any more at one meal.	f	16	14	10	13	3	2.52	1.28
	%	28.6	25.0	17.9	23.2	5.4		
I can't stop eating when there's ice cream, cookies or chips somewhere in the house.	f	14	6	15	11	10	2.95	1.43
	%	25.0	10.7	26.8	19.6	17.9		
When I get depressed, the first thing that comes to my mind is food.	f	16	14	13	8	5	2.50	1.29
	%	28.6	25.0	23.2	14.3	8.9		
I eat when I'm bored.	f	9	14	12	12	9	2.96	1.33
	%	16.1	25.0	21.4	21.4	16.1		
I eat healthy.	f	4	10	19	18	5	3.18	1.06
	%	7.1	17.9	33.9	32.1	8.9		
If the food is too hot, I wait for it to cool down a bit.	f	8	11	11	14	12	3.20	1.37
	%	14.3	19.6	19.6	25.0	21.4		
	f	11	12	12	16	5		

I snack without realizing I'm eating.	%	19.6	21.4	21.4	28.6	8.9	2.86	1.29
I eat small bites.	f	9	17	15	7	8	2.79	1.28
	%	16.1	30.4	26.8	12.5	14.3		
I eat junk food when I feel stressed.	f	11	13	16	9	7	2.79	1.29
	%	19.6	23.2	28.6	16.1	12.5		
I put it on autopilot while eating.	f	12	9	15	15	5	2.86	1.29
	%	21.4	16.1	26.8	26.8	8.9		
I eat chocolate to be happy.	f	13	14	14	9	6	2.66	1.30
	%	23.2	25.0	25.0	16.1	10.7		

In this study, we associated liposuction, one of the most frequently repeated aesthetic operations in recent years, with Mindful eating and physical activity, which has recently taken its place in nutrition science. In our study, we used the Mindful eating questionnaire, one of the most frequently used questionnaires for "Mindful eating", which has taken its place in the field of eating in recent years. In previous studies, the relationship between Mindful eating and BMI has been evaluated, and many data have been found that support its relationship with BMI. Pintado-Cucarella et al., in their study on 216 participants, used MEQ, the English version of YFQ, and demonstrated the relationship between mindful eating, one of the 5 sub-headings of MEQ, and body mass index. Their results showed that a low mindful eating score contributed significantly to overweight and binge eating (205). In another study by Taylor et al.; They found that mindful eating, a subgroup of the MEQ questionnaire, was significantly associated with body mass index. In this study, a self-sensitivity questionnaire was also used, and it was found that as self-sensitivity increased and BMI decreased (206). In addition, Clementi et al. evaluated the abbreviated form of the MEQ (including 20 questions) on 1067 samples in Italy and found this version to be a valid and reliable tool for use by clinicians and researchers (207). Framson et al. found that a low MEQ score was significantly associated with a high body mass index $>30 \text{ kg/m}^2$ in women in their study (3).

In our study, the YFQ questionnaire was applied to 56 participants aged 18-65 who had undergone liposuction.

The mean age of the participants was calculated as 34.71 (Sd=13.79). The height of the participants ranged from 155 to 193 cm. The mean height was calculated as 172.27 (Sd=9.38) cm.

The preoperative weight of the participants ranged from 48 to 145, and the mean weight was calculated as 78.94 (Sd=19.87). Current weight ranged from 43 to 107, and the mean weight was calculated as 74.50 (Sd=16.18). The amount of oil taken during the

operation ranged from 0.6 to 5 liters, and the average amount of oil was calculated as 1.54 (Sd=0.77) liters.

The weight change rate of the individuals ranged between -28.21% and 37.50%, and the average of the weight change percentage was calculated as 4.79 (Sd=7.48). In other words, the general trend in individuals after liposuction was weight loss. Postoperative time ranged from 4 to 56 months, and the mean time was calculated as 33.45 (Sd=17.33) months. Statistical findings were deepened by evaluating the necessary parameters on a monthly basis.

According to ISAPS 2019 data, in the aesthetic sector; The top 10 countries were USA, Brazil, Japan, Mexico, Italy, Germany, Turkey, France, India, and Russia. The top five most popular surgical procedures remain breast augmentation(1,795,551 procedures), liposuction(1,704,786 procedures), eyelid surgery(1,259,839 procedures), abdominoplasty(924,031 procedures), and rhinoplasty(821,890 procedures). The top five most popular surgical procedures remain in Turkey, breast augmentation(13.0%), liposuction(11.9%), eyelid surgery(10.1%), fat grafting (face) (7.4%), breast reduction(7.1%). The most common surgical procedures in women remain breast augmentation, and the second most common operation is liposuction. Among men, the top one is(1) liposuction with gynecomastia.

In our study, 42.9% of the participants were male and 57.1% were female. The proportions of men and women included in the study showed a close, almost homogeneous distribution. In male patients, general liposuction tendency was predominant with gynecomastia, which supports the ISAPS data.

The result of the General Practice Physical Activity Questionnaire (BBFAA); It was observed that 26.8% of the participants were inactive, 39.3% moderately inactive, 21.4% moderately active and 12.5% active physical activity level. In another study conducted with the General Practice Physical Activity Questionnaire (BBFAA) to emphasize the validity of the Questionnaire we used in Turkey, it was conducted with volunteers aged 16-74 years who applied to the Medicine Polyclinic in Turkey; 86 (21.0%) of the 409 people who participated in the study with BBFAA yielded results in four groups, 81 (19.8%) "moderately active", 72 (17.6%) "moderately inactive" and 170 (%) 41.6) was

also found to be “immobile” (208). They were found to be relatively less active compared to our study group. They were found to be more active because we worked with a group with higher body anxiety.

It was observed that 20.8% of the men were inactive, 41.7% moderately inactive, 16.7% moderately active and 20.8% active. It was observed that 31.3% of the women were inactive, 37.5% moderately inactive, 25% moderately active and 6.3% active. There was no significant relationship between gender and physical activity level ($\chi^2=3.39$; $p>0.05$). The ratio of physical activity levels observed in men and women was similar.

It was observed that 37.5% of the participants were in the 18-25 age group, 28.6% were in the 26-35 age group and 33.9% were in the 36+ age group. The sub-headings of YFQ, the mean of mindless eating, mean 14.30 (Sd=4.43), the mean emotional eating score is 16.14 (Sd=5.10), the mean eating control score is 12.50 (Sd=4.15), mindfulness mean score was 15.73 (Sd=2.60), eating discipline mean score was 12.04 (Sd=3.21), mindful eating mean score was 15.46 (Sd=3.12), interference score mean was 6, 38 (Sd=2.15) and YFÖ total score averages were calculated as 92.55 (Sd=15.33). According to these results, our participants had a moderate level of Mindful eating.

A study on the Mindful eating of university students included 318 healthy students aged between 18-45, randomly selected from Üsküdar University students between September 2015 and May 2016. In this study, the mean score of YFS-30 was found to be 98.11 ± 13.81 (209).

In another study conducted in Turkey, sub-scales of Mindful Eating Questionnaire are; Eating without Thinking ranges from 1 to 5, with an average of 3.57 ± 0.81 and a Cronbach's alpha of 0.805. Emotional Eating sub-scale scores ranged from 1 to 5, with a mean of 3.5 ± 1.02 and a Cronbach's alpha of 0.861. Eating Control subscales scores range from 1 to 5, with an average of 3.58 ± 0.97 and a Cronbach's alpha of 0.756.

Awareness subscales scores ranged from 1.6 to 4.4, with a mean of 3.22 ± 0.4 and a Cronbach's alpha of 0.589. Eating Discipline subscales scores ranged from 0.5 to 5, with

an average of 3.38 ± 0.72 and a Cronbach's alpha of 0.513. The scores of the Conscious

Nutrition subscales ranged from 1.4 to 4.8, with an average of 3.31 ± 0.55 and a Cronbach's alpha of 0.775. Interference subscales scores ranged from 1 to 5, with a mean of 3.67 ± 0.86 and a Cronbach's alpha of 0.705. Total Mindful Eating subscale scores ranged from 1.9 to 4.67, with a mean of 3.44 ± 0.51 and a Cronbach's alpha of 0.743. has been observed (210).

There was a low and significant difference between the amount of fat removed during the operation (liters) and the subgroup of YFS, the eating discipline ($r=0.49$; $p<0.01$), and the total ($r=0.28$; $p<0.05$) scores of YFS. It was observed that there were moderate positive relations. It was determined that the people who had a higher amount of fat removed during the operation had an increase in their eating discipline and total Mindful eating scores. At this point, more studies are needed to measure the amount of contouring in the individual's body and the awareness that the individual has to protect this contour. It can be thought that as the degree of improvement in the aesthetic appearance of the individual increases, it increases the eating discipline and ultimately the total awareness of eating.

When the relationship between weight change and the time elapsed after surgery was examined, it was observed that there was a low-level positive relationship. It was determined that the percentage of weight change increased as the time passed after the surgery increased. In other words, it has been observed that as the postoperative period increases, individuals are successful in maintaining their weight and even tend to lose weight, albeit with a low percentage. When the relationship is examined, individuals have been successful in maintaining their body contours in the post-operative period. In fact, it was observed that there was a low level of positive correlation between the time elapsed after surgery and BMI. ($r=0.28$; $p<0.05$)

It was observed that there was a moderately positive relationship between being affected by external factors (interference), which is one of the subtitles of Mindful eating, and the age of the participants ($r=0.32$; $p<0.05$). It was determined that as the age increased, the interference scores also increased, it was found to be statistically significant.

It was observed that there was a moderate negative relationship between age and weight change ($r=-0.44$; $p<0.01$). It was determined that weight change decreased with increas-

ing age. A statistically significant correlation was found between the age of the participants and the weight they gained after the liposuction operation. As the age increased, it was observed that they could not maintain the current BMI and gained weight. This showed that elderly individuals should be more careful in maintaining their body contours.

Eating without thinking according to physical activity level ($F(3;55)=0.24$; $p>0.05$), emotional eating ($F(3;55)=0.86$; $p>0.05$), eating control ($F(3;55)=0.39$; $p>0.05$), awareness ($F(3;55)=0.30$; $p>0.05$), eating discipline ($F(3;55)=0.32$; $p>0.05$), conscious nutrition ($F(3;55)=0.49$; $p>0.05$), interference ($F(3;55)=0.76$; $p>0.05$) and YFÖ It was observed that the total ($F(3;55)=0.12$; $p>0.05$) mean scores did not show a significant difference. It was determined that the Mindful eating of the participants whose physical activity levels differed was similar. It was observed that the physical activity tendency of the individual in his work life and social life did not have a significant relationship with his Mindful eating score or subheadings. In a study whose aim was to examine the association of mindful eating with BMI and physical activity levels among students at a 4-year university and to evaluate the potential benefit of mindful eating interventions in this campus setting: Ninety participants tested five subscales (Disinhibition, Awareness, Extrinsic Cues, Emotional Response, and Attention). distribution) and a 28-item Mindful Eating Questionnaire consisting of questions about height, weight, and physical activity. Low BMI was significantly associated with overall mindful eating. Physical activity level was not significantly associated with overall mindful eating scores; however, students who were more physically active were more likely to be unaware of their food and to eat in response to negative emotions. In our study, no significant relationship was found with the subheadings of physical activity and Mindful eating (211).

Postoperative weight change according to physical activity level ($F(3;55)=1.23$; $p>0.05$), Amount of fat removed during the operation ($F(3;55)=1.47$; $p>0.05$), and age ($F(3;55)=0.39$; $p>0.05$) did not show a significant difference. It was determined that the weight change, the amount of tissue removed during the operation and the average age of the participants whose physical activity levels differed were similar.

Eating without thinking according to gender ($t(54)=1.56$; $p>0.05$), emotional eating ($t(54)=-0.82$; $p>0.05$), eating control ($t(54)=1.72$; $p>0.05$), awareness ($t(54)=0.78$; $p>0.05$), conscious nutrition ($t(54)=1.59$; $p>0.05$), interference ($t(54)=0.16$; $p>0.05$) and YFÖ total ($t(54)=1.65$; $p>0.05$) mean scores did not show a significant difference. However, it was observed that there was a significant difference in the mean scores of the eating discipline according to gender ($t(54)=2.45$; $p<0.05$). The men's eating discipline mean score (Mean=16.03; SD=3.03) was significantly higher than the women's mean (Mean=14.71; SD=3.14).

It was observed that the mean amount of fat removed during the operation ($t(54)=0.94$; $p>0.05$) and percent weight change ($t(54)=0.86$; $p>0.05$) according to gender did not show a significant difference. It was determined that the average of the amount of fat taken during the operation and the percentage of weight change in the men and women participating in the study were similar.

As a result of our study, no direct relationship was found between maintaining the contour (not gaining weight) after liposuction and Mindful eating and physical activity. However, it has been observed that the amount of fat removed during liposuction is an important factor in maintaining body contour and even losing weight. This suggests that apart from Mindful eating and physical activity, the burden of the weight of the operation is the most important factor for people to better manage the post-operative process. Considering the limitations of studies on liposuction and the limitation of participants, more studies should be conducted on the relationship between nutrition and liposuction.

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APPENDIX-1 Ethics Committee Approval



Sayı : 37068608-6100-15- 2097
Konu: Klinik Araştırmalar
Etik Kurul Başvurusu hk.

18/02/2021

İlgili Makama (Zeynep Dilara Kılavuz)

Yeditepe Üniversitesi Tıp Fakültesi Beslenme ve Diyetetik Bölümü Prof. Dr. Serdar Öztezcan'ın sorumlu araştırmacı olduğu **“Yeme Farkındalığı ve Fiziksel Aktivitenin Liposuction Operasyonu Sonrası Ağırlık Değişimine Etkisi”** isimli araştırma projesine ait Klinik Araştırmalar Etik Kurulu (KA EK) Başvuru Dosyası (2102) kayıtlı Numaralı KA EK Başvuru Dosyası, Yeditepe Üniversitesi Klinik Araştırmalar Etik Kurulu tarafından 17.02.2021 tarihli toplantıda incelenmiştir.

Kurul tarafından yapılan inceleme sonucu, yukarıdaki isim belirtilen çalışmanın yapılmasının etik ve bilimsel açıdan uygun olduğuna karar verilmiştir. (KA EK Karar No:1385)



Prof. Dr. Turgay Çelik

Yeditepe Üniversitesi
Klinik Araştırmalar Etik Kurul Başkanı

APPENDIX-2 Permission to use General Practice Physical Activity Questionnaire(BBFAA)

 **Mehmet ÖZEN**
to aemelk, me

Nov 30, 2020, 5:07 PM ☆ ↩ ⋮

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Sayın Z. Dilara KILAVUZ
Yeditepe Üniversitesi
Beslenme ve Diyetetik Bölümü
Yüksek Lisans Öğrencisi
İSTANBUL

Sayın KILAVUZ,
İngiltere'de 2002 yılında Sağlık Bakanlığı'nın öncülüğünde The London School of Hygiene and Tropical Medicine tarafından Ulusal Sağlık Hizmetleri (NHS) kapsamında kullanılmak üzere geliştirilen ve tarafımızdan Türkçeye uyarlanan Birinci Basamakta Fiziksel Aktivite Anketi'ni (BBFAA) kullanmak istemenizden çok memnun oldum. Tabii ki anketi kullanabilirsiniz.
Ekte ölçeğin uygulamasında yol gösterici olması için bir açıklama ve öneri metni ile ölçeğin Türkçe sürümünü ve uyarlama çalışmamızın yayımlandığı makaleyi gönderiyorum.
Ayrıca puan hesabının elektronik ortamda yapılarak aktivite düzeyinin belirlenmesine olanak sağlayan Excel dosyasını da ekte bulabilirsiniz. Sormak istediğiniz başka bir konu olursa bana ya da tez çalışmasına danışmanlık yaptığım Uzm. Dr. Ayşe Emel KAYA NOĞAY'a () ulaşabilirsiniz.
Çalışmanızın sonuçlarını bizimle de paylaşırsanız ve yapacağınız tez/yayında makalemize atıfta bulunursanız seviniriz. Verimli ve başarılı bir çalışma olmasını dilerim.
Saygılarımla,

Doç. Dr. Mehmet ÖZEN
Sağlık Bilimleri Üniversitesi
Antalya Sağlık Uygulama ve Araştırma Merkezi
Aile Hekimliği Kliniği Eğitim ve İdari Sorumlusu
Muratpaşa / ANTALYA
 .tr

APPENDIX-3 Permission to use Mindful Eating Questionnaire (YFÖ-30)

Yeme Farkındalığı Ölçeği(YFÖ-30) Kullanım İzni Inbox x ⌵ 🖨 📧

 **ZEYNEP DİLARA KILAVUZ** Thu, Nov 26, 2020, 8:00 AM ☆
Merhabalar sevgili Gizem Köse, Ben Diyetisyen Z. Dilara Kılavuz, Yeditepe Üniversitesi'nde Beslenme ve Diyetet...

 **Gizem Köse** Thu, Nov 26, 2020, 1:58 PM ☆ ↩ ⋮
to me

🌐 Turkish > English [Translate message](#) [Turn off for: Turkish x](#)

Merhaba,
Ölçeği ekte gönderiyorum. Puanlandırması ve kaynak gösterimi de ekin içindedir.
Skorlamada aritmetik ortalama alınmakta olup, 3 ve üzeri yeme farkındalığının yüksek olduğunu göstermektedir.
İyi çalışmalar dilerim.

APPENDIX-4 Informed Consent Form

Bu katılacağınız çalışma bilimsel bir araştırma olup, araştırmanın adı “Beslenme Farkındalığı Ve Fiziksel Aktivitenin Liposuction Operasyonu sonrası Kilo Değişimine Etkisi”dir, araştırma Dyt. Z. Dilara Kılavuz tarafından sürdürülmektedir. Araştırmacıya herhangi bir sorun veya sorunuzda ulaşabileceğiniz numara sayfanın en altında yer almaktadır.

Bu araştırmanın amacı kilo vermek ve/veya vücudunu şekillendirmek isteyen liposuction operasyonu geçirmiş bireylerin, operasyon sonrası süreçte yeme farkındalığı ve fiziksel aktivite ile ilişkili olarak kilo değişim paternlerini incelemektir. Çalışmaya katılım gönüllülük esasına dayalıdır. Kararınızdan önce araştırma hakkında sizi bilgilendirmek istiyoruz. Bu bilgileri okuyup anladıktan sonra araştırmaya katılmak isterseniz formu imzalayınız.

Bu araştırmada yer almanız için bir defa sorulan soruları yanıtlamanız ve anketleri doldurmanız yeterlidir, sorular ve anket yaklaşık 5 dakika sürecektir. Araştırmada yer alması planlanan gönüllü sayısı 50’dir. Çalışma yaklaşık 5 ay sürecektir.

Bu araştırma ile ilgili olarak sizden beklenen istenen araştırmacının sorularına ve anketlere uygun ve doğru cevap vermek ve sonuçlarını zamanında araştırmacıya ulaştırmaktır.

Bu araştırmada sizin için herhangi bir risk ve zarar söz konusu değildir. Bu çalışmaya katılmanız halindeyse; bilimsel bir araştırmaya katılarak bilime katkı sağlamış olacaksınız. Çalışma sonuçları sizlerle paylaşılacaktır. Ayrıca bu araştırma kapsamında sizden veya bağlı bulunduğunuz sosyal güvenlik kuruluşundan hiçbir ücret istenmeyecektir veya tarafınıza bir ücret ödenmeyecektir.

Bu araştırmada yer almak tamamen sizin isteğinize bağlıdır. Araştırmada yer almayı reddedebilirsiniz ya da herhangi bir aşamada araştırmadan ayrılabilirsiniz. Bu durum herhangi bir cezaya ya da yaptırıma yol açmayacaktır.

Sizden liposuction işlemi sonucu ağırlık değişimini belirlemek amacıyla operasyon öncesi ağırlığınız, operasyon esnasında alınan yağ ağırlığı ve güncel ağırlığınız bilgileri toplanacaktır. Katılımcıların ad soyad gibi tanımlayıcı bilgileri alınmayacaktır. Çalışma sonucu elde edilen bu veriler ve anket sonuçları elektronik ortamda saklanacak olup bu verilere yalnızca sorumlu araştırmacı erişebilecektir. Size ait tüm bilgiler gizli tutulacaktır.

Araştırma sonucu elde edilen veriler yüksek lisans tezi ve bilimsel yayın amaçlı kullanılacaktır. Bireysel olarak herhangi bir değerlendirme yapılmayacaktır ve katılımcıların kişisel bilgileri yalnızca araştırmacı tarafından bilinecek olup yayınlanmayacaktır.

Yukarıda yer alan ve araştırmadan önce gönüllüye / katılımcıya verilmesi gereken bilgileri gösteren "Gönüllü Bilgilendirme Formunu" okudum. Bu bilgilerin içeriği ve anlamı bana açıklandı. Aklıma gelen bütün soruları sorma olanağı tanındı ve sorularıma doyurucu cevaplar aldım. Çalışmaya katılmadığım ya da katıldıktan sonra çekildiğim durumda, hiçbir yasal hakkımdan vazgeçmiş olmayacağım. Bu koşullarla, söz konusu araştırmaya hiçbir baskı ve zorlama olmaksızın gönüllü olarak katılmayı kabul ediyorum.

Sorularınız için veya ayrıntılı bilgi almak için
mail adresinden Z. Dilara Kılavuz ile iletişime geçebilirsiniz.

Yukarıda yer alan açıklamaları okuduğunuzu ve anladığınızı kabul ediyorsanız ve araştırmaya katılmak istiyorsanız "İleri" tuşuna basınız.

APPENDIX-5 Mindful Eating Questionnaire (YFÖ-30) Form

YEME FARKINDALIĞI ÖLÇEĞİ (YFÖ-30)

Değerli katılımcı, bu anket sizin yeme alışkanlıklarınız ve farkındalığınız ile ilgilidir.

Lütfen her bir soruyu dikkatlice okuyunuz ve size uygun gelen kutunun içine X işareti koyunuz.

1	2	3	4	5
Hiç	Nadiren	Bazen	Sık sık	Her zaman

		1	2	3	4	5
1.	Besinlerin kalorileri hakkında bilgim vardır.					
2.	Ana öğünümü ekmeksiz yiyemem.					
3.	Lokmalarımı çiğnemediğim yutarım.					
4.	Sevdiğim yiyeceklerden birini yerken, doyumum fark edemem.					
5.	Fast food olmayan bir hayat düşünemiyorum.					
6.	Çevremdekiler çok hızlı yemek yediğimi söyler.					
7.	Gaz yapan yiyecekleri yemekten kaçınırım.					
8.	Yemeden önce yiyeceklerin görüntüsü ve kokusundan keyif alırım.					
9.	Dün akşam ne yediğimi hatırlayabilirim.					
10.	Bir şey ikram edildiğinde düşünmeden yerim.					
11.	Yüksek kalorili besinlerden uzak dururum.					
12.	Protein içeriği yüksek besinleri yemeyi tercih ederim.					
13.	Yediğim besinlerdeki ince tatları fark ederim.					
14.	Birden bire çok acıktığımı fark edip ne bulsam yiyecek duruma gelirim.					
15.	Yediğim her lokmanın tadına varırım.					

1 6.	Sık sık diyet yaparım.					
1 7.	Tok olsam bile bir yiyeceğin aklımı çeldiği olur.					
1 8.	Öğün saatlerim bellidir.					
1 9.	Yemek yerken çatal yerine kaşık kullanırım.					
2 0.	Bir öğünde daha fazla yiyemeyecek hale gelene kadar yerim.					
2 1.	Evin bir yerlerinde dondurma, kurabiye ya da cips varken yemeden duramam.					
2 2.	Moralim bozulunca ilk aklıma gelen şey yemek olur.					
2 3.	Canım sıkılınca yerim.					
2 4.	Sağlıklı beslenirim.					
2 5.	Yemek çok sıcak ise biraz soğumasını beklerim.					
2 6.	Yediğimi fark etmeden atıştırırım.					
2 7.	Küçük lokmalarla yerim.					
2 8.	Stresli hissettiğimde abur cubur yerim.					
2 9.	Yerken otomatik pilota bağlarım.					
3 0.	Mutlu olmak için çikolata yerim.					

YEME FARKINDALIĞI ÖLÇEĞİ (MINDFUL EATING QUESTIONNAIRE) PUANLAMA YÖNERGESİ

Alt boyut ve madde sayısı: 7 alt boyut ve 30 madde

- 1. Düşünmeden Yeme (5 madde) :** 4, 14, 17, 20, 26
- 2. Duygusal Yeme (5 madde):** 21, 22, 23, 28, 30
- 3. Yeme Kontrolü (4 madde):** 3, 6, 27, 29
- 4. Farkındalık (5 madde):** 8, 9, 12, 13 15
- 5. Yeme Disiplini (4 madde):** 1, 18, 24, 25
- 6. Bilinçli Beslenme (5 madde):** 2, 7, 11, 16, 19
- 7. Enterferans (Dış etmenlerden etkilenme) (2 madde):** 5, 10

Ölçeğin bulunan ters maddeler: Ölçekte 20 ters madde bulunmaktadır. 1, 7, 9, 11, 13, 15, 18, 24, 25 ve 27.sorular düz puanlandırılmaktadır. Geriye kalan sorular ters* puanlandırılmaktadır. {*Ters Puanlama (1=5, 2=4, 3=3, 4=2, 5=1)}

Ölçeğin Değerlendirilmesi: Ölçek puanlanırken alt boyutların ve toplam puanın aritmetik ortalaması alınmaktadır. Ölçeğin her bir alt boyutundan alınan 3 ve üzeri puan bireyin ilgili alt boyutun değerlendirdiği özelliğe sahip olduğunu göstermektedir. Ölçek ayrıca toplam yeme farkındalığı puanı vermektedir.

APPENDIX-6 General Practice Physical Activity Questionnaire(BBFAA) Form

Birinci Basamak için Fiziksel Aktivite Anketi					
Tarih:/...../.....		Adı Soyadı:			
1. Lütfen işinizin gerektirdiği fiziksel aktivitelerin türü ve miktarını belirtiniz.					Lütfen yalnız bir kutucuğu işaretleyiniz
a	Çalışmıyorum (örn. emekli, malulen emekli, işsiz, tam zamanlı bakıcı, vs.)				☐
b	İşyerinde zamanım çoğunu oturarak geçiriyorum (örn; ofis işleri)				☐
c	İşyerinde zamanımın çoğunu ayakta veya yürüyerek geçiriyorum. Ancak yaptığım iş yoğun fiziksel aktivite gerektirmiyor. (örn; tezgahtar, kuaför, güvenlik görevlisi, bebek bakıcısı, vb)				☐
d	İşim ağır nesneleri kaldırmak veya alet kullanmak gibi belirli bir fiziksel aktivite gerektiriyor (örn; tesisatçı, elektrikçi, marangoz, temizlikçi, hemşire, bahçıvan, postacı, vs.)				☐
e	İşim çok ağır nesneleri kaldırmak da dahil olmak üzere şiddetli fiziksel aktivite gerektiriyor (örn; iskeleci, inşaat işçisi, çöpçü, vs.)				☐
2. Geçen hafta boyunca aşağıdaki aktivitelerin her birinde kaç saat harcadınız?					
Lütfen çalışsanız da çalışmasanız da cevap veriniz.					
		Hiç	1 saatten az	1- 3 saat arası	3 saat ve üzeri
a	Yüzme, koşu, aerobik, futbol, tenis, jimnastik gibi fiziksel egzersizler				☐
b	İşe giderken veya boş zamanlarda bisiklete binmek				☐
c	İşe giderken, alışveriş yaparken veya zevk için yürüme				☐
d	Ev işi, çocuk bakımı				☐
e	Hobi uğraşları (bahçe ya da ev içi uğraşlar)				☐
3. Normal yürüyüş hızınızı nasıl tanımlarsınız?					
Lütfen yalnız bir kutucuğu işaretleyiniz.					
a	Yavaş (saatte 5 km'den az)				☐
b	Sabit ortalama hız				☐
c	Tempolu hız				☐
d	Hızlı (saatte 7 km'den fazla)				☐

BİRİNCİ BASAMAK İÇİN FİZİKSEL AKTİVİTE ANKETİ (GENERAL PRACTICE PHYSICAL ACTIVITY QUESTIONNAIRE) PUANLAMA YÖNERGESİ

Puan hesabının elektronik ortamda yapılarak aktivite düzeyinin belirlenmesine olanak sağlayan Excel dosyası mevcuttur.

