REPUBLIC OF TURKEY
ISTANBUL AREL UNIVERSITY
POSTGRADUATE EDUCATION INSTITUTE
The Department of Psychology
Clinical Psychology Program

HEALTHY EATING ATTITUDES AND BEHAVIOURS GROUP PROGRAM: A RANDOMISED CONTROLLED FEASIBILITY STUDY

Doctoral Dissertation

Başak İNCE

Supervisor: Prof. Dr. Başak YÜCEL

İstanbul, 2020

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Written by: Başak İNCE

KABUL VE ONAY

Başak İNCE tarafından hazırlanan "Healthy Eating Attitudes and Behaviours Group Program: A Randomised Controlled Feasibility Study" başlıklı bu çalışma, Savunma Sınavı tarihinde yapılan savunma sınavı sonucunda başarılı bulunarak jürimiz tarafından Doktora Tezi olarak kabul edilmiştir.

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ABSTRACT

HEALTHY EATING ATTITUDES AND BEHAVIOURS GROUP PROGRAM: A RANDOMISED CONTROLLED FEASIBILITY STUDY

Başak İNCE
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Eating disorders (ED) are serious mental health illnesses interfering psychological, physical and social well-being. Besides the severity of ED, most of the individuals presenting symptoms are either not detected or treated. Among ones undergoing treatment, full recovery and remission are also not very likely. Given subclinical and clinical ED symptoms commonly occur among university students and negatively influence their well-being, screening ED related symptoms among university students, identifying students with a high risk of developing ED, and providing psychological intervention to them would be an important step for psychological health improvement. In this regard, in the first part of this thesis (Study 1), it is aimed to investigate levels of ED symptoms and related psychological problems among Turkish university students. Furthermore, since there is no ED prevention program available for university students in Turkey, in the second part of this thesis (Study 2), it is aimed to develop a Cognitive Behaviour Therapy oriented ED prevention program for female university students presenting a high risk for ED. A further aim was to examine feasibility, acceptability and efficacy of this program.

1584 university students (1195 females, 385 males, and 4 others) from Istanbul participated in Study 1. The mean age of the participants was 21.55 (*SD* = 3.37), and their mean BMI was 22.06 (*SD*=3.62). Participants were asked to fill out Demographic Information Form, Eating Disorders Examination Questionnaire (EDEQ), Eating Attitudes Test – 40 (EAT-40), Body Image Satisfaction Questionnaire (BISQ), and Sociocultural Attitudes towards Appearance Questionnaire-4-Revised (SATAQ-4R) in either paper-pencil or online format.

The analysis showed that 22.3% of the students are not satisfied with their weight. 10.9% of the students met clinical severity criteria of EAT-40 and 6.6% of the students met the clinical severity criteria of EDEQ-Total score. Analyses for comparing female and male students revealed that female students had statistically significantly higher scores in EAT-40, subscales and total EDEQ, Thin/Low Body Fat Internalization, General Attractiveness Internalization, Family Pressure subscales of SATAQ-4R than their male peers. Male students had significantly higher scores in Muscular Internalization and Peer / Significant Other Pressures subscales of SATAQ-4R. Percentage of female students meeting clinical severity criteria of EAT-40 and EDEQ-Total were higher than male students meeting clinical severity criteria for these instruments. Analyses further showed that students who approved participating in Study 2 presented higher levels of ED and related psychopathology compared to students who did not approve.

Participants of Study 2 consisted of 38 female university students, and they were randomly assigned to 6 session - *Healthy Eating Attitudes and Behaviours Group Program* (experimental group), single session - *Eating Disorders and Body Dissatisfaction: A Group Work* (active control group) or wait-list control condition. EDEQ, SATAQ-4R, Body Shape Questionnaire (BSQ), Difficulties in Emotion Regulation Scale-16 (DERS-16) and Group Feedback Form were administered as outcome measures. Analyses revealed that experimental group resulted in significantly higher improvement in subscales and total EDEQ, BSQ, DERS, and Thin/Low Body Fat Internalization subscales of SATAQ-4R from baseline to post assessment and baseline to 1-month follow up assessment compared to active and wait-list control conditions. The effect size for improvement in these outcome measures reflected large effect. Experimental group condition also presented high levels of feasibility and acceptability. Informativeness, being fun, and offering good rapport and communication with group friends were found to be the most favourable aspects of this program.

Overall, the findings of the current study highlight the importance of targeting ED symptoms and related problems their given significance among university students in Istanbul, Turkey. With its good level feasibility, acceptability and

preliminary efficacy, *Healthy Eating Attitudes and Behaviours Group Program* would be beneficial for reducing ED related psychopathology, body dissatisfaction, emotion regulation difficulties and internalization of thin/low body fat ideal among Turkish female university students.

Keywords: eating disorders, body dissatisfaction, prevention, university students, cognitive behaviour therapy

ÖZET

SAĞLIKLI YEME TUTUM VE DAVRANIŞLARI GRUP PROGRAMI: RANDOMİZE KONTROLLÜ UYGULANABİLİRLİK ÇALIŞMASI

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Yeme bozuklukları (YB) psikolojik, fiziksel ve sosyal iyi-oluşu etkileyen ciddi ruh sağlığı hastalıklarıdır. YB'nin ciddiyetine rağmen, semptom gösteren bireylerin çoğu ya tespit edilemezler ya da tedavi edilmezler. Tedavi görenlerin arasında ise tam iyileşme ve remisyon da pek olası değildir. Eşik altı ve klinik YB semptomları üniversite öğrencileri arasında yaygın olarak görüldüğünden ve iyi-oluşlarını olumsuz yönde etkilediğinden, üniversite öğrencilerinde YB ile ilişkili semptomları taramak, YB gelişme riski yüksek olan öğrencileri belirlemek ve psikolojik bir müdahale uygulamak psikolojik sağlığın iyileştirilmesi için önemli bir adım olacaktır. Bu bağlamda, tezin ilk bölümünde (Çalışma 1), Türk üniversite öğrencileri arasında YB semptomlarının düzeyleri ve buna bağlı psikolojik sorunların incelenmesi amaçlanmıştır. Ayrıca, Türkiye'de üniversite öğrencileri için YB önleme programı olmadığından, bu tezin ikinci bölümünde (Çalışma 2), YB geliştirme konusunda yüksek riski olan kadın üniversite öğrencilerine yönelik Bilişsel Davranış Terapisi (BDT) odaklı YB önleme programının geliştirilmesi amaçlanmaktadır. Diğer bir amaç ise, bu programın uygulanabilirliğini, kabul edilebilirliğini ve etkinliğini incelemektir.

Çalışma 1'e İstanbul'dan 1584 üniversite öğrencisi (1195 kadın, 385 erkek ve 4 diğer) katılmıştır. Katılımcıların yaş ortalaması 21.55 (*SD* = 3.37) ve BKİ ortalaması 22.06 (*SD* = 3.62) olarak bulunmuştur. Katılımcılardan Demografik Bilgi Formunu, Yeme Bozuklukları Değerlendirme Ölçeğini (YBDÖ), Yeme Tutum Testi – 40'ı (YTT-40), Beden İmgesi Memnuniyet Anketini (BİMA) ve Görüneme Yönelik Sosyokültürel Tutumlar Anketi 4-Revize'yi (GYST- 4R) kağıt kalem veya online ortamda doldurmaları istenmiştir. Analizler,

öğrencilerin %22.3'ünün kilosundan memnun olmadığını göstermiştir. Öğrencilerin %10.9'u YTT-40 klinik şiddet kriterini ve % 6.6'sı YBDÖ toplam klinik şiddet kriterlerini karşılamıştır. Kadın ve erkek öğrencilerin karşılaştırılmasına yönelik analizlere göre, kadın öğrenciler YTT-40, YBDÖ alt boyutları ve toplam puanı, GYST- 4R'nin Zayıflığın/Düşük Beden Yağının İçselleştirmesi, Genel Çekiciliğin İçselleştirilmesi alt boyutlarında erkek akranlarından istatistiksel olarak anlamlı düzeyde yüksek puanlar almışlardır. Erkekler ise GYST- 4R'nin Kaslılığın İçselleştirilmesi ve Akran/Önemli Kişi Baskısı alt boyutlarında yüksek puanlar ortaya koymuşlardır. YTT-40 ve YBDÖ-Toplam puanı klinik şiddet kriterlerini karşılayan kadın öğrencilerin yüzdesi bu ölçekler için klinik şiddet kriterlerini karşılayan erkek öğrencilerinkinden daha yüksektir. Analizler ayrıca, Çalışma 2'ye katılmayı onaylayan öğrencilerin, onaylamayan öğrencilere kıyasla daha yüksek düzeyde ED ve ilgili psikopatolojiye sahip olduğunu göstermiştir.

Çalışma 2'nin katılımcıları 38 kadın üniversite öğrencisinden oluşmaktaydı, ve katılımcılar seçkisiz olarak 6 oturumluk- Sağlıklı Yeme Tutum ve Davranışları Grup Programına (deney grubu), tek oturumluk - Yeme Bozuklukları ve Beden Memnuniyetsizliği: Grup Çalışması (aktif kontrol grubu)'na ya da beklemeye liste kontrol grubuna atanmıştır. Sonuç ölçütleri olarak YBDÖ, GYST- 4R, Beden Şekli Anketi (BŞA), Duygu Düzenleme Güçlüğü Ölçeği-16 (DDGÖ-16) ve Grup Geri Bildirim Formu uygulanmıştır. Analizler, deney grubunda YBDÖ alt boyutları ve toplam puanı, BŞA, DDGÖ-16 ve GYST- 4R'nin Zayıflığın/Düşük Beden Yağının İçselleştirmesi alt boyutunda başlangıçtan grup sonrası ölçüme ve başlangıçtan 1 aylık takip değerlendirmesinde aktif ve bekleme listesi kontrol gruplarına göre istatistiksel olarak anlamlı olarak daha yüksek düzeyde gelişime yol açmıştır. Bu sonuç ölçütlerindeki gelişim için etki büyüklüğü büyük etkiyi yansıtmıştır. Deney grubu aynı zamanda yüksek düzeyde uygulanabilirlik ve kabul edilebilirlik ortaya koymuştur. Bilgilendiricilik, eğlenceli olması ve grup arkadaşları ile iyi uyum ve yakınlık bu programın en beğenilen yönleri olarak bulunmuştur.

Sonuç olarak, bu çalışmanın bulguları, İstanbul'daki üniversite öğrencileri arasındaki durum göz önüne alındığında, YB semptomları ve ilgili problemleri

hedef almanın önemini vurgulamaktadır. İyi düzeyde uygulanabilirliği, kabul edilebilirliği ve ön etkinlik bulguları ile Sağlıklı Yeme Tutum ve Davranışları Grup Programı, Türk kadın üniversite öğrencileri arasında YB ile ilişkili psikopatoloji, beden memnuniyetsizliği, duygu düzenleme güçlükleri ve zayıflık/düşük beden yağının içselleştirilmesinin azaltılmasında faydalı olacaktır.

Anahtar kelimeler: yeme bozuklukları, beden memnuniyetsizliği, önleme, üniversite öğrencileri, bilişsel davranışçı terapi

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LIST OF ABBREVIATIONS

APA	: American Psychological Association
ANOVA	: Analysis of Variance
AN	: Anorexia Nervosa
BED	: Binge Eating Disorders
BISQ	: Body Image Satisfaction Questionnaire
BMI	: Body Mass Index
BSQ	: Body Shape Questionnaire
BN	: Bulimia Nervosa
CBT	: Cognitive Behaviour Therapy
CD	: Cognitive Dissonance
CONSORT	: Consolidated Standards of Reporting Trials
COPE	: Creating Opportunities for Personal Empowerment
DERS-16	: Difficulties in Emotion Regulation Scale -16
DEAB	: Disordered Eating Attitudes and Behaviours
EAT-40	: Eating Attitudes Test – 40
ED	: Eating Disorders
EDEQ	: Eating Disorders Examination Questionnaire
DSM – 5	: Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders
HW	: Healthy Weight
OSFED	: Other specified feeding or eating disorder
RTM	: Regression to the Mean
SATAQ-4R	: Sociocultural Attitudes towards Appearance Questionnaire-4-Revised
SPSS	: Statistical Package for Social Sciences
WHO	: World Health Organisation

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CHAPTER 1

INTRODUCTION

1.1 Definition of the Problem

Besides being one of the most basic biological human need, eating has also a significant psychological aspect. Today, with the increased sociocultural and media pressure, individuals' (especially women's) eating behaviours, eating and body/weight-related attitudes start to show complex features which may result in the development of psychological problems. As known to be one of the most common psychiatric disorders among women, eating disorders (ED) are characterized by a persistent deterioration in eating behaviour, and severe distress associated with weight and/or body shape (APA, 2013). Moreover, inadequate or excessive food intake, obsessive thoughts about food, diet, and body shape/weight, dissatisfaction with body shape, fear of gaining weight and excessive occupation with body shape have been shown to be the most common behaviours and attitudes in individuals with ED (Fairburn, Cooper, & Shafran, 2003).

ED have been shown to be life-threatening serious illnesses. There are many psychological, physical, and social consequences of the ED that influence both individuals and the whole society (Schmidt et al., 2016). Regarding age onset, adolescence and young adulthood period, particularly ages of 15 – 25, have been demonstrated as the peak age for development of ED (Schmidt et al., 2016).

ED are investigated under several diagnostic categories in the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM – 5) (APA, 2013). These categories are anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), and other specified feeding or eating disorder (OSFED) are the main diagnostic categories. Besides clinical features linked to eating and body shape and weight concerns, body mass index (BMI) is also commonly used as one of the significant indicators in the efforts of diagnostic procedures of disordered eating attitudes and behaviours. BMI has been defined as a statistical index for presenting a body fat estimate for women and men. It is

calculated using the following formula, and the World Health Organisation (WHO) classifications of BMI are presented in Table 1.1.

$$BMI = \frac{weight}{height^2}$$

Table 1.1 WHO BMI Classifications

BMI	Classifications
Below 16.5	Severely Underweight
Below 18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Overweight/Pre-obesity
30.0–34.9	Obesity class I
35.0–39.9	Obesity class II
Above 40	Obesity class III

Disordered eating attitudes and behaviours are not specific to Western Societies. Evidence provides support for disordered eating attitudes and behaviours are also significant health concerns in Turkey given their prevalence changed between 2.2% to 12.8% (Celikel et al., 2008; Kadıoğlu & Ergün, 2015). Besides available evidence commonly gathered from a single university or city, the real incidence of ED is still unknown since there are no community-wide studies are available. Given the high prevalence of ED particularly among university students and negative consequences of ED, screening disordered eating attitudes and behaviours and identifying students with a higher risk of developing ED have been considered to have major importance (Fitzsimmons-Craft et al., 2019). Furthermore, literature has emphasised the underestimation of disordered eating attitudes and behaviours among men (Ricciardelli & McCabe, 2015). Since the presentation and prevalence of ED among university students in Turkey, particularly among men, is limited, it is believed that any investigation would be valuable.

Evidence has suggested that implementation of ED prevention programs in university settings is a convenient approach for the efforts on the decreasing of the probability of sub-clinic and possibly clinic ED (Harrer et al., 2020). Even

though increased number of ED prevention programs are developed and tested in Western Societies such as the United States of America, Canada, Australia, England, Germany, Israil and Spain (Le, Barendregt, Hay, & Mihalopoulos, 2017), there is no ED prevention program for university students available in Turkey.

1.2 The Aim of the Current Study

In the first part of this thesis study, it is aimed to investigate disordered eating attitudes and behaviours, body dissatisfaction and internalization of sociocultural attitudes towards appearance among university students. In this way, it is also aimed to identify university students who have a higher risk of developing ED since identifying individuals at risk has been shown to be a crucial step for conducting prevention programs that are addressing risk factors (Wade, 2017).

In the second part of this thesis study, it is initially aimed to develop a Cognitive Behaviour Therapy oriented ED prevention program for female university students with a higher risk for ED targeting transdiagnostic changeable risk factors. Further purpose was to investigate the feasibility, acceptability and efficacy of this newly developed program with a randomised controlled study.

CHAPTER 2

LITERATURE REVIEW

2.3.Definition and Clinical Presentation of Eating Disorders

2.3.1. Anorexia Nervosa

The main clinical characteristics of AN are intense fear of becoming fat or gaining weight, persistent food restriction and unhealthy behaviours for preventing weight gain, and disturbed perception about body shape and weight. Individuals with AN generally have a low level of BMI (underweight or severely underweight). Although some individuals with AN admit their thinness or underweight status, the most of them have a distorted idea of being overweight or obese. They also do not acknowledge the severity of the medical risks associated with their malnourishment (Wade, 2017). Due to their intense fear of gaining weight and becoming fat, individuals with AN starve themselves for losing weight and/or preventing weight gain, and this feature distinguishes AN from other forms of ED (Hay, 2020). Individuals with AN particularly exhibit obsessive and rigid attitudes and behaviours regarding amount and type of consumed food and have excessive exercise routines. Many of them also evaluate their self-worth based on how much they can control their body and weight (Wade, 2017). **Table 2.1** represents DSM – 5 criteria for AN and subtypes of AN (APA, 2013, p.338-339).

AN generally present a chronic course. Most of the individuals with AN struggle with the disorder for more than ten years (Keel, 2010), and almost 20% of the individuals with AN chronically suffer from the illness throughout their lives. Patients with AN generally experience a variety of medical problems affecting several organ systems. When the illness gets more chronic, almost every organ system is affected, and some of these consequences can be irreversible (e.g., osteoporosis and diabetes) (Zipfel et al., 2015). Additionally, in comparison to the general population, a higher risk for suicide and premature death has been shown to be associated with AN diagnosis (Brown, Klein, & Keel, 2015). More specifically, more than five times higher standardized mortality ratio for AN patients have been indicated in comparison to their age and sex-matched peers has been demonstrated. Although the majority of the

patients with AN die due to natural physical consequences of ED, suicide has been shown to be a significant cause for death as well (Fichter & Quadflieg, 2016). Literature has also demonstrated that AN is more prevalently observed among girls and women, and there is almost a 10:1 female to male ratio for the clinical samples (Jones & Morgan, 2010).

Table 2.1. Diagnostic criteria for AN according to the DSM-5

A. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.
B. Intense fear of gaining weight or of becoming fat or persistent behaviour that interferes with weight gain, even though at a significantly low weight.
C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.
Restricting type: During the last 3 months, the individual has not engaged in recurrent episodes of binge eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas). This subtype describes presentations in which weight loss is accomplished primarily through dieting, fasting, and/or excessive exercise.
Binge-eating/purging type: During the last 3 months, the individual has engaged in recurrent episodes of binge eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

2.3.2. Bulimia Nervosa

Individuals with BN suffer from recurrent episodes of binge eating in which individuals consume a larger amount of high-calorie foods (e.g., hamburger, pizza, cake etc) regardless of hunger in a shorter period of time in comparison to the most individuals would eat under the same conditions. Binge eating is mainly accompanied by a sense of lack of control. Individuals continue

to eat until feeling uncomfortably full, and they prefer to be alone while eating (APA, 2013; Hay, 2020). This binge eating episodes are generally followed by an intense fear of gaining weight and shame, thus results in unhealthy compensatory behaviours (e.g., excessive exercising, vomiting, and misuse of laxatives etc.) for preventing possible weight gain. DSM – 5 criteria for BN are presented in **Table 2.2** (APA, 2013; p.345).

Compared to individuals with AN, individuals with BN are likely to maintain a normal level of BMI due to compensatory purging behaviours, but some of them can become overweight as well. Patients with BN experience many medical complications which are particularly associated with purging behaviours (e.g., dental erosions, reflux, electrolyte anomalies). Even though some of these complications can get better with the treatment, some of them can be very serious and cause permanent problems (Mehler & Rylander, 2015). Besides availability of some evidence-based treatment approaches, about one-third of individuals dealing with BN experience a relapse of the illness following remission (Brown et al., 2015). Although better than the course in AN, still 10% of the individuals with BN remain chronically symptomatic (Keel, 2010). Moreover, patients with BN demonstrate an elevated risk for premature death with a standardized mortality ratio of 1.49 (Fichter & Quadflieg, 2016).

Table 2.2. Diagnostic criteria for BN according to the DSM-5

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
1. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
B. Recurrent inappropriate compensatory behaviors in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.
D. Self-evaluation is unduly influenced by body shape and weight.
E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

2.3.3. Binge Eating Disorder

Like BN, BED is also characterized by binge eating episodes and marked distress related to these episodes (APA, 2013; Hay, 2020). However, compared to BN, individuals with BED do not engage in unhealthy/dysfuctional compensatory behaviours for eliminating the negative consequences of binge eating episodes, more specifically weight gain. **Table 2.3** indicates the DSM – 5 criteria for BED (APA, 2013, p.350). Patients with BED also feel embarrassed about the amount of the food they consumed and their inability to control overeating, thus they generally eat secretly (Wassenaar, Friedman, & Mehler, 2019).

Table 2.3. Diagnostic criteria for BED according to the DSM-5

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following: 1. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances. 2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating). **B.** The binge-eating episodes are associated with three (or more) of the following: 1. Eating much more rapidly than normal. 2. Eating until feeling uncomfortably full. 3. Eating large amounts of food when not feeling physically hungry. 4. Eating alone because of feeling embarrassed by how much one is eating. 5. Feeling disgusted with oneself, depressed, or very guilty afterwards. **C.** Marked distress regarding binge eating is present. **D.** The binge eating occurs, on average, at least once a week for 3 months. **E.** The binge eating is not associated with the recurrent use of inappropriate compensatory behaviour as in bulimia nervosa and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

As in all other ED, BED is also associated with increased disability, morbidity, and mortality. Individuals with BED can be in the normal weight range although more likely to be overweight or obese. Evidence has established that BED may independently lead the development of some medical illnesses, particularly metabolic problems (e.g., dyslipidemia, hypertension and diabetes). Furthermore, obesity has been shown to be one of the most common medical comorbidities among patients with BED. Relatedly, among individuals with obesity who are seeking treatment for weight loss (e.g., nutrition counselling, bariatric surgery), BED is very common (Wassenaar et al., 2019). Treatment success rates for BED is relatively low, and approximately half of the individuals with BED do not achieve remission in the treatment. However, relapse of the remitted patients is less common in comparison to AN and BN (Brown et al., 2015). Even though less likely than AN, standardized mortality ratio for patients with BED was found to be 1.50 which is higher than the general population (Fichter & Quadflieg, 2016).

2.3.4. Other Specified Feeding or Eating Disorder

OSFED diagnosis is given when an individual suffers from significant distress and/or impairment in their psychological, social and physical functioning as consequences of body shape and weight related difficulties but do not meet the full criteria for any of above-mentioned disorders (APA, 2013). DSM-5 criteria for OSFED are demonstrated in **Table 2.4** (APA, 2013, p.353-354). ED categorised under OSFED category can be very serious and chronic like AN, BN and BED. Research has also demonstrated that individuals with an OSFED diagnosis generally do not have a motivation for change, and dropout rates from treatment can reach up to 50% (Riesco et al., 2018).

Table 2.4. Diagnostic criteria for OSFED according to the DSM-5

This category applies to presentations in which symptoms characteristic of a feeding and eating disorder that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class. The other specified feeding or eating disorder category is used in situations in which the clinician chooses to communicate the specific reason that the presentation does not meet the criteria for any specific feeding and eating disorder. This is done by recording "other specified feeding or eating disorder" followed by the specific reason (e.g., "bulimia nervosa of low frequency"). Examples of presentations that can be specified using the "other specified" designation include the following:
1. Atypical anorexia nervosa: All of the criteria for anorexia nervosa are met, except that despite significant weight loss, the individual's weight is within or above the normal range.
2. Bulimia nervosa (of low frequency and/or limited duration): All of the criteria for bulimia nervosa are met, except that the binge eating and inappropriate compensatory behaviors occur, on average, less than once a week and/or for less than 3 months.
3. Binge-eating disorder (of low frequency and/or limited duration): All of the criteria for binge-eating disorder are met, except that the binge eating occurs, on average, less than once a week and/or for less than 3 months.
4. Purging disorder: Recurrent purging behaviour to influence weight or shape (e.g., self-induced vomiting: misuse of laxatives, diuretics, or other medications) in the absence of binge eating.
5. Night eating syndrome: Recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. There is awareness and recall of the eating. The night eating is not better explained by external influences such as changes in the individual's sleep-wake cycle or by local social norms. The night eating causes significant distress and/or impairment in functioning. The disordered pattern of eating is not better explained by binge-eating disorder or another mental disorder, including substance use, and is not attributable to another medical disorder or to an effect of medication.

2.3.5. Gender Based Clinical Features of Eating Disorders

Although literature in the ED field historically focused on females, evidence has established that males suffer from disordered eating attitudes and behaviours as well (Schaumberg et al., 2017). Besides similarities between males and females with ED regarding the sociodemographic and clinical features, different course and underlying motivations for the development and maintenance of the disordered eating attitudes and behaviours have been also emphasized. For instance, the average age of onset ED among males has been found to be later than females (Jones & Morgan, 2010). Furthermore, literature has demonstrated that while girls and young women have a higher tendency to perceive themselves as overweight or fat and therefore restrict their food intake, boys and young men are more likely to seek mesomorphic ideals including muscularity and physical fitness and present risky body and weight change behaviours (e.g., steroid use, excessive exercise, weight lifting) (Ata, Schaefer, & Thompson, 2015). In contrast to the situation in females, disordered eating attitudes and behaviours such as overeating, binge eating, and excessive exercise are considered to be more socially acceptable among males and they feel less guilty about their overeating behaviour. This situation makes it difficult to identify and diagnose males with ED which in turn result in under detection of cases for providing treatment (Wade, 2017). Moreover, males have been shown to have a higher risk of leaving psychological treatments before receiving optimal benefit from the treatment (Schaumberg et al., 2017).

2.4.Incidence and Prevalence of Eating Disorders

It has been previously demonstrated that disordered eating attitudes and behaviours begin to develop during adolescence. Between one-third to half of adolescent girls and boys have been shown to exhibit subthreshold ED symptoms such as dieting and unhealthy eating patterns and/or weight control practices; a notable minority seems to show excessive compensatory behaviours (e.g., vomiting, laxative usage, etc.) in order to prevent weight gain (Ciao, Loth, & Neumark-Sztainer, 2014). Ages of 15 – 25 are especially considered to be developmentally sensitive time as well as the peak age for ED onset (Schmidt et

al., 2016). When the subtypes of ED are investigated, 16-22 age group has been shown to be at a greater risk for developing AN, 14-22 age group for developing BN, and 17-32 age group for developing BED (Hudson et al., 2007; Rohde, Stice, & Marti, 2015).

According to findings of a recent systematic review of studies written in English and French, OSFED was found to have the highest lifetime prevalence rate among EDs with 7.4%, followed by AN with a rate of 3.6%. BN (2.1%) and BED (2%) had very similar prevalence rates (Galmiche et al., 2019). Regarding prevalence rates by continents, this study showed that the weighted mean prevalence of EDs was more common in USA with a rate of 4.6%, followed by Asia with a prevalence of 3.5%, and 2.2% in Europe (Galmiche et al., 2019).

An extensive number of researches have demonstrated that the prevalence of ED show differences among genders. A review study has estimated that 13% of young women and 4% of young men are affected by types of ED (Ciao et al., 2014). More recent research has exhibited that the weighted means of lifetime prevalence of EDs were 8.4% for women while it was 2.2% for men (Galmiche et al., 2019). Regarding subtypes of ED, a review study has established that the lifetime prevalence of AN and BED changes between 1-4% while the lifetime prevalence of BN changes between 1-2% among European women. Although less frequent, still apparent, 0.3–0.7% of European men report suffering from a form of ED (Keski-Rahkonen & Mustelin, 2016).

Recent studies have started to challenge and change the idea that ED are specific to Western Societies and developed as a result of beauty ideal created in these societies. Although there are studies showing ED are more prevalent with increasing rates in Western Societies, many studies are also available presenting evidence for that individuals form developing countries like Turkey develop ED as well, and the prevalence of these disorders are in the rise (Celikel et al., 2008; Yucel et al., 2011).

Literature in the ED field in Turkey has established that Turkish people, particularly younger ones, represent unhealthy eating attitudes and behaviours as similar to Western societies. For instance, according to Nutrition and Health

Research in Turkey in 2010, among Turkish citizens aged between 19 – 30 years old, 18.2% of the males and 18.7% of the females skip breakfast. Another study conducted on 501 Turkish female university students showed that 55.6% of the participants wish to be thinner (Swami et al., 2015). Furthermore, a study among 525 university students found that more than one-third of the students are not satisfied with their weights, about 30% of them show an effort to protect their current weights, and 2.9% always make diet (Kadıoğlu & Ergün, 2015).

Although less sufficient, there is also an increasing effort on estimating ED prevalence in Turkey. An early study in a small city found that 12.4% of 258 female university students have disordered clinically significant level of disordered eating attitudes and behaviours (Celikel et al., 2008). Similarly, a more recent study found that 12.8% of the female university students and 12.2% of the male university students exhibit disordered eating attitudes and behaviours (Kadıoğlu & Ergün, 2015). Regarding the diagnostic level, 2.2% of 951 university students have shown to have an ED diagnosis (Kugu et al., 2006). A further study investigated ED prevalence with a structured clinical interview among 2907 high school students in Edirne, a city in the Western part of Turkey. The prevalence of any type of ED diagnosis was found to be 2.33% where most of them were female. In terms of diagnostic categories, the prevalence of eating disorder not otherwise specified (1.51%) was found to be highest followed by BED (0.99%), BN (0.79%) and AN (0.034%) respectively (Vardar & Erzengin, 2011). Moreover, a study conducted among 636 female university students in a city located in the Mediterranean region in Turkey showed that EDs prevalence of 6.3% (Çelik et al., 2016). Another recent study conducted on 2600 students from Erzincan University located in Eastern Anatolia Region of Turkey has suggested 8.5% of the students have a possible ED (Yıldırım, Hacıhasanoğlu Aşılar, Karakurt, Çapık, & Kasımoğlu, 2018). Even though ED appears to be a significant health concern in Turkey with an increased prevalence, one should be cautious about these findings since available studies mainly rely on the clinical cut of the score of Eating Attitudes Test which is a widely used self-report questionnaire rather than administering the clinical interview.

2.5.Aetiology of Eating Disorders

It has been widely acknowledged that some factors play a significant role in the development of illnesses. In this regard, a factor increasing the chance of developing a certain illness is considered to be a risk factor. It has been also emphasised that a factor can be considered risky when it is connected to the age of onset, the severity of the symptoms, chronicity of the illness and success of the provided treatment (Trivedi et al., 2014). Research on the underlying risk factors for ED and associated symptoms have shown that ED may emerge through biological (including genes, hormones, neurotransmitters and brain networks), psychological, and environmental determinants.

2.5.1. Biological Factors

Biological factors have been considered to play pathophysiological roles in the development of ED. More specifically, family and twin studies on ED have provided evidence for the genetic transition of the illness. Findings have shown estimated heritability to range changed between 28% to 74% for AN, 28% to 83% for BN, and 39% and 45% for BED (Baker et al., 2015). These findings thus highlight moderate-to-high heritability for ED (Culbert, Racine, & Klump, 2015). Moreover, researches have suggested that individuals with ED exhibit alterations in neurotransmitters such as dopamine, serotonin, and opioids (Murray, Arosenius, & Avena, 2015). Gonadal hormones such as estradiol and progesterone has been also purposed as predictive risk factors (Culbert et al., 2015). Even though biological factors likely to increase ED vulnerability, it is recommended to bear in mind that the risk becomes more with interaction with environmental factors (Baker et al., 2015).

Neuroimaging studies have also provided insight regarding how brain networks and areas contribute to the development of ED and related symptoms (Steward et al., 2018). Literature has suggested limbic abnormalities (e.g., fear learning and generalization), ventral frontostriatal abnormalities (e.g., reward processing and cognitive and behavioural control) and dorsal frontostriatal abnormalities (e.g., habit learning) might predict maladaptive eating behaviours and attitude (Steinglass, Berner, & Attia, 2019). Furthermore, research has

shown that deficits in cognitive flexibility and inhibitory control and reward sensitivity particularly for restriction and overeating behaviours (Culbert et al., 2015). Although the literature on the neuroscience of ED has been growing, much research is still needed for a better understanding.

2.5.2. Psychological Factors

Literature has demonstrated that some psychological factors play important role in the aetiology of ED. In general, evidence has shown that problems in body image and body dissatisfaction are at the core of ED. Body image is a multifaceted psychological experience covering individuals' feelings, attitudes, behaviours and thoughts about how they perceive their body (Fassino & Marzola, 2018). Literature has indicated that dissatisfaction with body image negatively influences individuals' opinions, perceptions and emotions, and behaviours regarding their body and weight which in turn play a critical role in the development and maintenance of ED, particularly dieting, restrictive eating and excessive exercise behaviours (Kearney-Cooke & Tieger, 2015; Wade, 2017). Body dissatisfaction is also likely to interfere with treatment by making the achievement of healthy weight maintenance more difficult and contributing to drop-out and to predict relapse of the ED (Fassino & Marzola, 2018; Wade, 2017). Besides its importance, it has been recommended that addressing body image disturbances should not be a stand-alone therapeutic approach for individuals ED (Fassino & Marzola, 2018).

In addition to problems in body image and body dissatisfaction, personality has been considered to be another significant psychological factor in the aetiology of ED. Literature investigating the association between ED and personality traits and psychopathology has argued that personality traits or disorders might have an impact on development, course and outcome of ED (Lilenfeld et al., 2006). Research has underlined that poor interoceptive awareness, negative emotionality, drive for thinness, and obsessive-compulsive personality traits can increase predisposition for ED development risk. Moreover, the possibility of developing ED has been identified to be higher among individuals with some personality traits such as impulsivity,

ineffectiveness, perfectionism and neuroticism (Lavender, De Young, & Wonderlich, 2015).

A possible association between ED and internalizing symptoms has been also established. For instance, some studies have shown that internalizing symptoms, affect reactivity and distress intolerance can potentially trigger the development of ED related attitudes and behaviours (Juarascio et al., 2016). Although many researchers have reported that anxiety disorders and related symptoms develop before ED, the information about chronology is not consistent (Pallister & Waller, 2008). It has been argued that some common underlying mechanisms (e.g., cognitive avoidance and safety behaviours) and early life experiences (e.g., bullying and familial problems) might be responsible for the comorbidity between anxiety disorders and ED (Pallister & Waller, 2008).

There is a suggested association between depression and unhealthy eating styles. Evidence has shown that a history of depression is a strong predictor of ED onset (Jacobi et al., 2011). Furthermore, in a sample of adults from the Netherlands, United Kingdom, Germany, and Spain, lower levels of cognitive restrained and higher levels of emotional and uncontrolled eating have been presented among individuals with a history of major depressive disorder in comparison to those without previous depressive problems (Paans et al., 2018). Besides studies indicating mood disorders as predictors of ED, it is important to state here that evidence also shows that mood disorders can develop after the onset of ED (Godart et al., 2015).

2.5.3. Environmental Factors

Considerable number of studies have underlined that sociocultural pressure (e.g., media, parents, peers/significant others) play a powerful role on the development as well as maintenance of disturbance in eating behaviour and body image (Ata et al., 2015). Social norms regarding appearance and internalization of these norms can cause changes in eating behaviour with the purpose of having a more socially acceptable body weight and shape (Ata et al., 2015). Similarly, thin body ideal for women and fit/muscular body ideal for men

presented in the media including magazines, tv shows, social media create pressure for pursuing these ideals which in turn result in unhealthy attitudes and behaviours (Field & Kitos, 2010).

Among young people, internet usage, particularly social networking sites, is rapidly increasing and becoming the main source of media. In this regard, it has been suggested that social media particularly plays a role for increased preoccupation with own's appearance. More specifically, fitness and diet-oriented as well as photo-sharing websites and smartphone applications allowing photoshop and/or filter usage on the photographs are likely to create an unreal appearance ideal which in turn triggers body image satisfaction and excessive comparison with peers and celebrities (Wade, 2017). Following social media profiles for clean eating (e.g., eating organic food and consumption of raw food) and special diets (e.g., gluten-free and vegetarian) which are promoted by social media and celebrities might also trigger ED symptoms (Ambwani et al., 2019). Furthermore, engagement in social media and exposure to food and body-related content have been shown to increase the likelihood of disordered eating attitudes and behaviours such dieting, food restriction, overeating, preoccupations with healthy foods and exercise, and body dissatisfaction among young people (Rounsefell et al., 2020). Even though there is evidence from some longitudinal studies regarding the influence of peer-related factors (e.g., peers who are dieting, the pressure to be thin and body comparisons between peers) the development of ED (Field & Kitos, 2010), it is not clear whether appearance-related bullying and teasing from peers leads increased body image concerns and disordered eating attitudes and behaviours, or individuals who experience difficulties about body image and eating behaviour are more sensitive to comments from their peers (Lunde & Frisén, 2015).

Evidence has also demonstrated that familial dysfunction and communication including poor problem-solving and communication skills, insecure attachment styles, conflict, criticism, hostility, a lack of cohesion, and difficulty in behavioural control are commonly observed among families of individuals with ED (Crowther, Smith, & Williams, 2015). The influence of all types of child maltreatment (e.g., sexual, physical, emotional) on the increased risk for ED in both genders has been indicated (Afifi et al., 2017). Furthermore,

parental modelling of attitudes and behaviours regarding weight, body shape and eating (e.g., comments about weight/shape, perceived importance of weight/shape, and parental weight/shape control behaviours) has been shown to increase the risk of ED (Crowther et al., 2015; Field & Kitos, 2010).

2.6.Transdiagnostic Changeable Risk Factors for Eating Disorders

Transdiagnostic theory of psychological disorders has established that there are some common cognitive and behavioural processes causing and maintaining psychological disorders (Harvey et al., 2015; Mansell et al., 2008). Despite variation between diagnostic categories of DSM-5, individuals with all types of ED appear to share several common predicting factors so-called transdiagnostic mechanisms which lead to the development and/or maintenance of the ED-related pathology (Wade, 2017). In the section that follows, possible transdiagnostic changeable risk factors for ED derived from available literature will be briefly explained. Since changing some risk factors (e.g., genes and gender) is not very possible (Jacobi et al., 2004), for the scope of this study, changeable factors causing ED that can be targeted and manipulated to prevent the development of the ED will be addressed.

A predominant cognitive behavioural theory has suggested that over-evaluation of shape and weight is a common core psychopathological factor across all diagnostic categories, referred in the transdiagnostic theory of eating disorders (Fairburn, Cooper, & Shafran, 2003; Murphy et al., 2010). Besides studies of the authors of the theory, findings of a recent network analysis have also validated this assumption of the transdiagnostic theory of ED (DuBois et al., 2017). Body dissatisfaction, as a related construct to over-evaluation of shape and weight, is also one of the strongest risk factors for developing of any type of ED (Kearney-Cooke & Tieger, 2015; Stice, Marti, & Durant, 2011). Body dissatisfaction is likely to lead negative emotional experiences (e.g., misery, guilt, worry, and anger) and higher levels of maladaptive weight and body control behaviours (e.g., dieting, excessive exercise etc) (Wade, 2017).

Dieting has been emphasized as another significant risk factor for predicting the onset and maintenance of ED (Dakanalis et al., 2017). Research

has shown that moderate and severe levels of dieting behaviours are likely to increase the chance of ED development for 5 to 18 times (Wade, 2017). When an individual tries to engage in strict dietary rules (e.g., *"I am not going to eat any chocolate"*, *"I cannot consume carbohydrates"*, *"I cannot eat over 1000 calories"*), violating these rules and binge eating becomes very likely. This situation can further trigger unhealthy weight control behaviours such as starving oneself, excessive exercise, using laxatives which in turn strengthen the ED symptomatology (Stice & Presnell, 2010).

Higher levels of the body and weight checking, avoidance and comparison behaviours are risk factors that have frequently seen across the spectrum of ED as well (Nikodijevic et al., 2018; Wade, 2017). Some examples of body and weight control behaviours are frequently looking at the mirror or weighing oneself, pinching the skin for testing body fat level, measuring the size of body parts, asking others' opinions about the physical appearance (Kearney-Cooke & Tieger, 2015). On the other hand, body and weight avoidance behaviours can comprise of not looking at the mirror or not weighing oneself, wearing baggy clothes for covering perceived fatness, and avoiding engaging in some sports, trying clothes at stores, and physical contact (Kearney-Cooke & Tieger, 2015; Wade, 2017). Body and weight comparison behaviour consist of an evaluation of one's own body and weight by investigating other bodies that they come across in daily life such as magazines, social media, at schools etc. (Wade, 2017).

Additionally, a central role of excessive exercise in development, as well as maintenance of across all ED categories, has been indicated (Holland, Brown, & Keel, 2014). Exercise considered to be excessive when it is a compensatory behaviour for eating, and significantly impairs individuals' functioning in different aspects of life (e.g., work, school, or social life), occurs at inappropriate times of the day (e.g., at night, working hour etc.) or in inappropriate settings (e.g., dark places, outside activities at cold weather etc), and under the case of injury or other medical complications (APA, 2013; Holland et al., 2014). Excessive exercise behaviour is not only a predictor of disordered eating attitudes and behaviours, but it has also been shown to be associated with longer hospitalization period and increased relapse rate (Wade, 2017).

Research has also highlighted the importance of dysfunctional automatic thoughts related to food restriction and weight loss, loss of control over eating and self-evaluation regarding body shape and weight (Coelho et al., 2012; Fursland, Byrne, & Nathan, 2007; Legenbauer et al., 2018). Black-and-white thinking, catastrophising, mental filter and overgeneralisation are some examples of common dysfunctional automatic thoughts among people with ED (Fursland et al., 2007). Furthermore, thought shape fusion has been shown to be higher among individuals with ED in comparison to the ones without ED (Coelho et al., 2012).

The important role of emotion regulation difficulties has been demonstrated for the development and maintenance of all ED types (Brockmeyer et al., 2014; Kearney-Cooke & Tieger, 2015; Wade, 2017). Individuals with ED are likely to use maladaptive emotion regulation strategies such as emotion suppression, nonacceptance of emotions, and experiential avoidance (Wade, 2017). Since these individuals experience difficulty in giving an adaptive reaction to unpleasant emotional experiences, they use their maladaptive ED related attitudes and behaviours as a strategy for regulating their emotions (Wade, 2017). For instance, as one of the consequences of emotion regulation difficulties, individuals with ED are likely to use food particularly for dealing with negative emotions (e.g., anxiety, anger, sadness), so-called emotional/comfort eating, and this situation has been shown to be associated with problematic eating behaviours, mainly overeating and binge eating (Vögele & Gibson, 2010).

Taken together, based on the available theoretical and empirical research, it is believed that prevention and treatment approaches for ED would benefit from targeting these changeable transdiagnostic constructs.

2.7.Consequences of Eating Disorders

ED are serious illness not only for an individual personally but also for families, partners and even for the whole society (Schmidt et al., 2016). Disordered eating attitudes and behaviours have been demonstrated to increase the tendency to have ED (Sinton & Taylor, 2010), and development of eating

disorders can cause many physical illnesses and psychological problems and decreased functionality that have been shown to be associated with decreased self-esteem, shame, and other serious psychological disorders (Sinton & Taylor, 2010).

ED are often accompanied by medical consequences (Mitchell & Crow, 2010). These consequences can be cardiovascular complications (e.g., rhythm disturbances, hypotension), dermatologic complications (e.g., hair loss, dry skin), gastrointestinal complications (e.g., pancreatitis, gastritis, constipation), musculoskeletal complications (e.g., weakness in muscles, fatigue), dental complications (e.g., decalcification of the teeth, erosion in enamel), and metabolic/endocrinal complications (e.g., hypercholesterolemia, vitamin deficiencies, diabetes). Although some of these medical conditions are mild, an important number of them can be life-endangering (Mitchell & Crow, 2010).

In addition to medical problems, majority of the individuals with ED have been shown to have at least one comorbid psychiatric disorder: mood disorders, suicidality, anxiety disorders (a lifetime prevalence range between 48-81%), post-traumatic stress disorders (a lifetime prevalence range between 12-45%), substance and alcohol abuse (approximate prevalence 50%), sexual dysfunction, self-harm (27% weighted average lifetime prevalence), and personality disorders (Coelho, Thaler, & Steiger, 2015; Wade, 2017). More specifically, almost every nine patients in ten with ED fulfil the diagnosis of an additional psychiatric disorder (Udo & Grilo, 2019). Besides wide-ranging comorbid psychiatric disorders in ED, the prevalence of these disorders is higher than other patient populations with other psychiatric illnesses. For instance, a recent study on 36.309 adult participants in the USA has demonstrated considerably higher levels of lifetime prevalence of psychiatric disorders among individuals with ED in comparison to the ones without ED (Udo & Grilo, 2019).

Medical and psychological consequences of ED may lead to various negative outcomes such as obesity, depression, suicidal behaviours, anxiety disorders, and increased risk of death (Perez, Becker, & Ramirez, 2010; Stice, Becker, & Yokum, 2013). EDs are also likely to put a significant financial burden on individuals by influencing economic as well as social well-being (Schaumberg et al., 2017). As a frequently seen symptom in ED, body

dissatisfaction may increase the frequency of medical interventions such as unnecessary aesthetic surgeries and excessive spending on diet products, sport club memberships and cosmetics (Perez et al., 2010). Literature has underlined that many individuals with ED also have difficulty in maintaining cognitive and social functioning, and suffer from unemployment, inadequacy in parenting, and interpersonal difficulties etc. (Schmidt et al., 2016).

ED have chronic course. Research has indicated that the average illness duration is approximately six years (Schmidt et al., 2016). Suffering from an ED appears to affect every aspect of an individual's life, in other words, cause a health-related life crisis (Schaumberg et al., 2017). Given high levels of physical and psychological comorbidities and the long course of the illness, it has been recommended that treatment of ED, especially for more severe ones, should be conducted by a multidisciplinary team including various health specialist: psychologist/psychiatrist, dietitian, specialist physician, and family therapist (Hay, 2020). The need for a treatment conducted by a multidisciplinary team can be expensive as well as exhausting. Literature has underlined that average treatment cost for ED per person estimated to be higher than schizophrenia and similar to depression (Murray et al., 2017). Furthermore, patients may have to face problems regarding social role functioning, isolation and stigmatization. Relationships with family, friends, and parents, health-related quality of life reproductive health, and parenting are likely to be interfered by symptoms of ED.

2.8.University Students: A Significant Risk Group for Developing Eating Disorders

Throughout the developmental course, people go through variety of physical, psychological and social adaptation processes. These adaptation processes sometimes can bring challenges and increase the stress level. As one of these adaptation processes, young people consider starting the university as one of the most stressful life events. Social pressure from peers and romantic partners, as well as academic pressures (e.g., increased difficulty of courses, making decisions for future career etc.), can be emotionally challenging for

young people (Zotter & Reel, 2015). Related to these challenging experiences, many mental health problems are reported to be developed in this period (Szabo et al., 2015).

Development of disordered eating attitudes and behaviours is one of the most frequently seen mental health problem in this specific period. More specifically, female and male university students from all over the world present dieting behaviour, body dissatisfaction, unhealthy eating patterns and excessive exercise (Yager & O'Dea, 2008). Even though the extensive number of literature has introduced ED as disorders more specific to adolescence period covering secondary school and high school years, recent literature has argued that considering ages of 10–24 years as adolescence period (including university years) provides a better fit nowadays' life conditions that postpone transitions to emerging adulthood (e.g., completion of education, building a career, marriage etc) (Sawyer et al., 2018).

Evidence has underlined that the incidence of ED becomes its highest level in the transition phase to the university given its relations to the pursuit and exploration of identity, adjustment to being apart from home and family (Harrer et al., 2020). Median estimates of twelve months ED prevalence have been demonstrated to be approximately 54% for female university students and 19% for male university students (Harrer et al., 2020). In addition to the high prevalence of ED among university students, a longitudinal study has demonstrated a significant increase over the years. From 1995 to 2008, the prevalence of ED increased from 23.4% to 32.6% for female students and from 7.9% to 25% for male students (White, Reynolds-Malear, & Cordero, 2011). Research has particularly indicated that adolescent girls and young females have the highest risk of developing ED (Saekow et al., 2015). For example, 80-91% of the female university students reported making diet, and 70 -94% of them want to lose weight and be thinner (Yager & O'Dea, 2008).

Besides the significant prevalence of ED symptomology, awareness regarding disordered eating attitudes and behaviours, help-seeking and receiving treatment appears to be less likely. For instance, almost half of the female university students with high levels of ED psychopathology do not acknowledge a problem in their eating attitudes and behaviours (Gratwick-Sarll, Mond, &

Hay, 2013). Not recognizing the problem and lack of insight regarding the severity of ED can increase the likelihood of inappropriate treatment-seeking behaviours and decrease efficient help-seeking behaviours (Gratwick-Sarll et al., 2013). A study on 5.021 undergraduate and graduate students in the USA showed that among the students with ED symptomatology, only 20% of them received treatment (Eisenberg et al., 2011). Moreover, it has been underlined that some of the female students starting university are already influenced by clinically significant level disordered eating attitudes and behaviours, and almost any of these students receive treatment due to access barriers (Dakanalis et al., 2017).

Given the higher prevalence rates and adverse consequences of disordered eating attitudes and behaviours among young women, any effort for decreasing the risk for developing ED is considered to be a major public health priority (Sinton & Taylor, 2010). Literature has underlined that when eating and body-related problems are not addressed, they are eventually become more frequent, severe, and persistent (Fitzsimmons-Craft et al., 2019). These problems are also likely to negatively influence students' psychological, social and physical well-being, relationships with pairs, educational attainment and academic success which in turn trigger development of other psychological difficulties and increase the risk for school dropout (Szabo et al., 2015). In this regard, literature has emphasized that targeting disordered eating attitudes and behaviours among university students aged between 18 and 24 (university years) has been suggested to particularly significant (Fitzsimmons-Craft et al., 2019). Besides this need, the university counselling centres have difficulty in meeting students mental health needs, and most of the universities are lack of mental health professionals who can provide support for ED and related issues (Saekow et al., 2015).

2.9.Eating Disorders Prevention

Psychological, pharmacological, nutritional and brain stimulation approaches are available for the treatment of ED (Hay & Claudino, 2010; Treasure, Cardi, Leppanen, & Turton, 2015). Psychological treatments,

particularly CBT (with the strongest evidence), Interpersonal Therapy (IPT), and Family-Based Treatment (FBT), have been demonstrated to be evidence-based treatment approaches for ED (Linardon et al., 2017). Despite increased awareness regarding the ED and its consequences for both individual and societal levels as well as available successful treatment options, ED and related symptoms of many individuals are either not detected or treated (Schmidt et al., 2016). The majority of individuals with ED do not seek treatment or receive treatment (Kazdin, Fitzsimmons-Craft, & Wilfley, 2017). Approximately half of the individuals who acknowledge their problems face with a waiting period for more than one year after recognizing their symptoms requiring professional help (Kazdin et al., 2017). Moreover, among patients who receive treatment, only a small proportion of patients recovers, and relapse frequently observed among the ones who undergo a treatment besides shown efficacy of treatment modalities (Stice, Becker, et al., 2013).

There are also several significant barriers to seek help for ED such as the denial of the illness, fear of losing control, lack of or low motivation to change, fear of stigmatization, cultural influences, lack of mental health literacy and high cost of mental health services (Kazdin et al., 2017; Griffiths et al., 2018). Furthermore, almost 97% of individuals with ED suffer from functional impairments in many areas that are comparable to the situation of individuals with schizophrenia and autism (Murray et al., 2017). Evidence has emphasized that the course of ED progressively gets worse and becomes chronic when individuals with ED do not receive treatment (Wade, 2017). More specifically, when not treated, illness becomes severe and enduring for more than half of the cases (Treasure et al., 2015). Given many negative consequences of ED and personal, sociocultural and financial barriers for ED treatment, it is assumed that any intervention with an aim of preventing the development and/or chronicization of ED would to be a useful step for the improvement of public health.

Theoretical, experimental and longitudinal studies for the efforts of prevention of psychological illnesses as well as protecting and improving mental health have a significant place in the world mental health literature. Thus, preventive psychiatry is an important branch of psychiatry aiming to promote

mental health in individual and societal levels. For this purpose, preventive psychiatry initially works on taking individual, social, economic, medical and political precautions for preventing the development of mental illnesses as well as encouraging early diagnosis and effective treatment of mental illnesses (Trivedi et al., 2014). These efforts on illness prevention are categorised in three stages. As the earliest stage of prevention efforts, primary prevention focuses on the pre-pathogenesis stage of the illness. In the secondary prevention stage, it is aimed to screen individuals and society for early detection and providing prompt treatment in order to target illness before it becomes disabling. Lastly, tertiary prevention stage addresses the illness when it is more chronic for recovery from the illness as well as enhancing functionality (Trivedi et al., 2014).

Primary prevention programs for psychological illness have been investigated under three different categories based on the risk status of the targeted group (Becker, MacKenzie, & Stewart, 2015): universal, selective and indicated prevention programs. Among these, universal prevention programs target all population without considering any risk factor. Selective prevention programs target young people who have a higher risk for developing the illness while indicated prevention programs target people do not meet diagnostic criteria but show the symptoms of the illness (Stice, Becker, et al., 2013).

An extensive number of studies have demonstrated that prevention efforts of mental illnesses have potential benefits for individuals and public health. These interventions can provide promising effects for common mental health problems such as depressive disorders, anxiety disorders, suicide, substance use and psychotic disorders (Beardslee, Chien, & Bell, 2011; Cuijpers, 2009; Mendelson & Eaton, 2018). Evidence has shown that preventive interventions can effectively target every age group and delivered in many settings (e.g., workplace, schools and residential facilities) (Cuijpers, 2009). Decreasing needs for treatment, harmful and risky behaviours and comorbid health problems associated with the illness have been suggested as potential benefits of the preventive psychiatry. Preventing mental illnesses also have economic benefits such as hampering education drop out, unemployment, and risky behaviours (e.g., drug abuse, thievery, self-harm). (Beardslee et al., 2011; Mendelson & Eaton, 2018).

Over the last 20 years, the number of prevention studies for ED providing promising findings has been increased. Evidence derived from systematic reviews of randomized controlled trials has demonstrated that most of the prevention programs are able to produce statistically significant effects (small to moderate in general) on at least one risk factor for ED (Watson et al., 2016). Regarding the prevention approach, meta-analysis and review studies investigating the effectiveness of ED prevention programs have summarised that selective prevention programs are more effective when compared to other types of prevention programs (Stice, Shaw, & Marti, 2007; Watson et al., 2016). Among the selective prevention programs, Cognitive Behaviour Therapy (CBT) focused programs, Cognitive Dissonance based programs (CD), and Healthy Weight (HW) programs were indicated to be the most effective ones. A recent systematic review and meta-analysis study on selective ED prevention programmes for university setting has indicated that available programs can decrease the incidence of ED by 38% in comparison to the control groups (Harrer et al., 2020). More specifically, it has been emphasized that these prevention programs produce a small effect for global ED symptoms, weight-related concerns, and emotional symptoms, and a moderate effect for body dissatisfaction, dieting, and drive for thinness (Harrer et al., 2020; Watson et al., 2016). Given their effectiveness for decreasing common ED risk factors among university students, in the next section, only the CBT focused, DB and HW prevention programs will be described in detail.

2.9.1. A Brief Overview of Effective Eating Disorders Prevention Programs

As the first evidence-based ED prevention program, *StudentBodies* is an online program that includes traditional concepts of CBT. This program has been initially developed by Winzerberg and his colleagues (1998) with the aim of developing healthy body image and dietary practices among female university students. The effectiveness of *StudentBodies* has been repeatedly tested, and the content of the program has been improved over the years (Saekow et al., 2015; Taylor et al., 2006). This program provides psychoeducation regarding body image and consequences of disordered eating attitudes and behaviours, includes

discussions about the role of culture and media on the idea of beauty, and provide activities for reducing shape and weight concerns and encourage healthy weight regulation (Becker et al., 2015; Taylor et al., 2006). A meta-analytic review investigating the application of *StudentBodies* in the USA and Germany to female high school and university students has demonstrated moderate improvements in body image, thinness desire, and disordered eating attitudes (Beintner, Jacobi, & Taylor, 2012). Moreover, the 10-week version of the program has been shown to lead large effects for improvements in weight concerns, eating-related psychopathology and psychosocial impairment (Saekow et al., 2015). Evidence has also demonstrated that significant reductions in disordered eating attitudes and behaviours found to be maintained at follow up assessments (e.g., 6 months, 1-year, and 2-year) (Ciao et al., 2014).

One of the other most commonly administered and tested ED Cognitive Dissonance (CD) Based Intervention programs is the *Body Project* program, a widely applied program in the USA. The primary aim of this program to encourage participants voluntarily discuss the thin-ideal messages and sociocultural pressures by using Socratic questioning and creating anti-thin-ideal statements and behaviours (Stice et al., 2000; Stice & Ragan, 2002). Participants also are encouraged to challenge themselves by engaging in behaviours that they avoid due to their body image concerns (Becker et al., 2015). The reasoning behind the content of this program is that when internalization of thin-ideal weakens, unhealthy eating attitudes and behaviours, body dissatisfaction and negative affect would be reduced consecutively (Stice, Johnson, & Turgon, 2019). Efficacy trials have demonstrated that the levels of body dissatisfaction, internalization of thin-ideal, dieting, bulimic behaviours and negative affect were reduced among the participants of *Body Project* program with a maintained effect at follow up assessments (Stice et al., 2019; Stice, Marti, Spoor, Presnell, & Shaw, 2008). In addition to groups run by mental health professionals, this program is available with a peer leader format with the aim of enhancing peer interactions and leadership and healthy peer communication (Wade, 2017). Furthermore, an online version of the program has been developed and begun to be tested for efficacy (Ciao et al., 2014).

In order to deal with ED risk factors like unhealthy dieting and inappropriate exercise, *Healthy Weight* aims to increase participants knowledge in terms of nutrition, body image concerns and exercise as well as to help them for improving their skills regarding healthy weight behaviours and attitudes (Becker et al., 2015). In this way, it is expected that for being in a healthy weight range, participants will adopt a balanced eating and regular exercise habits instead of binge eating or restrictive eating (Wade, 2017). Evidence has established that the *Healthy Weight* program results in better improvement in ED pathology, self-reported dieting and body dissatisfaction in comparison to control group (Ciao et al., 2014). As in the *Body Project* program, *Healthy Weight* program has a peer-led version as well. Studies have shown that the efficacy of the program maintains at the follow-up assessments (Ciao et al., 2014).

2.9.2. Features of Successful Eating Disorders Prevention Programs

Given the significance of ED prevention, experimental, longitudinal, meta-analytic and review studies appear to give special attention to exploring successful aspects of the available programs for the enhancement of positive outcome. Based on the available literature, common features of ED risk prevention programs for individuals at high risk are transdiagnostic approach oriented, school- or university-based, multi-session, interactive for enhancement of skill development, and face-to-face or online delivery (Stice & Shaw, 2004; Wade, 2017). Besides the importance of multi-session format, the importance of developing ED programs that can be delivered in a relatively short period has been also emphasized since real-world conditions make it harder to carry out time-consuming programs (Becker et al., 2015).

The theoretical explanations behind prevention programs have underlined that a prevention program should decrease pathogenic and modifiable risk factors that in turn will decrease the incidence of a disorder (Sinton & Taylor, 2010). Although most of the ED prevention programs focus on over evaluation of shape and weight and body dissatisfaction, nonetheless additional risk factors for increasing the outcome also needed to be targeted (Kearney-

Cooke & Tieger, 2015). Moreover, it has been suggested that a prevention program should identify and target the multiple risk factors causing the disorders that have been demonstrated in prospective studies examining the factors leading the onset of the disorder (Sinton & Taylor, 2010). Relatedly, the stage model of illness has emphasized that prevention programs for high ED risk should target body dissatisfaction, thin-ideal internalization, perceived pressure for being thin, weight and shape concerns, dieting and negative emotionality (Treasure, Stein, & Maguire, 2015; Wade, 2017). Furthermore, a review study investigating the features of successful ED prevention programs has emphasised that the successful programs addressed the cognitive behavioural theory for enhancing change in disordered behaviours and attitudes (Ciao et al., 2014).

In addition to the characteristics of ED prevention program, it has been recommended that female university students are the ideal population for the effort on preventing eating disorders (Saekow et al., 2015). A 3 year-longitudinal cohort study on female university students have found that 11.2% of students presented a high risk in initial assessment developed a full or subthreshold ED (Jacobi et al., 2011). Zotter and Reel (2015) have suggested that when an effective prevention program is delivered in the university setting, positive consequences of these programs are likely to spread over to the peers who are in contact with the prevention program participants even after the graduation from university. Furthermore, the attenders of the effective programs may be positive role models regarding healthy eating attitudes and behaviours in their future interpersonal interactions such as their interaction with children, students, patients, and consumers (Zotter & Reel, 2015). Altogether, it is believed that developing and administering an ED prevention program targeting female university students and integrating evidence-based features (e.g., CBT oriented, multi-session, interactive etc.) would be fruitful for both research and clinical levels.

2.9.3. Prevention Efforts for Disordered Eating Attitudes and Behaviours in Turkey

As in all over the world, awareness regarding the prevalence and negative consequences of disordered eating attitudes and behaviours has been increased in Turkey as well. Besides increased awareness, efforts on the prevention of disordered eating attitudes and behaviours do not attract the required attention. To the date, only one ED prevention study conducted in Turkey has been identified. Nevertheless, prevention of obesity appeared to attract more attention. Obesity is simply defined as having higher levels of BMI (over 30) and associated with many physical and psychological difficulties. Although obesity is not included in DSM-5 as an ED, it has been shown to share some disordered eating attitudes and behaviours (e.g., poor body image, eating for emotion regulation, binge eating etc) similar to ED (Allison & Cirona-Singh, 2015). Due to very limited literature in the prevention of ED in Turkey, in addition to a single study in ED prevention, some examples for available prevention programs for obesity will be briefly described in the section follows.

Literature search regarding prevention of disordered eating attitudes and behaviours revealed that most of the studies conducted among children and adolescents in the school setting. For instance, Toruner and Savaser (2010) conducted a study on testing the impact of a school-based weight management program for 81 fourth-grade overweight and obese children. Their seven-session program included cognitive behavioural skills for healthy nutrition, a healthy lifestyle (e.g., physical exercises, decreased screen time), and self-recognition. They found that the BMI of children who attended the program significantly decreased compared to the children in no intervention control group. In another study for obesity prevention administered to 6771 primary school students, Sevinç and his colleagues (2011) investigated whether healthy nutrition education combined with physical activity programs would lead more improvement compared to healthy nutrition education only. Findings of this study showed that increases in BMI were significantly lower in both active conditions compared to the control group. In 2015, Toruner and her colleagues conducted a study on 692 elementary school students for testing the efficacy of school-based healthy life program. This program consisted of 4 training session

(a class hour long) on healthy life, nutrition, sedentary lifestyle, and physical exercise. Although the self-reported daily exercise was significantly increased in the intervention group, no significant difference for BMI was found. In a more recent study, the Turkish version of Creating Opportunities for Personal Empowerment' (T-COPE) has been tested as an obesity prevention program for 12-15 aged school children (Ardic & Erdogan, 2017). This CBT oriented program included 15 sessions for promoting cognitive and behavioural skills regarding nutrition and physical activity. The program resulted in improvements in knowledge of nutrition and physical activity, healthy lifestyle behaviours (e.g., physical activity and vegetable consumption) as well as decreased anxiety symptoms in both the short-term and long-term. However, no statistically significant difference between the intervention group and control group regarding BMI were determined.

Regarding ED prevention for adolescents, Arslanoğlu (2015) developed and tested the effect of structured group intervention. This study included a total of 24 female (14-17 years old) volleyball players. Participants randomly assigned to the intervention received 12 sessions including contents of psychoeducation about nutrition, predictors of disordered eating behaviours, negative thought on body image, emotions and eating, relaxation, assertiveness and problem-solving. Findings of this study revealed statistically significant reductions in disordered eating attitudes and behaviours and depression, and improvement in body image in the intervention group.

In conclusion, obesity prevention studies conducted in Turkey appears to provide mixed findings regarding improvements in BMI which is a critical predictor of body satisfaction. Apart from studies in obesity, findings of ED prevention program for volleyball players are assumed to be promising. However, while interpreting these findings, it is important to remember that none of these studies was conducted by researchers/clinicians in Psychology or Psychiatry departments. Thus, the psychological aspects of disordered eating attitudes and behaviours might be neglected. Another issue is that participants in the available studies were mainly children. Furthermore, the risk status of the participants was not investigated in any phase of the studies. Altogether, it appears that there is a need for developing a prevention program for individuals

presenting a higher risk for developing ED in Turkey targeting psychological risk factors.

CHAPTER 3

STUDY 1

3.1.Method

3.1.1. Participants

Participants for this study were recruited by using a convenience sampling method. Potential participants were reached through lecturers and professors who are teaching classes at different universities in Istanbul during Fall 2018 Semester. Among 1856 students from a total of 21 public and private universities located in Istanbul that were invited in participating in this screening study, 1584 university students approved participating in the study and filled out questionnaires which represented a response rate of 85%.

Among participants, 1195 of them were female, 385 of them were male, and 4 of them reported their gender as other. Mean age of the participants was 21.55 (*SD* = 3.37), and mean BMI of the participants was 22.06 (*SD*=3.62). Majority of the participants were studying in the Psychology department, followed by Engineering departments. Detailed information regarding the departments in which participants are studying and their distribution is provided in **Table 3.1**.

Table 3.1. Distribution of departments of participants

Department	*N*	%
Psychology	1062	67
Nutrition and Dietetics	108	6.8
Health Sciences	80	5.1
Education Sciences	39	2.5
Engineering	128	8.1
Art-Design	26	1.6
Architecture	17	1.1
Social Sciences	24	1.5
Economics and Administrative Sciences	38	2.4
Communication	18	1.1
Life Sciences	8	0.5
Tourism and Hotel Management	31	2
Law	4	0.3

3.1.2. Instruments

Participants of this study were asked to fill out a questionnaire package covering Demographic Information Form, Eating Disorders Examination Questionnaire (EDEQ), Eating Attitudes Test – 40 (EAT-40), Body Image Satisfaction Questionnaire (BISQ), and Sociocultural Attitudes towards Appearance Questionnaire-4-Revised (SATAQ-4R). Data collection instruments can be seen in Appendix 1.

3.1.2.1.Demographic Information Form

In this form, information regarding participants' gender, date of birth, marital status, working status, weight –height, department and university in which they are currently studying, psychiatric history and related treatment, weight satisfaction status, and prior application to health care providers for eating-related problems were gathered.

3.1.2.2.The Eating Disorders Examination Questionnaire (EDEQ)

EDEQ is a self-report questionnaire measuring symptoms, cognitions, behaviours, and attitudes linked to ED. It was developed by Fairburn and Beglin (1994) based on a clinical interview (Fairburn & Cooper, 1993). This questionnaire consists of 28 items covering four subscales: restraint eating, shape concern, weight concern, and eating concern. In EDEQ, participants are asked to rate how frequently they presented given statements over the past 28 days on a 7-point Likert Scale (0: no days; 6: every day). Summing and averaging the subscale scores of EDEQ produces a total score of EDEQ where higher scores indicate higher levels of ED psychopathology. More specifically, scores of 4 and higher are used as indicative of being in clinical level ED psychopathology (Mond et al., 2006).

Test-retest reliability coefficients of EDEQ's four subscale scores found to be ranged between .66 to .94. Furthermore, EDEQ provided acceptable internal consistency: weight concern (α = .72 – .89), eating concern (α = .73 – .86), shape concern (α = .83 – .93), and restraint eating (α = .70 – .85) (Berg et al., 2012). EDEQ was adapted and validated to Turkish in a sample of primary and high school students by Yücel and her colleagues in (2011). Test-retest reliability coefficients of Turkish version of the EDEQ was satisfactory for the EDEQ total score (r = .91), weight concern (r = .89), eating concern (r = .83), shape concern (r = .89), and restraint eating (r = .79). Internal consistency of the scale was .93 for the total score, and it was ranged between .70 to .86 for the subscales (Yucel et al., 2011). Psychometric properties of EDEQ has been tested in an adult sample as well (Baktıroğlu, 2019). In the current sample, Cronbach's

alpha for the total score was found to be .92, and it was ranged between .81 to .90 for the subscales.

3.1.2.3.The Eating Attitudes Test – 40 (EAT-40)

EAT-40 was developed as a 40-item self-report questionnaire for measuring frequently observed symptoms of AN (Garner & Garfinkel, 1979). Each item of the EAT-40 is rated on a 6 - point Likert scale where 1 represents always and 6 represents never. The sum of items score provides a total score of the EAT-40 where a score of 21 and higher indicates moderate risk and 30 and higher indicates high risk for disordered eating attitudes.

A good internal consistency was found for the scale among patients with AN ($\alpha = 0.79$) and control group ($\alpha = 0.94$) (Garner & Garfinkel, 1979). Savasir and Erol (1989) tested psychometric properties of the EAT-40 in Turkish population. 1-month interval test-retest reliability coefficient of the Turkish version of the EAT-40 was found to be 0.65. The scale also provided an acceptable internal consistency of Cronbach alpha as 0.70. In the current sample, Cronbach's alpha for the total score was found to be .82.

3.1.2.4.Body Image Satisfaction Questionnaire (BISQ)

The BISQ was developed in order to assess individuals' satisfaction with the parts of their body, in other words, body image satisfaction (Berscheid , Walster, & Bohrnstedt, 1972). In this scale, participants were asked to rate the degree of satisfaction with 25 aspects of their bodies on a 5-point Likert Scale (1: extremely dissatisfied to 5: extremely satisfied). The total score of BISQ is calculated by summing scores of each item then averaging, and lower scores indicate a higher degree of dissatisfaction with the body.

The Turkish version of the BISQ was adapted and validated in a sample of adolescents by Cok (1988, 1990) (Cok (Gokdogan), 1988) from the original questionnaire. Test-retest reliability of the scale was found to be $r = .88$, and internal consistency was found to be .92 for girls and .94 for boys. Cronbach's

alpha for the total score was found to be .89 in the current sample. In this study, the total score of BISQ was used.

3.1.2.5. Sociocultural Attitudes towards Appearance Questionnaire-4-Revised (SATAQ-4R)

The SATAQ – 4 was developed for assessing the influence of societal and interpersonal influences on body image and disturbances in eating behaviour (Schaefer et al., 2015). The revised version of the SATAQ consisted of 31 items covering seven subscales: Internalization: Thin/Low Body Fat, Internalization: Muscular, Internalization: General Attractiveness, Pressures: Peers and Significant Others, Pressures: Family, and Pressures: Media (Schaefer, Harriger et al., 2017). In SATAQ-4R, participants are asked to rate each item on a 5-point Likert Scale (1: definitely disagree to 5: definitely agree) where higher scores indicate higher levels of internalization and pressure.

Test-retest reliability for the SATAQ-4R was found to be good for female subscale with a range of .82 to .96 and for male subscale with a range of .75 to .96 (Schaefer et al., 2017). Psychometric properties of the Turkish version of SATAQ-4R were tested by Cihan and her colleagues (2016). The Turkish version of the questionnaire was shown to have good reliability with a .96 Cronbach's alpha for total SATAQ-4R score and good internal consistency for the all the subscales with Cronbach's alpha as .84 or higher (Cihan et al., 2016). In the current sample, Cronbach’s alpha values were ranged between .80 to .95 for the subscales.

3.1.3. Procedure

Ethical approval for the present study was taken from the Istanbul Arel University Ethical Committee (Appendix 2). Then, the author of this thesis study personally contacted lecturers and professors who are teaching classes at different universities in Istanbul during Fall 2018 Semester. Following to approval for data collection from lecturers and professors, questionnaire package consisting of an informed consent form and data collection instruments were given to the participants either face-to-face in a class hour as a paper-pencil

format or an online version of the package sent through an e-mail. The online version of the data collection package was created using *Google Forms*. The informed consent form provided to all participants included a detailed description of the thesis consisting of two studies. Participants were also informed that all of their personal information will be kept confidential and they are allowed to quite the research at any time they wish. Although participants are not asked to indicate their names or surnames, they were asked to provide their phone numbers or e-mail address only if they also would like to participate in the second study where a group program for healthy eating attitudes and behaviours that will be run. Filling out the questionnaire package took approximately 25-minutes. Although participation was voluntary based, participants were also rewarded with course credit for their participation.

3.1.4. Statistical Analysis

The analysis of the collected data for this study was carried out using the Statistical Package for Social Sciences (SPSS), version 21. Prior to actual analysis, preliminary analyses were conducted to investigate the suitability of the data set for analysis. First, the assumption of normality was checked to see if the data is normally distributed by investigating skewness, kurtosis and normality test results (Cain, Zhang, & Yuan, 2017; Kim, 2013). Then, descriptive and frequency analysis was run for determining the demographic and clinical characteristics of the sample (mean age, gender, psychiatric history etc.) and the scores obtained from data collection tools. Finally, for investigating the differences between female and male university students as well as the differences between students who approved participating in the second study and who did not approve, separate independent-sample t-test analyses were conducted for each variable.

3.2.Results

3.2.1. Descriptive Statistics

Before conducting descriptive statistics, data was investigated for missing values by running missing value and pattern analyses. These analyses revealed that missing values were random, thus missing values were replaced by using the mean series method for each variable. Initially, descriptive analyses were conducted in order to display both demographic and clinical feature of all sample. Then, separate analyses were conducted for comparing female and male participants, and participants who approved participating in the second study and participants who did not approve.

Firstly, frequency analysis was conducted for presenting the distribution of the sample regarding psychosocial demographic characteristics, and findings are presented in **Table 3.2**. Information regarding the correlations among outcome measures based on Pearson correlation analyses is provided in Appendix 4.

Table 3.2. Psychosocial demographic characteristics of participants

Variable	**n**	**%**
Marital status		
Married	35	2.2
In a relationship	329	20.8
Single	1216	76.8
Employment status		
Employed	223	14.1
Unemployed	1359	85.8
History of self-reported psychiatric disorder		
Yes	316	20
No	1267	80
History of self-reported outpatient treatment		
Psychotherapy	73	4.6
Pharmacotherapy	75	4.7
Combination of psychotherapy and pharmacotherapy	111	7
No treatment	1323	83.5
History of inpatient treatment		
Psychotherapy	4	0.3
Pharmacotherapy	7	0.4
Combination of psychotherapy and pharmacotherapy	7	0.4
No treatment	1564	98.7

Among 1584, 314 of them reported having a previous psychiatric diagnosis. Most common self-reported psychiatric disorders among these participants were anxiety disorders and mood disorders. **Table 3.3** represents the previous psychiatric diagnosis of the participants.

Table 3.3. Self-reported psychiatric diagnosis of participants

Psychiatric Diagnosis	**n**	**%**
Anxiety Disorders	65	20.7
Mood Disorders	64	19.4
Trauma and Related Disorders	9	2.9
Obsessive-Compulsive Disorder	25	8
Attention Deficit and Hyperactivity Disorder	13	3.5
Sleep Problems	4	1.3
Eating Disorders	3	1
Other	37	11.1
Multiple Diagnosis	31	9.2

Note. *N* = 314

Given its close relationship with disordered eating attitudes and behaviours, participants were asked to report satisfaction with their weight (**Table 3.4**), the percentages of participants regarding the reason for the dissatisfaction with weight based on the BMI classifications (**Table 3.5**), and whether they consulted a health care professional for their weight-related problems (**Table 3.6**).

Table 3.4. Weight satisfaction status of participants

Weight Satisfaction Status	**n**	**%**
Not Satisfied	354	22.3
Slightly Satisfied	580	36.6
Satisfied	535	33.8
Very Satisfied	114	7.2

Note. *N* = 1583

Table 3.5. Reason of weight dissatisfaction status based on BMI

Reason of Dissatisfaction	BMI Classification				Total
	Underweight (*n*=114)	Normal Weight (*n*=688)	Overweight (*n*=199)	Obese (*n*=48)	
Extremely Low Weight	2.63	0.29	0.00	0.00	0.48
Slightly Low Weight	47.37	12.50	0.00	0.00	13.35
Low Weight	35.96	7.27	0.50	0.00	8.77
Slightly Overweight	8.77	68.31	57.29	16.67	57.39
Overweight	0.88	10.61	36.18	45.83	16.02
Extremely Overweight	4.39	1.02	6.03	37.50	4.00
Total	100	100	100	100	100

Note. N = 1056

Table 3.6. Health professional application for weight related concerns

Health Professional Application Status	n	%
Psychologist / Psychiatrist	8	0.50
Dietician	252	15.90
Internal Medicine	29	1.80
Multiple Application	25	1.60
No Application	1270	80.2

Note. N = 1584

Finally, descriptive analyses were conducted for presenting ED symptoms, disordered eating attitudes and behaviours, body dissatisfaction, and internalization of sociocultural attitudes towards appearance. The findings of the descriptive analysis of the data collection instruments are presented in **Table 3.7**.

Table 3.7. Mean and SD scores on outcome measures

Instrument	**Mean**	***SD***
EDEQ		
Restraint Eating	2.05	1.41
Eating Concern	1.56	1.10
Shape Concern	2.30	1.46
Weight Concern	1.93	1.39
Total Scale	1.96	1.21
BISQ	3.68	0.62
EAT-40	17.88	9.30
SATAQ-4R		
Thin/Low Body Fat Internalization	2.51	1.05
Muscular Internalization	2.46	1.06
General Attractiveness Internalization	3.90	0.75
Family Pressures	1.87	1.09
Peer / Significant Other Pressures	1.74	0.93
Media Pressures	2.31	1.39

For exploring the severity of disordered eating attitudes and behaviours among Turkish university students, frequency analyses were also conducted by using cut-off scores of EAT-40 (30 and above) and EDEQ-Total (4 and above) for clinically significant level disordered eating attitudes and behaviours. Analyses revealed that 10.9% of the sample met clinical severity criteria of EAT-40 and 6.6% of the sample met the clinical severity criteria of EDEQ-Total. Furthermore, 3.2% of the sample met the clinical severity criteria of both instruments.

3.2.2. Comparison of Female and Male University Students

Descriptive analyses on demographic variables showed that there was a statistically significant difference between mean age of male students (M = 21.95; SD=3.11) and mean age of female students (M=21.42; SD=3.44), $t(1573) = 2.66$, $p < 0.01$. Furthermore, mean BMI of male students (M=24.02 SD=3.41) was significantly higher than mean BMI of female student (M=21.43 SD=3.47), $t(1571) = 12.75$, $p = 0.000$.

Frequency analysis on weight satisfaction status revealed that only a minority of the female and male students were very satisfied with their weight. While the percentage of being slightly satisfied with weight was most common in female students, the percentage of being satisfied with weight was most common in male students as presented in **Table 3.8**.

Table 3.8. Weight satisfaction status by gender

	Female Students		Male Students	
Weight Satisfaction Status	**n**	**%**	**n**	**%**
Not Satisfied	295	24.7	59	15.32
Slightly Satisfied	428	35.8	149	38.70
Satisfied	384	32.1	151	39.22
Very Satisfied	88	7.4	25	6.49

In terms of reasons for dissatisfaction with weight, the analysis showed that both female and male students reported as being slightly overweight. A second most common reason for being dissatisfied was being overweight for females and slightly low weight for males. **Table 3.9** displays more detailed information.

Table 3.9. Reason of weight dissatisfaction status based on BMI by gender

	Reason of Dissatisfaction	BMI Classification				Total
		Underweight (n=106)	Normal Weight (n=559)	Overweight (n=120)	Obese (n=31)	
Female	Extremely Low Weight	2.83	0.18	0.00	0.00	0.49
	Slightly Low Weight	46.23	4.65	0.00	0.00	9.19
	Low Weight	37.74	6.44	0.00	0.00	9.31
	Slightly Overweight	9.43	75.85	45.00	12.90	60.29
	Overweight	0.94	12.16	45.00	41.94	16.67
	Extremely Overweight	2.83	0.72	10.00	45.16	4.04
	Total	100	100	100	100	100

	Reason of Dissatisfaction	Underweight (n=8)	Normal Weight (n=126)	Overweight (n=79)	Obese (n=17)	Total
Male	Extremely Low Weight	0.00	0.79	0.00	0.00	0.43
	Slightly Low Weight	62.50	46.83	0.00	0.00	27.83
	Low Weight	12.50	11.11	1.27	0.00	6.96
	Slightly Overweight	0.00	34.92	75.95	23.53	46.96
	Overweight	0.00	3.97	22.78	52.94	13.91
	Extremely Overweight	25.00	2.38	0.00	23.53	3.91
	Total	100	100	100	100	100

Note. Female: n = 882; Male: n = 231

Regarding consulting a health care professional for weight-related problems, it was found that 23.5% of female participants consulted at least one health care professional. More specifically, the majority of the females (18.8%) consulted a dietitian for their weight-related problems. 9.1% of male participants reported that they consulted one or more health care professional. Similar to female participants, most of the males (6.8%) consulted a dietitian for their weight-related problems.

To test how female and male students differ each other on the mean scores from the outcome measures, separate independent samples t-tests for each variable were conducted. Analyses revealed that except BISQ and Family Pressures subscale of SATAQ-4R, there were statistically significant differences in mean scores of the females and males. Female students had significantly

higher mean scores compared to males in most of the instruments, except Muscular Internalization and Peer / Significant Other Pressures subscales of SATAQ-4R where male students had significantly higher mean scores. Mean scores, standard deviation scores, and t scores for each variable are presented in **Table 3.10**. Information regarding the correlations among outcome measures based on Pearson correlation analysis for female and male samples are provided in Appendix 4.

Table 3.10. Mean and SD scores on outcome measures by gender

	Female Students (*N*= 1195)		Male Students (*N*= 385)		
Instruments	***M***	***SD***	***M***	***SD***	***T Score***
EDEQ					
Restraint Eating	2.12	1.40	1.84	1.42	-3.34**
Eating Concern	1.64	1.12	1.32	1.01	-5.27***
Shape Concern	2.41	1.49	1.95	1.29	-5.84***
Weight Concern	2.03	1.42	1.63	1.22	-5.41***
Total Scale	2.05	1,23	1.68	1.10	-5.50***
BISQ	3.66	0.62	3.71	0.64	1.36
EAT-40	18.41	9.33	16.24	9.05	-4.05***
SATAQ-4R					
Thin/Low Body Fat Internalization	2.64	1.06	2.09	0.91	-9.84***
Muscular Internalization	2.19	0.94	3.32	0.96	20.34***
General Attractiveness Internalization	3.94	0.74	3.79	0.77	-3.45**
Family Pressures	1.88	1.12	1.84	0.99	-0.66
Peer / Significant Other Pressures	1.72	0.92	1.84	0.94	2.21*
Media Pressures	2.44	1.44	1.88	1.13	-7.82***

Note.

*$p<0.05$, **$p<0.01$, ***$p<0.001$

Frequency analyses were conducted for examining clinically significant level disordered eating attitudes and behaviours among female and male students. It was found that 11.9% of females and 7.8% of males met clinical severity criteria of EAT-40 and 7.4% of females and 3.6% of males met clinical severity criteria of EDEQ-Total. 3.6% of females and 1.8% of males met the clinical severity criteria of the sample met the clinical severity criteria of both instruments.

3.2.3. Comparison of Students Who Approved and Not Approved Participating in Second Study

Descriptive analyses and independent-sample t-test analyses were also conducted for investigating the differences between students who approved (*N*=934) and not approved (*N*=620) participating in the second study. Percentage of female and male students who approved were similar with 61.3% and 59.7% respectively. Analysis revealed a statistically significant difference between mean age of students who approved (M = 21.74; SD=3.42) and mean age of students who did not approve (M=21.26; SD=2.26), $t(1577) = 2.77$, $p < 0.01$. However, there was no statistically significant difference between mean BMI of students who gave approval (M=22.03 SD=3.64) and a mean BMI of the student who did not approve (M=22.09 SD=3.60).

Frequency analysis on weight satisfaction status revealed that only about 7% of the students who approved and did not approve the second study were very satisfied with their weight. For both students who approved and did not approve, being slightly satisfied with weight had the highest percentage. Detailed information is provided in **Table 3.11**.

Table 3.11. Weight satisfaction status by approval status

	Approved		**Not Approved**	
Weight Satisfaction Status	**n**	**%**	**n**	**%**
Not Satisfied	225	23.4	129	20.8
Slightly Satisfied	353	36.7	227	36.6
Satisfied	316	32.8	219	35.3
Very Satisfied	69	7.2	45	7.3

Frequency analyses revealed that the most common reason for being dissatisfied with weight was being slightly overweight, followed by being overweight for both students who approved and did not approve. Table 3.12 shows more detailed information about the reason for dissatisfaction with weight.

Table 3.12. Reason of weight dissatisfaction status based on BMI by approval status

	Reason of Dissatisfaction	BMI Classification				Total
		Underweight (*n*=69)	**Normal Weight (*n*=430)**	**Overweight (*n*=109)**	**Obese (*n*=35)**	
Approved	**Extremely Low Weight**	2.90	0.47	0.00	0.00	0.62
	Slightly Low Weight	49.28	13.26	0.00	0.00	14.15
	Low Weight	31.88	6.51	0.00	0.00	7.78
	Slightly Overweight	10.14	67.21	51.38	20.00	55.83
	Overweight	1.45	11.86	39.45	51.43	17.57
	Extremely Overweight	4.35	0.70	9.17	28.57	4.4
	Total	100	100	100	100	100

	Reason of Dissatisfaction	Underweight (*n*=45)	Normal Weight (*n*=258)	Overweight (*n*=90)	Obese (*n*=13)	Total
Not Approved	**Extremely Low Weight**	2.22	0.00	0.00	0.00	0.25
	Slightly Low Weight	44.44	11.24	0.00	0.00	12.07
	Low Weight	42.22	8.53	1.11	0.00	10.34
	Slightly Overweight	6.67	70.16	64.44	7.69	59.85
	Overweight	0.00	8.53	32.22	30.77	13.55
	Extremely Overweight	4.44	1.55	2.22	61.54	3.94
	Total	100	100	100	100	100

Note. Approved: $n = 664$; Not Approved: $n = 412$

Findings revealed that 20.6% of students who approved for the second study consulted one or more health care professional for weight-related problems. More specifically, most of the students who approved (16.2%) consulted a dietitian for their weight-related problems. 19% of students who did not approve for the second study reported that they consulted one or more health care professional. Like students who approved, majority of students who did not approve (15.5%) consulted a dietitian for their weight-related problems.

Independent samples t-tests for each variable was separately conducted for testing the differences between students who approved and who did not approve. As can be seen from mean scores, standard deviation scores, and t scores for each variable presented in **Table 3.13**, analyses revealed that students who approved had significantly higher levels of ED related psychopathology in most of the variables compared to students who did not approve. However, no

statistically significant differences were found for Muscular Internalization, General Attractiveness Internalization, Family Pressures, and Media Pressures subscales of SATAQ-4R. Information regarding the correlations among outcome measures based on Pearson correlation analysis for students approved and students did not approve are provided in Appendix 4.

Table 3.13. Mean and SD scores on outcome measures by approval status

	Approved (*N*= 964)		**Not Approved (*N*= 620)**		
Instruments	***M***	***SD***	***M***	***SD***	***T score***
EDEQ					
Restraint Eating	2.16	1.43	1.87	1.35	4.03***
Eating Concern	1.65	1.14	1.40	1.01	4.69***
Shape Concern	2.42	1.49	2.11	1.38	4.24***
Weight Concern	2.04	1.40	1.76	1.34	3.86***
Total Scale	2.07	1.24	1.79	1.14	4.65***
BISQ	3.64	0.62	3.73	0.63	-3.04**
EAT-40	18.62	9.55	16.73	8.79	4.02***
SATAQ-4R					
Thin/Low Body Fat Internalization	2.59	1.06	2.39	1.03	3.73***
Muscular Internalization	2.49	1.08	2.43	1.03	1.16
General Attractiveness Internalization	3.93	0.73	3.86	0.78	1.91
Family Pressures	1.88	1.10	1.85	1.07	0.58
Peer / Significant Other Pressures	1.78	0.95	1.68	0.88	2.23*
Media Pressures	2.34	1.42	2.24	1.33	1.41

**p*<0.05, ***p*<0.01, ****p*<0.001

Frequency of clinically significant level disordered eating attitudes and behaviours among students who gave approval and did not give approval was investigated. Analyses showed that 12.8% of participants who approved and 7.9% of who did not approve met clinical severity criteria of EAT-40 and 8.1% of participants who approved and 4.2% of who did not approve met clinical severity criteria of EDEQ-Total. Moreover, 4% of participants who approved and 1.8% of who did not approve met the clinical severity criteria of the sample met clinical severity criteria of both instruments.

3.3.Discussion

This part of the thesis study initially aimed to examine levels of disordered eating attitudes and behaviours and related demographic and clinical constructs among Turkish university students. A further aim was to identify female university students who have a high risk of developing ED, and invite them to participate in a clinical trial aiming to promote healthy eating attitudes and behaviours, so-called an ED prevention program.

A total of 1584 university students from 21 universities and a variety of departments participated in this study. Among these students, every one in five students reported that they have a history of psychiatric disorder, and most common psychiatric disorders were anxiety and mood disorders in accordance with previous research (Auerbach et al., 2016).

In terms of weight satisfaction, 22.3% of the students reported that they are not satisfied with their weight while only 7.2% of them reported that they are very satisfied with their weight. When participants who are not satisfied with their weight were asked about the reason for this dissatisfaction, the most of them (57.39%) reported that they find themselves slightly overweight, followed by overweight (16.02%). A detailed investigation of weight dissatisfaction status based on BMI classification showed that 8.77% of participants in the underweight range and 68.31% of participants in normal weight range think that they are slightly overweight. 0.88% of participants who are in underweight range and 10.61% of participants who are in normal weight range think that they are overweight. 4.39% of participants who are in the underweight range and 1.02% of participants who are in normal weight range think that they are extremely overweight. A possible explanation for the discrepancy between perceived weight and BMI in the present study might be that students do not consider BMI a source of evaluation of their body shape and weight. These results are in line with previous studies indicating that dissatisfaction with the current weight and wishing to lose weight are frequently seen among Turkish university students as in students from Western Societies (Yager & O'Dea, 2008; Swami et al., 2015; Kadıoğlu & Ergün, 2015).

Literature has demonstrated that wanting to lose weight and showing efforts for body/weight control are common among university students (Yager & O'Dea, 2008; Kadıoğlu & Ergün, 2015). Furthermore, previous research on individuals with ED exhibited that three-quarters of the patients sought help for achieving weight loss (Evans et al., 2011). Consistent with previous findings, the present study found that a considerable number of students strive for losing weight. More specifically, 19.8% of participants reported that they consulted a health professional for their weight-related problems where the majority of them (15.90%) consulted a dietitian. A higher tendency for consulting a dietitian for weight-related problems can be explained by the fact that individuals with higher levels of disordered eating attitudes and behaviours tend to seek help with an aim of weight loss rather than seeking help for psychological difficulties related to elevated concerns with body shape and weight (Evans et al., 2011). Relatedly, their primary goal can be to achieve physical perfection rather than being healthy and avoiding weight-related chronic physical and/or psychological illnesses (Turel et al., 2018).

An investigation of the prevalence of clinically significant level of disordered eating attitudes and behaviours based on self-report questionnaires revealed that 10.9% of the students met clinical severity criteria of EAT-40 and 6.6% of the students met the clinical severity criteria of EDEQ-Total score. Moreover, 3.2% of the students met the clinical severity criteria of both instruments in the present study. A study conducted in 2006 found that 5.2% of the Turkish university students were struggling with a clinically significant level of disordered eating attitudes and behaviours based on EAT-40 (Aşçı, Tüzün, & Koca, 2006) while another study conducted in 2010 found a prevalence of 6.8% (Tozun et al. 2010). A much recent study conducted in 2018 reported that 8.5% of the students have a possible ED based on EAT-40 score (Yıldırım et al., 2018). These findings might be interpreted as the rates of disordered eating attitudes and behaviours among Turkish university students are increasing based on EAT-40 score when both female and male students are investigated together.

The idea that ED are Western Societies specific problems has been already challenged. Nevertheless, a closer look at the literature on disordered eating attitudes and behaviours in different countries would improve our

understanding when investigating the situation for Turkish university students. For example, findings of a recent study conducted on Italian, Polish and Spanish university students indicated that 8.43% of the sample met clinical severity criteria of EAT-26, a shorter version of EAT-40 (Gramaglia et al., 2019). Similarly, a study on USA university students found that 7.6% of the university students met clinical severity criteria of EAT-26 (El Zein et al., 2019). Another study conducted in 12 colleges and universities in the USA found that 11.9% of the students had high levels of ED psychopathology based on EDEQ total score above 3, which is actually lower than the cut of the score used in the present (Lipson & Sonneville, 2017). Comparison of the present results and findings from studies conducted in Western societies provide further evidence that disordered eating attitudes and behaviours should be considered as common and serious psychological difficulties in Turkey as well. These findings should be interpreted with caution since all of these studies are conducted with different methodologies, and there is no study available comparing Turkish students with other students in other countries.

3.3.1. Comparison of Female and Male University Students

The number of female students (*N*=1195) was higher than the number of male students (*N*=385) in the present study. While no statistically significant difference between the mean age of students was found, the mean BMI of male students was significantly higher than the mean BMI of female students.

Descriptive analysis of weight satisfaction status showed that the percentage of female students (24.7%) reporting dissatisfaction with weight was higher than their male peers (15.32%). Regarding the reasons for dissatisfaction with weight showed similar findings for both genders as the most common reason was being slightly overweight. However, the second most common reason for being dissatisfied with weight was being overweight for females while it was being slightly low weight for males. Additionally, 23.5% of female students reported that they consulted a health care professional for their weight-related problems with 18.8% of them consulting a dietitian. This behaviour was less common among male students with a percentage of 9.1%. However, as in

females, when consulted for help, males also most commonly preferred a dietitian (6.8%). These findings are consistent with previous literature showing that females have a higher tendency to perceive themselves as overweight or fat and more frequently show effort for weight management in comparison to males (Ata et al., 2015).

A detailed examination of weight dissatisfaction status based on BMI classification revealed that 14 out of 106 of female students and 2 out of 8 male students perceived themselves as slightly overweight, overweight or extremely overweight although they were actually in underweight BMI range. Furthermore, 496 out of 559 of female students (88.7%) and 52 out of 126 male students (41.3%) perceived themselves as slightly overweight, overweight or extremely overweight although they were actually in normal-weight BMI range. These findings are in accordance with previous evidence indicating that although misperception of weight is common among both genders, there is a higher proportion of females perceiving themselves as being overweight irrespective of their BMI. A growing body of literature has recognised an association between inaccurate weight perception and unhealthy weight control behaviours. Relatedly, greater weight and body shape estimation in individuals with ED related psychopathology has been previously established (Gardner, 2011; Park et al., 2019). Thus, the present findings on the prevalence of over-evaluation of body weight are believed to warrant attention from mental health professionals in both research and clinical practice.

Consistent with the available literature, comparison of female and male students on levels of disordered eating attitudes and behaviours on self-reported outcome measures revealed some differences where females exhibited higher levels of psychopathology. More specifically, female students had higher levels of disordered eating attitudes and behaviours and related psychopathology than their male peers except for Muscular Internalization and Peer / Significant Other Pressures subscales of SATAQ-4R where male students had significantly higher scores.

Evidence has demonstrated that there is gender-based sociocultural expectancies regarding the desired body shape and weight (Manzato & Gravina, 2018). While females are expected to be thin, males are expected to be muscular.

This difference in expectancy plays a significant role in the motivation of body/weight control behaviours and related pressure. For instance, females engage in diet and calorie restriction for being thin whereas males show hyperphysical activity for being muscular (Manzato & Gravina, 2018). In this regard, finding higher levels of thin/low body fat internalization among females and higher levels of muscular internalization among males in the present study was expected. In other words, females are dissatisfied with their body due to internalization of thinness ideal, males experience satisfaction due to internalization of muscular ideal (DeBate et al., 2008).

Higher levels of pressure from peers and significant others among male students in the present study were contradictory to expectations based on previous evidence. This discrepancy could be explained by the fact that Turkey is a patriarchal society where masculinity has particular importance. Having a low fat and muscular body is likely to recognised as being more masculine, and muscularity is perceived to be associated with strength and power (Hünler, 2016). Additionally, having a muscular body might lead to feelings of superiority as well as having a possible power of controlling the world (Aras, 2018). In this regard, males might be experiencing higher levels of pressure from peers and significant others since muscularity has several meanings rather than just being physically attractive. Prior research has also noted that having friends and romantic partners who are physically attractive and/or present weight/body control behaviours can negatively affect eating behaviours and satisfaction with the body (O'Brien et al., 2009). Males in the present study might have higher numbers of attractive friends and/or romantic partners causing higher levels of perceived pressure from peers and significant others.

Besides observed differences between female and male students in many aspects, although females had slightly higher scores than males in body image dissatisfaction and Family Pressures subscale of SATAQ-4R, these differences were not statistically significant. When the literature on gender differences in body image dissatisfaction is investigated, contradictory findings attracted attention. While some studies have suggested that female students had significantly higher body image dissatisfaction scores than male peers (e.g., Çatıkkaş, 2011), an important number of studies report that body image

dissatisfaction is equally common among both genders (e.g., İnce, 2016; Turel et al., 2018). In terms of family pressure on the physical appearance, it has been argued that body shape and weight-related criticisms and teasing from family members, particularly from parents, play roles on young people's body shape/weight perception (Green & Pritchard, 2003; Sheldon, 2010). Nonetheless, studies mainly focus on females which limit our understanding of males. Based on the present findings and previous evidence, it is possible to speculate that female and male university students experience similar levels of body image dissatisfaction and family pressure related to their appearance, but the underlying mechanism of this dissatisfaction might be different such as body fat and muscle ratio.

The present study revealed that the prevalence of clinically significant level disordered eating attitudes and behaviours were more common in female students. More specifically, 11.9% of females and 7.8% of males met clinical severity criteria of EAT-40 and 7.4% of females and 3.6% of males met clinical severity criteria of EDEQ-Total. 3.6% of females and 1.8% of males met the clinical severity criteria of the sample met the clinical severity criteria of both instruments. Similar to the present study, findings of earlier studies conducted in Turkish university students exhibited that prevalence of female students meeting clinical cut off criteria for EAT-40 and EDEQ-Total was more common than the male students (Aşçı, Tüzün, & Koca, 2006; Kadıoğlu & Ergün, 2015; Baktıroğlu, 2019).

The present findings on disordered eating attitudes and behaviours are more common in females are in accordance with the findings of studies conducted in Western societies. For instance, in an American university student sample, 6% of females and 1% of males had a score of clinically significant range for EDEQ-Total (Quick, Byrd-Bredbenner, & Neumark-Sztainer, 2013). Likewise, in a sample of Spanish students, 3.30% of females and 1.71% of males met clinically significant range for EDEQ-Total (Peláez-Fernández, Labrador, & Raich, 2013). Although the prevalence of disordered eating attitudes and behaviours in the current sample seems to be higher for both genders than the Western society sample, these results should be interpreted with caution since above-mentioned studies in USA and Spain were not recently conducted.

White, Reynolds-Malear and Cordero (2011) have demonstrated that the prevalence of students presenting in ED related attitudes and behaviours displays an increasing trend over the years for both female and male students with a particular increase among male students. Compatibly, for both females and males, the mean scores of EAT-40 were higher than the mean scores of EAT-40 in previously mentioned studies conducted in Turkey (Aşçı, Tüzün, & Koca, 2006; Tozun et al. 2010; Yıldırım et al., 2018). This could be interpreted as a supportive finding for disordered eating attitudes and behaviours are increasing in both female and male Turkish students.

3.3.2. Comparison of Students Who Approved and Not Approved Participating in Second Study

934 students approved participating in the second study in which a group program for promoting healthy eating attitudes and behaviours while 620 did not approve participating in. The mean age of these two student groups was significantly different. However, no statistically significant difference was found for the mean BMI.

Descriptive analysis of weight satisfaction status revealed that students who gave approval for participating in the second study and students who did not give approval show similar patterns. For both groups, the most common weight satisfaction status was being slightly satisfied. Both students who gave approval and did not give approval for participating in also reported similar patterns for the reasons for dissatisfaction with their weights. The most common reason was being slightly overweight, followed by being overweight. In terms of consulting a health care professional for their weight-related problems, they also showed similar patterns. 20.6% of students who gave approval and 19% of students who did not give approval consulted help and majority of them sought help from a dietitian.

Findings on the weight dissatisfaction status based on BMI classification exhibited that 15.94% of students who gave approval and 11.11 % students who did not give approval perceived themselves as slightly overweight, overweight or extremely overweight although they were actually in underweight BMI range.

79.77% of students who gave approval and 80.24% students who did not give approval perceived themselves as slightly overweight, overweight or extremely overweight although they were actually in normal-weight BMI range. Findings of the current study regarding weight satisfaction and preferences for help-seeking for weight-related problems can suggest that university students perceive themselves as being overweight irrespective of their BMI status. Also, this misperception of weight did not appear to be related to students' motivation for participating in a study aiming to promote healthy eating attitudes and behaviours.

Analysis for investigating whether students who approve and who did not approve differ from each other about disordered eating attitudes and behaviours and related constructs demonstrated that students who approved had significantly higher levels of ED related psychopathology in most of the outcome measures compared to students who did not approve. However, no statistically significant differences were found for Muscular Internalization, General Attractiveness Internalization, Family Pressures, and Media Pressures subscales of SATAQ-4R even though students who approved had slightly higher scores.

It also appeared that the prevalence of clinically significant level disordered eating attitudes and behaviours were more common among students who approved. More specifically, 12.8% of participants who approved while 7.9% of who did not approve met clinical severity criteria of EAT-40, and 8.1% of participants who approved and 4.2% of who did not approve met clinical severity criteria of EDEQ-Total. Furthermore, 4% of participants who approved and 1.8% of who did not approve met the clinical severity criteria of the sample met the clinical severity criteria of both instruments.

The findings of the current study overall demonstrated that university students who approved participating in a psychoeducation group program exhibited higher levels of ED and related psychopathology than their peers who did not approve participating in. There can be some explanations for these findings. Several studies have been conducted for exploring reasons why some people do not take part in mental health research while others willing to participate in studies. An early study on individuals with ED showed that

exhibiting lower levels of psychological difficulties and ED related problems results in decreased levels of acceptance to participate in research (Bjork, Clinton, & Norring, 2006). Additionally, approving getting an invitation for a psychoeducation group program aimed at promoting healthy eating attitudes and behaviours might be considered as a way of help-seeking behaviour. A motivation to participate in such a program is likely to be a consequence of higher levels of impairment since literature has demonstrated a relationship between elevated psychological distress and greater help-seeking behaviours for individuals with ED related psychopathology (Fatt et al., 2019; Vollert et al., 2020).

3.3.3. Limitations

Several limitations should be acknowledged when interpreting the present findings. First of all, disordered eating attitudes and behaviours and related psychopathology were measured with self-report questionnaires. Even though these questionnaires are widely used and have good psychometric properties, they might cause under-recognition of some individuals who are in fact suffering. Since individuals with ED related difficulties tend to have a lack of awareness about the seriousness of the problem and/or experience fear of stigmatization and shame. Thus, future studies would benefit from administering clinical interviews. Secondly, the number of female students were three times more than the number of male students as a potential consequence of using a convenience sampling method. Again, due to convenience sampling method, most of the participants were studying in Psychology Department. These students are likely to have better insight regarding psychological difficulties and symptoms as a natural consequence of their education. Therefore, increasing the number of male participants and recruiting more students from different departments in future research would be particularly important for increased generalizability. Thirdly, besides a cut-off score of EAT-40 validated in a Turkish sample, a cut-off score of EDEQ was not tested in Turkey. Therefore, findings based on EDEQ cut-off scores should be cautiously interpreted. Another limitation of the present study was not gathering information about the current body shape and weight control behaviours (e.g., physical activity level,

dieting behaviour etc.) and physical/psychological states such as hunger, menstrual cycle and mood that can impact body size estimation as well as disordered eating attitudes and behaviours (Gardner, 2011; Kazdin et al., 2017).

3.3.4. Strengths

The current study also has several strengths worth mentioning. Firstly, it is believed that present findings provided strong evidence for disordered eating attitudes and behaviours and related psychopathology among Turkish university students appears to be in a remarkable degree. While the majority of the Turkish studies investigating disordered eating attitudes and behaviours and related difficulties conducted with samples either on female students or single university only, the present study, however, included both female and male students from many universities. Many students in all around Turkey study in universities in Istanbul, thus it is possible to state that the sample is representative of Turkish university students. Furthermore, the sample size of the present study is quite higher than most of the studies conducted before. Altogether, it is believed that the generalizability of the present findings appears to be better than previous studies.

3.3.5. Conclusion

The current study has shown that ED symptoms and related problems are common among university students in Istanbul, Turkey. In general, female students to have higher levels of disordered eating attitudes and behaviours as well as internalization and perceived pressure of sociocultural cultural attitudes towards appearance, compared to their male peers. Furthermore, higher levels of ED symptoms and related problems were observed among university students who approved participating in a study where a group program aiming to enhance healthy eating attitudes and behaviours will be held in comparison to the students who did not approve. Overall, it is believed that the present study highlights the importance of addressing disordered eating attitudes and behaviours and dissatisfaction with body weight and shape among Turkish university students, particularly female students.

CHAPTER 4

STUDY 2

4.1.Method

4.1.1. Participants

Eligible female participants for this study were selected among the participants in Study 1. Inclusion criteria for participating in this study were (1) having a score of EDEQ-Total or EAT - 40 higher than the mean average of female participants in Study 1, and (2) giving consent during Study 1 for getting an invitation for participating in Study 2. Participants were excluded if they were meeting one or more of these exclusion criteria: (1) current or history of eating disorders diagnosis, and (2) current substance abuse problem and/or current or past history of psychotic disorders.

Based on the eligibility criteria, 418 female university students were identified, and these students were randomly assigned to either experimental group condition, active control group condition or wait-list control group condition. Among these participants, only 48 of them accepted participating in the study, and only 38 of them took part in the baseline, post assessment and 1-month follow up measurement points. A diagram documenting the flow of participants through the study as recommended by the Consolidated Standards of Reporting Trials (CONSORT) statement (Eldridge et al., 2016) for randomised feasibility trials is presented in **Figure 4.1**.

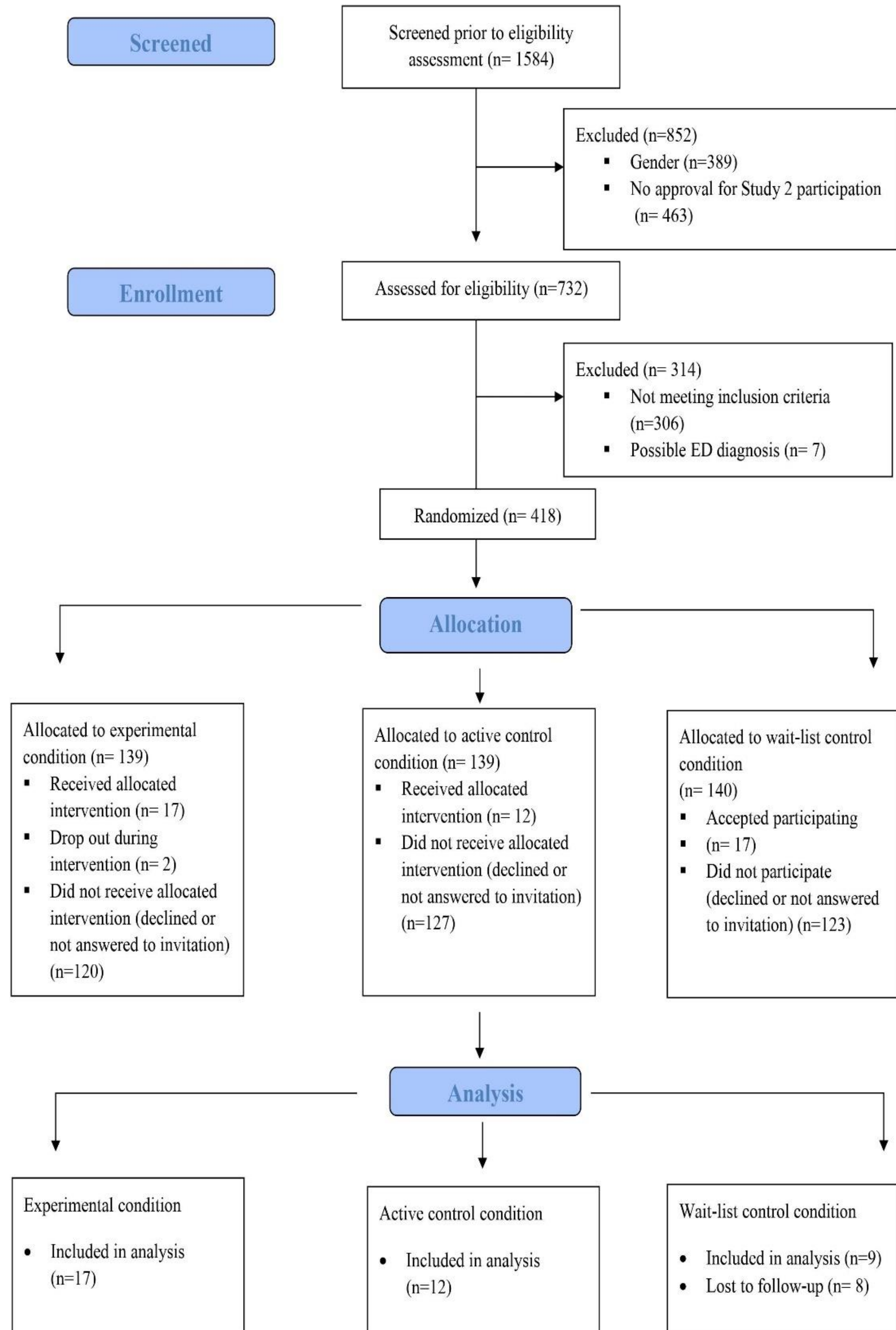

Figure 4.1. CONSORT Participant Flow Diagram

4.1.2. Primary Outcome Measures

4.1.2.1. The Eating Disorders Examination Questionnaire (EDEQ)

The information regarding EDEQ was provided in Study 1. In the current sample, Cronbach's alpha for the total score was found to be .90, and it was ranged between .73 to .84 for the subscales.

4.1.2.2. Body Shape Questionnaire (BSQ)

This self-report questionnaire was initially developed for measuring preoccupation with body weight and shape (Cooper et al., 1987). BSQ consists of 34 items in which participants are asked to rate each item on a 6-point Likert Scale (1: never to 6:always). A total score of the questionnaire can be in the range of 34 to 204 where total score lower than 110 represents no concern, a total score between 110 and 137 represents mild concern, a total score between 138 and 166 represents moderate concern, and a total score higher than 167 represent severe concern (Di Pietro & Silveira, 2009). BSQ found to provide an excellent alpha coefficient of internal consistency (α = .97) (Evans & Dolan, 1993). The psychometric properties of the Turkish version of the BSQ were tested by Akdemir and her colleagues (2012). Test-retest reliability of the scale was found to be r = .81 and the Cronbach's alpha was found to be .96 indicating that BSQ is an acceptable tool for measuring body-related concerns of Turkish individuals. BSQ also provided a good internal consistency with α = .95 in the current sample.

4.1.3. Secondary Outcome Measures

4.1.3.1. Difficulties in Emotion Regulation Scale -16 (DERS-16)

The DERS is a self-report questionnaire evaluating different aspects of emotion regulation difficulties. 16-item version of the DERS was developed by Bjureberg and his colleagues (2016) as a short form of original 36- item DERS (Gratz & Roemer, 2004). There are five subscales of DERS-16: clarity, goals, impulse, strategies, and non-acceptance. Items of the scale are rated on a 5-point Likert scale (1: almost never to 5: almost always), and higher scores are

indicative of greater emotion dysregulation skills. DERS-16 found to provide good test-retest reliability (*r* = .85) and internal consistency (*α* = .92) scores (Bjureberg, et al., 2016). Psychometric properties of the Turkish Version of DERS-16 was tested in a sample of undergraduate university students (Yiğit & Guzey Yiğit, 2017). The Turkish version provided good internal consistency coefficients for the total score (*α* = .92), and good internal consistency coefficients for all of the subscales ranging from .78 to .92. For this study, only the total score of DERS-16 was used, and the internal consistency of DERS found to be good (*α* = .93) in the current sample.

4.1.3.2.Sociocultural Attitudes towards Appearance Questionnaire-4-Revised (SATAQ-4R)

The information regarding SATAQ-4R was provided in Study 1. Cronbach's alpha of SATAQ-4R in the current sample found to range between .83 and .97 for its subscales and .94 for the total score.

4.1.3.3.Group Feedback Form

A feedback form was designed in order to gather information about the satisfaction with the aspects of the group program. There were 16 items on a 5-point Likert scale (1: definitely disagree to 5: definitely agree) asking participants to evaluate structure, helpfulness, and content of the program as well as the quality/features of the group therapist. This form also included open-ended questions asking their favourite and disliked features of the program, whether they would recommend attending this program to a friend and any other opinion they would like to share.

4.1.4. Interventions

4.1.4.1. Healthy Eating Attitudes and Behaviours Group Program (Experimental Group Condition)

Evidence-based clinical guidelines for ED have indicated that CBT is consistently recommended for all subtypes of ED, and CBT oriented prevention programs have been shown to result in a better outcome for university students (Hilbert, Hoek, & Schmidt, 2017; Watson et al., 2016). Thus, for the purpose of the present study, a CBT oriented ED prevention program for Turkish female university students, so-called *Healthy Eating Attitudes and Behaviours Group Program* has been developed by Clinical Psychologist Başak İnce (Thesis Student) and Psychiatrist Prof. Dr Başak Yücel (Thesis Supervisor). The session topics and contents of this program were based on the Fairburn (2008)'s book titled *Cognitive- Behavior Treatment and Eating Disorders* and 10-week online version of *StudentBodies* program designed by Saekow and her colleagues (2015). Program protocol was written based on Fairburn (2008)'s book titled *Cognitive- Behavior Treatment and Eating Disorders* and Fursland and her colleagues (2007)'s book titled *Overcoming Disordered Eating.*

This program aimed to inform participants about the causes and consequences of eating disorders, teach cognitive and behavioural techniques to change their unhealthy eating attitudes and behaviours, and provide support during their attitudinal and behavioural changes. The program consisted of 6 weekly sessions, and the length of the sessions changed between 45-minutes to 60-minutes depending on the number of participants in each group, and participants' involvements in the group discussions. Structure of the sessions in the program was accordant with the structure of CBT. Agenda for the session was provided at the beginning of each session, and participants were asked to give their feedback about the topics covered during the session at the end of each session. Furthermore, participants were asked to complete homework activities which were related to topics covered in each session. Detailed information regarding session contents is provided below.

Session 1

- The phase of acquainting and introducing program content
- Psychoeducation about eating disorders (ED): clinical features of ED, myths about ED, risks factors for the development of ED and negative consequences of ED
- Introducing body image concept
- Psychoeducation about body mass index
- Introducing "Eating Diary"

Homeworks:

1. Filling out "Eating Diary" every day
2. Mirror Activity

Session 2

- Review of Mirror Activity
- Review of Eating Diary
- Psychoeducation about unhealthy weight control methods and their negative consequences: dietary restriction, eating rules, forbidden foods, and excessive exercise
- Introducing normal/healthy eating
- Introducing regular eating (three main meals and two/three snacks)

Homeworks:

1. Filling out "Eating Diary" every day by sticking to a regular eating programme
2. Supermarket Activity

Session 3

- Review of Supermarket Activity
- Review of Eating Diary
- Psychoeducation about over-evaluation of weight and body shape
- Introducing the association between situation-thought-emotion-behaviour
- Introducing dysfunctional thinking and creating alternative thoughts

Homeworks:

1. Filling out "Eating Diary" every day by sticking to a regular eating programme
2. Catching up Dysfunctional Thoughts Activity

Session 4

- Review of Eating Diary
- Review of Catching up Dysfunctional Thoughts Activity
- Psychoeducation about body/weight control and avoidance behaviours
- Psychoeducation about weighing oneself and correctly interpreting the number on the scale
- Psychoeducation about decreasing control and avoidance behaviours

Homeworks:

1. Filling out "Eating Diary" every day by sticking to a regular eating programme
2. Behavioural Challenge Activity

Session 5

- Review of Eating Diary
- Review of Behavioural Challenge Activity
- Psychoeducation about emotions and emotional eating
- Psychoeducation about the differences between physical and emotional eating
- Psychoeducation about emotion regulation methods
- Psychoeducation about mindfulness and mindful eating

Homeworks:

1. Filling out “Eating Diary” every day by sticking to a regular eating programme
2. Behavioural Challenge Activity – II
3. Mindful Eating Activity

Session 6

- Review of Eating Diary
- Review of Behavioural Challenge Activity - II
- Review of Mindful Eating Activity
- Discussion about the strategies for maintaining attitude and behaviour changes
- Feedback from group members regarding the group process
- Closing up

4.1.4.2. Eating Disorders and Body Dissatisfaction: A Group Work (Active Control Group Condition)

This single-session group program was designed as an active control group for the purpose of this study. The content of the program was prepared based on Stice and his colleagues (2013)'s four - sessions *Body Project* ED prevention program. This single-session program aimed to inform participants about causes and consequences of ED, and discuss "thin ideal" messages created by media and the negative impact of these messages on women's body images, and address possible ways of countering these messages. Detailed information regarding the covered topics and video presentations in the group session is provided below. The length of the session changed between 1.5 hours to 2 hours depending on the number of participants in each group, and the degree of participants' involvements in the discussions.

Covered Topics

- Acquainting and introducing program content
- Influence of media on body ideals and our feelings and thoughts regarding our bodies
- Influence of eras on body ideals
- Introducing body image concept
- Introducing body dissatisfaction concept
- Influence of media on body dissatisfaction
- Consequences of body dissatisfaction
- Psychoeducation about eating disorders (ED): features of ED, myths about ED, risks factors for the development of ED and negative consequences of ED
- Body positivity and body activism
- Examples of body activism from social media
- An activity on how to respond "fat talk"

Presented Videos

- Body evolution model before and after photoshop
- Dove Real Beauty Sketches - You’re more beautiful than you think
- Are You Living an Insta Lie? Social Media Vs. Reality

4.1.5. Procedure

Following randomisation to the conditions, participants were invited to take part in the study that aims to promote healthy eating attitudes and behaviours by sending invitation flyers through e-mail or phone messages. They were informed that group sessions will be carried out by a clinical psychologist (thesis student) under the supervision of a psychiatry professor (thesis supervisor). Participants invited for the experimental group condition and active control group condition were informed that they would become entitled to obtain an official certificate of attendance (Appendix 5) if they participate in group sessions and fill out all of the questionnaires that will send different time points. Participants were provided with the opportunity to choose the time period (e.g., morning, noon, afternoon) for group sessions that fit best for them. Participants invited for wait-list control group informed that they are assigned to the wait-list condition, and will be invited to attend to the groups will be held in the next semester. They were also informed that they are requested to fill out questionnaires in three different time points for being able to attend to the group work.

Before the start of the first session of experimental group condition, participants were provided informed consents for both data collection instruments and video recordings of the sessions and then asked to fill out baseline questionnaires. They were also informed that they are only allowed miss two sessions for being able to get the attendance certificate, and if they inform their absence in advance, they will receive a catch-up handout for the session that they miss. At the end of the last session, participants were asked to fill out the same questionnaires as the baseline as a post assessment. They were also given an opportunity to fill out a feedback questionnaire without writing their

names and hand in it back in a closed envelope. Follow-up assessments were conducted through an online survey that was sent by e-mails.

Similar data collection procedure was applied to the participants in the active control group as well, however, they were asked to fill out post assessment and 1-month follow-up measurement at the same time with the experimental group through an online form sent by e-mail since they only attended one session. Participants in the wait-list control group simultaneously received all of the questionnaires online.

4.1.6. Statistical Analysis

SPSS version 21 was used for analysing the quantitative data collected for this study. For investigating demographic characteristics of the sample (mean BMI, mean age, etc) and satisfaction with aspects of the group, descriptive and frequency analyses were conducted.

Before the main analyses for testing the efficacy of the newly developed six-session ED prevention program with 3 (condition) x 3 (time) mixed-design analyses of variance (ANOVA), all assumptions for running ANOVA were checked (Field, 2013; Field, 2018). Firstly, the normality assumption was tested by investigating skewness, kurtosis and normality test results (Kim, 2013; Cain et al., 2017). Then, the assumption of sphericity was tested with Mauchly’s test. If Mauchly's test statistic was found to be significant, the assumption of sphericity was assumed to be violated. Thus, degrees of freedom were corrected by using the Greenhouse-Geisser estimate of sphericity (ε) for producing a valid F-ratio based on the rule below (Field, 2013; Field, 2018):

If $\varepsilon > 0.75 \rightarrow$ *Huynh-Feldt correction*

If $\varepsilon < 0.75 \rightarrow$ *Greenhouse-Geisser correction*

Finally, given that more than two groups are compared, the assumption of homogeneity of variances was tested with the Levene’s test where $p > .05$ is indicating that the assumption of homogeneity of variance is met (Field, 2013;

Field, 2018). Following assumption check, 3 (condition) x 3 (time) mixed-design ANOVA was run for each outcome variable separately for testing the main effect of time, the main effect of group and time x group interaction effect. For determining the effect size, partial eta squared (η_2^P) value was used. $\eta_2^P = .01$ is considered to be a small effect, $\eta_2^P = .06$ is considered to be a medium effect, and $\eta_2^P = .14$ is considered to be a large effect.

In order to investigate the qualitative data gathered from open-ended questions of the Group Feedback Form, principles of thematic analysis were applied for discovering whether the is a theme reflecting a level of patterned response or significant points that relate to the aim of the study (Braun & Clarke, 2006). Data was investigated by both the present author and a PhD level psychologist for obtaining more reliable results. Following investigating the data individually for generating themes, both analysers compared their findings. Final themes for the analysis were established following a discussion and agreement from both of analysers.

4.2.Results

4.2.1. Descriptive Statistics

Descriptive and frequency analyses were conducted for investigating the demographic characteristics as well as mean and standard deviation scores on each outcome variable for three-time points.

Groups were significantly different in terms of mean BMI; as found in one-way ANOVA ($F(2,35) = 3.79$, $p < .05$) There were no statistically significant differences between group means regarding mean age; as found in one-way ANOVA ($F(2,35) = .007$, $p = .99$)

4.2.1.1.Experimental Group Condition

The experimental group condition consisted of a total of 17 female university student from 11 different universities. 13 of them were Psychology students, one of them was Nutrition and Dietetics student, two of them were Education Sciences students and one of them was Life Sciences student. Mean age of these participants was 21.06 (*SD*= 1.71). Their mean BMI was 25.03 (*SD*= 3.65) with a range of 17.99 – 32.32. Regarding weight satisfaction, 11 of them reported to be not satisfied and six of them reported to be slightly satisfied.

The mean and standard deviations scores of participants in the experimental group condition on outcome variables in the baseline, post assessment and 1-month follow up are presented in **Table 4.1**. Information regarding the correlations among outcome measures at baseline measurement based on Pearson correlation analysis is provided in Appendix 4.

Table 4.1. Means and standard deviations for outcomes at baseline, post assessment and 1-month follow up in experimental group

	Experimental Group (*N*=17)					
	Baseline		Post Assessment		1-Month Follow Up	
	M	*SD*	*M*	*SD*	*M*	*SD*
EDEQ						
Restraint Eating	2.87	1.22	1.44	1.33	1.92	1.55
Eating Concern	2.59	0.91	1.19	0.85	1.88	1.20
Shape Concern	4.17	0.97	2.11	0.93	2.78	1.49
Weight Concern	3.71	1.16	2.00	1.04	2.56	1.41
Total Score	3.33	0.85	1.68	0.88	2.29	1.32
BSQ	128.60	25.15	79.82	28.42	91.47	36.39
DERS	28.06	11.58	35.24	13.91	23.71	15.76
SATAQ-4R						
Thin/Low Body Fat Internalization	3.74	0.78	2.88	1.01	2.82	1.32
Muscular Internalization	2.25	1.32	2.08	1.16	1.85	1.14
General Attractiveness Internalization	4.46	0.48	4.04	0.82	4.18	.74
Family Pressure	2.85	1.27	2.28	1.32	2.35	1.30
Peer / Significant Other Pressure	2.50	1.04	2.42	1.30	2.27	1.25
Media Pressure	3.74	0.99	3.38	1.43	3.15	1.55

4.2.1.2.Active Control Group

The active control group condition consisted of 12 female university students. All participants were Psychology students from four different universities. Their mean age was 21.08 (*SD*= 1.38), and mean BMI was 23.10 (*SD*= 2.52) with a range of 20.66 – 30.48. Six of the participants reported to be slightly satisfied with their weight, five of them reported to be not satisfied and one of them reported to be very satisfied.

The mean and standard deviations scores of participants in the active control group on outcome variables in the baseline, post assessment and 1-month follow up assessment are presented in **Table 4.2**. Information regarding the correlations among outcome measures at baseline measurement based on Pearson correlation analysis is provided in Appendix 4.

Table 4.2. Means and standard deviations for outcomes at baseline, post assessment and 1-month follow up in active control group

	Active Control Group (*N*=12)					
	Baseline		Post Assessment		1-Month Follow Up	
	M	*SD*	*M*	*SD*	*M*	*SD*
EDEQ						
Restraint Eating	2.50	1.69	2.84	1.20	3.08	1.53
Eating Concern	1.46	1.37	2.40	.95	2.35	1.16
Shape Concern	2.76	1.47	2.94	1.22	3.00	1.51
Weight Concern	2.55	1.38	3.15	1.01	2.75	1.33
Total Score	2.28	1.29	2.81	.91	2.80	1.28
BSQ	92.49	37.64	101.67	38.49	100.42	44.37
DERS	19.08	16.23	26.16	17.69	25.08	19.36
SATAQ-4R						
Thin/Low Body Fat Internalization	3.10	1.13	3.21	1.31	2.98	1.30
Muscular Internalization	2.11	.94	1.91	1.10	1.83	.91
General Attractiveness Internalization	3.75	1.10	3.85	.96	3.58	1.09
Family Pressures	2.45	1.43	2.32	1.45	2.23	1.60
Peer / Significant Other Pressures	1.81	1.09	1.97	.99	1.88	1.21
Media Pressures	3.43	1.72	3.45	1.53	3.19	1.57

4.2.1.3.Wait-List Control Group

The wait-list control group condition consisted of nine female university students from eight different universities. Seven of them were Psychology student, one of them was Nutrition and Dietetics student, and one of them was an Engineering student. Mean age of these participants was 21 (*SD*= 1.58). Their mean BMI was 21.54 (*SD*= 2.88) with a range of 18.00 – 25.95. Regarding weight satisfaction, four of them reported to be not satisfied, four of them reported to be slightly satisfied, and one of them reported to be satisfied.

The mean and standard deviations scores of participants in the wait-list control group on outcome variables in the baseline, post assessment and 1-month follow up are shown in **Table 4.3**. Information regarding the correlations among outcome measures at baseline measurement based on Pearson correlation analysis is provided in Appendix 4.

Table 4.3. Means and standard deviations for outcomes at baseline, post assessment and 1-month follow up in wait-list control group

	Wait-List Control (*N*=9)					
	Baseline		**Post Assessment**		**1-Month Follow Up**	
	M	***SD***	***M***	***SD***	***M***	***SD***
EDEQ						
Restraint Eating	2.78	1.04	3.18	1.73	3.29	1.48
Eating Concern	2.22	1.14	2.27	1.31	2.67	1.40
Shape Concern	3.29	1.27	3.06	1.86	3.43	1.55
Weight Concern	3.11	1.49	3.20	1.68	3.36	1.74
Total Score	2.85	0.98	2.93	1.52	3.19	1.36
BSQ	103.22	32.33	105.11	43.95	116.00	44.68
DERS	25.11	10.80	35.56	18.28	31.22	15.47
SATAQ-4R						
Thin/Low Body Fat Internalization	3.22	1.34	3.17	1.45	3.56	1.32
Muscular Internalization	2.20	0.87	2.24	0.81	2.20	0.71
General Attractiveness Internalization	4.13	0.82	4.13	0.89	4.11	0.95
Family Pressures	2.81	1.65	2.72	1.66	2.86	1.63
Peer / Significant Other Pressures	2.40	1.03	2.24	1.25	2.65	1.40
Media Pressures	3.28	1.52	3.08	1.73	3.22	1.70

4.2.2. Comparison of Conditions on Outcome Measures

Outcome measures were analysed with 3 (condition: experimental, active control group, wait-list control) x 3 (time: baseline, post assessment, 1-month follow up) mixed-design ANOVA to determine the efficacy of interventions and possible differences across time points by groups.

4.2.2.1. Primary Outcome Measures

Analysis on EDEQ – Restraint Eating Subscale revealed that a non-significant main effect of time, $F(1.85, 64.57) = 0.98$, $p = .38$, and a non-significant main effect of condition, $F(2, 35) = 2.41$, $p = .10$. There was a significant interaction between condition and time, $F(3.69, 64.57) = 5.31$, $p < .01$ $\eta_p{}^2 = .23$. A post hoc pairwise comparison using the Bonferroni correction for interaction effect showed a statistically significant reduction from baseline to post assessment ($p < .001$) and baseline to 1-month follow up ($p < .05$) for the experimental group condition. **Figure 4.2** represents changes in mean scores in each condition across time points.

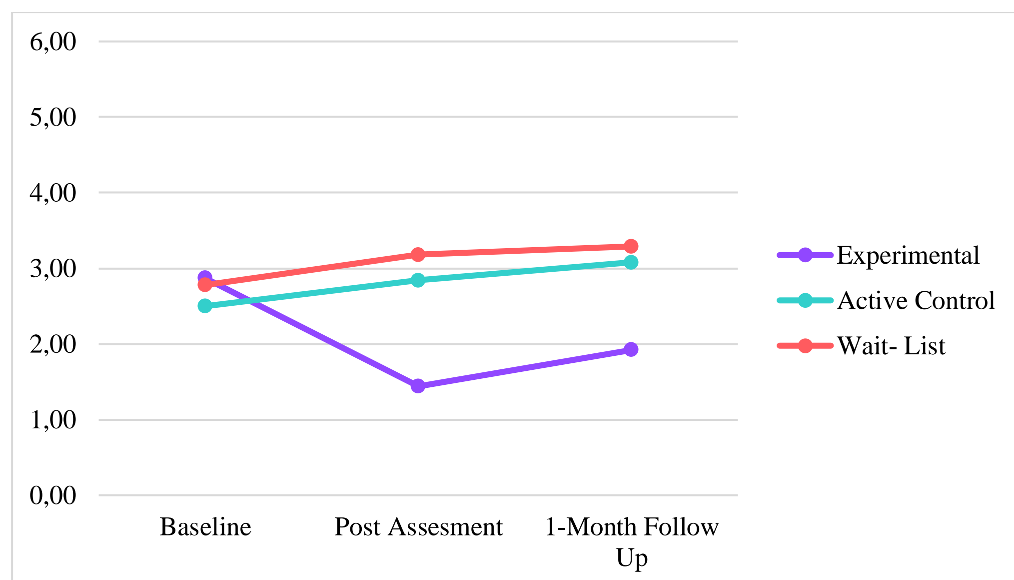

Figure 4.2. Changes on EDEQ-restraint eating scores from baseline to 1-month follow up assessment

Analysis on EDEQ – Eating Concern Subscale revealed a non-significant main effect of time, $F(1.84, 64.26) = 2.31$, $p = .11$, and a non-significant main effect of group, $F(2, 35) = .77$, $p = .47$. There was a significant interaction between condition and time, $F(3.67, 64.57) = 11.08$, $p < .01$ $\eta_p^2 = .39$. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from baseline to post assessment ($p < .001$) and baseline to 1-month follow up ($p < .05$) for the experimental group condition. Changes in mean scores in each condition across time points are shown in **Figure 4.3**.

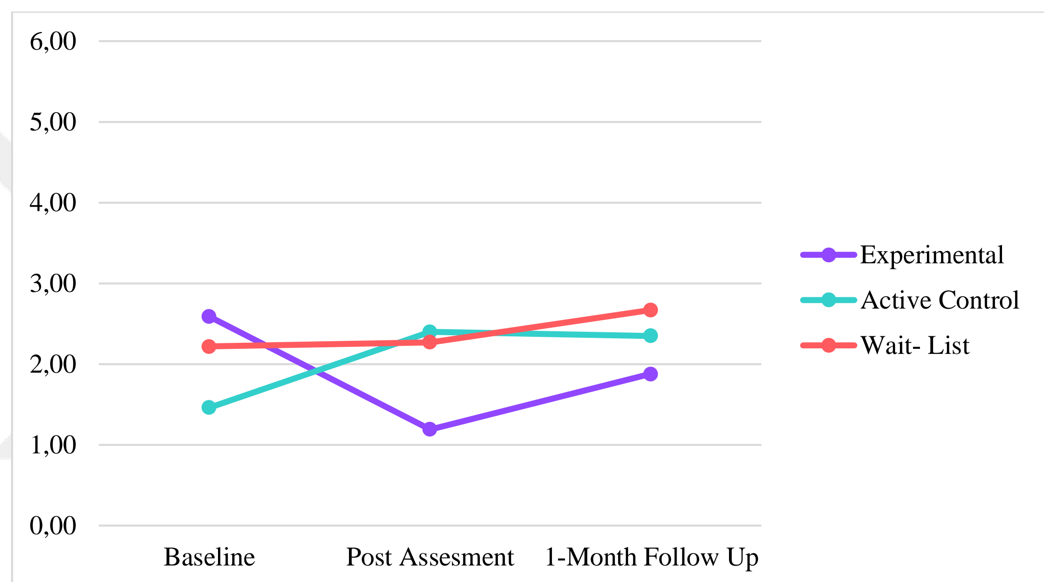

Figure 4.3. Changes on EDEQ-eating concern scores from baseline to 1-month follow up assessment

Analysis on EDEQ – Shape Concern Subscale revealed a significant main effect of time, $F(2, 70) = 6.41$, $p < .01$ $\eta_p^2 = .15$, and a non-significant main effect of condition, $F(2, 35) = .25$, $p = .79$. There was a significant interaction between condition and time, $F(4, 70) = 8.09$, $p < .001$ $\eta_p^2 = .32$. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from baseline to post assessment ($p < .001$) and baseline to 1-month follow up ($p < .01$) for the experimental group condition. **Figure 4.4** represents changes in mean scores in each condition across time points.

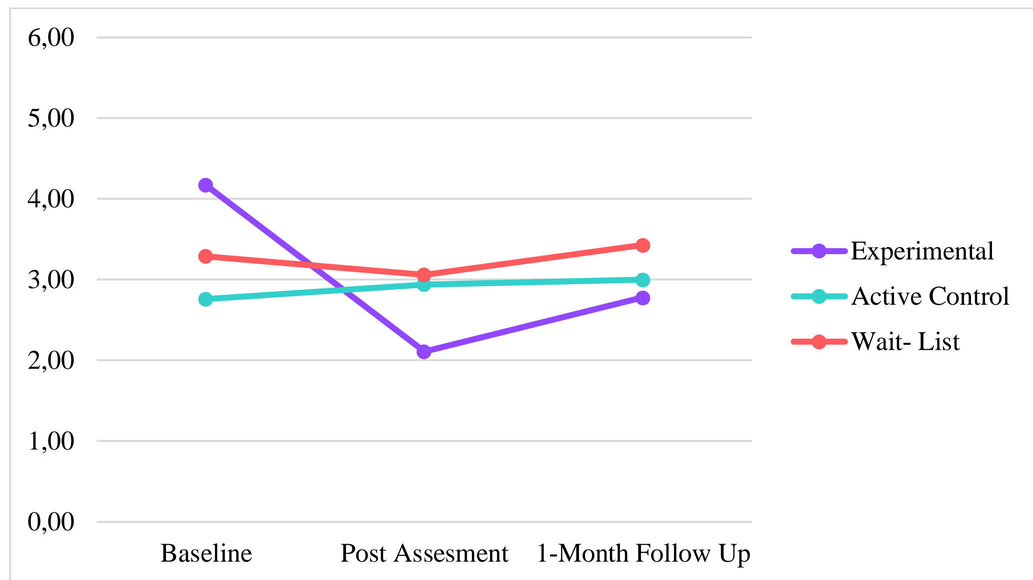

Figure 4.4. Changes on EDEQ-shape concern scores from baseline to 1-month follow up assessment

Analysis on EDEQ – Weight Concern Subscale revealed a non-significant main effect of time, F(1.73, 60.41) = 1.58, p =.21, and a non-significant main effect of condition, F(2, 35) = .51, p = .61. There was a significant interaction between condition and time, F(3.45, 60.41) = 8.15, $p <$ .001 η_p^2 = .32. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from baseline to post assessment (p < .001) and baseline to 1-month follow up (p < .01) for the experimental group condition. Changes in mean scores in each condition across time points are presented in **Figure 4.5**.

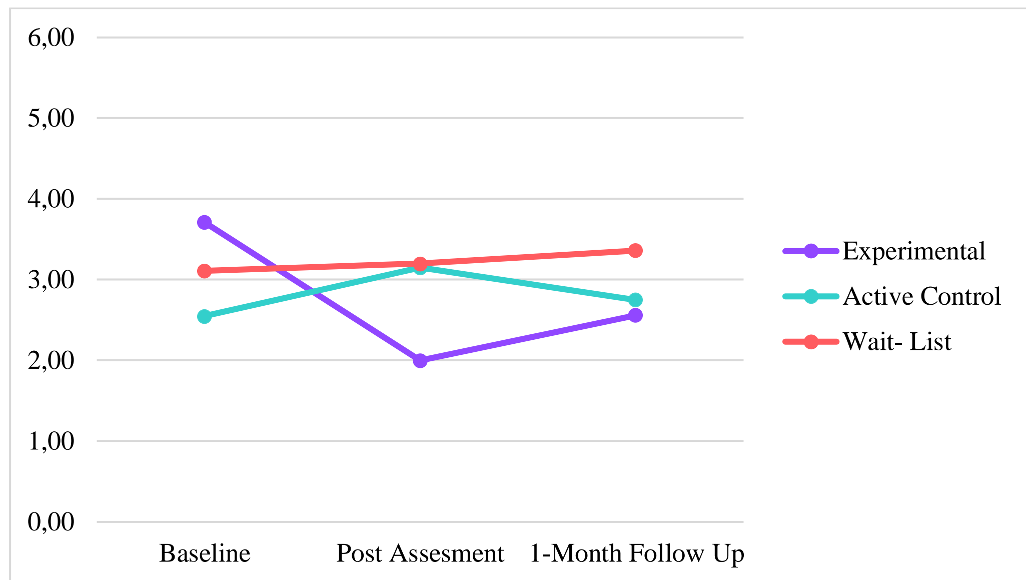

Figure 4.5. Changes on EDEQ-weight concern scores from baseline to 1-month follow up assessment

Analysis on EDEQ – Total Score revealed a non-significant main effect of time, $F(1.67, 58.39) = 2.65$, $p = .09$, and a-non-significant main effect of condition, $F(2, 35) = .92$, $p = .41$. There was a significant interaction between condition and time, $F(3.34, 58.39) = 11.23$, $p < .001$ $\eta_p^2 = .39$. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from baseline to post assessment ($p<.001$) and baseline to 1-month follow up ($p< .01$) for the experimental group condition. Changes in mean scores in each condition across time points are presented in **Figure 4.6**.

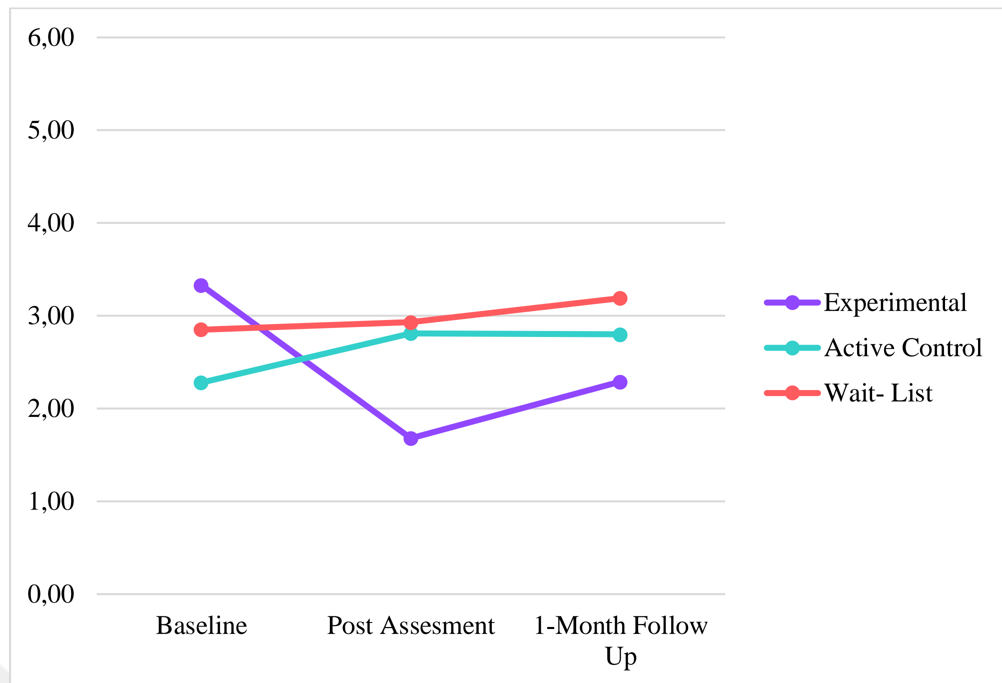

Figure 4.6. Changes on EDEQ-Total scores from baseline to 1-month follow up assessment

Analysis of BSQ revealed a significant main effect of time, $F(1.74, 60.86) = 4.59$, $p = .018$ $\eta_p^2 = .12$, and a non-significant main effect of condition, $F(2, 35) = .56$, $p = .78$. There was a significant interaction between condition and time, $F(3.48, 60.86) = 13.78$, $p < .001$ $\eta_p^2 = .44$. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from baseline to post assessment ($p <.001$) and baseline to 1-month follow up ($p < .001$) for the experimental group condition. **Figure 4.7** shows changes in mean scores in each condition across time points.

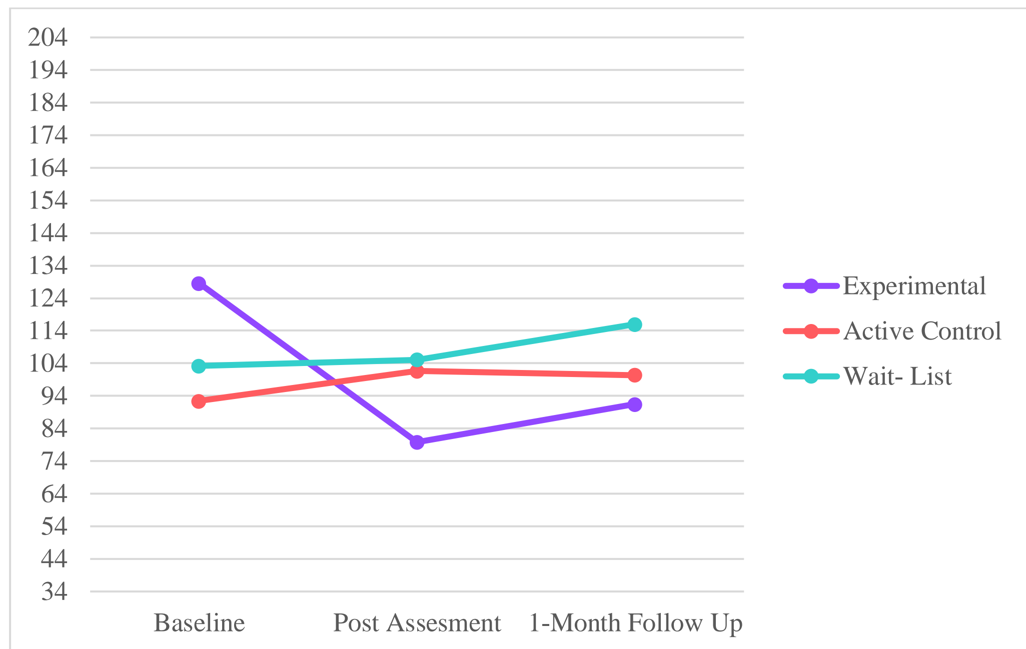

Figure 4.7. Changes on BSQ scores from baseline to 1-month follow up assessment

4.2.2.2.Secondary Outcome Measures

Analysis of DERS revealed a significant main effect of time, $F(1.84, 64.27) = 7.50$, $p = .002$ $\eta_p^2 = .18$, and a non-significant main effect of condition, $F(2, 35) = .88$, $p = .42$. There was a non-significant interaction between condition and time, $F(3.67, 64.27) = 1.90$, $p > .05$ $\eta_p^2 = .09$. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from post assessment to 1-month follow up ($p < .001$) for the experimental group condition. Changes in mean scores in each condition across time points are represented in **Figure 4.8**.

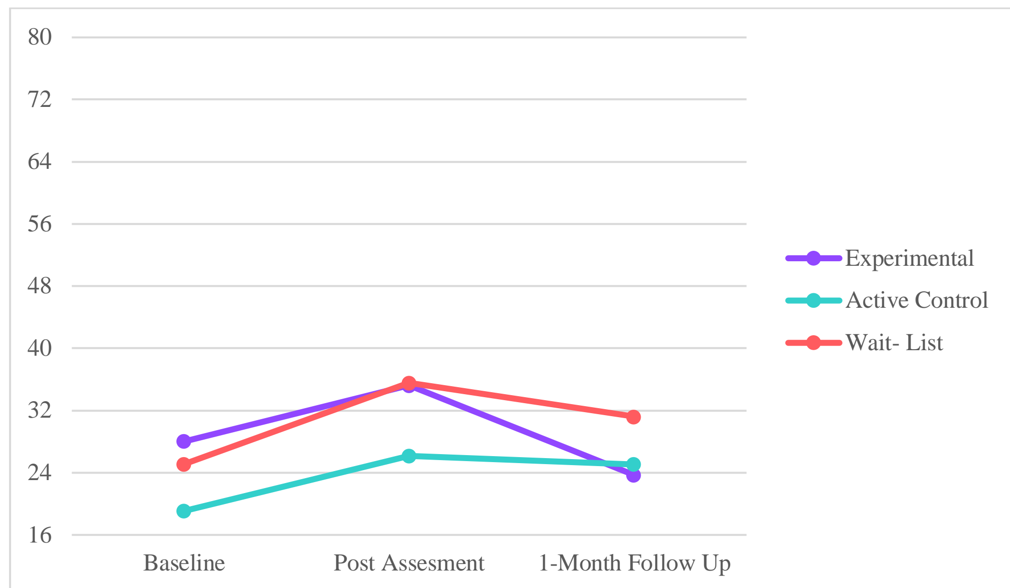

Figure 4.8. Changes on DERS scores from baseline to 1-month follow up assessment

Analysis on SATAQ-4R – Internalization: Thin/Low Body Fat Subscale revealed a non-significant main effect of time, $F(2, 70) = 1.72$, $p = .19$, and a non-significant main effect of condition, $F(2, 35) = .11$, $p = .89$. There was a significant interaction between condition and time, $F(4, 70) = 3.73$, $p < .01$ $\eta_p^2 = .18$. A post hoc pairwise comparison using the Bonferroni correction showed a statistically significant reduction from baseline to post assessment ($p < .01$) and baseline to 1-month follow up ($p <.01$) for the experimental condition. **Figure 4.9** displays changes in mean scores in each condition across time points.

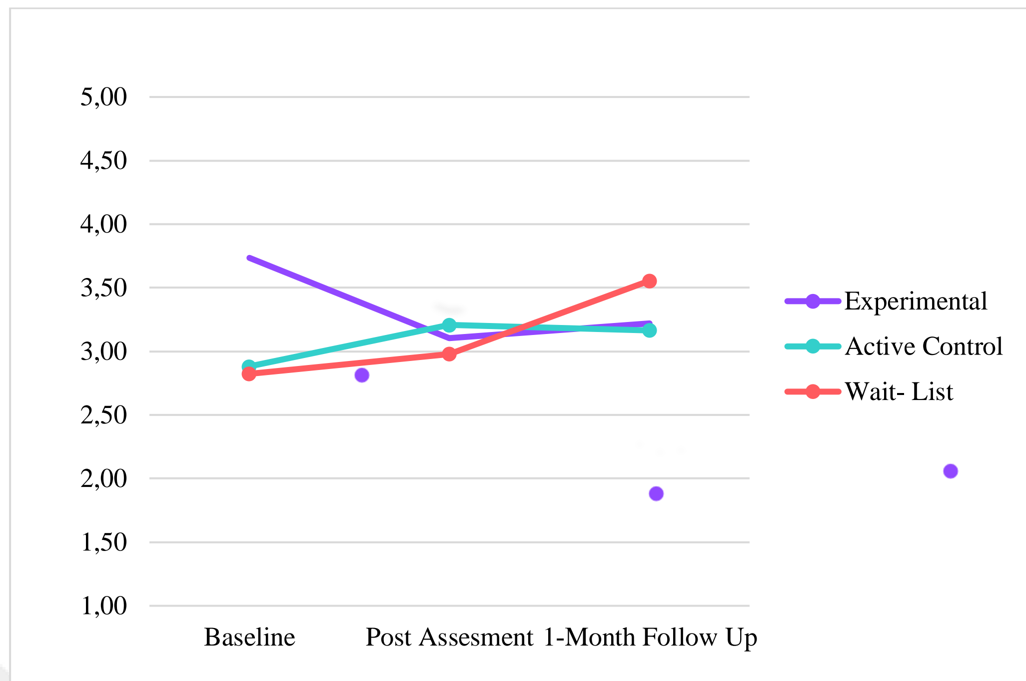

Figure 4.9. Changes on SATAQ-4R-thin/low body fat internalization scores from baseline to 1-month follow up assessment

Analysis on SATAQ-4R - Internalization: Muscular Subscale revealed a non-significant main effect of time, $F(2, 70) = 2.61$, $p = .09$, and a non-significant main effect of condition, $F(2, 35) = .19$, $p = .83$. There was a non-significant interaction between condition and time, $F(4, 70) = .75$, $p = .56$. Since no significant main or interaction effect was found, no further post hoc analysis was conducted. Changes in mean scores in each condition across time points are shown in **Figure 4.10**.

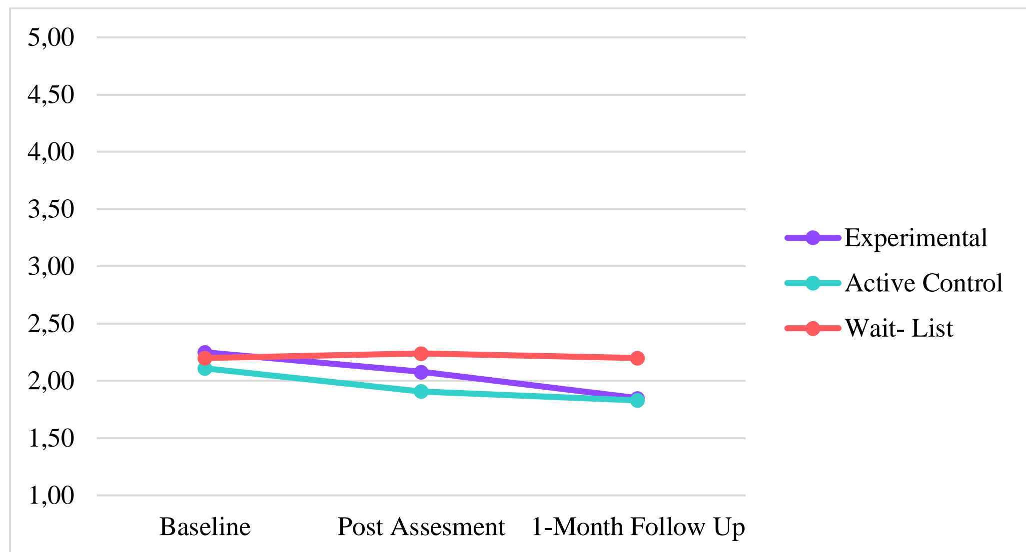

Figure 4.10. Changes on SATAQ-4R-muscular internalization scores from baseline to 1-month follow up assessment

Analysis on SATAQ-4R - Internalization: General Attractiveness Subscale revealed a non-significant main effect of time, $F(2, 70) = 1.36$, $p = .26$, and a non-significant main effect of condition, $F(2, 35) = 1.42$, $p = .26$. There was a non-significant interaction between condition and time, $F(4, 70) = 1.91$, $p = .12$. No further post hoc analysis was conducted given non-significant main and interaction effects. **Figure 4.11** represents changes in mean scores in each condition across time points.

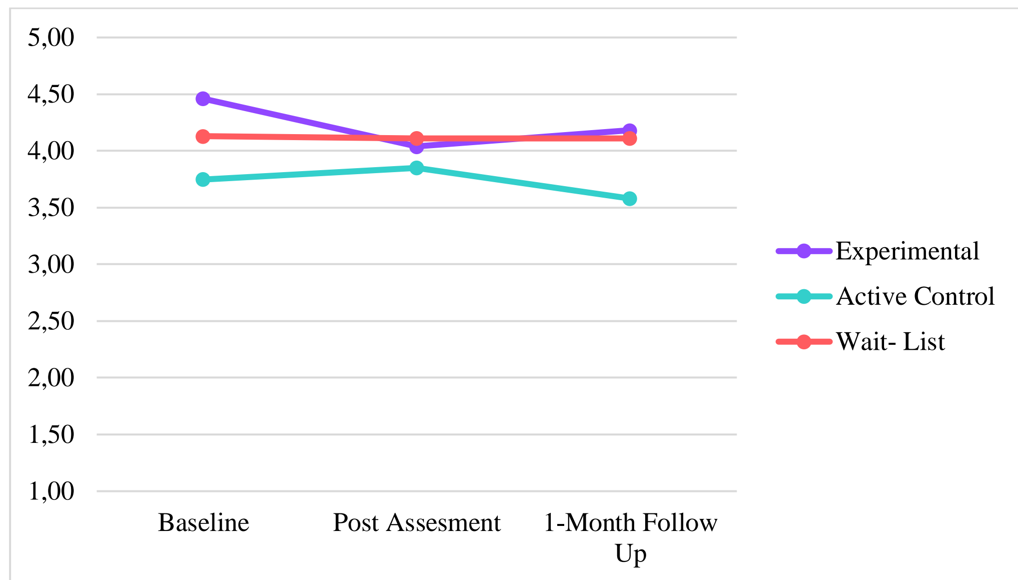

Figure 4.11. Changes on SATAQ-4R-general attractiveness internalization scores from baseline to 1-month follow up assessment

Analysis of SATAQ-4R – Pressures: Family Subscale revealed a non-significant main effect of time, $F(2, 70) = 2.34$, $p = .10$, and a non-significant main effect of condition, $F(2, 35) = .30$, $p = .75$. There was a non-significant interaction between condition and time, $F(4, 70) = 1.13$, $p = .35$. Since no significant main or interaction effect was found, no further post hoc analysis was conducted. Changes in mean scores in each condition across time points are shown in **Figure 4.12**.

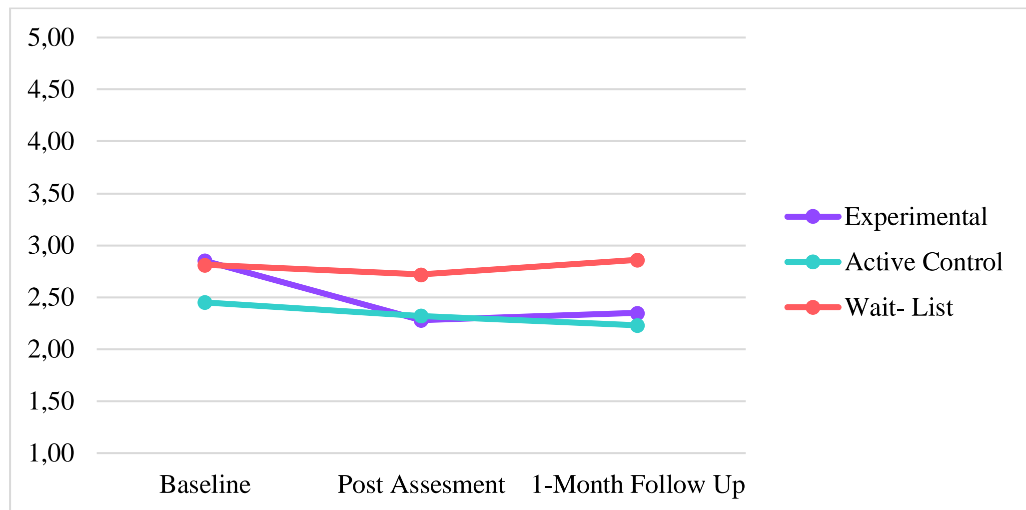

Figure 4.12. Changes on SATAQ-4R-family pressure scores from baseline to 1-month follow up assessment

Analysis of SATAQ-4R – Pressures: Peers/Significant Others Subscale revealed a non-significant main effect of time, $F(1.64, 57.40) = .06$, $p = .91$, and a non-significant main effect of condition, $F(2, 35) = 1.03$, $p = .37$. There was a non-significant interaction between condition and time, $F(3.28, 57.40) = .77$, $p = .53$. No further post hoc analysis was conducted given non-significant main and interaction effects. **Figure 4.13** represents changes in mean scores in each condition across time points.

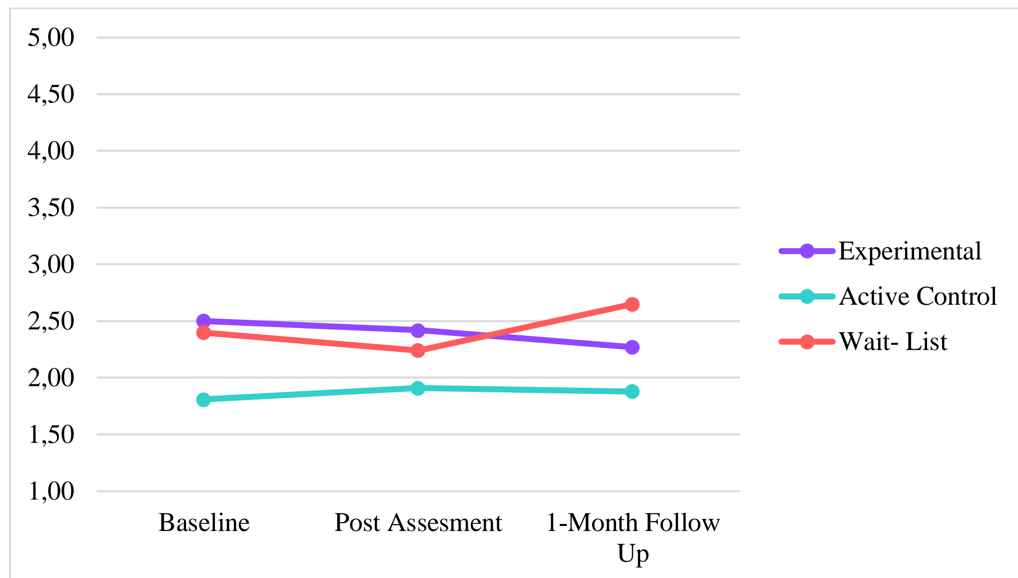

Figure 4.13. Changes on SATAQ-4R-peer/significant others pressure scores from baseline to 1-month follow up assessment

Analysis of SATAQ-4R – Pressures: Media Subscale revealed a non-significant main effect of time, $F(2, 70) = 1.64$, $p = .20$, and a non-significant main effect of condition, $F(2, 35) = .08$, $p = .93$. There was a non-significant interaction between condition and time, $F(4, 70) = .69$, $p = .60$. Since no significant main or interaction effect was found, no further post hoc analysis was conducted. Changes in mean scores in each condition across time points are shown in **Figure 4.14**.

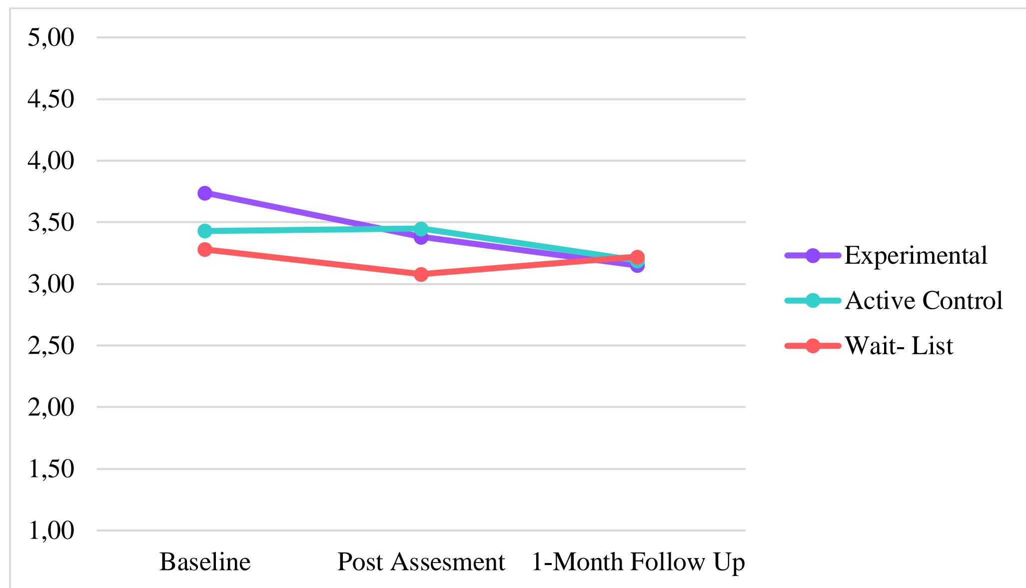

Figure 4.14. Changes on SATAQ-4R-media pressure scores from baseline to 1-month follow up assessment

4.2.3. Feasibility and Acceptability of the Interventions

The feasibility and acceptability of the intervention groups (experimental and active-control conditions) were investigated by group feedback forms including both quantitative and qualitative information.

4.2.3.1.Experimental Group Condition

17 of the participants have completed the intervention and overall attended to the 5.06 sessions out of 6 sessions, suggesting an attendance rate of 84.3%. Two participants dropped out from the study due to their heavy schoolwork-load. Degrees of satisfaction with the group aspects were changed between 4.31 to 5, and the mean satisfaction score was 4.72 out of 5, indicating a high level of satisfaction with the group program. The findings of the participants' feedback regarding the aspects of the program are presented in **Table 4.4**.

Table 4.4. Satisfaction with group aspects in experimental group

Questions	Mean Scores
Group program had…	
1. successful organization.	4.56
2. clear aims.	4.5
3. satisfactory number of sessions.	4.31
Information provided during program were…	
4. clear and understandable.	4.81
5. informative.	4.94
6. useful for difficulties I have regarding my weight.	4.62
7. useful for difficulties I have regarding my body shape.	4.69
Activities/homework provided during program were…	
8. informative.	4.86
9. fun.	4.25
10. useful for difficulties I have regarding my weight.	4.5
11. useful for difficulties I have regarding my body shape.	4.44
During groups, all participants…	
12. had/were given equal time.	5
13. were asked to give their opinions and provided an opportunity for talking.	5
Therapist of group program…	
14. had full knowledge of the topic and enthusiastic.	5
15. gave accurate and constructive feedback to the participants.	5
16. used clear and understandable language.	5
Mean Satisfaction Score	**4.72**

Open-Ended Question 1: Which features of the group program were your favourite?

Common themes:

1. Informativeness
2. Being fun
3. Good rapport and communication with group friends

Open-Ended Question 2: Which features of the group program you did not like?

Only seven participants gave feedback on this question, however, no common theme identified. Given feedbacks regarding group work were about the location of the group sessions, anxiety provocative homework, confrontation in the beginnings of the group, length of sessions being not enough.

Open-Ended Question 3: Would you recommend attending this group program to your friend?

All of the participants indicated that they would recommend attending this psychoeducation group to their friends.

4.2.3.2.Active Control Group Condition

Degree of satisfaction with the group aspects were changed between 4.11 to 5, and the mean satisfaction score was 4.57 out of 5, indicating a high level of satisfaction with this group program. The findings of the participants' in the active control group feedback regarding the aspects of the program are presented in **Table 4.5**.

Table 4.5. Satisfaction with group aspects in active control group

Questions	Mean Scores
Group work had…	
1. successful organization.	4.56
2. clear aims.	4.89
3. satisfactory number of sessions.	3.89
Information provided during group work were…	
4. clear and understandable.	5
5. informative.	4.67
6. useful for difficulties I have regarding my weight.	4.22
7. useful for difficulties I have regarding my body shape.	4.11
Activities/homework provided during group work were…	
8. informative.	4.22
9. fun.	4.33
10. useful for difficulties I have regarding my weight.	4.11
11. useful for difficulties I have regarding my body shape.	4.11
During group work, all participants…	
12. had/were given equal time.	5
13. were asked to give their opinions and provided an opportunity for talking.	5
Therapist of group work…	
14. had full knowledge of the topic and enthusiastic.	5
15. gave accurate and constructive feedback to the participants.	5
16. used clear and understandable language.	5
Mean Satisfaction Score	**4.57**

Open-Ended Question 1: Which features of the psychoeducation group were your favourite?

Common themes:

1. Informativeness
2. Video presentation

Open-Ended Question 2: Which features of the psychoeducation group you did not like?

Only four participants gave feedback on this question, and a common theme was identified as not having enough session number/length.

Open-Ended Question 3: Would you recommend attending this psychoeducation group to your friend?

Eight out of nine participants indicated that they would recommend attending this psychoeducation group to their friends.

4.3.Discussion

This randomised controlled feasibility trial initially aimed to develop a 6-session CBT oriented ED prevention program for female university students presenting a high risk for developing ED. The further aim was to investigate the feasibility and efficacy of this newly developed program, so-called *Healthy Eating Attitudes and Behaviours Group Program* (experimental condition). For testing the preliminary efficacy of this program, it was compared with a single-session program, *Eating Disorders and Body Dissatisfaction: A Group Work* (active control condition) which was designed for the purpose of this study, and a wait-list control condition.

4.3.1. Interpretation of the Findings

4.3.1.1.Primary Outcome Measures

3 (condition: experimental, active control, wait-list control) x 3 (time: baseline, post assessment, 1-month follow up) mixed-design ANOVA analyses revealed statistically significant time × condition interaction effects for all primary outcome measures on the favour of experimental group condition. Post hoc pairwise comparison for the interaction effect showed a statistically significant reduction from baseline to post assessment and baseline to 1-month follow up assessment. More specifically, experimental group condition resulted in significantly greater reductions in restraint eating, eating concern, shape concern, weight concern and global ED psychopathology scores as well as body dissatisfaction in comparison to active and wait-list group control conditions at both post assessment and 1-month follow up assessment. Time × condition interaction effect size based on Partial Eta Squared reflected large effect for all of these outcome measures.

The present study appeared to produce a similar improvement on ED related psychopathology and body dissatisfaction to the previous research testing ED prevention programs that have parallel content/aim. As detailly explained in the method section, experimental group condition was developed based the content of CBT for ED (Fairburn, 2008) and the *StudentBodies* (version: Saekow et al. 2015) which is a widely administered and tested internet-based CBT

program for ED prevention. An early study in the USA showed that *StudentBodies* results in a greater reduction in weight concern, and overall ED psychopathology at post-assessment and 1-year follow up assessments in comparison to control group (Taylor et al., 2006). A German version of *StudentBodies* also lead to higher levels of improvement in weight concern, overall ED psychopathology, and body dissatisfaction at post-assessment and 6-month follow up assessments when compared to a wait-list control group. This improvement produced medium to high effect size (Beintner et al., 2012). Furthermore, a more recent study revealed that *StudentBodies* produced larger effects for decreasing overall ED psychopathology, weight concerns and psychosocial impairment than a wait-list control group at post-assessment (Saekow et al. 2015). Although these CBT oriented ED prevention programs were delivered online and had more sessions (8 to 10 weekly sessions), *Healthy Eating Attitudes and Behaviours Group Program* in the experimental group condition resulted in a similar degree improvement in ED related psychopathology and body dissatisfaction eventually.

4.3.1.2.Secondary Outcome Measures

The analysis showed a significant main effect of time for difficulties in emotion regulation. It was unexpected to observe that the mean scores for difficulties in emotion regulation were increased from baseline to post assessment, and then decreased from post assessment to 1-month follow up assessment in all of the conditions. Despite similar change pattern, the only statistically significant reduction from post assessment to 1-month follow up assessment was found in the experimental group condition with a large effect size. Besides non-significant reduction from post assessment to 1-month follow up assessment in both active and wait-list control conditions, the mean scores in 1-month follow up assessment were even higher than the baseline scores.

Extensive number of researches have established an association between ED and emotion regulation difficulties, and there are some ED prevention programs available including contents related to emotion regulation skills (e.g., mindfulness). However, it is somewhat surprising that no ED prevention study

was identified testing the improvement in emotion regulation difficulties following the intervention. Given a lack of empirical findings, it is therefore only possible to discuss based on the present findings. It could be argued that increased awareness regarding the seriousness of the ED and related problems as a result of being part of this study was emotionally challenging for the students in these conditions. Another explanation for this unexpected finding can be that emotion regulation skills might be situation dependent. More specifically, individuals might be evaluating their emotion regulation skills based on perceived helpfulness of the strategies they currently used regardless of their real functionality/adaptiveness and external feedback (Berking & Wupperman, 2012). Thus, this fluctuation in the scores is observed. An additional argument for increased scores can be related to a statistical phenomenon called regression to the mean (RTM). RTM suggests that when a data is collected from a sample presenting very high or low mean scores, it is like to have a mean closer to the population mean in the second assessment which is done from the same sample (Morton & Torgerson, 2005). In the Turkish adaptation of DERS-16 (Yiğit & Guzey Yiğit, 2017), a measure for emotion regulation difficulties, the mean scores of female university students were much higher than the mean scores of the participants in all of the conditions in the present study. Therefore, this increase in the present study might also suggest a possible RTM effect.

Analysis of internalization and pressure of sociocultural attitudes towards appearance revealed a significant time × condition interaction effect only for internalization of thin/low body fat. This interaction produced a large effect and was found to be significant only in the experimental group condition. In terms of change over time, post hoc pairwise comparison for the interaction effect showed a statistically significant reduction from baseline to post assessment and baseline to 1-month follow up assessment. Besides the significantly greater change in the internalization of thin/low body fat in the experimental group condition compared to active and wait-list control conditions, no statistically significant differences were found for internalization of muscularity and general attractiveness and pressure from family, peers/significant others and media for any condition or time point even though

mean scores in 1-month follow up were lower than baseline in experimental and active control conditions.

When literature investigated, no study was identified testing the improvement in all subscales of SATAQ-4R following ED prevention program. This situation actually making it harder to compare present findings based on previous literature. Nevertheless, obtaining a significant reduction in the internalization of thin/low body fat corroborates the earlier findings that *StudentBodies* as a CBT based prevention program can reduce the drive for thinness (Taylor et al., 2006; Beintner et al. 2012; Saekow et al. 2015). Although not directly targeting thin-ideal created by society, experimental group condition addressed topics that challenge internalization of thin/low body fat, namely over-evaluation of weight and body shape, and body/weight control and avoidance behaviours. Including these topics in the content of the program might be responsible for the positive outcome in the internalization of thin/low body fat. Nevertheless, neither influence of interpersonal relationships on eating attitudes and behaviours nor pressure from family, peers, significant others and media regarding ideal body weight and shape were addressed in the experimental group condition. Not finding a significant improvement in these aspects of sociocultural attitudes towards appearance can be explained by the lack of session/topic directly addressing these aspects in the program content.

Cognitive Dissonance (CD) based prevention interventions mainly aim to criticize the thin-ideal messages and related sociocultural pressures as well as create anti-thin-ideal statements and behaviours. *Body Project* has been known to be one of the most widely tested CD based prevention programs. Efficacy trials on *Body Project* have demonstrated reductions in ED symptoms, restraint eating, body dissatisfaction and thin-ideal internalization among female university students (Stice et al., 2008; Stice, Butryn et al. 2013; Stice et al., 2019). However, in the present study, active control condition which also targets the influence of media on thin-ideal internalization and ED symptoms did not show any significant improvement. Given that systematic reviews and meta-analysis studies have shown that single-session interventions are not effective for prevention of ED (Stice & Shaw, 2004; Le et al., 2017), not finding a statistically significant improvement in the active control condition might be a

result of one-session nature of the program given that *Body Project* has a longer period (e.g., 4-session or 6- session formats).

The literature on ED prevention has established that CBT and CD based ED prevention interventions are the most effective ones among others for university students (Watson, et al., 2016; Harrer et al., 2020). However, our understanding of the comparative effectiveness of these interventions is limited. To best of the knowledge of the present author, only one study was conducted testing the effectiveness of CBT, CD and no intervention for ED prevention as in the present study. In that study, female university students with a high risk of ED were randomized to four-session online CD intervention, online CBT intervention or no intervention. Regarding body dissatisfaction and thin-ideal internalization, no statistically significant differences were found between CBT and CD intervention although these two groups were more effective than no intervention. CBT intervention was more effective at reducing restraint eating and general ED related psychopathology compared to both DB and no intervention groups (Chithambo & Huey, 2017). In this sense, when combined with present findings, one could assume that CBT based ED prevention programs can be better.

4.3.2. Program feasibility and acceptability

Investigation of feasibility and acceptability of the group program in the experimental condition revealed an attendance rate of 84.3% and 4.72 out of 5 for the mean score of satisfaction with the group aspects. Only two participants dropped out during the program process suggesting a drop out rate of 10% which is lower than suggested by earlier research (Beintner, Jacobi, & Taylor, 2014). Also, all of the participants reported that they would recommend attending this group program to their friends. Overall, these findings can be interpreted as the levels of feasibility and acceptability of *Healthy Eating Attitudes and Behaviours Group Program* is very high.

In order to improve program content and format, participants were further asked to report the most and least favourable aspects if applicable. For the most favourable aspects, all participants agreed on the same themes:

informativeness and being fun, and offering good rapport and communication with group friends were the most favourable aspects of the program. Least favourable aspects were reported by seven students as the location of the group sessions, anxiety provocative homework, confrontation felt in the beginnings of the group, length of sessions being not enough.

Similarly, single-session active control condition resulted in good level feasibility and acceptability with 4.57 out of 5 for the mean score of satisfaction with the group aspects. Also, except for one participant, all of the participants reported that they would recommend attending this group work to their friends. The most common favourable aspects of the program for participants were informativeness and presentation of videos. Four participants reported having a least favourable aspect: not having enough session number/length.

Recently, Shaw, Rohde and Stice (2018) have conducted a qualitative feedback study on participants of two ED/obesity prevention programs with an aim of improving the efficacy of these programs. They found that the most valued aspects of these interventions were setting lifestyle change goals, the group setting, accountability for behaviour change and the provided information Previous literature has also established that peer support may be beneficial for normalizing concerns around body weight and shape, enhancing motivation towards change and adapting newly learned skills and behaviours in real life (Kass et al., 2014). When earlier findings are combined with results of the present study, it is possible to state that receiving information and being in a group setting are indispensable aspects of a program aimed preventing disordered eating attitudes and behaviours.

Although both experimental and active control conditions exhibited good feasibility and acceptability, some difficulties faced with participants recruitment process that needs to be mentioned. Among the 1584 participants in Study 1, 418 female university students were identified as meeting inclusion criteria and randomly assigned to either experimental group condition, active control group condition or wait-list control group condition. When invitations were sent through e-mails or phone messages, the majority of the potential participants did not even reply to the invitation. Among the ones that could be

reached, only a small part of the female university students with a high risk of developing ED accepted being part of the present study.

There might be several speculations for not reaching the expected number of participants. For instance, females presenting higher levels of disordered eating attitudes and behaviours might be experiencing greater ambivalence for changing their unhealthy behaviours which provide potential benefits such as weight control (Völker, Jacobi, & Taylor, 2011). A study on ED patients in Turkey found that the levels of ED psychopathology, body dissatisfaction and depression play roles in treatment motivation (Ergüney Okumuş, Sertel Berk, & Yücel, 2016). More specifically, treatment motivation increases with a decrease in symptoms. Therefore, students with higher levels of psychological difficulties might be more likely to decline to participate in. On the other hand, as previous evidence suggested, concerns about confidentiality, distrust and/or fear of research, stigma related to mental illnesses, and difficulty in accepting the illness can be also considered as possible barriers to participating in this study (Woodall et al., 2010).

In the USA, National Eating Disorder Association (NEDA) organizes on-campus *NEDAwareness Week* psychoeducational program to increase awareness regarding body image and ED related difficulties. They also aim to increase students' knowledge about the accessible campus facilities and resources for students who are struggling with these difficulties (Tillman et al., 2015). Among students who participated in this awareness week program, only one-third of students reported that they would consult a professional if they were experiencing body image and eating-related difficulties. Notwithstanding, help-seeking behaviour for a friend experiencing the same difficulties was much higher (83%) (Tillman et al., 2015). These findings underline that even if students have higher levels of awareness, help-seeking behaviour is still low. This could be the case for the potential participants in the present study as well.

4.3.3. Summary of the findings

A recent systematic review and meta-analysis study conducted for investigating the efficacy of ED prevention on the university setting has established that available programs produce small to moderate effects for decreasing ED related risk factors (Harrer et al., 2020). Although the current findings are preliminary, experimental group condition produced greater improvement in restraint eating, eating concern, shape concern, weight concern and overall ED related psychopathology, body dissatisfaction, emotion regulation difficulties and internalization of thin/low body fat ideal in comparison to active and wait-list control conditions. The effect of the experimental group condition was large, and the improvement was maintained at 1-month follow up assessment.

Feasibility and acceptability were found to be good for both experimental and active control conditions in the present study. Previous work has established that high level of adherence does not necessarily lead good treatment outcome, in fact, there might be some other factors influencing improvement such as the length and content of the ED prevention program as well as the level of understanding and engaging in the contents (Saekow et al. 2015). Given the group setting was found to be one of the most valuable aspects, gaining insight regarding shared experiences and receiving ongoing group support for challenges can be considered as another factor for not observing an improvement in the active control condition. In this regard, it is possible to suggest that the active control condition was not more successful than the wait-list control condition in producing improvement despite its' good level feasibility and acceptability.

One unanticipated finding in the present study was the increases in mean scores from baseline to post assessment and 1-month follow up assessment in many of the outcome measures observed in both active control and wait-list control conditions. One could argue that participants' concerns about their eating attitudes and behaviours increased along with increased information and awareness regarding ED. Since they did not receive an active ongoing intervention and could not get additional support for dealing with these concerns, they may experience higher levels of ED and related psychopathology

(Manwaring et al., 2008). Overall, it is possible to assume that when an ED prevention program does not have a sufficient number of session and content, it might cause worsening of the symptoms.

4.3.4. Limitations

Findings of the present study need to be interpreted in light of some limitations. Firstly, the sample size was small and unequal in each condition due to difficulties in the recruitment procedure. This is likely to limit our confidence in drawing clear conclusions for both within-group and between-group effects. Secondly, the use of self-report questionnaires might lead to biased answers. Thirdly, the present study included short-term follow-up data only, thus it is unclear whether the positive outcome would be maintained in the long term. Furthermore, it is not known whether any of the participants started to seek psychological help during the study process which could influence the outcome. Another limitation was the high frequency of Psychology student among participants. Their main motivation participating in this study might be receiving a certificate of attendance that could be added to curriculum vitae rather than real help-seeking.

4.3.5. Strengths

The present study also has several strengths. Firstly, to the author's knowledge, this is the first study on developing and testing the efficacy of ED prevention program for Turkish university students. Clinical trials including only a wait-list control condition have been previously criticised as possible overestimation of treatment effects (Cunningham, Kypri, & McCambridge, 2013). In this regard, the second strength was testing the efficacy of the program with a randomised controlled trial and including active and wait-list control groups. Furthermore, the present study cooperated mixed methods of quantitative and qualitative analyses for satisfaction with group aspects which is likely to increase the power of findings. Another strength was the administration of the instruments measuring emotion regulation difficulties and internalization

and pressure of sociocultural attitudes towards appearance which were undertested in previous ED prevention studies.

4.3.6. Clinical Implications and Future Directions

This randomised controlled trial provided support for the feasibility and acceptability of implementing an ED prevention program for Turkish female university students. Findings of the current study also suggested that the *Healthy Eating Attitudes and Behaviours Group Program* can produce clinically and statistically meaningful intervention effect for decreasing ED risk factors and symptoms in female students at high-risk. Another clinical implication of the present study is establishing the importance of integrating emotion regulation skills in the efforts for ED prevention.

There are several suggestions for future research and clinical applications. For instance, it would be necessary to replicate the present findings in future research with the increased sample size for increasing the power and generalizability. Also, given that prevention programs aim long-term impact, it would be crucial to collect long-term follow-up data to test whether the effect is maintained. In terms of improving the outcome of the ED prevention program, including a session for enhancing emotion regulation skills would be a beneficial step, particularly for individuals presenting binge eating and purging symptoms (Mallorqui-Bague et al., 2018). Similarly, a session particularly addressing internalization and pressure of sociocultural attitudes towards appearance can decrease the effect of environmental influences. Furthermore, integrating booster or follow-up session into the program can help to sustain the progress and prevent relapse (Taylor et al., 2006). Another suggestion might be using motivational techniques that can improve engagement to the program which in turn likely to result in a better outcome (Saekow et al. 2015). Furthermore, a national survey conducted in the USA revealed that the presence of psychological counselling and/or therapy centres on university campuses accessible for ED and body image-related difficulties have great importance for the students (NEDA, 2013). In this regard, integrating ED prevention programs in university campuses and/or curriculum can increase the attendance rates of

the programs which in turn increase the chance of reaching more students who are at risk.

4.3.7. Conclusion

The results of this randomised controlled feasibility trial suggest good level feasibility and acceptability of *Healthy Eating Attitudes and Behaviours Group Program.* Furthermore, based on preliminary findings, this program can be effective in reducing in restraint eating, eating concern, shape concern, weight concern and overall ED related psychopathology, body dissatisfaction, emotion regulation difficulties and internalization of thin/low body fat ideal among Turkish female university students. Even though the group program provided large effect size with the preliminary data, the effectiveness and helpfulness of the program can be improved in the ways suggested for future research and clinical applications.

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APPENDICES

Appendix 1: Informed Consents (In Turkish)

ARAŞTIRMA AMAÇLI GRUP ÇALIŞMASI İÇİN BİLGİLENDİRİLMİŞ ONAM FORMU

Sayın Katılımcı,
Sağlıksız yeme tutum ve davranışlarını önlemek amacıyla yeni geliştiren bir grup uygulamasının etkililiğiyle ilgili bir araştırma yapmaktayız. Arş. Gör. Başak İnce'nin İstanbul Arel Üniversitesi Sosyal Bilimler Enstitüsü Psikoloji Doktora Programı doktora tez araştırması olarak Prof. Dr. Başak Yücel danışmanlığında yürütülmekte olan bu çalışmaya katılım **gönüllülük** esasına dayanmakta olup; bu araştırmaya katılıp katılmamakta tamamen serbestsiniz. Bu konudaki kararınızdan önce araştırma hakkında sizi bilgilendirmek istiyoruz. Bu bilgileri okuyup anladığınızdan emin olduktan sonra araştırmaya katılmak isterseniz bu formu imzalayınız.

Araştırmanın başlangıcında, sonunda ve 1 ay sonra sizlere iletilen bazı soru formlarını doldurmanız istenecektir. Bu konudaki katılımınız araştırma için değerlidir. Elde edilen veriler kimlik bilgileriniz **gizli tutularak** bilimsel nitelikli yayınlarda kullanılabilecek olamakla birlikte bu amaçların dışında bu kayıtlar kullanılmayacak ve başkalarına verilmeyecektir. Gerçek isminizi vermek istemediğiniz durumda daha sonradan hatırlayabileceğiniz bir takma isim de kullanabilirsiniz.

Bu araştırmaya katılmayı kabul ederseniz grup oturumları Prof. Dr. Başak Yücel'in danışmanlık vereceği Klinik Psikolog Başak İnce tarafından yürütülecektir. Uygulanacak grup çalışması **6 oturum** sürecektir. Araştırma süresince sizden beklenen haftada bir gün belirlenen saatte grup çalışmalarının yapılacağı yerde bulunmanız ve grup çalışmasına gelemeyeceğiniz durumlarda bunu önceden haber vermenizdir.

Yürütülecek olan grup çalışmasının temeli etkililiği ve etkinliği bilimsel çalışmalarla gösterilmiş ve yaygın biçimde kullanılan bilişsel-davranışçı terapi yaklaşımına dayanmaktadır. Araştırmaya seçilmenizin nedenlerinden biri sahip olduğunuz bazı özelliklerin bu yaklaşıma uygun olmasıdır. Bununla birlikte, eğer araştırma sırasında başka bir yöntemden daha fazla yararlanacağınız düşünülürse, bu yöntemlere yönlendirilmeniz yapılacaktır. Başka bir deyişle, sizin yararınız araştırma amacının önünde tutulacaktır.

Bu araştırmaya katılmayı kabul ettiğiniz takdirde, bu konuda eğitim almış bir uzman psikolog tarafından görülme şansı kazanmış olacaksınız. Aynı zamanda, tüm grup oturumlarına katılırsanız ve grup sonu, 1 ay sonra iletilen soru formlarını doldurursanız **"Sağlıklı Yeme Tutum ve Davranışları Psikoeğitim Grubu"** katılım sertifikası almaya hak kazanacaksınız. Bu görüşmeler için sizden herhangi bir ek ücret talep edilmeyecektir. Bununla birlikte size herhangi bir ödeme yapılmayacak ve tazminat talebi kabul edilmeyecektir.

Bu araştırmaya katılmayı tercih etmeyebilir ya da araştırmadan çıkmayı isteyebilirsiniz. Bu durumda projenin yürütülmesi sırasında herhangi bir aşamada ve herhangi bir neden göstermeden çekilebilirsiniz. Ancak, araştırmanın sağlıklı yürüyebilmesi adına bu durumu önceden proje çalışanlarına bildirmenizi rica ediyoruz.

Bana yapılan tüm açıklamaları ayrıntılarıyla anlamış durumdayım. İmzalı bu form kağıdının bir kopyası da bana verileceğinin bilgisine sahibim. Kendi başıma belli bir düşünme süresi sonunda adı geçen araştırma projesinde katılımcı olarak yer almaya karar verdim. Bu konuda yapılan daveti gönüllülük içerisinde kabul ediyorum.

Katılımcı
Adı, soyadı:
Telefon:
Mail Adresi:
Tarih:
İmza

Araştırmacı / Grup Yürütücüsü
Adı soyadı, unvanı: Arş. Gör. Başak İnce (Klinik Psikolog)
Tel:
İmza:

GRUP ÇALIŞMASI İÇİN BİLGİLENDİRİLMİŞ ONAM FORMU

Sayın Katılımcı,

Sağlıksız yeme tutum ve davranışlarını önlemek amacıyla yeni geliştiren bir grup uygulamasının etkililiğiyle ilgili bir araştırma yapmaktayız. Arş. Gör. Başak İnce'nin İstanbul Arel Üniversitesi Sosyal Bilimler Enstitüsü Psikoloji Doktora Programı doktora tez araştırması olarak Prof. Dr. Başak Yücel danışmanlığında yürütülmekte olan bu çalışmaya katılım **gönüllülük** esasına dayanmakta olup; bu araştırmaya katılıp katılmamakta tamamen serbestsiniz. Bu konudaki kararınızdan önce araştırma hakkında sizi bilgilendirmek istiyoruz. Bu bilgileri okuyup anladığınızdan emin olduktan sonra araştırmaya katılmak isterseniz bu formu imzalayınız.

Bekleme listesi grubuna atandığınız bu araştırma kapsamında sizden beklenen farklı zamanlarda (toplamda 5 kere) sizlere iletilecek olan soru formlarını doldurmanızdır. Bu konudaki katılımınız araştırma için değerlidir. Elde edilen veriler kimlik bilgileriniz **gizli tutularak** bilimsel nitelikli yayınlarda kullanılabilecek olamakla birlikte bu amaçların dışında bu kayıtlar kullanılmayacak ve başkalarına verilmeyecektir. Gerçek isminizi vermek istemediğiniz durumda daha sonradan hatırlayabileceğiniz bir takma isim de kullanabilirsiniz.

Bekleme listesi grubuna atandığınız bu araştırmaya katılmayı ve size iletilen soru formlarını doldurmayı kabul ederseniz, 2020 Bahar döneminde yürütülmesi planlanan 6 oturum sürecek olan "Sağlıklı Yeme Tutum ve Davranışları Psikoeğitim Grubu" grup oturumlarına katılım hakkı kazanacaksınız. Bu araştırmaya katılmayı kabul ettiğiniz takdirde, bu konuda eğitim almış bir uzman psikolog tarafından görülme şansı kazanmış olacaksınız. Bu görüşmeler için sizden herhangi bir ek ücret talep edilmeyecektir. Bununla birlikte size herhangi bir ödeme yapılmayacak ve tazminat talebi kabul edilmeyecektir.

Bu araştırmaya katılmayı tercih etmeyebilir ya da araştırmadan çıkmayı isteyebilirsiniz. Bu durumda projenin yürütülmesi sırasında herhangi bir aşamada ve herhangi bir neden göstermeden çekilebilirsiniz. Ancak, araştırmanın sağlıklı yürüyebilmesi adına bu durumu önceden proje çalışanlarına bildirmenizi rica ediyoruz.

Bana yapılan tüm açıklamaları ayrıntılarıyla anlamış durumdayım. Kendi başıma belli bir düşünme süresi sonunda adı geçen araştırma projesinde katılımcı olarak yer almaya karar verdim. Bu konuda yapılan daveti gönüllülük içerisinde kabul ediyorum.

Katılımcı

Adı, soyadı:

Telefon:

Mail Adresi:

Tarih:

İmza

Araştırmacı / Grup Yürütücüsü

Adı soyadı, unvanı: Arş. Gör. Başak İnce (Klinik Psikolog)

Tel:

İmza:

BEKLEME LİSTESİ GRUBU İÇİN BİLGİLENDİRİLMİŞ ONAM FORMU

Sayın Katılımcı,

Sağlıksız yeme tutum ve davranışlarını önlemek amacıyla yeni geliştiren bir grup uygulamasının etkililiğiyle ilgili bir araştırma yapmaktayız. Arş. Gör. Başak İnce'nin İstanbul Arel Üniversitesi Sosyal Bilimler Enstitüsü Psikoloji Doktora Programı doktora tez araştırması olarak Prof. Dr. Başak Yücel danışmanlığında yürütülmekte olan bu çalışmaya katılım **gönüllülük** esasına dayanmakta olup; bu araştırmaya katılıp katılmamakta tamamen serbestsiniz. Bu konudaki kararınızdan önce araştırma hakkında sizi bilgilendirmek istiyoruz. Bu bilgileri okuyup anladığınızdan emin olduktan sonra araştırmaya katılmak isterseniz bu formu imzalayınız.

Bekleme listesi grubuna atandığınız bu araştırma kapsamında sizden beklenen farklı zamanlarda (toplamda 5 kere) sizlere iletilecek olan soru formlarını doldurmanızdır. Bu konudaki katılımınız araştırma için değerlidir. Elde edilen veriler kimlik bilgileriniz **gizli tutularak** bilimsel nitelikli yayınlarda kullanılabilecek olamakla birlikte bu amaçların dışında bu kayıtlar kullanılmayacak ve başkalarına verilmeyecektir. Gerçek isminizi vermek istemediğiniz durumda daha sonradan hatırlayabileceğiniz bir takma isim de kullanabilirsiniz.

Bekleme listesi grubuna atandığınız bu araştırmaya katılmayı ve size iletilen soru formlarını doldurmayı kabul ederseniz, 2020 Bahar döneminde yürütülmesi planlanan 6 oturum sürecek olan "Sağlıklı Yeme Tutum ve Davranışları Psikoeğitim Grubu" grup oturumlarına katılım hakkı kazanacaksınız. Bu araştırmaya katılmayı kabul ettiğiniz takdirde, bu konuda eğitim almış bir uzman psikolog tarafından görülme şansı kazanmış olacaksınız. Bu görüşmeler için sizden herhangi bir ek ücret talep edilmeyecektir. Bununla birlikte size herhangi bir ödeme yapılmayacak ve tazminat talebi kabul edilmeyecektir.

Bu araştırmaya katılmayı tercih etmeyebilir ya da araştırmadan çıkmayı isteyebilirsiniz. Bu durumda projenin yürütülmesi sırasında herhangi bir aşamada ve herhangi bir neden göstermeden çekilebilirsiniz. Ancak, araştırmanın sağlıklı yürüyebilmesi adına bu durumu önceden proje çalışanlarına bildirmenizi rica ediyoruz.

Bana yapılan tüm açıklamaları ayrıntılarıyla anlamış durumdayım. Kendi başıma belli bir düşünme süresi sonunda adı geçen araştırma projesinde katılımcı olarak yer almaya karar verdim. Bu konuda yapılan daveti gönüllülük içerisinde kabul ediyorum.

Katılımcı

Adı, soyadı:

Telefon:

Mail Adresi:

Tarih:

İmza

Araştırmacı / Grup Yürütücüsü

Adı soyadı, unvanı: Arş. Gör. Başak İnce (Klinik Psikolog)

Tel:

İmza:

VİDEO KAYDI BİLGİLENDİRİLMİŞ ONAM FORMU

Sayın Katılımcı,

Sağlıksız yeme tutum ve davranışlarını önlemek amacıyla geliştiren bir grup uygulamasının etkililiğiyle ilgili bir araştırma yapmaktayız. Arş. Gör. Başak İnce'nin İstanbul Arel Üniversitesi Sosyal Bilimler Enstitüsü Psikoloji Doktora Programı doktora tez araştırması olarak Prof. Dr. Başak Yücel danışmanlığında yürütülen bu grup uygulamasının etkililiğiyle ilgili yapmakta olduğumuz araştırmaya katılmayı kabul ettiğiniz için teşekkür ederiz. Bu programın işleyişini denetlemek ve geliştirmek amacıyla, yapılacak olan grup seanslarında video kaydı alınacaktır.

Video kaydına izin vermek **gönüllülük** esasına dayanmakta olup; bu konuda dilediğiniz kararı vermekte serbestsiniz Bu konudaki kararınızdan önce video kaydı hakkında sizi bilgilendirmek istiyoruz. Bu bilgileri okuyup anladığınızdan emin olduktan sonra araştırmaya katılmak isterseniz bu formu imzalayınız.

Uygulanacak olan grup seanslarında siz ve diğer grup katılımcılarının yüzü gözükmeyecek şekilde video çekimi yapılacaktır. Grup seanslarında elde edilen veriler ve görüntüler **gizli tutulacaktır.** Video kayıtları sadece Prof. Dr. Başak Yücel ve araştırmada yer alan araştırmacılar tarafından grup sürecinin ele alınması amacıyla izlenecek; araştırma sonlandırıldığında imha edilecektir. Video kaydı ve grup seanslarında gerçek isminizi vermek istemediğiniz durumda daha sonradan hatırlayabileceğiniz bir takma isim de kullanabilirsiniz.

Video kaydında yer almayı tercih etmeyebilirsiniz. Bu durumda projenin yürütülmesi sırasında herhangi bir aşamada ve herhangi bir neden göstermeden araştırmadan çekilebilirsiniz. Ancak, araştırmanın sağlıklı yürüyebilmesi adına bu durumu önceden proje çalışanlarına bildirmenizi rica ediyoruz.

Bana yapılan tüm açıklamaları ayrıntılarıyla anlamış durumdayım. İmzalı bu form kağıdının bir kopyası da bana verileceğinin bilgisine sahibim. Kendi başıma belli bir düşünme süresi sonunda adı geçen araştırma projesi kapsamında video kaydında yer almaya karar verdim. Bu konuda yapılan daveti gönüllülük içerisinde kabul ediyorum.

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Adı soyadı, unvanı: Arş. Gör. Başak İnce (Klinik Psikolog)

Telefon:

İmza:

Appendix 2: Outcome Measures (In Turkish)

Demografik Bilgi Formu

1. **Doğum yılınız**: _______________
2. **Cinsiyetiniz:**
3. **Medeni durumunuz:**
4. **Yetiştiğiniz Yer?**
5. **Hangi bölümde eğitim alıyorsunuz? ____________________________**
6. **Çalışıyor musunuz?**
7. **Bugüne kadar tedavi gerektiren bir ruhsal sorun yaşadınız mı**?

   (0) = Hayır   (1) = Evet

   (Belirtiniz..)
8. **Bir önceki soruya yanıtınız evet ise, tedavinizin türü neydi?** (Birden fazla seçeneği işaretleyebilirsiniz)

   Ayaktan : ☐ Psikoterapi ☐ İlaç ☐ Psikoterapi + İlaç

   Yatarak : ☐ Psikoterapi ☐ İlaç ☐ Psikoterapi + İlaç
9. **Boyunuz: ___________________**
10. **Kilonuz:_____________________**
11. **Kilonuzdan memnun musunuz**?

    0 = Hiç memnun değilim   1 = Az memnunum   2 = Memnunum   3 = Çok memnunum
12. **Memnun değilseniz, hangi açıdan memnun değilsiniz?**

    1 = Aşırı zayıfım   2 = Biraz zayıfım   3 = Zayıfım   4 = Biraz şişmanım   5 = Şişmanım 6 = Aşırı şişmanım
13. **Eğer kilo sorununuz olduğunu düşünüyorsanız ne kadar süredir bu sorunu yaşıyorsunuz?   (Lütfen ay/yıl diye belirtin.)**

    ____
14. **Daha önce yeme ile ilişkili bir sorun sebebiyle herhangi bir sağlık çalışanına (doktor, psikolog, diyetisten vb.) başvurmayı düşündünüz mü?**

    (0) = Hayır   (1) = Evet

    (Belirtiniz...)

15. Daha önce yeme ile ilişkili bir sorun sebebiyle herhangi bir sağlık çalışanına (doktor, psikolog, diyetisten vb.) başvurdunuz mu?

(0) = Hayır (1) = Evet

(Belirtiniz...)

Yeme Bozukluğu Değerlendirme Ölçeği

1'den 12'ye kadar olan sorular: Lütfen sağdaki uygun olan sayıyı yuvarlak içine alınız. Soruların sadece son dört haftayı içerdiğini (28 gün) unutmayınız

	Son 28 günün kaçında…	**Hiç-birinde**	**1 -5**	**6 -12**	**13 -15**	**16 -22**	**23 -27**	**Her gün**
1-	Kilonuzu ya da bedeninizin şeklini değiştirmek amacıyla yiyecek miktarınızı kasıtlı olarak sınırlandırmaya çalıştınız? *(Başarılı olup olmadığınız önemli değildir.)*	0	1	2	3	4	5	6
2-	Bedeninizin şeklini ya da kilonuzu değiştirmek amacıyla uzun bir süre (*uyanık olduğunuz 8 saat boyunca ya da daha fazla bir süre için*) hiçbir şey yemediğiniz oldu?	0	1	2	3	4	5	6
3-	Bedeninizin şeklini ya da kilonuzu değiştirmek amacıyla hoşlandığınız yiyecekleri beslenme düzeninizden çıkarmaya çalıştınız? *(Başarılı olup olmadığınız önemli değildir.)*	0	1	2	3	4	5	6
4-	Bedeninizin şeklini ya da kilonuzu değiştirmek amacıyla yemenizle ilgili (örn. kalori sınırlandırması) belli kurallara uymaya çalıştınız? *(Başarılı olup olmadığınız önemli değildir.)*	0	1	2	3	4	5	6
5-	Bedeninizin şeklini ya da kilonuzu etkilemek amacıyla boş bir mideye sahip olmak için belirgin bir arzu duydunuz?	0	1	2	3	4	5	6
6-	Tamamen düz bir karına sahip olmak için belirgin bir arzu duydunuz?	0	1	2	3	4	5	6
7-	Yiyecek, yemek yeme ya da kalorilerle ilgili düşünmenin, ilgilendiğiniz konulara (örn. çalışma, bir konuşmayı takip etme ya da okuma) yoğunlaşmanızı çok zorlaştırdığı oldu?	0	1	2	3	4	5	6
8-	Bedeninizin şekli ve kiloyla ilgili düşünmenin, ilgilendiğiniz konulara (örn. İşinize, bir konuşmayı takip etmenize ya da okumanıza) yoğunlaşmanızı çok zorlaştırdığı oldu?	0	1	2	3	4	5	6
9-	Yemek yemeyle ilgili kontrolü kaybetmekten belirgin biçimde korktuğunuz oldu?	0	1	2	3	4	5	6
10-	Kilo alabileceğinizden belirgin bir biçimde korktunuz?	0	1	2	3	4	5	6
11-	Kendinizi şişman hissettiniz?	0	1	2	3	4	5	6
12-	Kilo vermek için güçlü bir arzunuz oldu?	0	1	2	3	4	5	6

13'ten 18'e kadar olan sorular : Lütfen sağdaki boşluğa uygun sayıyı yazınız. Soruların yalnızca son dört haftaya yönelik olduklarını (28 güne) hatırlayınız.

	Son dört hafta içinde (28 gün)…	
13-	Son 28 gün içinde, kaç kere, başka insanların alışılmadık miktarda fazla (şartlara göre) olarak tanımlayacakları biçimde yemek yediniz?	………
14-	Bu süre içinde kaç kere yemek yemenizle ilgili kontrolü kaybetme hissine kapıldınız (yediğiniz sırada) ?	………
15-	Son 28 günün kaç GÜNÜNDE aşırı yemek yeme nöbetleri ortaya çıktı (örn. Alışılmadık miktarda fazla yemek yediğiniz ve o sırada kontrolü kaybettiğiniz duygusunu yaşadınız)?	………
16-	Son 28 gün içinde, bedeninizin şekli ya da kilonuzu kontrol amacıyla, kaç kere kendinizi kusturdunuz?	………
17-	Son 28 gün içinde, bedeninizin şekli ya da kilonuzu kontrol amacıyla, kaç kere müshil (bağırsak çalıştırıcı) kullandınız?	………
18-	Son 28 gün içinde, kilonuzu, bedeninizin şeklini ya da yağ miktarınızı kontrol etmek, kalorileri yakmak amacıyla, kaç kere "kendinizi kaybedercesine" ya da "saplantılı" biçimde egzersiz yaptınız?	………

19'dan 21'e kadar olan sorular: Lütfen uygun sayıyı yuvarlak içine alınız. **<u>Lütfen bu sorular için "tıkınırcasına yeme" teriminin</u>**, mevcut koşullarda başkalarına göre alışılmadık miktarda ve kontrolü kaybetme duygusuyla beraber fazla yemeyi ifade ettiğini göz önünde bulundurunuz.

19-	Son 28 gün içinde, kaç kere gizlice (örn. Saklanarak) yemek yediniz? (<u>Tıkınırcasına yeme durumlarını saymayınız.</u>)	Hiçbirinde	1 -5 gün	6 -12 gün	13 -15 gün	16 -22 gün	23 -27 gün	Her gün
		0	1	2	3	4	5	6
20-	Yemek yediğiniz zaman bedeninizin şeklini ya da kilonuzu etkilediği için ne oranda kendinizi suçlu hissettiniz (hata yaptığınızı hissettiniz)? (<u>Tıkınırcasına yemek yeme durumlarını saymayınız.</u>)	Hiçbir zaman	Nadi-ren	Yarıdan az	Yarı yarıya	Yarıdan fazla	Çoğu zaman	Her zaman
		0	1	2	3	4	5	6
21-	Son 28 gün içinde, başkalarının sizi yemek yerken görmesiyle ilgili ne kadar endişelendiniz? (<u>Tıkınırcasına yeme durumlarını saymayınız.</u>)	Hiç	Biraz		Orta		Önemli ölçüde	
		0	1	2	3	4	5	6

22'den 28'e kadar olan sorular: Lütfen sağda uygun bulduğunuz sayıyı yuvarlak içine alınız. Soruların **<u>yalnızca son dört haftaya</u>** yönelik olduklarını (28 güne) hatırlayınız.

		Hiç	Biraz		Orta		Önemli ölçüde	
22-	<u>Kilonuz</u>, kişi olarak kendiniz hakkında düşüncenizi ve yargınızı etkiledi mi?	0	1	2	3	4	5	6
23-	<u>Bedeninizin şekli</u>, kendiniz hakkındaki düşüncenizi (yargınızı) etkiledi mi?	0	1	2	3	4	5	6
24-	Önümüzdeki dört hafta boyunca, haftada 1 kez tartılmanız istense (ne daha sık ne daha seyrek), bu sizi ne kadar üzerdi?	0	1	2	3	4	5	6
25-	<u>Kilonuzdan</u> ne derece memnun değilsiniz?	0	1	2	3	4	5	6
26-	<u>Bedeninizin şeklinden</u> ne derece memnun değilsiniz?	0	1	2	3	4	5	6
27-	Bedeninizi görmekten ne kadar rahatsız oluyorsunuz (örn. Aynada, mağazanın camında, soyunurken, banyo ya da duş yaparken)?	0	1	2	3	4	5	6
28-	<u>Başkalarının</u> bedeninizin şeklini görme-sinden ne derece rahatsız oluyorsunuz? (örn. Soyunma odalarında, yüzerken ya da dar elbiseler giyerken)	0	1	2	3	4	5	6

Kadınlara :

Geçtiğimiz üç-dört aylık dönemde hiç aybaşı (regl) olmadığınız oldu mu?............

Aksama olduysa kaç tane?.......................

Bu nedenle ilaç kullanıyor musunuz?..................

Yeme Tutum Testi-40

Yönerge: Bu ölçekteki maddelerin çoğu sizin yeme alışkanlıklarınızla ilgili olmakla birlikte, farklı konularda maddeler de yer almaktadır. Bunların arasında doğru ya da yanlış söz konusu değildir. Lütfen kendinizi olduğunuz gibi görmeye çalışarak, sizin için en doğru olan seçeneği isaretleyin.

1=Daima2=Çok sık 3=Sık sık4=Bazen 5=Nadiren 6=Asla

1) Başkaları ile birlikte yemek yemekten hoşlanırım.	1	2	3	4	5	6
2) Başkaları için yemek pişiririm, fakat pişirdiğim yemeği yemem.	1	2	3	4	5	6
3) Yemekten önce sıkıntılı olurum.	1	2	3	4	5	6
4) Şişmanlamaktan ödüm kopar.	1	2	3	4	5	6
5) Acıktığımda yemek yememeye çalışırım.	1	2	3	4	5	6
6) Aklım fikrim yemektedir.	1	2	3	4	5	6
7) Yemek yemeği durduramadığım zamanlar olur.	1	2	3	4	5	6
8) Yiyeceğimi küçük küçük parçalara bölerim.	1	2	3	4	5	6
9) Yediğim yemeğin kalorisini bilirim.	1	2	3	4	5	6
10) Ekmek, patates, pirinç gibi yüksek kalorili yiyeceklerden kaçınırım.	1	2	3	4	5	6
11) Yemeklerden sonra şişkinlik hissederim.	1	2	3	4	5	6
12) Ailem fazla yememi bekler.	1	2	3	4	5	6
13) Yemek yedikten sonra kusarım.	1	2	3	4	5	6
14) Yemek yedikten sonra aşırı suçluluk duyarım.	1	2	3	4	5	6
15) Tek düşüncem daha zayıf olmaktır.	1	2	3	4	5	6
16) Aldığım kalorileri yakmak için yorulana kadar egzersiz yaparım.	1	2	3	4	5	6
17) Günde birkaç kere tartılırım.	1	2	3	4	5	6
18) Vücudumu saran dar elbiselerden hoşlanırım.	1	2	3	4	5	6
19) Et yemekten hoşlanırım.	1	2	3	4	5	6
20) Sabahları erken uyanırım.	1	2	3	4	5	6
21) Günlerce aynı yemeği yerim.	1	2	3	4	5	6
22) Egzersiz yaptığımda harcadığım kalorileri hesaplarım.	1	2	3	4	5	6
23) Adetlerim düzenlidir. (Yalnızca kadın öğrenciler cevap verecektir)	1	2	3	4	5	6
24) Başkaları çok zayıf olduğumu düşünür.	1	2	3	4	5	6
25) Şişmanlayacağım düşüncesi zihnimi meşgul eder.	1	2	3	4	5	6
26) Yemeklerimi yemek başkalarınınkinden daha uzun sürer.	1	2	3	4	5	6
27) Lokantada yemek yemeği severim.	1	2	3	4	5	6
28) Müshil kullanırım.	1	2	3	4	5	6
29) Şekerli yiyeceklerden kaçınırım.	1	2	3	4	5	6
30) Diyet (perhiz) yemekleri yerim.	1	2	3	4	5	6
31) Yaşamımı yiyeceğin kontrol ettiğini düşünürüm.	1	2	3	4	5	6
32) Yiyecek konusunda kendimi denetleyebilirim.	1	2	3	4	5	6
33) Yemek konusunda başkalarının bana baskı yaptığını hissederim.	1	2	3	4	5	6
34) Yiyecek ile ilgili düşünceler çok zamanımı alır.	1	2	3	4	5	6
35) Kabızlıktan yakınırım.	1	2	3	4	5	6
36) Tatlı yedikten sonra rahatsız olurum.	1	2	3	4	5	6
37) Rejim yaparım.	1	2	3	4	5	6
38) Midemin boş olmasından hoşlanırım.	1	2	3	4	5	6
39) Şekerli, yağlı yiyecekleri denemekten hoşlanırım.	1	2	3	4	5	6
40) Yemekten sonra içimden kusmak gelir.	1	2	3	4	5	6

Beden İmgesi Memnuniyet Anketi

	Son Derece Hoşnutum (5)	Oldukça Hoşnutum (4)	Kararsızım (3)	Pek Hoşnut Değilim (2)	Hiç Hoşnut Değilim (1)
BEDENİN GENEL GÖRÜNÜMÜ					
Beden oranları	5	4	3	2	1
Bedenin duruşu	5	4	3	2	1
Spor yeteneği	5	4	3	2	1
Ten rengi	5	4	3	2	1
Kas gücü	5	4	3	2	1
Boy	5	4	3	2	1
Kilo	5	4	3	2	1
YÜZ					
Yüz güzelliği	5	4	3	2	1
Saçlar	5	4	3	2	1
Gözler	5	4	3	2	1
Kulaklar	5	4	3	2	1
Burun	5	4	3	2	1
Ağız	5	4	3	2	1
Dişler	5	4	3	2	1
Ses	5	4	3	2	1
Çene	5	4	3	2	1
BEDEN ÜYELERİ					
Omuzlar	5	4	3	2	1
Kollar	5	4	3	2	1
Eller	5	4	3	2	1
Ayaklar	5	4	3	2	1
GÖVDE					
Karın	5	4	3	2	1
Kalçalar	5	4	3	2	1
Bacak ve bilekler	5	4	3	2	1
Göğüsler ve üst bölge	5	4	3	2	1
Cinsel organ	5	4	3	2	1

Görünüşe Yönelik Sosyokültürel Tutumların İçselleştirilmesi Anketi-4 Güncellenmiş

	Kesinlikle katılmıyorum (1)	Çoğunlukla katılmıyorum (2)	Ne katılıyorum ne katılmıyorum (3)	Çoğunlukla katılıyorum (4)	Kesinlikle katılıyorum (5)
1. Kaslı görünmek benim için önemlidir.	(1)	(2)	(3)	(4)	(5)
2. Giydiğim kıyafetlerin içinde iyi görünmek benim için önemlidir.	(1)	(2)	(3)	(4)	(5)
3. Vücudumun çok zayıf görünmesini isterim.	(1)	(2)	(3)	(4)	(5)
4. Kaslı görünmekle ilgili çok fazla düşünürüm.	(1)	(2)	(3)	(4)	(5)
5. Dış görünüşümle ilgili çok fazla düşünürüm.	(1)	(2)	(3)	(4)	(5)
6. Zayıf görünmekle ilgili çok fazla düşünürüm.	(1)	(2)	(3)	(4)	(5)
7.Güzel/yakışıklı görünmek isterim.	(1)	(2)	(3)	(4)	(5)
8.Vücudumun kaslı görünmesini isterim.	(1)	(2)	(3)	(4)	(5)
9. Dış görünüşüm hakkında çok da fazla düşünmem.	(1)	(2)	(3)	(4)	(5)
10. Vücudumun kaslı görünmesini istemem.	(1)	(2)	(3)	(4)	(5)
11. Vücudumun çok ince görünmesini isterim.	(1)	(2)	(3)	(4)	(5)
12. Çekici olmak benim için önemlidir.	(1)	(2)	(3)	(4)	(5)
13. Vücudumda çok az yağ olması ile ilgili çok fazla düşünürüm.	(1)	(2)	(3)	(4)	(5)
14. Nasıl göründüğümle ilgili çok fazla düşünmem.	(1)	(2)	(3)	(4)	(5)
15. Çok kaslı görünen bir vücudum olsun isterim.	(1)	(2)	(3)	(4)	(5)

Aşağıdaki soruları **ailenizi** (ebeveynleri, ağabeyleri, ablaları, kardeşleri ve akrabalarınızı içerecek şekilde) düşünerek cevaplayınız.

	Kesinlikle katılmıyorum (1)	Çoğunlukla katılmıyorum (2)	Ne katılıyorum ne katılmıyorum (3)	Çoğunlukla katılıyorum (4)	Kesinlikle katılıyorum (5)
16. Daha zayıf görünmem konusunda üzerimde ailemin baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
17. Dış görünüşümü düzeltmem konusunda üzerimde ailemin baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
18. Vücut yağımı düşürmem konusunda ailem beni teşvik eder.	(1)	(2)	(3)	(4)	(5)
19. Ailem vücudumu daha iyi bir şekle sokmam konusunda beni teşvik eder.	(1)	(2)	(3)	(4)	(5)

Aşağıdaki soruları **akranlarınızı** (yakın arkadaşlarınızı, sınıf arkadaşlarınızı ve aynı yaş grubunda olduğunuz diğer kişileri içerecek şekilde) düşünerek cevaplayınız.

	Kesinlikle katılmıyorum (1)	Çoğunlukla katılmıyorum (2)	Ne katılıyorum ne katılmıyorum (3)	Çoğunlukla katılıyorum (4)	Kesinlikle katılıyorum (5)
20. Zayıflamam konusunda akranlarım beni teşvik eder.	(1)	(2)	(3)	(4)	(5)
21. Dış görünüşümü düzeltmem konusunda üzerimde akranlarımın baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
22. Vücudumun daha iyi görünmesi konusunda üzerimde akranlarımın baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
23. Vücut yağımı düşürmem konusunda akranlarımdan baskı görürüm.	(1)	(2)	(3)	(4)	(5)

Aşağıdaki soruları **hayatınızdaki önemli kişileri** (romantik ilişkide bulunduğunuz kişileri, öğretmenleri ve koçlarınızı içerecek şekilde) düşünerek cevaplayınız.

	Kesinlikle katılmıyorum (1)	**Çoğunlukla katılmıyorum (2)**	**Ne katılıyorum ne katılmıyorum (3)**	**Çoğunlukla katılıyorum (4)**	**Kesinlikle katılıyorum (5)**
24. Zayıflamam konusunda hayatımdaki önemli kişiler beni teşvik eder.	(1)	(2)	(3)	(4)	(5)
25. Dış görünüşümü düzeltmem konusunda üzerimde hayatımdaki önemli kişilerin baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
26. Vücudumun daha iyi görünmesi konusunda üzerimde hayatımdaki önemli kişilerin baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
27. Vücut yağımı düşürmem konusunda hayatımdaki önemli kişilerden baskı görürüm.	(1)	(2)	(3)	(4)	(5)

Aşağıdaki soruları **medyayı** (televizyon, dergiler, internet, filmler, reklam panoları ve reklamları içerecek şekilde) düşünerek cevaplayınız.

	Kesinlikle katılmıyorum (1)	**Çoğunlukla katılmıyorum (2)**	**Ne katılıyorum ne katılmıyorum (3)**	**Çoğunlukla katılıyorum (4)**	**Kesinlikle katılıyorum (5)**
28. Vücudumun daha iyi görünmesi konusunda üzerimde medyanın baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
29. Daha zayıf görünmem konusunda üzerimde medyanın baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
30. Dış görünüşümü düzeltmem konusunda üzerimde medyanın baskısını hissederim.	(1)	(2)	(3)	(4)	(5)
31. Vücut yağımı düşürmem konusunda üzerimde medyanın baskısını hissederim.	(1)	(2)	(3)	(4)	(5)

Beden Şekli Ölçeği-34

Görünümünüzle ilgili neler hissetiğinizi bilmek istiyoruz. Son dört haftayı düşünerek size en uygun gelen yanıtı işaretleyiniz. Soru atlamamanız çok önemlidir

Son Dört haftadır

	Asla	Nadiren	Bazen	Sıklıkla	Çok sıklıkla	Daima
1. Sıkıldığınızda vücut şeklinize takıldığınız olur mu?	1	2	3	4	5	6
2. Diyet yapmanız gerektiğini hissedecek kadar görünümünüz hakkında endişelendiniz mi?	1	2	3	4	5	6
3. Vücudunuzun diğer bölgelerine göre baldırlarınızın, kalçanızın veya alt bölgenizin daha geniş olduğunu düşündünüz mü?	1	2	3	4	5	6
4. Şişmanlayabileceğinizden veya daha da şişmanlayacağınızdan korktuğunuz oldu mu?	1	2	3	4	5	6
5. Vücudunuzun yeterince sıkı olmadığından endişelendiğiniz oldu mu?	1	2	3	4	5	6
6. Tokluk hissinin (örneğin fazlaca bir yemekten sonra) sizi şişman hissettirdiği oldu mu?	1	2	3	4	5	6
7. Vücudunuzla ilgili ağlayacak kadar kendinizi kötü hissettiğiniz oldu mu?	1	2	3	4	5	6
8. Vücudunuzdaki fazlalıkların sallanabileceğini düşünerek koşmaktan kaçındığınız oldu mu?	1	2	3	4	5	6
9. Zayıf hemcinslerinizle birlikte olmak vücudunuzla ilgili olumsuz duygular yaşamanıza neden oldu mu?	1	2	3	4	5	6
10. Otururken baldırlarınızın yayılmasından endişelendiğiniz oldu mu?	1	2	3	4	5	6
11. Küçük miktarlarda yemek yemek bile şişman hissetmenize neden oldu mu?	1	2	3	4	5	6
12. Diğer hemcinslerinizin vücut şekillerine dikkat ettiğiniz ve onlarla karşılaştırdığınızda kendi vücudunuzun kötü olduğunu hissettiğiniz oldu mu?	1	2	3	4	5	6
13. Vücut şekliniz hakkında düşünmek konsantre olma yeteneğinizi etkiledi mi (örn: televizyon izlerken, okurken veya sohbet ederken)?	1	2	3	4	5	6
14. Çıplak olmak (örn:banyo yaparken) kendinizi şişman hissettirdi mi?	1	2	3	4	5	6
15. Vücut şeklinizi özellikle farkettirecek kıyafetleri giymekten kaçındınız mı?	1	2	3	4	5	6
16. Bedeninizin toplu bölgelerini kesmeyi hayal ettiniz mi?	1	2	3	4	5	6

	Asla	Nadiren	Bazen	Sıklıkla	Çok sıklıkla	Daima
17. Tatlılar, kekler veya diğer yüksek kalorili yiyecekleri yemek sizi şişman hissettirdi mi?	1	2	3	4	5	6
18. Vücut şekliniz hakkında kendinizi kötü hissettiğiniz için sosyal ortamlardan uzaklaştınız mı?	1	2	3	4	5	6
19. Kendinizi aşırı iri ve toplu hissettiniz mi?	1	2	3	4	5	6
20. Vücudunuzdan dolayı utanç hissettiniz mi?	1	2	3	4	5	6
21. Vücut şekliniz hakkındaki endişeniz diyet yapmanıza neden oldu mu?	1	2	3	4	5	6
22. Vücudunuzdan en hoşnut olduğunuz anlar midenizin boş olduğu zamanlar mı (örneğin sabahları)?	1	2	3	4	5	6
23. Şu anki vücut şeklinizin, kontrolünüzü kaybetmenizden kaynaklandığını düşündüğünüz oldu mu?	1	2	3	4	5	6
24. Bel ve karın çevrenizdeki yağ toplanmalarını diğer insanların görmesinden endişelendiğiniz oldu mu?	1	2	3	4	5	6
25. Diğer hemcinslerinizin sizden daha zayıf olmasının haksızlık olduğunu düşündüğünüz oldu mu?	1	2	3	4	5	6
26. Daha zayıf hissetmek için kustuğunuz oldu mu?	1	2	3	4	5	6
27. Diğer insanlarla birlikteyken çok fazla yer kapladığınız için kaygılandığınız oldu mu? (Ör: kanepede ya da bir otobüs koltuğunda otururken)?	1	2	3	4	5	6
28. Bedeninizdeki sarkmalardan endişelendiğiniz oldu mu?	1	2	3	4	5	6
29. Yansımanızı görmek (örn: bir ayna veya dükkan vitrinlerinde) vücut şekliniz hakkında kötü hissetmenize neden oldu mu?	1	2	3	4	5	6
30. Ne kadar yağ olduğunu görmek için vücudunuzun herhangi bir yerini parmaklarınız arasında sıkıştırdınız mı?	1	2	3	4	5	6
31. Diğer insanların vücudunuzu görebileceği ortamlardan (örn: ortak soyunma odaları veya havuzlar) kaçındığınız oldu mu?	1	2	3	4	5	6
32. Daha zayıf hissetmek için müshil kullandığınız oldu mu?	1	2	3	4	5	6
33. Vücut şekliniz hakkındaki farkındalığınız özellikle birileriyle beraberken artıyor mu?	1	2	3	4	5	6
34. Vücut şekliniz hakkındaki endişeniz size egzersiz yapmanız gerektiğini hissettirdi mi?	1	2	3	4	5	6

Duygu Düzenleme Güçlüğü Ölçeği-16

	Hemen hemen hiç (% 0-% 10	Bazen (% 11-% 35)	Yaklaşık Yarı yarıya (% 36-% 65)	Çoğu zaman (% 66-% 90)	Hemen hemen her zaman (% 91-% 100)
1. Duygularıma bir anlam vermekte zorlanırım.					
2. Ne hissettiğim konusunda karmaşa yaşarım.					
3. Kendimi kötü hissettiğimde işlerimi bitirmekte zorlanırım.					
4. Kendimi kötü hissettiğimde kontrolden çıkarım.					
5. Kendimi kötü hissettiğimde uzun süre böyle kalacağına inanırım.					
6. Kendimi kötü hissetmenin yoğun depresif duyguyla sonuçlanacağına inanırım.					
7. Kendimi kötü hissederken başka şeylere odaklanmakta zorlanırım.					
8. Kendimi kötü hissederken kontrolden çıktığım korkusu yaşarım.					
9. Kendimi kötü hissettiğimde bu duygumdan dolayı kendimden utanırım.					
10. Kendimi kötü hissettiğimde zayıf biri olduğum duygusuna kapılırım.					
11. Kendimi kötü hissettiğimde davranışlarımı kontrol etmekte zorlanırım.					
12. Kendimi kötü hissettiğimde daha iyi hissetmem için yapabileceğim hiçbir şey olmadığına inanırım.					
13. Kendimi kötü hissettiğimde böyle hissettiğim için kendimden rahatsız olurum.					
14. Kendimi kötü hissettiğimde kendimle ilgili olarak çok fazla endişelenmeye başlarım.					
15. Kendimi kötü hissettiğimde başka bir şey düşünmekte zorlanırım.					
16. Kendimi kötü hissettiğimde duygularım dayanılmaz olur.					

Grup Programı Geri Bildirim Formu

Lütfen aşağıdaki derecelendirme sistemini kullanarak verilen ifadeleri puanlayınız.

Kesinlikle katılmıyorum (1)	Çoğunlukla katılmıyorum (2)	Ne katılıyorum ne katılmıyorum (3)	Çoğunlukla katılıyorum (4)	Kesinlikle katılıyorum (5)

Grup programının….

1. organizasyonu başarılıydı.	(1)	(2)	(3)	(4)	(5)
2. hedefleri açıktı.	(1)	(2)	(3)	(4)	(5)
3. oturum sayısından memnundum.	(1)	(2)	(3)	(4)	(5)

Not: Oturum sayısından memnun değilseniz; lütfen kaç oturum olmasını tercih ederdiniz yazınız…………………………………………………………………………………..

Grup programı süreci boyunca sunulan bilgiler…

4. net ve anlaşılırdı.	(1)	(2)	(3)	(4)	(5)
5. öğreticiydi.	(1)	(2)	(3)	(4)	(5)
6. kilom ile ilgili yaşadığım zorluklar konusunda faydalıydı.	(1)	(2)	(3)	(4)	(5)
7. beden şeklim ile ilgili yaşadığım zorluklar konusunda faydalıydı.	(1)	(2)	(3)	(4)	(5)

Grup programı süreci boyunca yapılan aktiviteler/ödevler……

8. öğreticiydi.	(1)	(2)	(3)	(4)	(5)
9. eğlenceliydi.	(1)	(2)	(3)	(4)	(5)
10. kilom ile ilgili yaşadığım zorluklar konusunda faydalıydı.	(1)	(2)	(3)	(4)	(5)
11. beden şeklim ile ilgili yaşadığım zorluklar konusunda faydalıydı.	(1)	(2)	(3)	(4)	(5)

Grupta tüm katılımcılara……

12. eşit vakit ayrıldı.	(1)	(2)	(3)	(4)	(5)
13. fikirleri soruldu ve söz hakkı verildi.	(1)	(2)	(3)	(4)	(5)

Grup programının yürütücüsü / terapisti…

14. konusuna hakim ve istekliydi.	(1)	(2)	(3)	(4)	(5)
15. katılımcılara doğru ve yapıcı geri bildirimler verdi.	(1)	(2)	(3)	(4)	(5)
16. net ve anlaşılır bir dil kullandı.	(1)	(2)	(3)	(4)	(5)

Psikoeğitim grubu ile ilgili olarak…..

<u>en sevdiğiniz özellikler:</u>

<u>en sevmediğiniz özellikler:</u>

Bir arkadaşınıza bu psikoeğitim grubuna katılmasını tavsiye eder misiniz?

Paylaşmak istediğiniz geri bildirimlerinizi lütfen aşağıya yazınız.

Appendix 3: Ethical Approval (In Turkish)

T.C.
İSTANBUL AREL ÜNİVERSİTESİ REKTÖRLÜĞÜ

Sayı : 69396709-200
Konu : Etik Kurul Kararları

Sayın Arş. Gör. Başak İNCE

Üniversitemiz Etik Kurulu'nun 20/05/2019 tarih ve 2019/03 sayılı toplantısında alınan karar aşağıda sunulmuştur.

Gereğini bilgilerinize rica ederim.

e-imzalıdır
Prof. Dr. Ali Argun KARACABEY
Rektör (V.)

20/05/2019 tarih ve 2019/03 Sayılı Etik Kurulu kararı:

KARAR NO-19: Üniversitemiz Fen-Edebiyat Fakültesi Psikoloji Bölümü öğretim elemanlarından **Arş. Gör. Başak İNCE'nin** "Yeme Bozuklukları Geliştirme Riski Olan Üniversite Öğrencilerine Yönelik Yeme Bozukluklarını Önleme Programının Etkiliğinin Sınanması" isimli çalışması görüşüldü. Yapılan görüşmeler sonucunda; Arş. Gör. Başak İNCE'nin çalışmasıyla ilgili Fen-Edebiyat Fakültesi Psikoloji Bölümü öğretim üyelerinden Prof. Dr. Yılmaz ÖZAKPINAR'ın de görüşü doğrultusunda söz konusu projenin uygun olduğuna oy birliği ile karar verildi.

Türkoba Mahallesi Erguvan Sokak No:26 / K 34537 Tepekent - Büyükçekmece/İSTANBUL (www.arel.edu.tr)
Aynur EKEN (Yazı İşleri Memuru) aynureken@arel.edu.tr
Tel: +90 850 8502735 Fax: +90 212 860 04 81
Evrakın elektronik imzalı suretine https://e-belge.arel.edu.tr adresinden b466c13b-9d11-4d06-ba0b-51c132c17f93 kodu ile erişebilirsiniz.
Bu belge 5070 sayılı Elektronik İmza Kanunu'na uygun olarak Güvenli Elektronik İmza ile imzalanmıştır.

Appendix 4: Correlation Tables

Table 1

Correlations among outcome measures in all sample in Study 1

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EDEQ_Res	1												
2. EDEQ_EC	.71**	1											
3. EDEQ_SC	.66**	.77**	1										
4. EDEQ_WC	.68**	.77**	.90**	1									
5. EDEQ_Total	.85**	.89**	.93**	.93**	1								
6. EAT	.54**	.53**	.54**	.54**	.60**	1							
7. BISQ	-.17**	-.29**	-.49**	-.40**	-.38**	-.22**	1						
8. ThinLowInt	.46**	.51**	.61**	.59**	.60**	.48**	-.26**	1					
9. Musc	.11**	.08**	.05*	.06*	.08**	.10**	.03	.07**	1				
10. GenAtr	.28**	.32**	.42**	.38**	.39**	.28**	-.17**	.39**	.20**	1			
11. FamPres	.31**	.41**	.49**	.49**	.47**	.27**	-.24**	.31**	.02	.12**	1		
12. PeerSOPres	.32**	.45**	.52**	.51**	.50**	.32**	-.28**	.34**	.11**	.15**	.72**	1	
13. MedPres	.30**	.35**	.47**	.42**	.43**	.33**	-.29**	.35**	.03	.28**	.35**	.42**	1

Note. N= 1584. EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; EAT: Eating Attitudes Test – 40; BISQ: Body Image Satisfaction Questionnaire; ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 2

Correlations among outcome measures in female students in Study 1

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1. EDEQ_Res	1												
2. EDEQ_EC	.71**	1											
3. EDEQ_SC	.67**	.78**	1										
4. EDEQ_WC	.69**	.78**	.91**	1									
5. EDEQ_Total	.85**	.89**	.93**	.94**	1								
6. EAT_Total	.56**	.56**	.58**	.57**	.63**	1							
7. BISQ	-.21**	-.34**	-.52**	-.44**	-.42**	-.27**	1						
8. ThinLowInt	.47**	.51**	.61**	.59**	.61**	.51**	-.30**	1					
9. Musc	.15**	.15**	.10**	.12**	.14**	.18**	.03	.21**	1				
10. GenAtr	.29**	.34**	.45**	.40**	.41**	.33**	-.21**	.46**	.19**	1			
11. FamPres	.34**	.43**	.52**	.52**	.50**	.30**	-.26**	.33**	0.04	.17**	1		
12. PeerSOPres	.36**	.48**	.56**	.54**	.54**	.34**	-.32**	.35**	.09**	.20**	.74**	1	
13. MedPres	.31**	.35**	.47**	.42**	.43**	.34**	-.31**	.32**	.14**	.32**	.35**	.42**	1

Note. N= 1195. EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; EAT: Eating Attitudes Test – 40; BISQ: Body Image Satisfaction Questionnaire; ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 3

Correlations among outcome measures in male students in Study 1

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EDEQ_Res	1												
2. EDEQ_EC	.72**	1											
3. EDEQ_SC	.64**	.73**	1										
4. EDEQ_WC	.64**	.73**	.87**	1									
5. EDEQ_Total	.86**	.88**	.91**	.91**	1								
6. EAT_Total	.43**	.36**	.38**	.39**	.45**	1							
7. BISQ	-.04	-.12*	-.36**	-,28**	-.22**	-.05	1						
8. ThinLowInt	.40**	.44**	.52**	,52**	.57**	.36**	-.12*	1					
9. Musc	.21**	.16**	.21**	.17**	.21**	.14**	-.03	.17**	1				
10. GenAtr	.21**	.20**	.31**	.28**	.28**	.11*	-.02	.12*	.48**	1			
11. FamPres	.21**	.34**	.41**	.40**	.38**	.19**	-.18**	.26**	.01	-.05	1		
12. PeerSOPres	.23**	.39**	.48**	.48**	.44**	.30**	-.20**	.40**	.09	.03	.68**	1	
13. MedPres	.21**	.30**	.39**	.32**	.34**	.26**	-.21**	.34**	.04	.05	.39**	.51**	1

Note. N= 385. EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; EAT: Eating Attitudes Test – 40; BISQ: Body Image Satisfaction Questionnaire; ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 4

Correlations among outcome measures in students who approved in Study 1

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EDEQ_Res	1												
2. EDEQ_EC	.70**	1											
3. EDEQ_SC	.67**	.79**	1										
4. EDEQ_WC	.68**	.78**	.91**	1									
5. EDEQ_Total	.85**	.89**	.94**	.93**	1								
6. EAT_Total	.57**	.56**	.57**	.57**	.63**	1							
7. BISQ	-.18**	-.33**	-.50**	-.43**	-.40**	-.27**	1						
8. ThinLowInt	.48**	.55**	.63**	.61**	.63**	.49**	-.30**	1					
9. Musc	.12**	.07*	.03	.04	.07*	.10**	.08*	.08*	1				
10. GenAtr	.30**	.33**	.45**	.41**	.41**	.32**	-.18**	.44**	.20**	1			
11. FamPres	.29**	.41**	.49**	.49**	.46**	.26**	-.25**	.32**	-.00	.13**	1		
12. PeerSOPres	.31**	.45**	.52**	.51**	.49**	.32**	-.31**	.36**	.10**	.15**	.73**	1	
13. MedPres	.29**	.35**	.46**	.41**	.42**	.36**	-.30**	.37**	.03	.30**	.34**	.43**	1

Note. N= 934. EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; EAT: Eating Attitudes Test – 40; BISQ: Body Image Satisfaction Questionnaire; ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 5

Correlations among outcome measures in students who did not approve in Study 1

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EDEQ_Res	1												
2. EDEQ_EC	.73**	1											
3. EDEQ_SC	.65**	.74**	1										
4. EDEQ_WC	.68**	.76**	.89**	1									
5. EDEQ_Total	.86**	.88**	.92**	.93**	1								
6. EAT_Total	.46**	.45**	.48**	.48**	.52**	1							
7. BISQ	-.13**	-.22**	-.45**	-.35**	-.33**	-.11**	1						
8. ThinLowInt	.40**	.44**	.56**	.54**	.54**	.46**	-.19**	1					
9. Musc	.09*	.08	.08	.08*	.09*	.10*	-.05	.05	1				
10. GenAtr	.24**	.30**	.38**	.34**	.35**	.21**	-,15**	.33**	.19**	1			
11. FamPres	.35**	.41**	.50**	.50**	.49**	.29**	-.21**	.29**	.07	.11**	1		
12. PeerSOPres	.34**	.43**	.52**	.51**	.51**	.33**	-.25**	.31**	.12**	.15**	.71**	1	
13. MedPres	.31**	.37**	.48**	.42**	.44**	.28**	-.28**	.30**	.02	.24**	.37**	.39**	1

Note. N= 620. EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; EAT: Eating Attitudes Test – 40; BISQ: Body Image Satisfaction Questionnaire; ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 6

Correlations among outcome measures in experimental group condition in Study 2

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EDEQ_Res	1												
2. EDEQ_EC	.28	1											
3. EDEQ_SC	.32	.66**	1										
4. EDEQ_WC	.48	.70**	.72**	1									
5. EDEQ_Total	.69**	.79**	.82**	.90**	1								
6. BSQ	.30	.60*	.75**	.66**	.70**	1							
7. DERS	-.09	.06	.07	-.13	-.04	.24	1						
8. ThinLowInt	.55*	.27	.28	.22	.43	.56*	.29	1					
9. Musc	-.45	-.07	-.18	-.30	-.33	-.20	-.02	-.29	1				
10. GenAtr	.10	.23	.00	.26	.19	-.18	-.09	.11	.10	1			
11. FamPres	-.12	.32	.59*	.25	.30	.30	-.12	-.18	.10	-.13	1		
12. PeerSOPres	-.28	.40	.31	.25	.18	.23	-.24	-.17	.17	.16	.77**	1	
13. MedPres	-.00	.51*	.47	.56*	.46	.58*	-.22	-.04	-.28	-.08	.43	.52*	1

Note. N= 17 ; EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; BSQ: Body Shape Questionnaire; DERS: Difficulties in Emotion Regulation Scale ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 7

Correlations among outcome measures in active control group condition in Study 2

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1. Pre_EDEQ_Res	1												
2. Pre_EDEQ_EC	.77**	1											
3. Pre_EDEQ_SC	.83**	.87**	1										
4. Pre_EDEQ_WC	.67*	.90**	.92**	1									
5. Pre_EDEQ_Total	.89**	.93**	.97**	.92**	1								
6. Pre_BSQ	.79**	.90**	.92**	.86**	.92**	1							
7. Pre_DERS	.83**	.79**	.80**	.67*	.82**	.88**	1						
8. Pre_ThinLowInt	.65*	.66*	.88**	.77**	.80**	.82**	.75**	1					
9. Pre_Musc	.12	.21	.23	.13	.16	.31	.43	.16	1				
10. Pre_GenAtr	.47	.41	.72**	.60*	.60*	.73**	.58*	.86**	.25	1			
11. Pre_FamPres	.44	.54	.66*	.52	.58*	.64*	.61*	.81**	.30	.71*	1		
12. Pre_PeerSOPres	.65*	.65*	.54	.43	.59*	.73**	.76**	.46	.43	.38	.50	1	
13. Pre_MedPres	.47	.56	.71*	.64*	.63*	.75**	.62*	.73**	.31	.83**	.68*	.31	1

Note. N= 12 ; EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; BSQ: Body Shape Questionnaire; DERS: Difficulties in Emotion Regulation Scale ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Table 8

Correlations among outcome measures in wait-list control group condition in Study 2

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Pre_EDEQ_Res	1												
2. Pre_EDEQ_EC	.39	1											
3. Pre_EDEQ_SC	.05	.61	1										
4. Pre_EDEQ_WC	.14	.75*	.90**	1									
5. Pre_EDEQ_Total	.45	.87**	.86**	.93**	1								
6. Pre_BSQ	.06	.62	.89**	.93**	.84**	1							
7. Pre_DERS	.01	.25	.38	.62	.43	.68*	1						
8. Pre_ThinLowInt	.20	.77*	.67*	.68*	.75*	.69*	.18	1					
9. Pre_Musc	-.03	.28	.02	.08	.11	.18	.16	-.09	1				
10. Pre_GenAtr	.23	.59	.27	.43	.49	.52	.62	.47	.33	1			
11. Pre_FamPres	-.32	.16	.59	.42	.31	.42	.17	.34	.11	-.02	1		
12. Pre_PeerSOPres	-.63	.01	.57	.36	.16	.41	.16	.23	.03	-.02	.89**	1	
13. Pre_MedPres	-.05	.46	.44	.62	.49	.67*	.82**	.17	.50	.76*	.08	.18	1

Note. N= 9 ; EDEQ: Eating Disorders Examination Questionnaire; EDEQ_Res: Restraint Eating; EDEQ_EC: Eating Concern; EDEQ_SC: Shape Concern; EDEQ_WC: Weight Concern; EDEQ_Total: Total score; BSQ: Body Shape Questionnaire; DERS: Difficulties in Emotion Regulation Scale ThinLowInt: Thin/Low Body Fat Internalization; Musc: Muscular Internalization; GenAtr: General Attractiveness Internalization; FamPres: Family Pressures; PeerSOPres: Peer / Significant Other Pressures; MedPres: Media Pressures; ** $p < .01$, * $p < .05$

Appendix 5: Attendance Certificates (In Turkish)