

RESEARCH

Separation individuation process in adolescents with eating disorders and its impact on resilience

Yeme bozukluğu olan ergenlerde ayrışma bireyselleşme süreci ve bu özelliklerin dayanıklılığa etkisi

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Abstract

Purpose: The present study aimed to examine the relationship between eating disorders, resilience and the separation-individuation (SI) process in adolescents.

Materials and Methods: The study included 49 adolescents with eating disorders and 126 adolescents as a control group. Control group did not have any psychiatric diagnosis or were diagnosed with conditions categorized under "neurodevelopmental disorders". K-SADS-PL-DSM-5 diagnostic interview was conducted with the case group. All adolescents in the study filled in self-reported questionnaires.

Results: When the adolescents in the case group were compared with the control group; having divorced parents, caregiving by relatives, having a history of anxiety and mood disorders comorbidity, parental eating attitude problems, history of traumatic experiences were found to be higher and school achievement was found to be lower. In the case group, separation-individuation subscales, including "need denial", "separation anxiety", "engulfment anxiety", "teacher enmeshment", and expectancy" were found to be higher compared to the control group. Resilience scores in the case group (37.00) were found to be significantly lower than those in the control group (48.00). In addition, there was a positive correlation between resilience scores and 'nurturance seeking' (r=0.364, p=0.01), and a negative correlation between resilience scores and 'rejection expectancy' (r=-0.447, p<0.01) and 'engulfment anxiety' (r=-0.283, p=0.48).

Conclusion: Our study found associations between eating disorders and adolescents' exposure to adverse life events, unhealthy navigation of separation-individuation processes, and lower levels of psychological resilience. Approaches to increase resilience can reduce the risk of psychopathology. It is also believed that providing

Öz

Amaç: Çalışmamızda ayrılma-bireyleşme özelliklerinin ve psikolojik dayanıklılığın yeme bozukluğu ile ilişkisini incelemek amaçlanmıştır.

Gereç ve Yöntem: Çalışmamıza yeme bozukluğu tanılı, 12 – 18 yaş arası 49 ergen ve aynı yaşlar arasında nörogelişimsel bozukluk tanılı veya herhangi bir psikopatoloji saptanmayan 126 ergen dahil edilmiştir. Olgu grubu ile K-SADS-PL-DSM-5 tanı görüşmesi yapılmıştır. Ergenlerden özbildirim ölçeklerini doldurmaları istenmistir.

Bulgular: Olgu grubundaki ergenlerde kontrol grubuna göre; boşanmış anne-babaya ve parçalanmış aileye sahip olma, akraba tarafından bakım verilme, anksiyete ve duygudurum bozuklukları eş tanısının olma, anne ve babalarında yeme tutum sorunları, travmatik yaşantı öyküsü oranı daha yüksek, okul başarısı ise daha düşük bulunmuştur. Yeme bozukluğu tanısı bulunan ergenlerin ayrılma-bireyleşme alt ölçeklerinden; ihtiyacı inkar etme, ayrılma anksiyetesi, yutulma anksiyetesi, öğretmene yapışma ve reddedilme beklentisi puanları kontrol grubundaki ergenlere göre daha yüksek saptanmıştır (). Psikolojik dayanıklılık puanları ise olgu grubunda (37.00) kontrol grubuna (48.00) göre daha düşük saptanmıştır. Avrılma-birevlesme alt ölceklerinden bakım arama (r=0.364, p=0.01) ile dayanıklılık arasında pozitif yönde; reddedilme beklentisi (r=-0.447, p<0.01) ve yutulma anksiyetesi (r=-0.283, p=0.48) ile dayanıklılık arasında negatif yönde ilişki gözlenmiştir.

Sonuç: Çalışmamızda ergenlerin olumsuz yaşam olaylarına maruz kalmasının, ayrılma-bireyleşme sürecinde problem yaşamalarının ve dayanıklılık düzeylerinin düşük olmasının yeme bozukluğu ile ilişkili olduğu bulunmuştur. Yeme bozukluklarının gelişimini önlemek için klinik görüşmelerde çocukluk döneminde meydana gelen olumsuz yaşam olaylarının fark edilmesi, ergenler ve

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Received: 27.09.2024 Accepted: 11.03.2025

informative psychological counseling services to families, and offering seminars on healthy separation-individuation processes may also prove beneficial. In future research, conducting longitudinal studies would be beneficial for establishing causal relationships among variables.

Keywords: Separation-individuation, adolescents, psychological resilience, eating disorders, negative life events

INTRODUCTION

Eating disorders are unhealthy eating behaviors characterized by self-identification with unrealistic body weight standards for beauty, negative body image causing emotional distress and self-regulation difficulties, over- or under-eating, and inappropriate weight control attitudes¹. It has been reported that 13% of the young population had received at least one diagnosis of an eating disorder by the age of 20, with more than 27% of girls aged 12–18 years exhibiting unhealthy eating attitudes and behaviors^{2,3}.

Genetic, familial, psychoanalytic, psychological, developmental and sociocultural factors play a role in the etiology of eating disorders. Evidence for genetic factors has emerged. Twin studies have demonstrated that anorexia nervosa (AN), bulimia nervosa (BN), and disordered eating behaviors are moderately to highly heritable⁴. A family history of binge eating behavior, loss of a parent and a fragmented family structure are also considered among the social and environmental risk factors for eating disorders⁵. Some family dynamic characteristics have also been highlighted by studies into eating disorders. These factors include interventionism, overprotectiveness, rigidity and inadequacy in conflict resolution⁶. In addition to these factors, it has been suggested that it may be useful to focus on attachment and separationindividuation in the parent-child relationship when examining eating disorders in adolescents⁷. The separation-individuation theory was defined by Mahler, and she proposed that the initial infantmother integrity, which begins as a symbiotic relationship, gradually separates over time, forming its own identity. Disruptions in the separationindividuation process can lead to crises and difficulties in identity formation in later stages of life8. Some theorists have suggested that disruptions or pathological fixations in the separation-individuation process may contribute to the onset of eating disorders during adolescence^{9,10,11}.

ebeveynler ile ayrılma-bireyleşme sürecini sağlıklı atlatmaları açısından çalışılması ve dayanıklılığı arttırmaya yönelik girişimlerde bulunulmasının faydalı olabileceği düşünülmektedir. Gelecekteki araştırmalarda boylamsal çalışmaların yapılması neden-sonuç ilişkisi kurabilmek için faydalı olacaktır.

Anahtar kelimeler: Ayrılma-bireyleşme, ergenler, psikolojik dayanıklılık, yeme bozuklukları, olumsuz yaşam olayları

Psychological factors associated with eating disorder (ED) development include excessive perfectionism, low self-esteem and low self-efficacy and the concept of psychological resilience and its deficit have also been found to be associated with eating disorders¹². The American Psychological Association defines "resilience" as the ability to adapt to challenges, trauma, and other stressors¹³. When faced with challenging life circumstances, resilient individuals prefer to propose solutions and make plans rather than exhibiting avoidance behavior. In a study conducted by Calvete et al. (2018), wherein psychological resilience factors, such as "acceptance of self and life" and "personal competence," were examined, it was found that improving resilience alleviated the symptoms of eating disorders¹². A study by Robert et al. found that endurance was associated with fewer symptoms of eating disorder and a higher chance of recovery in both cross-sectional and longitudinal analyses¹⁴. In the literature, studies into autonomy and psychological resilience have reported a positive correlation between these two variables, so that as autonomy increases, psychological resilience also increases, and that the individual's autonomy has an effect on the high level of psychological resilience when taking initiatives to address the problems $encountered ^{15,16,17,18}.\\$

Although there are associations between separation-individuation and mental health problems, such as depression, aggression, criminal behavior, and self-harming behavior, there are limited studies examining the connection between eating disorders and the separation-individuation process. Furthermore, the studies have mostly been conducted with adult populations^{19,20,21}. Furthermore, there are very few published studies on psychological resilience in people with eating disorders. Detailing the positive or negative factors in this field and elaborating on the relationship with eating disorders will be beneficial for identifying preventive interventions and effective treatment practices¹¹.

The aim of this study was to examine the relationship between eating disorders and the separationindividuation process and resilience in adolescents aged 12-18 years. This study proposes four main hypotheses. First, sociodemographic characteristics are expected to differ significantly between individuals with eating disorders and those in the control group. Second, a negative significant relationship is anticipated between healthy separation-individuation and the diagnosis of eating disorders in adolescents. Third, individuals diagnosed with eating disorders are predicted to have significantly lower psychological resilience levels compared to the control group. Finally, a positive significant relationship is expected between healthy separation-individuation and resilience adolescents.

MATERIALS AND METHODS

Sample

The study was conducted at the Child and Adolescent Psychiatry Clinics of Kocaeli University Faculty of Medicine. Patient information is stored in files at the institution, and only physicians have access to these files. A researcher who was suitably qualified to evaluate patients conducted the assessments in the study. Approval for the study was received from the Kocaeli University ethics committee on 01/09/2022 with the decision number Non-Interventional Clinical Research Ethics Committee-2022/14.01. Informed consent was obtained from the volunteers before participation in the study The sample size for the study was calculated using G*Power 3.1.9.2 (Kiel University, Kiel, Germany), considering an error margin of 0.05, a power of 0.95, and an effect size of 0.94 to detect a statistically significant difference between the two groups based on the relevant scale score. Consequently, a total of 175 volunteers were enrolled in the study, with 49 participants in the case group and 126 participants in the control group.

The study included 49 adolescents aged 12–18 years who presented to the Child and Adolescent Psychiatry Clinics of Kocaeli University Faculty of Medicine, who did not meet the exclusion criteria, and agreed to participate in the study. The exclusion criteria for the study included the following: additional diagnoses of neurological disorders, organic brain damage, autism spectrum disorder, schizophrenia or mental retardation, illiteracy, and

hearing or speech impairments that could potentially disrupt communication. Patients presenting with restricted eating, vomiting behavior, or symptoms related to weight were assessed with the Kiddie Schedule for Affective Disorders and Schizophrenia - Present and Lifetime Version (K-SADS-PL) by a researcher with a practitioner certificate in K-SADS to review their psychiatric diagnoses. Through clinical interviews conducted by the researcher, 49 adolescent cases diagnosed with AN, BN, or other specified feeding or eating disorders (OSFED) were included in the study group out of a total of 80 patients. The control group consisted of 126 adolescents from the same age group out of a total of 150 adolescents who visited the Child and Adolescent Psychiatry Clinics at Kocaeli University Faculty of Medicine. Adolescents with psychiatric diagnoses other than attention deficit hyperactivity disorder (ADHD) were not included in the study. These individuals did not have any psychiatric diagnosis or were diagnosed with ADHD. There are studies reporting that separation-individuation process is associated with borderline personality disorder, anxiety, depression, conduct disorder and suicide risk. However, to the best of our knowledge, no study showing a one-to-one relationship with ADHD has been published^{22,23,24}. In addition, since ADHD is a neurodevelopmental disorder and published studies have reported that parent-child interactions in the preschool period do not cause ADHD25, it was thought that it would not be problematic to include this diagnosis in the control group.

Measures

The adolescents in our study group were assessed using the K-SADS-PL-DSM-5 by a child psychiatrist. Adolescents in both the case and control groups were requested to complete a sociodemographic data form, the Separation Individuation Test For Adolescents (SITA), the Eating Disorder Examination Questionnaire (EDE-Q) and the Child and Youth Resilience Measure (CYRM).

Sociodemographic and health characteristics

Sociodemographic characteristics including age, gender, number of siblings, academic performance, family type, primary caregiver during the preschool period, parental educational level, parental employment status, parental eating attitude issues, history of psychiatric illness in the family and the adolescent's history of negative life events were collected.

Eating Disorder Examination Questionnaire (EDE-Q)

The EDE-Q, designed by Fairburn and Beglin (1994), reflects the severity of psychopathology consisting of four subscales, which are dietary restraint, eating concerns, concerns about weight and concerns about shape²⁶. The Turkish version of the EDE-Q has been demonstrated to be a reliable and valid measure for adolescents aged between 12 and 18 years²⁷. The scale consists of 28 questions. The number of questions and subscales in the Turkish version remained the same as in the original. The severity of eating disorders over the past four weeks is indicated on a seven-point Likert scale ranging from 0 to 6. When calculating the subscale score, the scores of the questions related to that subscale are summed and divided by the total number of questions in the subscale. For the total score, the scores of the four subscales are summed and divided by the number of subscales. The evaluation is interpreted such that higher scores indicate increased severity of eating disorder.

Separation Individuation Test for Adolescents (SITA)

The SITA was developed by Levine et al. in 1986 and assesses the separation-individuation process of adolescents²⁸. In the scale, consisting of 65 questions, each question is rated on a 5-point Likert scale from "1 (strongly agree)" to "5 (strongly disagree)". The scores for each subscale are calculated by summing the scores of the questions associated with that subscale. The scale has eight subscales measuring separation anxiety, engulfment anxiety, nurturance seeking, peer enmeshment, teacher enmeshment, practice-mirroring, need denial and rejection expectancy. Separation anxiety describes individuals who fear losing their connections with significant figures in their lives. Engulfment anxiety refers to individuals who fear close relationships and perceive them as a threat to their independence. Nurturance seeking characterizes individuals with a strong need to form attachments. Clinging to friends defines individuals who seek enmeshed peer relationships, while teacher enmeshment describes those with a need for close relationships with teachers. Practicemirroring represents individuals with narcissistic tendencies. Need denial characterizes individuals who reject their need for attachment, and rejection expectancy refers to individuals who anticipate being rejected by significant figures in their lives. The

Turkish validity and reliability study was conducted in high school and university students, by Bildik et al.²⁹.

Child and Youth Resilience Measure (CYRM)

The original 28-item version of the scale was developed by Liebenberg et al. in 2012³⁰. The short form of the scale, also developed by Liebenberg et al., consists of a total of 12 items. All items are rated on a 5-point scale from "1 = does not describe me at all" to "5 = describes me a lot"³¹. Higher scores indicate greater presence of resilience processes. The Turkish validity and reliability study of the scale for youths aged 11-17 years was conducted by Arslan (2015)³².

Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version, DSM-5-Turkish Adaptation (K-SADS-PL-DSM-5-T)

The K-SADS-PL is a semi-structured interview form developed by Kaufman et al. to determine psychopathologies of children and adolescents³³. In 2016, the instrument was updated according to the DSM-5 diagnostic criteria and renamed as K-SADS-PL-DSM-5³⁴. This semi-structured interview, administered to both children/adolescents and their caregivers, includes diagnostic and sub-diagnostic criteria for eating disorders, mood disorders, anxiety disorders, and behavioral disorders, as well as a general assessment scale for children. The Turkish validity and reliability was conducted by Ünal et al. in 2019³⁵, resulting in the K-SADS-PL-DSM-5-T.

Statistical analysis

Statistical analysis was performed using the SPSS, version 20.0 (IBM Corp., Armonk, NY, USA). The G*Power version 3.1.9.2 (Kiel University, Kiel, Germany) software package was used to determine the power/sample size of the study The conformity of the data to normal distribution was assessed using the Kolmogorov-Smirnov (K-S) test. Numeric variables (age, body mass index [BMI], scale scores of each group) are presented as median (25th - 75th percentile) and frequency (percentiles). Data following a normal distribution are presented as mean ± standard deviation. Differences between groups for non-normally distributed numeric variables were compared using the Mann-Whitney U test, Kruskal-Wallis one-way analysis of variance, and Dunn's multiple comparison test. To assess differences between groups, comparisons related to categorical variables (such as gender, number of siblings, family integrity, family type, caregiver,

parents' education level, employment status, eating attitude problems, and school performance level) were made using Fisher's Exact chi-square test, Yates' chi-square test, and Monte Carlo chi-square test. In addition, logistic regression analysis was used to assess the influence of the subscales of the SITA and resilience on eating disorders. Pearson correlation coefficients were used to assess the relationship between SITA and resilience measure scores. A p-value of less than 0.05 was considered statistically significant.

RESULTS

The study included a total of 175 adolescents and of these, 49 were included in the case group and 126 in the control group. The results of the K-SADS-PL

scale administered to the 49 participants in the case group showed that 16 (32.6%) were diagnosed with AN, 23 (46.9%) with BN, and 10 (20.4%) individuals with OSFED. The mean age was 15.2±1.5 years in the case group and 14.9±1.5 years in the control group, and no significant difference was found between the two groups.

When examining the eating behaviors of fathers, due to the absence of behaviors such as caloric calculation, vomiting and restrictive eating, the healthy group and the binge eating behavior group were compared in terms of their calculations. When examining the eating behaviors of mothers, due to the absence of behaviors such as caloric calculation, vomiting and binge eating, the healthy group and the restrictive eating behavior group were compared in terms of their calculations.

Table 1. Sociodemographic characteristics of participants

Variable		Case	Control (n=126)	p	Effect
		(n=49)	(0 ()		size
		n (%)	n (%)		
Sex	Female	46 (93.9)	78 (61.9)	<0.001*	d=0.0872
					η2=0.0019
	Male	3 (6.1)	48 (38.1)		
Parents' marital status	Married	33 (67.3) b	109 (86.5) a	0.01*	d=0.1001
					$\eta 2 = 0.0025$
	Divorced	14 (28.6) a	16 (12.7) b		
	Parental loss	2 (4.1)a	1 (0.8)a		
Family structure	Nuclear	31 (63.3)b	108 (85.7)a	0.005*	d=0.1003
		, ,	,		$\eta 2 = 0.0025$
	Extended	2 (4.1) ^b	2 (1.6) ^b		
	Fragmented	16 (32.6) ^a	16 (12.7)b		
Academic achievement	High	20 (40.8)a	45 (35.7)a	0.038*	d=0.1017
level	Medium	14 (28.6) a	60 (47.6)b		$\eta 2 = 0.0026$
	Low	15 (30.6)b	21 (16.7)a		'
	None	26 (53.1) ^a	53 (42.1) ^a	<0.001*	d=0.8294
Psychiatric comorbidity	ADHD	6 (12.2) ^a	59 (46.8)b		η2=0.1467
-	Anxiety	8 (16.3) ^a	10 (7.9)a		'
	disorders	- (/	- (/		
	Mood disorders	9 (18.4) ^b	4 (3.2)a		
Primary caregiver during	Parents	44 (89.8)	124 (98.4)	0.019*	d=0.3345
infancy	Grandparents	5 (10.2)	2 (1.6)		$\eta 2 = 0.0272$
Psychiatric illness in the	Absence	26 (53.1)	104 (82.5)	<0.001*	d=0.0993
family	Presence	23 (46.9)	22 (17.5)		η2=0.0025
Father's eating behaviors	Healthy	46 (93.9)	126 (100.0)	0.021*	<u> </u>
_	Binge eating	3 (6.1)	0 (0.0)		
Mother's eating behaviors	Healthy	44 (89.8)	126 (100.0)	0.001*	-
	Restrictive eating	5 (10.2)	0 (0.0)		

Chi-Square Tests; *p<0.05; a-b: There is no difference between findings with the same letter; ADHD: Attention Deficit Hyperactivity Disorder.

No significant difference was found between the case and control groups in terms of number of siblings, father's education-employment status, and mother's education-employment status variables (p>0.05). The variables for which significant differences between

the case and control groups were found are presented in Table 1.In our cohort, the total EDE-Q scores and subscale scores were significantly higher in the case group compared to those in the control group (p<0.001) (Table 2).

Table 2. Comparison of the EDE-Q scores between case and control groups

EDE-Q Scores	Group	Median (25p-75p)	p	Effect size
Restraint	Case	26.00 (19.50-28.00)	<0.001*	d=2.345
	Control	1.00 (0.00-4.00)	U: 58.000	$\eta 2 = 0.579$
Eating concerns	Case	20.00 (16.00-24.00)	<0.001*	d=2.404
	Control	1.00 (0.00-3.00)	U: 27.000	$\eta 2 = 0.591$
Body shape concerns	Case	38.00 (34.00-43.00)	<0.001*	d=2.307
	Control	5.00 (1.00-9.00)	U: 79.000	$\eta 2 = 0.571$
Weight concerns	Case	24.00 (21.00-26.00)	<0.001*	d=2.362
	Control	3.00 (1.00-6.00)	U: 49.000	$\eta 2 = 0.582$
Total	Case	107.00 (93.00-119.00)	<0.001*	d=2.297
Total	Control	12.00 (3.00-23.00)	U: 84.500	$\eta 2 = 0.569$

Mann–Whitney U Test; *p<0.05; EDE-Q: Eating Disorder Examination Questionnaire.

Table 3. Comparison of the SITA scores between case and control groups

SITA Scores	Group	Median (25p-75p)	p	Effect size
Separation anxiety	Case	28.0 (24.5-34.5)	<0.001*	d=0.965
	Control	20.0 (15.0-25.0)	U: 1356.500	$\eta 2 = 0.189$
Engulfment anxiety	Case	20.0 (17.0-24.5)	<0.001*	d=0.754
	Control	16.0 (12.0-20.0)	U:1682.500	$\eta 2 = 0.124$
Nurturance seeking	Case	17.0 (14.0-21.0)	0.319	d=0.151
	Control	19.0 (16.0-22.0)	U: 3386.000	η2=0.006
Peer enmeshment	Case	22.0 (18.5-27.0)	0.443	d=0.116
	Control	22.0 (17.0-25.2)	U: 2856.500	$\eta 2 = 0.003$
Teacher enmeshment	Case	17.0 (13.0-21.0)	0.013*	d=0.382
	Control	15.5 (11.0-18.0)	U: 2340.500	$\eta 2 = 0.035$
Practicing-mirroring	Case	33.0 (27.0-42.5)	0.984	d=0.003
	Control	34.5 (27.0-41.0)	U: 3093.000	η2=0
Need denial	Case	13.0 (9.5-15.0)	<0.001*	d=0.584
	Control	9.0 (7.0-12.0)	U: 1970.500	η2=0.079
Rejection expectancy	Case	34.0 (25.0-39.5)	<0.001*	d=1.269
	Control	19.0 (14.0-27.0)	U: 954.000	$\eta 2 = 0.287$

Mann–Whitney U Test; *p<0.05; SITA: Separation-Individuation Test of Adolescence.

In the case group, scores for the subscales of SITA, including "need denial", "separation anxiety", "engulfment anxiety", "teacher enmeshment", and "rejection expectancy" were significantly higher compared to the control group (p<0.001) (Table 3). The significantly elevated scores for "separation anxiety" and "rejection expectancy" in the case group

were found to be higher than those in the control group across all subgroups of eating disorders (p<0.05). The scores for "engulfment anxiety" were significantly higher in the AN (p=0.039) and BN (p=0.001) subgroups, "teacher enmeshment" scores were significantly higher in the BN (p=0.005) subgroup, and "need denial" scores were significantly

higher in the AN (p=0.025) and other specified feeding or eating disorders (OSFED) (p=0.020) subgroups compared to the control group (p<0.05). No significant difference was found between the

individual eating disorder subgroups (AN vs BN vs OSFED) in terms of subscales of SITA (p>0.05) (Table 4).

Table 4. SITA score results for case subgroups and control group

SITA Scores	Groups Median (25p-75p)				p	Effect
	Control	AN	BN	OSFED		size
Separation anxiety	20.00 (15.00-	27.00 (23.75-	28.00 (24.00-	30.50 (24.50-	<0.001 ^{a,b,c}	d=0.937
	25.00)	33.25)	35.00)	35.75)	H: 33.781	η2=0.18
Engulfment anxiety	16.00 (12.00-	21.00 (16.00-	21.00 (17.00-	19.50 (17.75-	<0.001 ^{a,b,c}	d=0.707
	20.00)	25.75)	25.00)	24.00)	H: 21.996	η2=0.111
Nurturance	19.00 (16.00-	19.00 (15.25-	15.00 (14.00-	21.00 (13.00-	0.111	d=0.268
seeking	22.00)	22.75)	19.00)	21.75)	H: 6.010	η2=0.018
Peer enmeshment	22.00 (17.00-	24.00 (20.25-	22.00 (17.00-	21.50 (17.50-	0.592	d=0.16
	25.25)	27.00)	27.00)	26.00)	H: 1.907	η2=0.006
Teacher	15.50 (11.00-	17.00 (14.50-	19.00 (16.00-	12.00 (6.75-	<0.001 ^{b,c,e}	d=0.608
enmeshment	18.00)	21.00)	22.00)	14.50)	H: 17.445	η2=0.084
Practicing-	34.50 (27.00-	33.00 (25.50-	32.00 (27.00-	34.00 (27.50-	0.940	d=0.249
mirroring	41.00)	46.50)	42.00)	45.25)	H: 0.400	η2=0.015
Need denial	9.00 (7.00-	13.00 (9.25-	11.00 (8.00-	13.00 (11.00-	<0.001 ^{b,c}	d=0.587
	12.00)	17.50)	14.00)	16.50)	H: 16.579	η2=0.079
Rejection expectancy	19.00 (14.00-	31.50 (25.00-	34.00 (29.00-	33.50 (24.50-	<0.001 ^{a,b,c}	d=1.238
	27.00)	40.075)	37.00)	39.25)	H: 50.365	η2=0.277

Kruskal Wallis; *p<0.05; AN: Anorexia Nervosa; BN: Bulimia Nervosa; OSFED: Other Specified Feeding or Eating Disorders; SITA: Separation-Individuation Test of Adolescence; a: There is a difference between control and AN; b: There is a difference between control and BN; c: There is a difference between AN and BN; e: There is a difference between AN and OSFED; f: There is a difference between BN and OSFED.

The median CYRM score of the adolescents in the case group was 37.00 (30.00–42.00) and 48.00 (43.00–53.00) in the control group (p<0.001). The median CYRM scores were found to be significantly higher in each of the eating disorder subgroups compared to the control group (p<0.001) but again no significant difference was found between the individual eating disorder subgroups.

When the subscales of SITA and CYRM were included in logistic regression analysis, 'rejection expectancy' and 'resilience' showed a significant effect. There was a 1.09-fold increase in 'rejection expectancy' (OR=1.088) and a 1.17-fold decrease in resilience (OR=0.855) that was associated with a risk of developing eating disorders (Table 5).

Table 5. The Effect of Rejection Expectancy and Resilience on Eating Disorders

Indonesials	ß*	Standart	D	Odds Ratio	CI (%95)	
Independent variable	þ.	Error		Higher Limit		
Rejection expectancy	0.084	0.043	0.049**	1.088	1.000	1.183
Resilience	-0.157	0.040	<0.001**	0.855	0.790	0.926

Logistic Regression Analysis; *β (Beta): Standardized Coefficient; **p <0.05; CI: Confidence Interval.

There was a significant moderate negative correlation between resilience measure scores and 'rejection expectancy' (r=-0.447, p<0.01) and a weak correlation between resilience measure scores and

'engulfment anxiety' (r=-0.283, p=0.48) subscale scores. Conversely, there was a moderate but positive correlation between resilience measure scores and 'nurturance seeking' (r=0.364, p=0.01) subscale scores.

DISCUSSION

In the present study, there was a higher proportion of female participants in the case group compared to the control group. In a study conducted by Herpertz et al., it was found that the diagnoses of AN, BN, and OSFED were more common among female adolescents aged 15-19 years compared to males³⁶. The higher prevalence of eating disorders among young females may be attributed to several factors, including greater social pressure based on their appearance, increased susceptibility to stress and trauma, and the idealization of thin body types in the media. The average age of our study group corresponds to middle adolescence. With regard to biological factors, puberty begins and ends about two years later in boys than in girls. Consistent with this, a review of four BN studies found that boys begin BN at a later age than girls³⁷. Also, one of the reasons for the majority of the group being female in our study may be the lack of physician awareness, the lack of prominent endocrine symptoms such as amenorrhea seen in women and not in men, and the fact that men consider eating disorders as a 'women's mental illness' and do not seek treatment38. In addition, studies have found that girls are more critical of their own eating behavior and are more concerned about their bodies and eating than boys^{39,40}.

We found significantly higher rates of divorce and parental loss among the parents of adolescents in the case group compared to the control group. Recent studies have found a higher rate of divorce in families of children exhibiting disordered eating behaviors⁴¹. Furthermore, the academic achievement of young individuals diagnosed with eating disorders was found to be significantly lower compared to the control group. This finding may be related to the frequent occurrence of comorbidities, including depression and anxiety disorders, which can affect academic achievement, as well as the presence of symptoms such as low body weight and fatigue in individuals diagnosed with eating disorders. In a study conducted by Bould et al. in 2018, disordered eating behaviors were found to be more common

among students in schools with poorer levels of achievement⁴².

Eating disorders often coexist with other psychiatric or medical conditions, which can complicate treatment. In a study conducted in Sweden in 2015 involving a large clinical sample, the most common comorbid disorders accompanying eating disorders patients were anxiety disorders (53%) and mood disorders (43%)⁴³. Similar to the literature, mood disorders were significantly higher in the case group compared to the control group in the present study. These results indicate the necessity of screening for other mental disorders, particularly mood disorders, in patients diagnosed with eating disorders in clinical practice.

It was observed that second-degree relatives, such as grandmothers and grandfathers, assumed the caregiver role more frequently in the case group. Hilde Bruch reported that eating disorders are associated with caregivers' inability to meet the infant's needs adequately in the early years of life⁴⁴. It was considered that caregivers such as grandparents may be inadequate in meeting the baby's needs, which could lead to difficulties in healthy attachment and, consequently, the development of an inadequate self-concept in the individual. Furthermore, these children may not have developed warm relationships with their parents and may have experienced communication problems, which could have served as a basis for the development of an eating disorder.

In a study conducted by Walsh et al. (2017), fathers serve as role models for their children by promoting healthy eating behaviors, which in turn influence their children's eating attitudes⁴⁵. Also in the present study, fathers of the case group were found to have significantly higher rates of binge eating episodes compared to the control group. The binge eating behavior of fathers may have been imitated by adolescents, leading to the development of similar eating behaviors, thereby creating a basis for the development of eating disorders.

In a study by Martini et al. conducted in 2020, it was found that children of mothers diagnosed with eating disorders have a higher likelihood of developing unhealthy eating behaviors and psychopathological conditions⁴⁶. In the present study and consistent with the literature, restrictive eating behavior in the case group mothers was found to be significantly more common than in the control group. It is believed that this finding may arise from mothers modeling

restricted food intake for their children, regulating the home eating environment according to their own eating behavior, adopting an intrusive approach to eating with their children, or experiencing negative emotions that affect parenting skills.

There was a significantly higher prevalence of traumatic events, sexual abuse, and emotional neglect history in our case group compared to the control group. Consistent with this, Brustenghi et al. found higher rates of trauma history and emotional dysregulation in young adults with eating disorders compared to the control group⁴⁷. In our study, a history of challenging life events in the first three years of life was significantly more common in the case group compared to the control group. Larsen et al. found that adverse life events, such as family breakdown and parental loss occurring during the first six years of life, increased the risk of BN and OSFED⁴⁸.

In comparison to the control group, patients with eating disorders in the present study exhibited higher total scores and scores on the subscales of "restraint", "eating concerns", "body shape concerns", and "weight concerns". Reducing food intake, losing weight, and typically maintaining dangerously low body weight are unhealthy methods commonly used in eating disorders⁴⁹. Manasse et al. reported that individuals with BN tend to intensify their meal restrictions after experiencing increased fears of weight gain⁵⁰.

Adolescents in our cohort who had been diagnosed with eating disorders scored higher on SITA in the areas of "need denial", "separation anxiety", "engulfment anxiety", and "rejection expectancy" the separation-individuation process. Rejection expectancy may lead individuals to perceive their parents as hostile and indifferent, leading to frequent use of denial and suppression mechanisms, as well as difficulties in communication in their relationships. Consequently, this may contribute to the development of negative mood and eating disorders^{51,52}. It is believed that individuals who deny their needs may symbolically use food to separate from their mothers and induce vomiting behavior to distance themselves from the "mother," potentially leading to the development of AN52. When reviewing the literature for "engulfment anxiety", according to Bruch, due to the mother's insensitivity to the baby's feeding needs, inhibition occurs during the separation-individuation process, making it difficult for the child to perceive themself as a separate individual from their mother⁵³. It is argued that the restrictive eating behaviors characteristic of AN lead affected individuals to maintain a greater degree of immaturity and continue to be enmeshed within the family system⁵⁴. When examining the subscale of "separation anxiety," it has been shown that "attachment anxiety" contributes to both depressive symptoms and eating disorder symptoms⁵⁵.

We also found that the scores for "teacher enmeshment" were higher in adolescents diagnosed with eating disorders compared to the control group. This finding may have arisen from individuals diagnosed with eating disorders being unable to establish sufficient closeness in their relationships, failing to find people with whom they can identify, and feeling the need to establish a close relationship with their teachers in search of approval. Crum et al. identified teachers as significant attachment figures for students⁵⁶. It is, therefore, believed that it is crucial to maintain communication with teachers during the treatment process of eating disorders, promote family and peer relationships, and support the exploration of role models. The relationship between "teacher enmeshment" and eating disorders has not been addressed in the literature, and it is believed that this particular finding may provide a stimulus for future investigations.

In the present study CYRM scores were found to be significantly higher in the control group. In a study conducted by Lie et al. in 2023, it was shown that protective factors, such as high resilience levels and emotion regulation skills, are inversely related to lifetime occurrence and symptom severity of eating disorders⁵⁷. The published findings highlight the importance of investigating the relationship between eating disorders and resilience in clinical practice. However, due to the majority of studies being conducted with adult age groups, there is a need for studies focusing on adolescents. We found that among individuals with eating disorders the "rejection expectancy" subscale and resilience showed a significant difference in logistic regression analysis. These results suggest that rejection expectancy and resilience may have a significant impact on symptomatology in patients with eating disorders. There are few studies in this area, and more research is needed to elucidate this relationship. It is believed that it would be beneficial to focus on these issues in the treatment process.

The correlation analysis between the subscales of SITA and resilience revealed a positive correlation

between the "nurturance seeking" subscale and resilience, while a negative correlation was observed between resilience and both "rejection expectancy" and "engulfment anxiety". In the validity study for the SITA, conducted by Levine et al., it was reported that the scores of the "nurturance seeking" subscale were significantly higher in the "friendly-compliant" temperament group compared to negative temperament groups, including those who were "angry-irritable" and "anxious," resembling the scores of the "healthy separation" subscale²⁸. The "nurturance seeking" subscale is associated with successfully navigating the separation-individuation phase, as it describes the individual's need to establish connections with others around them. Therefore, it is believed that this subscale may be related to increased resilience. "Engulfment anxiety" is observed in individuals with inconsistent and conflicting relationships, while "rejection expectancy" is observed in individuals who avoid attachment or exhibit aggressive behavior in relationships^{28,51}. "Engulfment anxiety" may lead to fears of forming close relationships, while "rejection expectancy" may lead to relationship breakdowns, both of which could be associated with decreased psychological resilience. To the best of our knowledge, no previous study has investigated the impact of separation-individuation process on resilience. It is believed that our study, by helping us understand the factors influencing resilience from early ages, contributes to the examination of healthy parent-child separation, the enhancement of resilience to prevent psychopathologies, such as eating disorders, and the development of preventive mental health practices.

There are limitations of our study, which should be acknowledged. First, it had a cross-sectional design which makes it difficult to establish causal relationships among our findings. In future research, conducting longitudinal studies would be beneficial for establishing causality among variables. The study sample consisted of adolescents who presented to the clinic, while those who did not seek clinical care were not represented. Therefore, community-based studies with larger sample sizes are needed. In addition, since most of the participants were female, the results cannot be generalized to the overall population. Future studies should aim to include male and female participants in similar proportions to enhance generalizability. Another limitation was the presence of patients diagnosed with ADHD in the control group. Furthermore, the scales administered

to the adolescents were self-report measures, which may have led to underreporting or overreporting, potentially affecting the assessment. Specifically, the separation-individuation scale scores were based on adolescents' self-perceptions, without validation from caregiver-reported data. Therefore, incorporating caregiver responses in future research will help strengthen the reliability of the findings.

This study found associations between eating disorders and unhealthy navigation of separationindividuation processes, and lower levels of psychological resilience. Further research exploring the relationship between eating disorders and resilience in adolescents, as well as the integration of resilience into the treatment process of eating disorders, would be beneficial. The fact that the adolescent gains independence and exists as a separate individual may be perceived by parents as losing their children. In parental interviews, it should be reinforced that separation-individuation is a natural and necessary process. In addition, it should be stated that parental attitudes that prevent separation-individuation may actually increase separation anxiety in adolescents and may prevent peer relations that should be present in this developmental period⁵². Clinical approaches to increase resilience may reduce the risk of psychopathology.

In order to increase psychological resilience in adolescents the following measures may be beneficial: ensuring that families set an example for young people by making their own emotional regulation appropriate and improving their mentalization skills; developing a sensitive parenting establishing approach; and good communication^{58,59,60}. It is also believed that providing informative psychological counseling services to families, with the aim of enhancing parentchild relationships, and offering seminars on healthy separation-individuation processes may also prove beneficial.

Author Contributions: Concept/Design: EÇG, İDÇ; Data acquisition: EÇG; Data analysis and interpretation: EÇG; Drafting manuscript: EÇG; Critical revision of manuscript: EÇG, İDÇ; Final approval and accountability: EÇG, İDÇ; Technical or material support: EÇG; Supervision: İDÇ; Securing funding (if available): n/a.

Ethical Approval: Ethical approval was obtained from the Kocaeli University Non-Interventional Clinical Research Ethics Committee with the date of 01.09.2022 and project number KU GOKAEK-2022/14.01-2022/181.

Peer-review: Externally peer-reviewed.

Conflict of Interest: Authors declared no conflict of interest. Financial Disclosure: Authors declared no financial support

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