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# The effects of separation-individuation characteristics in adolescents with anorexia nervosa

*Anoreksia nervoza tanılı ergenlerde ayrılma-bireyleşme özelliklerinin etkileri*

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**ABSTRACT**

Aim: This study aimed to investigate the relationship between separation-individuation characteristics, body mass index (BMI), and quality of life in adolescents diagnosed with anorexia nervosa (AN).

Materials and Methods: The study included a sample of 21 cases who were presented at the Ege University Child and Adolescent Psychiatry Unit and received a diagnosis of anorexia nervosa. The study utilized the Sociodemographic Data Form, the Separation-Individuation Test of Adolescence (SITA), and the Children's Quality of Life Inventory (PedsQL).

Results: Negative correlations were found for the scores of rejection expectancy and need denial from the separation-individuation subscales with peer enmeshment and quality of life functionality (r = -0.67; p = 0.002; r = -0.61; p = 0.007). A positive correlation was found between the practicing-mirroring scores of the cases and the affect-related quality of life functionality (r = 0.55; p = 0.018).

Conclusion: The study suggests that difficulties in separation-individuation among adolescents with anorexia nervosa are linked to a decline in quality of life. Recognizing and addressing separation-individuation challenges, which are believed to contribute to the development of anorexia nervosa and its psychodynamic etiology, is crucial for improving quality of life and ensuring effective treatment.

Keywords: Separation-individuation, anorexia nervosa, adolescent psychiatry.

***ÖZ***

***Amaç:*** *Bu çalışmanın amacı yeme bozukluğu tanılı ergenlerdeki ayrılma-bireyleşme özellikleri ile, beden kitle indeksleri (VKİ) ve yaşam kaliteleri arasındaki ilişkiyi saptayabilmektir.*

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***Gereç ve Yöntem:*** *Ege Üniversitesi Tıp Fakültesi Çocuk ve Ergen Ruh Sağlığı Hastalıkları birimine başvuran ve anoreksiya nervoza tanısı alan 21 olgu araştırma örneklemini oluşturmaktadır. Çalışmada Sosyodemografik Veri Formu, Adölesan Ayrılma Bireyleşme Testi [AABT], Çocuklar İçin Yaşam Kalitesi Ölçeği (ÇİYKÖ) formları kullanılmıştır.*

***Bulgular:*** *Olguların ayrılma bireyleşme alt ölçeklerinden reddedilme beklentisi ve ihtiyacı inkâr etme skorlarıyla; yaşıtlarıyla ilişkileri ile ilgili yaşam kalitesi işlevselliği arasında negatif yönde korelasyon saptanmıştır (r=-0.67; r=-0.61; p=0.002; p=0.007). Olguların pratik yapma-aynalama skorları ile duygulanımla ilişkili yaşam kalitesi işlevselliği arasında ise pozitif yönde bir korelasyon saptanmıştır (r=0.55; p=0.018).*

***Sonuç:*** *Bu çalışmada AN tanılı ergenlerdeki ayrılma bireyleşme güçlüklerinin yaşam kalitesinde düşüş ile ilişkili olduğu bulunmuştur. AN gelişiminde, psikodinamik etiyolojide yeri olduğu düşünülen ayrılma-bireyleşme ile ilgili güçlüklerin fark edilip desteklenmesi, yaşam kalitesinin artırılması ve etkin tedavi açısından göz ardı edilmemesi gereken bir konudur.*

***Anahtar Sözcükler:*** *Ayrılma bireyleşme, anoreksiya nervoza, ergen psikiyatri.*

## INTRODUCTION

Anorexia nervosa (AN) is an eating disorder that progresses with problems related to weight loss and malnutrition and has a higher mortality rate and suicide risk compared to the general population (1, 2). It is thought to be more common than its prevalence suggests, since the disease has a wide spectrum and includes subclinical forms that do not fully meet the diagnostic criteria (3, 4). Weight loss is often due to food restriction, but weight loss can also occur due to energy expenditure (such as exercise) or consumption of metabolism-boosting products (5). This disorder usually occurs in adolescence or pre-adolescence, and physical and psychiatric comorbidities are frequently observed (6, 7). In this disorder, patients overestimate their beliefs about their eating attitudes (1).

Anorexia nervosa is a disorder with multiple causes in which many genetic, neurobiological, psychological, developmental, and sociocultural factors play roles in its development (8). Opinions about the psychodynamic etiology of the disorder focus on the separation-individuation period. According to Mahler's theory, in the separation-individuation period covering the first three years of life, the human offspring who is physically separated from his mother but "born without being adjusted to the outside world" also separates from their mother spiritually and begins to perceive themselves as a separate individual (9). A healthy separation, which is expected to mature in this period, has the most critical importance for the development of individuation and sense of identity (10). After this period, which Mahler defined as the separation-individuation process in the first three years, Blos defined adolescence as the second separation-individuation period (11). According to Blos, in the second separation-individuation period, the adolescent should say goodbye to internalized parental designs, find affection objects outside the family, and adapt to the adult world (11). In the psychodynamic literature, the symptoms of anorexia nervosa are stated to develop in response to the intense anxiety that occurs with the repeated experience of the separation-individuation period (12). It was suggested that the pressure to be independent during adolescence activates difficulties with separation and individuation that originated during feeding from infancy and are associated with eating disorders (13).

Quality of life is the subjective sum of physical, psychological, and social functionality and well-being sub-dimensions, as well as the general health of the individual (14). In anorexia nervosa, which affects many systems in the body, there is no effect on the quality of life in the early period. However, the quality of life decreases with the increase in somatic symptoms in the later period (15). In various studies on the subject, there was a decrease in the quality of life in AN (16, 17). Quality of life was used as a criterion for AN in the 1990s (18).

This study aimed to investigate the relationship between separation-individuation characteristics, BMI, and quality of life in adolescents diagnosed with anorexia nervosa. Our hypothesis was that separation-individuation characteristics would affect body mass index and quality of life in AN patient. While there are many studies on the deterioration of quality of life in anorexia nervosa, the effect of separation-individuation characteristics on quality of life in adolescents with anorexia nervosa forms a gap in the literature. We hope that our study will contribute to filling this gap in literature.

## MATERIALS and METHODS

Our study included 20 female and 1 male case aged 12-18 years, who applied to XXXX Child Psychiatry Outpatient Clinic with eating and weight loss problems and were diagnosed with anorexia nervosa through psychiatric interviews. Written informed consent was obtained from all patients, and ethics committee approval was obtained from the ethics committee of XXXX (Decision no: 19-8.1T/54). PedsQL (18, 23), SITA (19, 20), and the Schedule for Affective Disorders and Schizophrenia for School-Aged Children, Present and Lifetime Version (K-SADS-PL) (21, 22) were used for the evaluation of the cases, and their diagnoses were first made by experienced resident physicians and then finalized by the responsible faculty members. Comorbid diagnoses were evaluated with the same method. The inclusion criteria for patients in this study were as follows: they had to meet the DSM-5 diagnostic criteria for anorexia nervosa, be between the ages of 12 and 17, and voluntarily agree to participate in the study. Cases with clinically below-normal mental capacity and cases with autism and bipolar disorder were excluded from the study. All patients were evaluated by a pediatrician. Exclusion was planned for those with serious physical illnesses or conditions that could lead to neurological deficits. However, no patients were excluded from the study for these reasons. The study was initially planned with 34 patients. Unfortunately, 6 patients did not attend follow-up appointments, 2 patients declined to complete the forms, 3 patients could not obtain parental consent, 1 patient was excluded due to cognitive limitations, and 1 patient was excluded due to comorbid bipolar disorder. Ultimately, the study was completed with 21 patients.

After case selection, a sociodemographic data form was given to all cases, in which general information such as age and family characteristics was questioned. The cases were weighed, and care was taken to ensure that the weighing process was carried out in the early hours of the day. The body mass index (BMI) of the patients was calculated and recorded.

### Tools

### Schedule for Affective Disorders and Schizophrenia for School Aged Children, Present and Lifetime Version, K-SADS- PL (21, 22)

K-SADS-PL is used to detect current and lifelong psychopathologies in children and adolescents. It is a semi-structured interview form. The form consists of three parts. In the first part, demographic characteristics of the child, general health status, previous psychiatric admissions, general information such as treatment, family and peer relationships, and school information are questioned. The second part includes screening questions and evaluation criteria that examine specific psychiatric symptoms. If there are positive symptoms as a result of the screening interview, the additional symptom list is questioned in order to better evaluate that psychopathology.

### Children’s Quality of Life Inventory (PedsQL) (18)

The scale developed by Varni et al. aims to measure general social functioning and quality of life in the 2-18 age group. The scale measures physical, emotional, social, and academic functioning. In the section on physical functionality, there are eight items; in the section on emotional functionality, there are five items; and in the section on social functionality, there are five items. In the section concerning school-related issues, there are three items for the 2-4 age group and five items for other age groups.

### Separation-Individuation Test of Adolescence (SITA) (19)

Developed by Levine and colleagues in 1986, the SITA includes a series of behavioral expressions related to relationships with parents, teachers, and peers. It is a Likert-type scale consisting of 85 items. The subscales of the SITA have been identified as separation anxiety, engulfment anxiety, peer enmeshment, teacher enmeshment, practicing-mirroring, need denial, rejection expectancy, and nurturance seeking.

### Sociodemographic Data Form

This form is a brief information sheet containing questions about the child's age, family characteristics, accompanying illnesses, the presence of psychiatric disorders in the family, and similar inquiries.

### Statistical Analysis

Data was analyzed using appropriate statistical methods. Analyses were performed using the SPSS 25.0 (Statistical Package for Social Sciences) software package. Before statistical analysis, Shapiro-Wilk and Kolmogorov-Smirnov tests were used to evaluate whether numerical variables were normally distributed. Variable correlation was evaluated with Pearson correlation in the case of normal distribution and Spearman correlation for non-normal distribution.

The independent samples t-test was used to compare paired groups. A power analysis was conducted for the statistical analysis of the research. The required sample size to achieve 80% power ($\alpha = 0.05$) for large effect size ($r = 0.5$) was 34. In our study, this sample size was not achieved, and the observed statistical power for 21 patients is 58.7%, which is one of the limitations of the study.

## RESULTS

The ages of the subjects included in the study ranged from 12 to 18 years, and the mean age was calculated as 15.1. While 95.2% (n=20) of the cases included in our study were female, 4.8% (n=1) were male. Other information about sociodemographic data and comorbidity rates is shown in Table-1.

When Table 1 is examined, 85.7% (n=18) of the 21 cases with anorexia nervosa (AN) had at least one comorbid psychiatric diagnosis. In our sample, the most common comorbidity was major depression (MDD) in 71.4% (n=15), followed by ADHD in 42.9% (n=9), generalized anxiety disorder (GAD) in 28.6% (n=6), and obsessive-compulsive disorder (OCD) in 23.8% (n=5). When the 18 cases with comorbid psychiatric diagnoses and the 3 cases without comorbidity were compared in terms of SITA scores, no statistically significant difference was observed in any of the subscales ($p>0.05$). In addition, when the cases were divided into two groups—those with and without MDD—AN cases with MDD comorbidity had higher separation anxiety and engulfment anxiety scores, and lower practice and mirroring scores than AN cases without MDD (p: 0.04; 0.00; 0.00). The scores for the cases diagnosed with AN, with and without major depressive disorder, are shown in Table-2.

The cases in our sample were evaluated in terms of the relationship between SITA scores and PedsQL scores. A negative correlation was found between rejection expectancy and need denial scores from the SITA subscales, and quality of life functionality related to their relationships with peers ($r=-0.67$; $r=-0.61$; $p=0.002$; $p=0.007$). With further analysis, the relationship between rejection expectancy and quality of life functionality related to relationships with peers was significant, but the relationship between need denial and quality of life functionality related to relationships with peers was not significant ($p=0.002$; $p=0.102$; $r^2=0.506$; $r^2=0.122$). A positive correlation was found between the practice-mirroring scores of the cases and affect-related quality of life functionality ($r=0.55$; $p=0.018$), and further regression analysis found this relationship to be significant ($p=0.023$, $r^2=0.466$). In addition, when the relationship between SITA scores and BMI percentiles was evaluated, a positive correlation was found between practice-mirroring scores and BMI percentiles ($r=0.54$; $p=0.03$) (Table-3). Regression analysis was performed to evaluate the relationship between practice-mirroring scores and BMI, and a significant relationship was found ($p=0.016$, $r^2=0.349$).

**Table-1.** Sociodemographic Findings and Comorbidity.

| **Cases of Anorexia Nervosa (n=21)** | **YES n (%)** | **NO n (%)** |
|---|---|---|
| Psychopathology in the Family | 7 (33.3) | 14 (66.6) |
| Eating Disorder in Mother | 1 (4.7) | 20 (96.3) |
| Eating Disorder in Father | 0 (0) | 21 (100) |
| Eating Disorder in Siblings | 4 (30.7) | 9 (69.3) |
| **Additional Psychiatric Diagnosis** | **n (%)** | |
| *Presence of comorbidity* | 18(85.7) | |
| *Major Depression* | 15 (71.4) | |
| *Attention Deficit Hyperactivity Disorder (ADHD)* | 9 (42.9) | |
| *Generalized Anxiety Disorder (GAD)* | 6 (28.6) | |
| *Obsessive Compulsive Disorder (OCD)* | 5 (23.8) | |

**Table -2.** Evaluation of the scores for cases with and without MDD comorbidity from the SITA scale

| | | N | X | t | P | |
|---|---|---|---|---|---|---|
| Separation Anxiety | MDD +<br>MDD - | 15<br>6 | 25.60<br>16.66 | 2.113 | **0.04** | |
| Engulfment Anxiety | MDD +<br>MDD - | 15<br>6 | 22.66<br>13.66 | 4.608 | **0.00** | |
| Peer Enmeshment | MDD +<br>MDD - | 15<br>6 | 29.00<br>29.66 | -0.186 | 0.85 | |
| Teacher Enmeshment | MDD +<br>MDD - | 15<br>6 | 18.93<br>19.00 | -0.35 | 0.97 | |
| Practicing-Mirroring | MDD +<br>MDD - | 15<br>6 | 26.46<br>35.60 | -4.520 | **0.00** | |
| Need Denial | MDD +<br>MDD - | 15<br>6 | 12.33<br>13.50 | -0.615 | 0.54 | |
| Rejection Expectancy | MDD +<br>MDD - | 15<br>6 | 26.53<br>25.50 | 0.375 | 0.71 | |
| Nurturance Seeking | MDD +<br>MDD - | 15<br>6 | 25.06<br>22.66 | 0.925 | 0.36 | |

MDD: MAJOR DEPRESSIVE DISORDER (+): yes; (-):no

**Table-3.** Analysis of the Relationships Between Separation Individuation Test Results of the Cases with BMI Percentiles and PedsQL Scores.

| | ***BMI Percentiles*** | | ***PedsQL Affect Scores*** | | ***PedsQL Others Scores*** | |
|---|---|---|---|---|---|---|
| | *P value ($\chi 2$)* | *correlation coefficient (r value)* | *P value ($\chi 2$)* | *correlation coefficient (r value)* | *P value ($\chi 2$)* | *correlation coefficient (r value)* |
| Separation Anxiety | 0.61 | 0.13 | 0.38 | -0.21 | 0.33 | -0.24 |
| Engulfment Anxiety | 0.80 | 0.06 | 0.90 | -0.03 | 0.91 | -0.02 |
| Peer Enmeshment | 0.07 | 0.45 | 0.61 | 0.12 | 0.22 | 0.30 |
| Teacher Enmeshment | 0.79 | 0.06 | 0.59 | 0.13 | 0.37 | 0.22 |
| Practicing-Mirroring | **0.03** | **0.54** | **0.01** | **0.55** | **0.03** | **0.51** |
| Need Denial | 0.31 | -0.26 | 0.24 | -0.29 | **0.00** | **-0.61** |
| Rejection Expectancy | 0.40 | -0.22 | **0.01** | **-0.55** | **0.00** | **-0.67** |
| Nurturance Seeking | 0.92 | 0.02 | 0.93 | 0.02 | 0.71 | -0.09 |

BMI: Body Mass Index, PedsQL: Children's Quality of Life Inventory

## DISCUSSION

This study examined the effects of separation-individuation characteristics on the body mass index and quality of life of adolescent patients with AN. According to our findings, among the cases diagnosed with AN, the quality of life was better in those with better practice and mirroring skills, which are positive separation-individuation characteristics. On the contrary, subjects who had negative separation-individuation characteristics, such as rejection expectancy and need denial, had lower quality of life. Additionally, the body mass index percentiles of the cases with AN who had better practice and mirroring skills were also higher. Moreover, it seems that patients with anorexia nervosa accompanied by depression experience greater difficulties in separation and individuation.

Separation and individuation skills are expected to be acquired during adolescence. Self and object images are expected to form during this period (19). In this period, which is full of crises

that need to be resolved for healthy mental development, difficulties related to separation and individuation were associated with depression, eating disorders, delinquency, and substance use (20). Similar to our study, in a study conducted using the SITA scale and investigating the relationship between separation-individuation characteristics and depression, the depression scores of young people with separation-individuation difficulties were higher (24). According to studies, parents of depressed adolescents have more controlling parental attitudes, and separation from parents who cannot leave their children creates difficulties for adolescents (25). The relationship between eating pathologies and depression has been known for a long time. A recent review and meta-analysis evaluated 30 longitudinal studies examining the relationship between eating pathologies and depression. According to the results of the study, eating pathologies increase the risk of developing depression, and depression increases the risk of developing eating pathologies (26). In our sample, a significant comorbidity rate of major depression (MDD) was observed, with 71.4% of participants exhibiting this condition, which aligns with findings reported in the existing literature. Furthermore, individuals with anorexia nervosa (AN) who also presented with MDD demonstrated elevated scores on the separation anxiety and engulfment anxiety subscales of the SITA test. These subscales are indicative of the challenges faced in the separation-individuation process, reflecting difficulties in establishing autonomy and personal identity. Conversely, these patients scored lower on the practice-mirroring subscale, a measure that typically serves as a positive indicator of successful separation and individuation.

Based on these findings, it appears that the difficulties in separation and individuation among individuals with anorexia nervosa are significantly associated with the comorbidity of depression. The presence of depressive symptoms may exacerbate the challenges related to separation-individuation, suggesting that the psychological complexities inherent in AN are compounded by co-occurring depressive disorders. Consequently, addressing and treating the accompanying depressive symptoms could prove beneficial in facilitating healthier separation-individuation processes among adolescents with anorexia nervosa. This highlights the importance of an integrated treatment approach that simultaneously targets both eating disorder symptoms and comorbid depressive conditions to enhance overall psychological well-being.

Quality of life, a multifaceted concept closely linked to an individual's overall well-being, has been extensively studied within the context of eating disorders. A recent review analyzed 12 cross-sectional studies and 5 cohort studies, revealing a significant association between dietary habits and quality of life among children (27). Additionally, a review published in 2019 concluded that eating disorders in children and adolescents were correlated with a diminished quality of life (28).

While numerous studies in literature highlight a decline in quality of life among individuals diagnosed with anorexia nervosa, there remains a notable gap in research specifically exploring the relationship between separation-individuation characteristics and quality of life in this population. Understanding how these developmental processes interact with the experiences of individuals suffering from anorexia nervosa could provide valuable insights into their overall well-being and inform targeted interventions aimed at improving their quality of life. Further investigation in this area is essential to fill this research void and enhance our comprehension of the complex dynamics at play in eating disorders.

## CONCLUSION

Deaths from anorexia nervosa mostly occur due to suicide and medical complications of AN (29). The longer the disease persists, the higher the risk of medical complications and death. After diagnosis, treatment should commence promptly, aiming for remission. Given the diverse causes of AN, it is recommended to employ multiple treatment methods, including weight restoration and other interventions, particularly psychoeducation. Efforts should also focus on supporting adolescents in terms of separation and individuation. Strengthening the adolescent in this area during AN treatment can enhance treatment outcomes and improve the patient's quality of life.

## LIMITATIONS

There are several limitations in this study. The first limitation is the small sample size of the participants. To obtain more accurate statistical

results, the study should be repeated with larger samples. The second limitation of our study was the absence of a control group. We recommend that further studies compare anorexia nervosa groups with control groups consisting of healthy adolescents. Another limitation is the restricted number of male patients. There is a need for further research involving larger sample groups that include a greater number of male patients.


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**Conflict of interest:** The authors declare that they have no conflict of interest.


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