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# Adult Separation Anxiety Disorder in the Geriatric Population with Major Depressive Disorder

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## ABSTRACT

**Objective:** Separation anxiety disorder is a disorder with childhood-onset, which manifests itself also in adulthood and is often comorbid with other psychiatric disorders. However, its relationship with major depressive disorder has been less studied. This study aims to investigate the prevalence of adult separation anxiety disorder in the geriatric population with major depressive disorder and identify the determinants of adult separation anxiety disorder.

**Methods:** Eighty-five patients aged 60 and over, diagnosed with major depressive disorder according to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition were evaluated through the Structured Clinical Interview for Separation Anxiety Symptoms, The Standardized Mini-Mental State Examination, Beck's Depression Inventory, Beck Anxiety Inventory, and Adult Separation Anxiety Questionnaire.

**Results:** The comorbidity of adult separation anxiety disorder in patients with major depressive disorder was found as 49.4% (n = 42). While there was no statistically significant difference between the adult separation anxiety disorder + major depressive disorder group and only major depressive disorder group in terms of age, sex, education, marital status, income level, medical diseases, and death of a loved one ($P > .05$), prolonged separation from parents before the age of 3, prevalence rates of severe depression, Beck Anxiety Inventory scale scores were found to be statistically significantly higher in patients diagnosed with major depressive disorder + adult separation anxiety disorder compared to those diagnosed only with major depressive disorder ($P < .05$). Beck Anxiety Inventory mean scores and severe depression were found as the determinants of adult separation anxiety disorder.

**Conclusion:** Major depressive disorder diagnosis in the geriatric population is highly associated with adult separation anxiety disorder. Questioning of adult separation anxiety disorder in elderly individuals especially with severe depression, rather than focusing on general anxiety symptoms, may contribute to psychotherapeutic and psychopharmacological treatment approaches.

**Keywords:** Depressive disorder, geriatrics, separation anxiety

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## INTRODUCTION

Separation anxiety disorder is defined as an anxiety disorder characterized by constant excessive anxiety regarding separation from home and/or from people to whom the individual has a strong

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emotional attachment.[1] Although it has been suggested in the previous studies that separation anxiety disorder is an anxiety disorder that occurs only in childhood,[2] in line with the researches and observations made, through to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), the age criterion was removed and it was revealed that it could also be defined as adult onset. According to the research conducted by the World Health Organization with 38 993 adults from 18 countries, it was found that the lifetime prevalence of separation anxiety disorder was 4.8%, and 43.1% of the cases were adult-onset.[3] The prevalence of adult separation anxiety disorder (ASAD) in clinical samples varies between 23% and 65%,[4-6] while its most common comorbid anxiety disorder is suggested to be panic disorder.[5,7]

Anxiety disorders and depressive disorders are the mental disorders with the highest comorbidity among all psychiatric diagnoses in adulthood.[8] However, the number of studies investigating the relationship between ASAD and depression is limited.[6,7,9,10] Major depressive disorder[11] and anxiety disorders[12] are also important health problems in individuals in the age range of the geriatric population. In his study with major depressive disorder (MDD) patients aged 60 and over, Suradom[13] found the comorbidity of any anxiety disorder as 16.8% (n = 32). However, separation anxiety disorder was not evaluated in this study.

It is known that ASAD significantly affects the functionality of the person independently from other mental illness comorbidities.[6] Also, it is known that when ASAD is seen with depressive disorder, it negatively affects the clinical course and response to treatment and decreases the quality of life.[14,15] One of the objectives of this study was to determine the prevalence of ASAD in the geriatric age group who were admitted to psychiatry outpatient clinics and whose major diagnosis was MDD. Another objective of our study was to compare the depressive patients with and without comorbidity of ASAD in terms of sociodemographic and clinical variables and to identify the determinants of ASAD in the geriatric age group. Since it is the first study investigating ASAD in a geriatric clinical population, it was aimed that the data to be determined in the study will contribute to the psychopharmacological or psychotherapeutic treatment processes of elderly patients with an anxiety disorder and MDD.

## MATERIAL AND METHODS

Ethical approval was obtained from the Clinical Research Ethics Committee of Health Application and Research Center (2019/2429). Patient enrollment was started after the approval of the committee.

Psychiatric interviews were conducted with 96 psychiatry clinic outpatients aged 60 and over, who consecutively applied and were followed up between June 2019 and January 2020, and whose major diagnosis was MDD. The inclusion criteria were as follows: (a) being aged 60 years or older; (b) being at least a primary school graduate; (c) having a major diagnosis of MDD according to DSM-5; and (d) having 17 or more Beck Depression Inventory (BDI) scores. The exclusion criteria were as follows: (a) the presence of any of the diagnoses of psychotic disorder, bipolar disorder, and alcohol substance abuse; (b) having a score under 27 in the Standardized Mini-Mental State Examination (SMMSE); and (c) being hospitalized in the past year due to a known serious medical illness (neurological, metabolic diseases). Of the cases, 1 case had an ischemic attack in the last year, 8 cases who filled the questionnaires incomplete or incorrect, and 2 cases who did not meet the education level criterion were not included in the study. A total of 85 individuals were included in the study after signing their informed consent forms.

The diagnosis of ASAD in MDD-diagnosed geriatric patients was made according to DSM-V criteria and Structured Clinical Interview Form for separation anxiety symptoms by clinical examination. All respondents answered the sociodemographic data form, BDI, Beck Anxiety Inventory (BAI), and the Adult Separation Anxiety Questionnaire (ASA-27) themselves. "Severe depression" was diagnosed during clinical evaluation for cases with a BDI score of 30 and above, by taking into account the social and occupational functionality of the patient and the objective evaluation of the intensity of the symptoms. According to the presence of ASAD comorbidity, MDD patients were divided into 2 groups as with comorbid adult separation anxiety disorder (ASAD+) and without comorbid adult separation anxiety disorder patients (ASAD−) and then sociodemographic variables and clinical variables such as age, gender, marital status, education, medical illnesses, separation and loss experiences, depression and anxiety scale scores, adult separation anxiety scale scores were compared. The determinants of ASAD were tried to be identified in the geriatric age group diagnosed with MDD.

### The Sociodemographic Data Form

The sociodemographic data form was designed for this study and it consists of questions related to patients' data such as age, gender, marital status, education levels, income levels, smoking, alcohol habits, the current status of their illnesses, loss and separation experiences, and a history of prolonged (greater than 6 months) separations from parents before the age of 3.

### The Clinician Version of Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition Disorders (SCID-CV)

The Clinician Version of Structured Clinical Interview (SCID-CV) used in the study is a Structured Clinical Interview Form that was developed by First[16] for DSM-V disorders, and its Turkish validity and reliability study was performed by Elbir et al.[17]

### The Structured Clinical İnterview Form for Separation Anxiety Symptoms

This form was developed by Cyranowski et al[18] is used to diagnose ASAD, and the validity and reliability study of the Turkish form was conducted by Diriöz et al.[19] It consists of 2 parts with 8 items in total. The presence of at least 3 of the 8 criteria in each section is required. In order to accept the presence of a criterion, it must have a disruptive effect on functionality, cause significant distress in the individual, and the symptom must show continuity. The Cronbach's alpha coefficient was 0.59.

### Beck's Depression Inventory (BDI)

The BDI was developed by Beck et al.[20] Its Turkish validity and reliability study was carried out by Hisli et al.[21] The cut-off score was determined as 17, where 17-29 refers to moderate depression and 30-63 to severe depression. The Cronbach's alpha coefficient was 0.80.

### Beck Anxiety Inventory (BAI)

The BAI was developed by Beck et al..[22] Ulusoy et al[23]adopted this scale into Turkish.[23] Higher total scores indicate more severe anxiety symptoms. The Cronbach's alpha coefficient was 0.93.

### Adult Separation Anxiety Questionnaire (ASA)

The ASA questionnaire that examines separation anxiety symptoms in adulthood was created by Manicavasagar et al.[24] its Turkish validity and reliability study was carried out by Diriöz et al.[19] In the Turkish version, the cut-off score was determined as 25. The Cronbach's alpha coefficient was 0.93.

### The Standardized Mini-Mental State Examination (SMMSE)

The Standardized Mini-Mental State Examination (SMMSE) was firstly developed in 1975 by Folstein et al.[25] Its Turkish validity and reliability study was carried out by Gungen et al .[26]

### Statistical Analysis

Statistical Package for the Social Sciences software 22 for statistical analysis (IBM SPSS Corp., Armonk, NY, USA) programs were used for evaluating the findings obtained in the study. The Shapiro–Wilk test was used for evaluating the normality of parameters. Descriptive statistical methods (mean, standard deviation, and frequency) were used while evaluating the study data. The Student's *t*-test was used for the comparison of samples with normal distribution, while the Mann–Whitney *U* test was used for the comparison of samples without normal distribution. In the comparison of qualitative data, on the other hand, the Fisher's exact test, the Fisher–Freeman–Halton test, and Yates's continuity correction were used. Logistic regression analysis was applied for multivariate data analysis. Significance was found as $P < .05$.

## RESULTS

The study was carried out with cases that met DSM-V criteria for the diagnosis of MDD between June 2019 and January 2020 in age ranging from 60 to 85 years (mean age: 66.79 ± 5.9) and 80% of them (n = 68) were women. Most of them were married (55.3%, n = 47), while others were single (5.9%, n = 5), widow (29.4%, n = 25), and divorced/separated (9.4%, n = 8). Adult separation anxiety disorder comorbidity in MDD-diagnosed patients was found to be 49.4% (n = 42). When patients diagnosed with MDD + ASAD and patients diagnosed with only MDD were compared, no statistically significant difference was found in terms of distribution rates of age, sex, education, marital status, and income level ($P > .05$) (Table 1).

Prolonged separation from parents before the age of 3 ($P < .05$) and prevalence rates of severe depression ($P < .05$) were found to be statistically significantly higher in patients in the MDD + ASAD group compared to the MDD group, while no statistically significant difference was found in terms of distribution rates of medical diseases and death of a loved one (Table 2)

When patients diagnosed with MDD + ASAD and patients diagnosed with only MDD were compared, the mean ASA and BAI scores were found to be statistically significantly higher in patients diagnosed with MDD + ASAD ($P < .05$). No statistically significant difference was found in terms of BDI mean scores ($P > .05$) (Table 3).

To identify the determinants of the presence of ASAD diagnosis, we evaluated the effects of prolonged separation from parents before the age of 3, the severity of depression and BAI score parameters, with logistic regression analysis and the model was found to be significant ($P < .05$), while the Nagelkerke R square value was determined as 0.235 and the explanatory coefficient of the model (63.5%) was high. The effects of BAI and severe depression parameters in the model were found to be statistically significant ($P < .05$). It was found that BAI and severe depression parameters increased the diagnosis of ASAD by 1.07 and 8.46 times, respectively (Table 4).

**Table 1. Demografic Characteristics of 85 MDD Patients With and Without ASAD**

| MDD | ASAD (+) (n = 42) | ASAD (−) (n = 43) | Test Value | *P* |
|---|---|---|---|---|
| | Mean ± SD | Mean ± SD | | |
| Age | 66.43 ± 5.83 | 67.14 ± 6.03 | *t*: 0.553 | .582[a] |
| | n (%) | n (%) | | |
| Sex | | | | |
| Female | 34 (81%) | 34 (79.1%) | $\chi^2$: 0.000–*df* = 1 | 1.000[b] |
| Male | 8 (19%) | 9 (20.9%) | | |
| Education | | | | |
| Primary school | 16 (38.1%) | 21 (48.8%) | $\chi^2$: 1.310 – *df* = 3 | .723[c] |
| Middle school | 10 (23.8%) | 9 (20.9%) | | |
| High school | 11 (26.2%) | 10 (23.3%) | | |
| University | 5 (11.9%) | 3 (7%) | | |
| Marital status | | | | |
| Married | 24 (57.1%) | 23 (53.5%) | $\chi^2$: 1.775 – *df* = 3 | .681[c] |
| Single | 3 (7.1%) | 2 (4.7%) | | |
| Widowed | 10 (23.8%) | 15 (34.9%) | | |
| Separated | 5 (11.9%) | 3 (7%) | | |
| Income level | | | | |
| <2000 ytl | 18 (42.9%) | 20 (46.5%) | $\chi^2$: 0.793 – *df* = 2 | .753[c] |
| 2000-4999 ytl | 20 (47.6%) | 21 (48.8%) | | |
| 5000-10 000 ytl | 4 (9.5%) | 2 (4.7%) | | |

[a]Student's *t*-test; [b]continuity (Yates') correction; [c]Fisher–Freeman–Halton test. MDD, major depressive disorder; ASAD, adult separation anxiety disorder.

## DISCUSSION

Although the onset of separation anxiety symptoms occurs often in childhood, adolescence, and early adulthood, it can also be seen in any period of life, including advanced age.[2,27] To the best of our knowledge, our study has the characteristics of being the first study investigating ASAD in geriatric ages diagnosed with MDD in Turkey; besides, no study with a similar pattern was found in the literature. Also, studies investigating the relationship between depressive disorder and separation anxiety disorder are limited in number and their results are contradictory, too. It is reported that 20-40% of outpatients with a diagnosis of mood disorder and anxiety disorder met the criteria for ASAD diagnosis.[6] In a study comparing complicated grief cases and healthy controls, it was revealed that separation anxiety disorder was associated with lifetime depressive and manic symptoms in both groups.[28] Among adolescents, MDD is significantly associated with ASAD.[9] Chelli et al[10] found ASAD at a high rate of 47.5% in adults with MDD. In a study, investigating separation anxiety in the geriatric population, among 86 outpatients who applied to primary healthcare, adult separation anxiety scores were found to be correlated with childhood separation anxiety scores, situational anxiety, and trait anxiety scores, and being at a younger age, while higher scores of adult separation anxiety were found to be associated with lifetime anxiety disorder or any mood disorder. Also, in this study, it was found that adult separation anxiety symptoms exceeding the threshold value in the geriatric population

**Table 2. Clinical Characteristics of 85 MDD Patients with and Without ASAD**

| | ASAD | | | |
|---|---|---|---|---|
| | ASAD (+) | ASAD (–) | | |
| MDD | n (%) | n (%) | Test Value | *P* |
| Prolonged separation from parents under age 3 | | | | |
| Yes | 8 (19%) | 2 (4.7%) | - | .049*[a] |
| No | 34 (81%) | 41 (95.3%) | | |
| Medical illness | | | | |
| No | 10 (23.8%) | 16 (37.2%) | $\chi^2$: 11.504 – *df* = 8 | .102[c] |
| Cardiologic | 15 (35.7%) | 13 (30.2%) | | |
| Respiratuary | 3 (7.1%) | 4 (9.3%) | | |
| Dermatologic | 1 (2.4%) | 0 (0%) | | |
| Gastrointestinal | 6 (14.3%) | 0 (0%) | | |
| Onchologic | 1 (2.4%) | 1 (2.3%) | | |
| Endocrinologic | 5 (11.9%) | 8 (18.6%) | | |
| Orthopedic | 1 (2.4%) | 0 (0%) | | |
| Genitourinary | 0 (0%) | 1 (2.3%) | | |
| Death of a loved one | | | | |
| No | 1 (2.4%) | 2 (4.7%) | $\chi^2$: 6.045 – *df* = 8 | .563[c] |
| Mother | 2 (4.8%) | 2 (4.7%) | | |
| Father | 4 (9.5%) | 2 (4.7%) | | |
| Sister/brother | 0 (0%) | 1 (2.3%) | | |
| Kids | 0 (0%) | 1 (2.3%) | | |
| Relatives | 4 (9.5%) | 1 (2.3%) | | |
| Spouse | 3 (7.1%) | 1 (2.3%) | | |
| More than 1 family member | 28 (66.7%) | 33 (76.7%) | | |
| Severity of depression | | | | |
| Moderate | 31 (73.8%) | 41 (95.3%) | $\chi^2$: 6.037 – *df* = 1 | .014*[b] |
| Severe | 11 (26.2%) | 2 (4.7%) | | |

[a]Fisher's exact test; [b]continuity (Yates') correction; [c]Fisher–Freeman–Halton test; *$P < .05$.
MDD, major depressive disorder; ASAD, adult separation anxiety disorder.

**Table 3. Clinical Scales of 85 MDD Patients With and Without ASAD**

| | ASAD (+) (n = 42) | ASAD (–) (n = 43) | | |
|---|---|---|---|---|
| MDD | Mean ± SD (Median) | Mean ± SD (Median) | Test Value | *P* |
| BDI | 23.33 ± 6.4 (21) | 20.98 ± 6.3 (19) | *Z*: –1.858 | .063 |
| BAI | 19.93 ± 10.05 (20.5) | 13.93 ± 8.77 (12) | *Z*: –2.710 | .007* |
| ASA | 38.38 ± 12.22 (35.5) | 15.02 ± 6.35 (15) | *Z*: –7.943 | .000* |

*Z*, Mann–Whitney *U* test; *$P < .05$.
MDD, major depressive disorder, ASAD, adult separation anxiety disorder; BDI, Beck Depression Inventory; BAI, Beck Anxiety Inventory; ASA, Adult Separation Anxiety Questionnaire.

were 3.5%.[29] Our finding determining the prevalence of ASAD in a clinical sample diagnosed with MDD in the geriatric ages as 49.4% (n = 42) is consistent with studies in previous data. With the data we obtained, we can state that ASAD diagnosis is common in the geriatric population diagnosed with MDD. One of the main results of our study is that the presence of ASAD in MDD-diagnosed geriatric patients was found to be statistically significantly correlated with the experience of prolonged separation from parents before the age of 3, severe depression, and high anxiety scores. Another result of this study is that severe depression and BAI scores were found predictors of ASAD in geriatric population diagnosed with MDD. Evaluating these results together, our study shows that MDD diagnosis is highly associated with ASAD and suggests that this relationship is also valid in a clinical sample consisting of the geriatric age group.

**Table 4. Predicting Factors of ASAD in Geriatric Patients with MDD**

| | OR | 95 CI% | *P* |
|---|---|---|---|
| BAI | 1.076 | 1.020-1.135 | .007* |
| Severe depression | 8.466 | 1.565-45.802 | .013* |
| Constant | 0.218 | | .004* |

*$P < .05$.
BAI, Beck Anxiety Inventory; ASAD, adult separation anxiety disorder.

The geriatric population is also highly susceptible to stressful life events that pose interpersonal threats, such as loneliness, separation, and grief.[29] Experiences such as loss and grief were found to be associated with ASAD[30] as well as risk factors for depression[11] in advanced age. However, in our study, ASAD comorbidity was not associated with the death of a loved one. In a study comparing complicated grief (CG) cases and MDD-diagnosed patients in terms of ASAD symptoms, ASAD scores were found to be higher in individuals diagnosed with only MDD compared to either the CG alone or the MDD + CG group, and the majority of MDD patients were found to exceed the ASA threshold score.[28] The results of this study suggest that separation anxiety is only associated with depressive symptomatology rather than with CG that develops following actual losses, and the results of our study are consistent. The geriatric age is a period that threatens ties and intimacy with significant others[29] and current separation or various stress-related situations that involve the threat of separation or depressive cognitions can precipitate acute anxiety

by damaging the primary bonds.[27] Previous studies state that female gender, childhood traumatic experiences, and lifetime traumatic events are important determinants of lifetime separation anxiety disorder.[31] Herein, when we investigated the predictors of ASAD, it was found that severe depression and BAI scores increased the diagnosis of ASAD 8.46 times and 1.07 times, respectively. According to the stress–diathesis model, it has been suggested that separation anxiety exists in early developmental stages, however, the reach of its symptoms to the clinical level depends on the nature and degree of stress experienced at certain life cycles.[27] In our study, we can suggest that both severe depression[32] and increased anxiety symptoms can be represented by a dimensional structure that develops in response to separations experienced in very early life, and we can argue that both severe depression-related impairment and the presence of anxiety can contribute significantly to the emergence of ASAD or to triggering symptoms at turning points like the geriatric period.

### Study Limitations

Considering the fact that depressive patients may remember their past experiences more negatively and concerns about childhood may not be remembered clearly at later ages, we did not question childhood separation anxiety in our study. Again, since we do not evaluate personality and temperament traits, we also did not assess whether the separation anxiety was situational or dimensional. In the future, longitudinal prospective studies to focus on the early development of these symptoms and their potential interactions would be important in understanding mutual interactions. Although separation anxiety is a symptom of insecure attachment,[5] attachment styles were not investigated in our study. Considering that depressive disorder and separation anxiety disorder are common especially in the geriatric age group and that the attachment style is also activated in situations of actual or imaginative threat (loss, separation, changing conditions) to the selfdom[33]; it is thought that future attachment studies in the geriatric age group will contribute to the literature. Our results cannot be generalized because our study did not include a large number of patients and only included a geriatric age group. The fact that separation anxiety was significantly higher in depression patients supports our hypothesis that we pay attention to this diagnostic group and the geriatric age period.

Adult separation anxiety disorder is a common disorder in the MDD-diagnosed geriatric population. Focusing only on general anxiety symptoms in MDD-diagnosed geriatric patients may cause the specific symptoms of separation anxiety disorder to be overlooked. Separation anxiety disorder should be considered and questioned, especially in elderly individuals who experience severe depression. Depending on psychotherapeutic or psychopharmacological approaches, as the depression improves and its severity decreases, the symptoms of separation anxiety disorder may also subside or vice versa, treatments for separation anxiety disorder may affect the clinical course positively by reducing the severity of depression.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the ethics committee of Şişli Hamidiye Etfal Training and Research Hospital (Date: June 11, 2019, Decision Number: 2019/2429).

**Informed Consent:** Written informed consent was obtained from patients who participated in this study.

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