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RESEARCH ARTICLE

ASSOCIATES OF ADULT SEPERATION ANXIETY DISORDER AMONG UNIVERSITY STUDENTS: A CASE CONTROL STUDY

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ABSTRACT

Purpose: Separation anxiety is a state of extreme anxiety, felt by an individual in case of separation from attachment figure. It was aimed to investigate attachment styles, temperament traits, childhood trauma and dissociative experiences of university students diagnosed with adult separation anxiety disorder (ASAD).

Methods: Sixty five university students, diagnosed to have ASAD by a structured clinical interview were compared with healthy students via˝Adult Attachment Style Questionnaire (AAQ)," "Childhood Trauma Questionnaire (CTQ)," "Temperament Evaluation of Memphis, Pisa, Paris and San Diego Auto-questionnaire (TEMPS-A)," and "Dissociative Experiences Scale (DES)."

Results: Twenty two (33.8%) students with ASAD had problems with orientation and getting used to university. According to AAQ, students with ASAD had higher prevalence of insecure attachment styles, and especially high ambivalent attachment styles and to CTQ, students with ASAD had significantly higher scores in all subscales except physical abuse. Overall DES score was higher in students with ASAD compared to the control group. DES score and history of physical disease in the family were independent associates of ASAD.

Conclusion: Dissociative experiences and history of physical disease in the family were independent associates of ASAD among university students. Hence, early awareness of dissociative symptoms and family history might help early identify students with ASAD.

Keywords: Adult separation anxiety disorder, attachment, temperament traits, separation anxiety.

INTRODUCTION

Separation anxiety is a state of extreme anxiety an individual feels in case of separation or anticipation of separation from his/her mother or another basic attachment figure. The concept of separation anxiety is based prolonged, it is considered to be a mental disorder, if it is severe and developmentally inappropriate or disrupts the functionality of the individual. In other words, it is a part of normal mental development process, and it can be defined as an anxiety disorder which can be observed in childhood or adulthood (1). The diagnosis of adult separation anxiety disorder (ASAD) was first included in Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5). DSM-IV and International Classification of Diseases-10 (ICD-10) defined separation anxiety disorder (SAD) as a childhood disorder that starts before the age of 18 years (2).

It was reported that childhood separation anxiety may continue in adulthood and may also appear in adulthood (3). The adulthood form also appears as a pattern of symptoms similar to the childhood form. Adults also experience intense fears about separation from attachment figures, develop tactics to maintain the close relationship, and experience panic attacks when they face real or potential separations (3,4). Symptoms of separation in adulthood can be in the form of extreme anxiety about separation from parents or children as well as from parents, or about something bad that may happen to them (5). Manicavasagar et al. determined that childhood separation anxiety extends to adulthood (5). Cyranowski et al. suggested that adult separation anxiety may occur first in adulthood, independent of childhood, and supported this idea by their research (6). Shear et al. found that the lifetime prevalence of ASAD in the population was 6.6% and the prevalence of childhood separation anxiety disorder (CSAD) was 4.1% in first epidemiological study, the National Comorbidity Survey Replication (NCS-R) (7).

In a study, Manicavasagar et al. found that 2/3 of patients with ASAD had the onset of symptoms in childhood and these symptoms reappeared with stressors and constraints during adulthood, and that those which occured in adulthood after the loss of a loved one, divorce or traumatic event (5). Shear et al. reported that adults with ASAD were more likely to be unable to marry, divorce, be unemployed, have a low educational level, and experience failure in work life compared to healthy controls (7).

Separation anxiety disorder is mostly explained with the “attachment theory” (1). The term “separation anxiety” has been used in different ways to demonstrate aspect of attachment behavior, to identify the pathological stress observed in children with abnormal attachment experiences, or to identify a set of anxiety symptoms that are often observed in childhood (8).

In this study, it was aimed to investigate attachment styles, temperament traits, childhood trauma and dissociative experiences of university students with ASAD and to compare them with age-sex matched healthy control group.

METHODS

Participants

This study was derived from a thesis in profession entitled “Prevalence of Adult Separation Anxiety Disorder in University Students.” with additional analyses. Students (n=141) with a score of 25 or more according to Adult Separation Anxiety Questionnaire (ASAQ) in that thesis were invited for second interview up on telephone call. These students underwent Structured Clinical Interview by one of the authors and 65 students were diagnosed to have ASAD. Sixty five students studying at Cumhuriyet University were compared with the healthy control group with regards to “Adult Attachment Style Scale,” “Childhood Trauma Questionnaire (CTQ),” “Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire,” and “Dissociative Experiences Scale.” Healthy control group was generated by students who received scores lower than 25 in the Adult Separation Anxiety Questionnaire (ASAQ) in the thesis study. After a psychiatric interview, 75 age and sex matched individuals with no history of psychiatric disorders were determined and evaluated as the control group.

The study was a case-control study. Approval of the Ethics Committee of the Medical Faculty of Cumhuriyet University was obtained (Decision No: 2016-03 / 23).

Measures

Childhood Trauma Questionnaire (CTQ)

The scale developed by Bernstein in 1995 is a five-point Likert-type self-report scale having questions about emotional, physical and sexual abuse, and physical and emotional neglect in childhood. Response options consist of (1) never, (2) rarely, (3) from time to time, (4) often, (5) very often, and each question is scored between 1-5. It is used for the calculation of traumatic experience subscales and the total score (9). The validity, reliability and standardization studies for the Turkish version were carried out. The cut-off point was not calculated for the Turkish version of the scale, but the researchers made some predictions based on the study findings. The findings of this study indicate that the limit of 5 points for sexual and physical abuse could be increased to 7 points for physical neglect and emotional abuse and 12 points for emotional neglect. It can be observed that this limit may be around 35 points for the total score (10).

Dissociative Experiences Scale (DES)

It is a 28-item self-report scale developed by Bernstein and Putnam in 1986. For each item of the scale, scoring is made between 0-100 and the total

score is calculated to obtain the result. The scores above 30 indicate the presence of dissociative disorder (11). Validity and reliability studies of the Turkish version were carried out (12).

Adult Attachment Style Questionnaire (AAQ)

The AAQ consists of two parts. The first part, developed by Hazan and Shaver, consists of three different expressions, each of which describes the characteristics of the relationship with parents in childhood and the general behavioral characteristics, classifying adults as secure, ambivalent, and avoidant (13). The second part of the scale developed by Mikulincer et al. consists of 15 items, which are scored between 1 and 7 for each participant. Each attachment style is represented by five items, and the item with the highest score determines the attachment style of the individual completing the scale (14).

Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A)

It was developed by Akiskal to evaluate the dominant affective temperament (15). The questionnaire consists of 99 items that determine depressive, hyperthymic, irritable, cyclothymic and anxious temperaments. The person answers all of his / her life as yes or no. In order to determine the presence of predominant depressive (18 items), cyclothymic (19 items), hyperthymic (20 items), irritable (18 items) and anxious (24 items) temperament characteristics, the cut-off points are 13, 18, 20, 13 and 18, respectively. The validity and reliability studies of the Turkish version were carried out by Vahip et al (16).

Statistical analysis

The data obtained from this study were evaluated by using SPSS (Statistical Package for Social Sciences) for Windows 22.0 statistical package software (institutional registration). In the evaluation of the data, when the parametric test assumptions were fulfilled, student's T test was used. When there was an abnormal distribution, Mann-Whitney U test was utilized. Appropriate chi-Square test was used to compare categorical data, and the level of significance was accepted as 0.05. A backward stepwise multivariable logistic regression analysis was provided to predict independent associates of having ASAD.

RESULTS

Of the 65 students diagnosed to have ASAD, 48 (73.8%) were male and 17 (26.2%) were female. The control group consisted of 55 (73.3%) males and 20 (26.7%) females (p=0.945). The mean age of the students with ASAD and control grup were 21.84 ± 1.88 vs. 22.5± 1.99 years (p=0.06).

There was a significant difference between two groups with regard to socioeconomic level (p=0.003, Table 1). Students with ASAD (43.1%) more frequently reported that they lived with their family compared to control group (43.1% vs 22.7%, p=0.016, Table1).

Twenty one (32.3%) of students with ASAD and 10 (13.3%) students in the healthy control group reported that they had difficulty exceeding one month after initiation of education period (p=0.007). While 22 (33.8%) of the students with ASAD had problems with orientation and getting used to university, 12 (16.0%) of the healthy students had such problem (p=0.014, Table 1).

While 20 (30.8%) of the students with ASAD had a history of physical disease, 12 (16.0%) students in the control group had a history of physical disease (p=0.038). While 28 (43.1%) of the students with ASAD reported history of physical disease in their family, 14 (18.7%) students in the control group reported history of physical disease in their family (p=0.002). There was a statistically significant difference between two groups in terms of the history of suicide attempt: Six (9.2%) of the students with ASAD and one (1.3%) of the students in the healthy control had a previous history of suicide attempt (p=0.032). The results were presented in Table 1.

Mean DES score of the students with ASAD versus control group were 23.3±17.6 vs. 9.6±9 (p<0.001) (Table 1). DES score of 30 or more was present in 4% (n=3) of the control group versus 32.3% (n=21) of students with ASAD (p<0.001).

Mean CTQ score of the students with ASAD versus control group were 38.8±14 vs. 30.9±8.1 (p<0.001) (Table 1). The students with ASAD were compared with the control group according to the subdomains of CTQ, there was a statistically significant difference between the two group in all subdomains (emotional neglect, p<0.001, emotional abuse, p=0.01, physical neglect, p=0.021, sexual abuse, p=0.017) except for physical abuse (p=0.299).

There was a statistically significant difference

Table 1. Comparison of the baseline characteristics of the ASAD and control group

	ASAD n(%)	**Control group n(%)**	p-value
Age (years)	21.84±1.88	22.5±1.99	0.06
Gender (Male/Female)	48/17	55/20	0.945
Marital Status			
Married	0(0%)	2(2.7%)	0.185
Single	65(100%)	73(97.3%)	
Socioeconomic Level			
Low	3(4.6%)	8(10.7%)	**0.003**
Medium	62(95.4%)	57(76.0%)	
High	0(0%)	10(13.3%)	
Current status			
Living with family	28(43.1%)	17(22.7%)	
Living with relatives	3(4.6%)	3(4.0%)	
Living alone at home	2(3.1%)	6(8.0%)	**0.016**
Living with friends	13(20.0%)	32(42.7%)	
Living in dormitory	19(29.2%)	17(22.7%)	
Loss of Family Members			
Yes	9(13.8%)	8(10.7%)	0.566
Caregiver For the First Three Years of Life			
Mother			
Relative	57(87.7%)	61(81.3%)	
Nanny	5(7.7%)	5(6.7%)	0.487
Nursery	2(3.1%)	6(8.0%)	
	1(1.5%)	3(4.0%)	
Difficulty exceeding one month after initiation of education period	21(32.3%)	10(13.3%)	**0.007**
Disorientation to University	22(33.8%)	12(16.0%)	**0.014**
History of Physical Disease	20(30.8%)	12(16.0%)	**0.038**
History of Physical Disease in the Family	28(43.1%)	14(18.7%)	**0.002**
History of Suicide Attempt	6(9.2%)	1(1.3%)	**0.032**
Family Support	54(83.1%)	66(88.0%)	0.406
Dissociative Experiences scale	23.3±17.6	9.6±9	**<0.001**
Childhood Trauma Questionnaire	38.8±14	30.9±8.1	**<0.001**

between the two groups in terms of attachment styles ($p<0.001$) (See Table 2). There was no statistically significant difference between the two groups in terms of temperament traits ($p=0.323$) (See Table 2).

Multivariable stepwise backward logistic regression was used to designate independent variables that were associated with ASAD. Parameters with statistically significant differences in the univariate

Table 2. Distribution of the students with ASAD and control group according to attachment styles and temperament traits

		ASAD n (%)	Control n (%)	
Attachment Style				
	Secure	27 (41.5%)	56 (74.7%)	
	Ambivalent	26 (40.0%)	12 (16.0%)	
	Avoidant	12 (18.5%)	7 (9.3%)	**p<0.001**
	Total	65(100%)	75(100%)	
	Depressive Temperament	8 (12.3%)	8 (10.7%)	
	Cyclothymic Temperament	7 (10.8%)	4 (5.3%)	
Temperament	**Hyperthymic Temperament**	6 (9.2%)	9 (12.0%)	p=0.323
	Irritable Temperament	3 (4.6%)	5 (6.7%)	
	Anxious Temperament	13 (20.0%)	7 (9.3%)	
	No dominant temperament	28 (43.1%)	42(56.0%)	

analysis (Table 1&2) were included in the multivariate analysis. The history of physical disorder in the family (p=0.013, Exp(B)=2.882, 95% CI=1.24-6.664) and DES score (p<0.001, Exp(B)=1.078, 95% CI=1.04-1.115) were found to be independent associates of ASAD (Table 3).

DISCUSSION

Adult separation anxiety disorder has recently been added into DSM-5. Studies are limited in the adult age groups. Adult separation anxiety disorder is also missed by most of the physicians. In this study, the sociodemographic characteristics, temperament traits, attachment styles, childhood traumas and dissociative experiences of students with ASAD and healthy control group were compared.

In the study, the majority of the group with ASAD consisted of male students. This may be due to selection bias that the students who accepted to participate the second stage of the study were mostly male students. However, there was no difference in terms of gender distribution among patients diagnosed with ASAD in a study carried out by Diriöz M et al (17). In a study conducted by Shear et al., it was found that childhood separation anxiety disorder was more common in females, but there was a less difference in terms of gender in the ASAD group and males were more likely to have an onset of ASAD in adulthood (7).

The socioeconomic level of students with ASAD was found to be moderate in general. A statistically significant difference was found between the ASAD and control groups in terms of the socioeconomic level. Although there is no direct comparison, it was reported that children with separation anxiety disorder had families with a low socioeconomic level (18). In

Table 3. Multivariable regression analysis to predict independent associates of ASAD

	P	Exp(B)	95% C.I.for EXP(B)	
			Lower	Upper
History of physical disease in the family	0.013	2.882	1.246	6.664
Dissociative Experiences Scale	0.001	1.078	1.043	1.115
Constant	0.001	0.345		

their follow-up study, Poulton et al. found that CSAD was related to the low socioeconomic level (19).

In the study, it was found that 43.1% of the students with ASAD lived together with their families. In a study with 170 first-grade college students aged between 18 and 20, Santorelli revealed that students with adult separation anxiety symptoms lived with their families at a higher rate than the others (20). This finding was consistent with our findings.

It was found that the students with ASAD had a higher rate of difficulty exceeding one month after initiation of education period. This might be expected due to the nature of separation anxiety. It might be difficult for them to leave home, family and adapt to a different environment.

In the study, history of physical disease in themselves or in their family was more frequently noted in the students with ASAD compared to the control. The history of physical disease in the family was found to be an independent predictor of ASAD in the multivariable analysis. The higher rate physical disease in the family might be accompanying factor for separation anxiety.

While 41.5% of the students with ASAD had a secure attachment style, 74.7% of the control group exhibited a secure attachment style according to the AAQ. Besides, 40% of the students with ASAD had ambivalent attachment, though, 16% of the control group had ambivalent attachment. It was found that there was a positive relationship between insecure attachment styles and ASAD, and the ambivalent attachment style was found to yield a higher rate of ASAD (1). Bowlby stated that the child would respond with anxiety and fear in situations when he/she cannot foresee the availability of attachment figure, but children with an insecure attachment style would have more anxiety than those with secure attachment (1). Manassis reported that insecure attachment styles might create an environment for the development of anxiety disorders and that specific attachment styles may be associated with specific anxiety disorders (21). In the study of Manicavasagar et al., attachment styles were investigated in panic disorder (PD) patients with and without ASAD comorbidity, and the “ambivalent attachment style” was shown to be higher in PD patients with ASAD comorbidity (22). In the study of Santorelli, investigates a mediational model with individual attachment style serving as a mediator between perceived early parenting styles and symptoms of ASA in 170 first-year college students between the ages of 18-20 and a large percent of the sample endorsed clinically significant levels of symptoms of ASAD (47%), it was suggested that the anxious attachment style might be a predictor for ASAD (23).

No statistically significant difference was found between the two groups in terms of temperament in this study. However, in the study conducted by Mertol et al., the Cloninger's Temperament and Character Inventory was applied to the ASAD, PD and control groups, and high harm avoidance scores showing “predisposition for anxiety” were found to be higher in the ASAD group (24). In the thesis study of Ok, dominant anxious temperament and cyclothymic temperament traits and the etiologic factors such as separation from parents in the early childhood increase the risk of PD with ASAD (25).

Mean score of CTQ of students with ASAD and mean score of all subdomains of this scale were higher compared to the control group except for the physical abuse subscale. The data obtained from the study might suggest that childhood traumatic experiences, similar to other anxiety disorders, may be a predictor for the development of ASAD (26,27). In the study of Çakmak B et al. which investigated the relationship between childhood traumas and adult separation anxiety, and they found a significant positive relationship between the Adulthood Separation Anxiety Checklist total score and CTQ emotional neglect and abuse, sexual abuse and total score (28). It was shown that childhood traumas might lead to a predisposition for ASAD in the later life of the individual (28).

In this study, mean score of DES was higher in the students with ASAD compared to the control group. DES score was found to be independent associate of ASAD in the multivariable analysis. In the study conducted by Mertol et al., DES scores were 16±11.5 vs. 11.2±10.5 and 5.8±8.2 with a significant difference among the groups for ASAD vs. Panic disorder (PD) patients, and healthy volunteers respectively (24). Traumatic experiences were shown to cause dissociative symptoms (29). Silove et al. found a significant relationship between post-traumatic stress disorder (PTSD) and ASAD in their study on victims of war. In that study, It was found that all of the ASAD cases were diagnosed with PTSD comorbidity (30). The cross-sectional nature of the study created a limitation. A limited number of studies on adult separation anxiety disorder in the literature brought about difficulties for comparison. Furthermore, there are very few studies investigating the relationship

between ASAD, attachment styles, childhood traumas, dissociative disorder, and temperament in the literature. Of note, though, multivariable analysis was made, a case-control nature of the design complicates the value of the obtained results. Therefore, more studies with larger sample sizes along with longitudinal design are needed.

CONCLUSION

Compared to control group, students with ASAD had higher rate of moderate socioeconomic level, more frequent preference of the university in the province where their family lives and higher rate of long-term difficulties in starting and continuing school. History of physical disease was also more frequently encountered on top of a higher rate of a suicide attempt among the students with ASAD. According to the attachment styles, it was found that the students with ASAD generally had insecure attachment styles, and especially high ambivalent attachment styles. Although, childhood trauma score was higher among students with ASAD, only DES score and history of physical disease in the family were independent associates of ASAD. Hence, early awareness of dissociative symptoms and family history might help early identify students with ASAD.

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