

Psychopathology and Temperament in Parents of Adolescents with Substance Use Disorders: A Controlled Study

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Abstract

Objective: The aim of the present study was to investigate the characteristics of psychopathology and temperament in parents of adolescents with substance use disorders (SUD). We compared the psychiatric diagnoses and temperament characteristics of parents of adolescents with SUD with parents of adolescents without SUD.

Methods: Diagnostic interviews of the parents were conducted with 3 instruments: Structured Clinical Interview for DSM non-patients, Axis 1 Disorders, and Axis 2 Disorders (SCID-NP, SCID-I, and SCID-II). Temperament characteristics were evaluated with TEMPS-A (Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire), Turkish version.

Results: Mood disorders ($P = 0.010$), and avoidant ($P = 0.005$) and paranoid ($P = 0.011$) personality were more frequent in mothers of adolescents with SUD than in the controls, whereas mood disorders ($P = 0.011$), SUD ($P = 0.047$), and paranoid personality ($P = 0.008$) were more frequent in the fathers of adolescents with SUD than in the controls. Depressive, cyclothymic, and anxious temperament scores (respectively $P = 0.023$, $P = 0.00$, and $P = 0.003$) were higher in mothers than in the controls, and depressive temperament ($P = 0.013$) scores were higher in fathers of adolescents with SUD than in the controls.

Conclusion: DSM Axis I and Axis II disorders were more frequent in the parents of adolescents with SUD than in the parents of adolescents without SUD. The difference in temperament characteristics exists in both groups. Familial effects have significant clinical implications for SUD in adolescents, such as individual features and peer effect.

Key Words: Adolescent, substance use disorders, psychiatric diagnoses, temperament

INTRODUCTION

Resiliency or resistance concepts have arisen to help understand why some adolescents do not develop negative behaviors despite having had experienced similar aversive conditions, environment, and risk factors as their counterparts (Ostoszewski and Zimmerman 2006). There are 3 resiliency factors in adolescents with substance use disorders (SUD): Individual characteristics, and the influence of family and friends.

The quality of care giving during childhood is said to be responsible for a child's ability for discriminating emotions and emotional control later in life (Chakroun

et al. 2004), which is reported to be dysfunctional in addicts. The combination of care giving quality and genetic predisposition to addiction makes children vulnerable to addictive behavior (Gerra et al. 2007). The quality of the mother-child relationship and the child's perception of his/her attachment relationships with caregivers mediate the relationship between genetic and environmental factors. (Westermeyer et al. 2004). Child's perception of his/her parents' caregiveness as well as the aggressive and angry personality style of parents has also been pointed out (Chakroun et al., 2004).

The parental personality characteristics is a risky fac-

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tor for alcoholism (Tarter and Vanyukov 1994). When SUD cases were compared to healthy individuals in terms of personality style, the frequency of poor adjustments in their personality characteristics was greater in the SUD group. Misadjusting personality style seems to be a risk factor for SUD. Moreover, impulsive, neurotic, and extravert personality styles were reported to be important risk factors for SUD (Jones 1968; Loper et al. 1973; Cloninger et al. 1988; Caspi et al. 1997). Adoption studies indicate that being reared by an alcoholic caregiver does not increase the risk of alcoholism later in life (Goodwin et al. 1974; Newlin et al. 2000). The personality style of individuals with SUD is reported to be inherited (Tellegen et al. 1988) and a familial risk factor (McGue et al., 2001; Swendsen et al. 2002). Personality theorists assert that some personality characteristics are more frequently inherited than others (Tellegen et al. 1988). The 40%-50% of personality characteristics are attributed to genetic factors (Bouchard et al. 1998; Reiman and Raad 1998).

In conditions of long-term substance use, behavioral, cognitive, and affective alterations are observed, such as social withdrawal, irritability, and aversive emotions. These changes stem from anxiety and depressive syndromes created by substance use (Schuckit and Hesselbrock 1994; Schuckit et al. 1997). When SUD is successfully treated, the severity of these problems diminish, which supports the idea that maladjustment is a required condition (Sacks and Levy 1979; Fleischhacker and Kryspin-Exner 1986). It is clinically important to examine the risk factors of psychopathology and temperament characteristics in parents of adolescents with SUD. The present study aimed to evaluate the parents of adolescents with SUD and those of adolescents without SUD in terms of psychopathology and temperament characteristics.

METHOD

Sample

The study group consisted of mothers and fathers of adolescents with SUD that presented to the Ege University Child and Adolescent Alcohol and Substance Addiction Research and Application Center between 2005 and 2007. In all, 88.5% of cases that consulted to the outpatient clinic and all the cases in the inpatient clinic were male (Yüncü et al. 2006); therefore, we included only the parents of male adolescent cases in the study. Parents with any physical or psychological illness that could interfere with data collection were excluded from

the study. We interviewed the mothers and fathers of 47 male adolescents with SUD. Two parents were divorced, and 2 other parents were separated. We could not obtain sufficient information from 2 mothers and 1 father, who were therefore excluded. The control group consisted of mothers and fathers of adolescents without a history of SUD. The control group was matched with the study group in terms of age and gender.

Instruments

Diagnostic interviews of the study group were conducted with the Turkish version of the Structured Clinical Interview for DSM-Axis 1 Disorders (SCID-I) (Çorapçıoğlu et al. 1999). Turkish versions of the Structured Clinical Interview for DSM non-patients (SCID-NP) (Sorias et al. 1990) and Structured Clinical Interview for DSM Axis II Disorders (SCID-II) were administered to the control group. In order to determine temperament characteristics, the Turkish version of the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire (TEMPS-A) was used. TEMPS-A was developed by Akiskal in order to evaluate the dominant affective temperament. The questionnaire consists of 100 items that measure depressive, hyperthymic, angry, cyclothymic, and anxious temperaments. Respondents are required to provide yes or no answers in consideration of their entire life. The cut-off points for depressive (19 items), cyclothymic (19 items), hyperthymic (20 items), angry (18 items), and anxious (24 items) temperaments are 13, 18, 20, 13, and 18, respectively. Vahip et al. (2005) conducted the reliability and validity study of the Turkish version of the questionnaire. The test-retest reliability of each subtest ranged between 0.73 and 0.93; Cronbach's alpha coefficient for each subtest was between 0.77 and 0.85 (Vahip et al. 2005). The sociodemographic characteristics of both groups (i.e. age, education level, marital status, monthly income level of the family, and family history of migration history) were recorded.

PROCEDURE

All parents were interviewed first with SCID-NP and SCID-I, and were then administered TEMPS-A. The study and control groups were compared in terms of sociodemographic characteristics, SCID-I and II diagnoses, and temperament scores. Additionally, the mothers and fathers in the study group, and the mothers and fathers in the control group were separately compared. When any parent had more than 1 personality disorder (PD) diagnosis, each personality disorder diagnosis was

Table I. Evaluation of the study group and control group in terms of DSM-Axis I diagnoses.

	Case			Control			Case Control	Mother Control	Father Control	Father Mother
	Total	Mother	Father	Total	Mother	Father				
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	χ^2	χ^2	χ^2	χ^2
Presence of Axis I diagnoses	45 (51.1)	22 (50)	23 (52.3)	6 (12.5)	5 (20.8)	1 (4.2)	19.782**	5.518*	15.737**	0.045
Mood disorder	29 (33)	19 (43.2)	10 (22.7)	3 (6.3)	3 (12.5)		12.310**	6.680*	6.395*	4.166*
Psychotic disorder										
Alcohol dependence/SUD	10 (11.4)		9 (22.7)	1 (2.1)		1 (4.2)	3.598		3.945*	11.282**
Anxiety disorder	2(2.3)		2 (4.5)	1 (2.1)			0.005	1.861	3.945*	2.047
Somatization disorder	3 (3.4)	3 (6.8)		1 (2.1)	1 (4.2)		0.191	1.197		3.106
Sexual dysfunction	1(1.1)		1 (2.3)				0.549		0.554	1.011

*p<.05,**p<.001, *p<.05,**p<.001

Case control: The comparison between the parents of the study group and the parents of the control group.

Mother control: The comparison between the mothers of the study group and the mothers of the control group.

Father control: The comparison between the fathers of the study group and the fathers of the control group Father-mother: The comparison between fathers and mothers of the study group.

statistically examined in the analysis. In the evaluation of personality clusters, if a case had more than 1 PD diagnosis in a given cluster, the first diagnosis in that cluster was put into the analysis and we excluded the other diagnoses in the same cluster from the analysis to prevent repetition.

Statistical Analysis

The Mann-Whitney U test was used to compare continuous variables and the chi-square test was used to compare categorical variables. The level of statistical significance was accepted as $P < 0.05$. All analyses were two-tailed.

RESULTS

All the adolescent SUD cases of the study group were male (mean age: 16.4 ± 1.3 years). Mean age at first experimentation with substances was 14.1 ± 1.8 years. Mean duration from first experimentation and the start of SUD treatment was 25.6 ± 21.1 months. Among the adolescent SUD cases, 100% used alcohol or substances other than tobacco and 93.2% of them

smoked. In terms of the substance first used, 47.7% used marijuana, 36.4% used alcohol, 13.6% used toluene, and 2.3% used stimulants (ecstasy). Among adolescents with SUD, 77.3% used marijuana, 61.4% used alcohol, 54.5% used ecstasy, 31.8% used toluene, and 2.3% used cocaine. Among the SUD cases, 31.8% had a family history of addiction, while 68.2% did not ($P = 0.001$).

Comparison of Parents in Terms of Sociodemographic Characteristics

Mean age of the study group (42.2 ± 5.3 years) did not significantly differ from that of the control group (43.6 ± 7.7 years) ($P = 0.197$). When the study group mothers and fathers were compared, there wasn't a significant difference in terms of mean age ($P = 0.305$ for mothers and $P = 0.491$ for fathers). In all, 33% the study group ($n = 29$) and 41.7 % of control group ($n = 20$) lived in the town of their birth, and the difference was significant ($P = 0.312$). Mean duration of education in the study group (6.5 ± 2.9 years) was significantly less than that of the control group (12.1 ± 3.5 years) ($P = 0.000$). Mean monthly income in the study group (874.2 ± 321.4 New

Table II. Evaluation of the study group and control group in terms of DSM-Axis II diagnoses.

	Case			Control			Case Control	Mother Control	Father Control	Father Mother
	Total	Mother	Father	Total	Mother	Father				
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	χ^2	χ^2	χ^2	χ^2
Presence of Axis II diagnoses	52 (59.1)	26 (59.1)	26 (59.1)	9 (18.8)	3 (12.5)	6 (25)	18.326**	13.782**	5.567*	0.000
A-cluster	27 (30.7)	10 (22.7)	17 (38.6)	3 (6.3)		3 (12.5)	10.783*	6.395*	5.110*	2.618
Paranoid	27 (30.7)	10 (22.7)	17 (38.6)	2 (4.2)		2 (8.3)	13.016**	3.395*	7.083*	2.618
Schizoid				1 (2.1)		1 (4.2)				
B-cluster	11 (12.5)	6 (13.6)	5 (11.4)				6.5258*	3.589	2.944	0.104
Antisocial	2 (2.3)	1 (2.3)	1 (2.3)				1.107	0.554	0.554	
Borderline	4 (4.5)	3 (6.8)	1 (2.3)				2.248	1.712	0.554	1.048
Histrionic	4 (4.5)	2 (4.5)	2 (4.5)				2.248	1.124	1.124	
Narcissistic	1 (1.1)		1 (2.3)				0.549		0.554	1.011
C-cluster	37 (42)	23 (52.3)	14 (31.8)	6 (12.5)	3 (12.5)	3 (12.5)	12.540**	10.402*	3.091	3.777
Avoidant	20 (22.7)	15 (34.1)	5 (11.4)	1 (2.1)	1 (4.2)		9.897*	7.729*	2.824	6.471*
Dependent	3 (3.4)	2 (4.5)	1 (2.3)	1 (2.1)		1 (4.2)	0.191	1.124	0.195	0.345
Obsessive-compulsive	15 (17)	8 (18.2)	7 (15.9)	4 (8.3)	2 (8.3)	2 (8.3)	1.961	1.201	0.776	0.80
Passive aggressive	3 (3.4)	1 (2.3)	2 (4.5)				1.673	0.554	1.124	0.345
Self-defeating	1 (1.1)	1 (2.3)					0.549	0.554		1.011

Case control: The comparison between the parents of the study group and the parents of the control group

Mother control: The comparison between the mothers of the study group and the mothers of the control group

Father control: The comparison between the fathers of the study group and the fathers of the control group

Father-mother: The comparison between fathers and mothers of the study group

Turkish Liras [YTL]) was significantly lower than that of the control group (1247.6 ± 473.5 YTL) ($P < 0.001$).

Comparison of Parents in Terms of Psychopathology

In total, 51.1% of the study group and 12.5% of the control group had at least 1 psychiatric illness ($P < 0.001$). The most frequent psychiatric disorder in the study group was an affective disorder (33%), followed by alcohol dependence/SUD (11.4 %), somatization disorder

(3.4 %), anxiety disorder (2.3 %), and sexual dysfunction (1.1 %) (Table I). The difference between the study and control groups in terms of Axis-I diagnoses and affective disorders ($P < 0.001$) was not significant. The difference between the 2 groups was statistically marginal in terms of alcohol dependence/SUD ($P = 0.058$). In the study group, 43.2% of mothers and 22.7% of fathers had an affective disorder, which was the most frequent psychiatric disorder in both the study group and control group. The second most frequent disorder was alcohol

Table III. Evaluation of the study group and control group in terms of temperament characteristics.

	Case			Control			Case Control	Mother Control	Father Control	Father Mother
	Total	Mother	Father	Total	Mother	Father				
	M ± SD	M ± SD	M ± SD	M ± SD	M ± SD	M ± SD	z	z	z	z
Depressive	7.1±3.2	7.4±3.5	7±3	5.4±3.3	5.7±3.4	5±3.2	-3.361*	-2.271*	-2.483*	-0.264
Cyclothymic	7.7±4.3	8.3±3.9	7.1±4.6	5.8±4.3	6.3±4.1	5.4±4.5	-2.436*	-1.964*	-1.509	-1.063
Hyperthymic	10±4.4	9.1±4.1	10.8±4.6	11.5±4.1	10.3±4.4	12.6±3.6	-1.634	-0.831	-1.457	-2.006*
Irritable	3.9±3.6	4.1±3.7	3.7±3.6	3.3±4.4	2.8±3.5	3.9±5.1	-1.772	-1.768	-0.786	-0.396
Anxiety	8.3±5.4	9.9±5.5	6.7±4.9	5.5±5.3	5.9±5.9	5.1±4.7	-3.135*	-2.935*	-1.371	-2.939*

Case control: The comparison between the parents of the study group and the parents of the control group

Mother control: The comparison between the mothers of the study group and the mothers of the control group

Father control: The comparison between the fathers of the study group and the fathers of the control group

Father-mother: The comparison between fathers and mothers of the study group

dependence/SUD (20.4%) among the study group fathers (Table I). Mood disorders were significantly more frequent among the study group mothers than among the mothers in the control group ($P = 0.01$). Significantly more study group fathers had a mood disorder ($P = 0.011$), alcohol dependence/SUD ($P = 0.047$), or an anxiety disorder ($P = 0.047$), as compared to the control group fathers. There was a significant difference between the study group mothers and fathers, and between the control group mothers and fathers in terms of affective disorders ($P = 0.041$) and alcohol dependence/SUD ($P = 0.001$). Comorbid diagnoses were more frequent in the study group ($n = 13$) than in the control group ($n = 3$) ($P = 0.037$). The most frequent comorbid diagnosis in the study group was somatoform disorder ($n = 9$). There was a significant difference between the study group and control group in terms of alcohol dependence/SUD ($P < 0.001$). There difference between 2 the groups in terms of other Axis-I diagnoses was not significant.

Axis-II diagnoses were more frequent in the study group (59.1%) than in the control group (18.8%) ($P < 0.001$). In the study group 34.1% of parents had at least 2 Axis-II diagnoses, whereas there were no Axis-II diagnoses in the control group. The most frequent Axis-II diagnosis was C-cluster PD (PD) (42%), which was followed by cluster A (30.7%) and cluster B (12.5%)

PD. Paranoid PD (30.7%), avoidant PD (22.7%) and obsessive-compulsive PD (17%) were the most frequent Axis-II disorders. C-cluster PD (52.3%) and, specifically, avoidant PD (34.1%) was the most frequent among the study group mothers, followed by avoidant PD. A-cluster PD, and in particular, paranoid PD (38.6 %) was the most frequent PD among the study group fathers, which was followed by obsessive-compulsive PD (Table II).

There were significant differences between the study group and control group in terms of cluster A, cluster B, and cluster C PD ($P = 0.001$, $P = 0.011$, and $P = 0.000$, respectively), and paranoid PD and avoidant PD ($P < 0.001$ and $P = 0.002$). When comparing the study group mothers and fathers with the control group mothers and fathers, significant differences between the mothers in the study group and those in the control group in terms of cluster A and C PD were observed, as well as in terms of paranoid PD and avoidant PD ($P = 0.011$ and $P = 0.001$). Fathers in the study group and those in the control group differed significantly in terms of cluster A PD and paranoid PD ($P = 0.024$) (Table II). When mothers and fathers in the study group were compared, there was no group difference in terms of avoidant PD ($P = 0.011$). There was also no difference between the parents with a family history of SUD and those without in terms of Axis-II diagnoses.

Comparison of Parents in Terms of Temperament Characteristics

Mean depressive, cyclothymic, irritable, and anxious temperament scores of the study group parents (7.1 ± 3.2 , 7.7 ± 4.3 , 3.9 ± 3.6 , and 8.3 ± 5.4 , respectively) were higher than those of the control group parents (5.4 ± 3.3 , 5.8 ± 4.3 , 3.3 ± 4.4 , and 5.5 ± 5.3 , respectively). Depressive, cyclothymic, and anxious temperament scores of the 2 groups were significantly different ($P = 0.001$, $P = 0.015$, and $P = 0.002$, respectively). Similar results were obtained for mothers in the study group and for those in the control group ($P = 0.023$, $P = 0.05$, $P = 0.003$, respectively). Depressive temperament scores of the fathers in the study group and those in the control group were significantly different ($P = 0.013$) (Table III). When we compared the study group parents that had a family history of SUD with those that didn't, the difference in temperament scores was not significant.

DISCUSSION

Fewer studies have examined the parents of adolescents with SUD than the children of parents with SUD. The present study is the first to examine both the presence of psychopathology (Axis-I and II diagnoses) and temperament characteristics in parents of adolescents with SUD. Adolescents with SUD began to experiment with substances at a mean age of 14.1 ± 1.8 years. Mean elapsed time between first experimentation with substances and initiation of treatment for SUD was 25.6 ± 21.1 months. Yüncü et al. (2006) examined the two-year evaluations of patients in the outpatient clinic of our treatment center. Researchers report that the mean age at first experimentation of substances is 13.7 ± 2.16 years and mean duration of time between first experimentation and treatment for SUD is 29 ± 23.98 months (Yüncü et al 2006), which is similar to our findings.

In the present study the study group had a higher rate of psychopathology (Axis I) than the control group. It was posited that the presence of psychological disorder in parents is a risk factor for substance use in adolescents (Clark et al. 2005). Moreover, adolescents whose parents both have SUD have a lower age of SUD onset and more severe addiction compared to adolescents with only 1 parent that has SUD (Westermeyer et al. 2007). In the present study mood disorders in mothers and mood disorders and alcohol/SUD were the most frequent Axis-I disorders in the study and control groups. Relatives of people with opioid addiction were reported to have higher rates of SUD compared to the relatives

of people without any addiction, but they had similar rates of psychotic disorders, depressive disorders, and obsessive-compulsive disorders (Prasant et al. 2006). One longitudinal study showed that substance abuse and addiction were predicted by the presence of psychological disorders in the parents of adolescents/young adults that used marijuana (Von Sydow et al. 2002). In one study, 75.4% of parents of people with SUD did not have any comorbid diagnosis whereas it is indicated that comorbid diagnosis of mood disorder and anxiety disorder is more frequent among the other subject. (De Graaf et al. 2002).

In the present study we observed higher rates of mood disorders among mothers in the study group. Zatzick et al. (2006) similarly reported that the rate of depressive symptoms was higher among the parents of adolescents with alcohol use disorders, but they did not observe any relationship of depressive symptoms between adolescents and their parents. Our study was different than that of Zatrack et al. (2006) in that the adolescents of the parents in our study group were using more than 1 substance. Depressive symptoms in the family, poor communication between family members, and weaknesses in parents' behavior are suggested to be risk factors for substance use among girls aged 13-17 years (Wiesner and Juang 2004). We did not examine the parents of female adolescents with SUD and this might be a limitation of our study, but higher rates of depressive symptoms were observed in the study group.

A study that examined the presence of any Axis-I diagnosis in children of parents with alcohol addiction indicated that these children had higher rates of anxiety disorders, depressive disorder, ADHD, elimination disorders, learning disorders, tics disorders, and mental retardation, as compared to the control group. (Çengel Kültür et al., 2006). They reported that the rate of ADHD among the children of parents with alcohol addiction were higher than in both the control group and general population (6%-9%). More adolescents with a family history of alcoholism have behavioral problems (such as anger-aggression and committing crime), perceive isolation and rejection from their family, and are diagnosed with antisocial personality disorders than those without a family history of alcoholism (Barnow et al. 2002). They are also reported to have lower rates of perceived acceptance from and emotional proximity to family members. Moreover, sons of male alcoholics are more angry and aggressive, and have higher rates of oppositional defiant disorder, ADHD, and poor academic performance compared to healthy control groups (Vi-

taro et al. 1996). Adolescents with a family history of alcoholism are reported to have higher negative emotion, response to stress, aggression, and alienation scores, and lower well being scores compared to those without such a history (Elkins et al. 2004). Boys of mothers with alcohol use disorder (AUD) have higher rates of psychosocial problems compared to girls and boys of fathers with AUD and (Werner 1986). In the present study, 31.8% of the adolescents had a family history of addiction, while 68.2% did not. There were higher rates of alcohol dependence/SUD among the adolescents with a family history of alcohol dependence/SUD compared to those that did not.

The psychosocial development and psychosocial adaptation of the children of fathers with SUD are effected by age of the father, frequency of the father's aggressive behaviors, frequency of the father's substance use in the previous year, antisocial personality characteristics of the father, and the level of psychological stress in their mothers (Fals-Stewart et al. 2003). The presence of depressive problems, recurrent stress, and the absence of any consistent parental figure increase the frequency of substance use in the children of parents that are opioid addicts treated with methadone (Keller et al. 2002). The presence of alcohol dependence/SUD seen in the early stages of development is suggested to be inherited, especially among men, whereas, environmental effects on alcohol dependence/SUD seem to be more important among women (McGue et al. 2001). The personality styles of boys and girls with a family history of SUD are similar (Elkins et al. 2004). There seems to be an important relationship between the dimensions of temperament, and lifelong psychopathology and SUD (Windle and Windle 2006). Adolescents of parents with SUD are said to be at risk of limit setting, control, avoidance from harm, and tradition. There is no difference in the personality characteristics of female and male adolescents of parents with SUD. Negative emotions and limit setting are important risk factors for SUD (Elkins et al. 2004).

Wills et al. (2003) reported that temperament characteristics of family members affect substance use in adolescents. Researchers highlight some temperament characteristics and behavioral patterns in parents of children with SUD, but there are no longitudinal studies on the measurement of temperament characteristics in parents of children with SUD. In the present study we observed differences between temperament characteristics in the study and control groups; depressive, cyclothymic, and anxious temperament scores were higher in the study group. Depressive, cyclothymic, irritable, and anxious

temperament scores of the mothers in the study group were higher than those of the mothers in the control group. Depressive temperament scores of the fathers in the study group were higher than those of the fathers in the control group.

High depressive and cyclothymic scores of mothers were compatible with the findings on sub-clinical depressive mood (i.e. low self-esteem, low goal directed behavior, low energy, inability to get pleasure) and the frequency of depressive disorders in the mothers in the study group. High anxious temperament scores were compatible with such findings as low emotional expression, high frequency of avoidant behavior, somatoform disorder comorbidity, and avoidant PD diagnosis. This condition might be related to a predisposition to develop a dependent behavior on a history of childhood neglect, negative identification, wrong or inadequate defenses, which is so to speak a picture of behavior of a dependent woman (Gerra et al. 2007).

The present study observed differences between the study group and the control group in terms of irritable temperament scores at marginally significant levels. High irritable temperament scores are the reflection of impulsivity, poor impulse control, novelty seeking, irritability and suspiciousness, anger, and aggression. These personality characteristics are similar to the paranoid personality disorder. Parents with these characteristics might not respond to an adolescent's need to be accepted and might negatively affect the healthy development of the feeling of control in adolescents, which might lead to addictive behavior. (Chakroun et al. 2007). The present study shows that paranoid PD was the most frequent PD in fathers and the second most frequent PD in mothers.

The level of education level of the family has been suggested to influence substance use among adolescents (Wills et al. 2003), which is in agreement with our findings. We observed that the level of education of the study group was significantly lower than that of the control group. Yüncü et al. (2007) reported that the duration of education of the parents of adolescents with SUD living on the street ranges between 0 to 5 years, whereas in the parents of children that have never lived on the street it is more than 6 years.

Previous studies indicate that low socioeconomic level is a risk factor for SUD (Von Sydow et al. 2002). Our study shows that the socioeconomic level of the study group was lower than that of the control group. Economic level is significantly related to substance use of the parents (Von Sydow et al. 2002). Another finding of

the present study suggests that there wasn't a significant difference between the study group and control group in terms of the frequency of migration among the families. Although previous studies indicated that migration is significantly related to the frequency of SUD (Ekşi 2002), we recommend further study to determine if the absence of a history of immigration is a protective factor against SUD.

The present study provides important epidemiologi-

cal and clinical data. The study group was different than the control group in terms of Axis-I and II diagnoses, and temperament characteristics. Familial factors are as important as personality factors and the influence of peers in SUD. Family factors include the presence of psychological disorder in and the temperament characteristics of parents, and sociocultural factors, such as low-level parental education, low socioeconomic level, and a history of migration.

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