Temperament, Character, and Dissociation Among Detoxified Male Inpatients With Alcohol Dependency

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The aim of this study was to determine possible relationships of pathological dissociation with temperament, character, and concurrent psychopathological features in a consecutive series of male alcohol-dependent patients. Fifty-eight patients with pathological dissociation were compared with 118 nondissociative patients classified by dissociative taxon membership. Beside higher scores on anxiety, depression, and alcoholism scales, a larger proportion of dissociative group reported childhood abuse, suicide attempts, and self-mutilation than did the nondissociative group. They also had higher scores of novelty seeking and harm avoidance, but lower scores of persistence, self-directedness, and cooperativeness. Trait anxiety, depression, and severity of alcoholism predicted dissociative experiences; however, none of the temperament or character measures did. Rather than being a derivative of temperament or character features, dissociative experiences of male alcohol-dependent patients are associated with overall concurrent psychopathology.
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Keywords: alcohol abuse; anxiety; character; depression; dissociation; temperament

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Introduction

Dissociative symptoms and disorders may accompany several psychiatric disorders (Sar & Ross, 2006) including borderline personality disorder (Sar et al., 2003; Sar, Akyuz, Kugu, Ozturk, & Ertem-Vehid, 2006), obsessive–compulsive disorder (Lochner et al., 2004), posttraumatic stress disorder (Briere, Scott, & Weathers, 2005), acute stress disorder (Spiegel, Classen, & Cardena, 2000), eating disorders (Farrington, Waller, Neiderman, Sutton, Chopping, & Lask, 2002), pathological gambling (Grant & Kim, 2003), kleptomania (Grant, 2004), and even schizophrenia (Ross & Keyes, 2004). A somatoform type of dissociation is proposed to be the underlying mechanism of medically unexplained symptoms; i.e., conversion symptoms (e.g., pseudoseizures), psychogenic pain, and somatization disorder (Nijenhuis, Spinhoven, Van Dyck, Van der Hart, & Vanderlinden, 1996; Sar, Akyuz, Kundakci, Kiziltan, & Dogan, 2004). There are also reports that a significant subgroup of patients with alcohol and/or drug use have comorbid dissociative disorders influencing treatment outcome (Karadag, Sar, Tamar-Gurol, Evren, Karagoz, & Erkiran, 2005). Namely, alcohol-dependent inpatients with a dissociative disorder have somatization disorder, borderline personality disorder, and lifetime major depression more frequently than those without a dissociative disorder (Evren, Sar, Karadag, Tamar-Gurol, & Karagoz, 2007).

Subjects with dissociative disorders report childhood traumas frequently both in clinical settings (Tutkun, Sar, Yargic, Ozpulat, Yanik, & Kiziltan, 1998) and in the general population (Sar, Akyuz, & Dogan, 2007). They constitute the group with the highest rates of childhood trauma among all psychiatric populations. Dissociative disorders are increasingly considered as a chronic complex posttraumatic psychopathology closely related to childhood abuse and/or neglect (Putnam, 1997). There are also reports that alcohol-dependent patients have elevated rates of childhood adversities (Evren, Kural, & Cakmak, 2006). Although preliminary studies are not supportive of a hypothesis for dissociative disorders based on genetics (Grabe, Spitzer, & Juergen Freyberger, 1999; Lochner et al., 2004), there are reports supporting genetic determinants of alcohol dependency (Enoch & Goldman, 2001).

In the present study, we administered a measure to all patients originally designed to explore genetic and environmental factors underlying normal and abnormal personality dimensions (Cloninger, 1987). The four temperament dimensions measured in Cloninger's personality model (novelty seeking, harm avoidance, reward dependency, persistence) are assumed to be highly heritable and to be underlined by specific neurotransmission systems (Cloninger, 1987; Gourion, Pelissolo, & Lepine, 2003). The three character dimensions (self-directedness, self-transcendence, cooperativeness) are considered to be more readily influenced by environmental factors. Therefore, they are less stable over time (Basiaux et al., 2001). To prevent potential interference with the results of the study, we also assessed concurrent depression, anxiety, and overall severity of alcohol dependency and entered them in multivariate statistical evaluation.

The origin of dissociative experiences among alcohol-dependent patients is unknown. An environmental factor such as childhood trauma has been considered as relevant to this phenomenon (Schaefer et al., 2007). On the other hand, dissociation itself is considered a possible factor leading to substance dependency or, in turn, it may be a chemical result of ongoing substance use (Langeland, Draijer, &

van den Brink, 2002). The aim of this study was to inquire into possible relationships of genetic (temperament), environmental (character), and situational (concurrent psychopathology) factors with pathological dissociation among male patients with alcohol dependency.

Method

Participants and Procedures

The study was conducted in Bakirkoy State Hospital for Psychiatric and Neurological Diseases, Alcohol and Drug Research, Treatment and Training Center (AMATEM) in Istanbul between December 2005 and July 2006. AMATEM is a 100-bed center that specializes in inpatient treatment of substance use disorders; referrals are made to AMATEM from all over the country. The hospital's Ethical Committee approved the study. Patients' written informed consent was obtained after the study protocol was thoroughly explained. Interviews with the study group were conducted after a detoxification period. That was 4–6 weeks after the last day of alcohol use.

Two-hundred consecutively admitted alcohol-dependent inpatients without a history of any other substance abuse were considered for participation in the study. All participants fit the diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*; American Psychiatric Association, 1994) for alcohol dependence. Five patients were excluded from the study due to illiteracy and 3 patients were excluded because of cognitive deficits. Although none of the patients refused to participate in the study, 16 patients were excluded due to incomplete response to assessment instruments or because of early withdrawal from the program. A final group of 176 patients participated in the study.

The mean age of the participants was 43.1 ($SD = 8.3$, range = 23–70). Hundred-one (57.4%) subjects were married, whereas 55 (29.6%) were divorced and 23 (13.1%) were single. Eighty-seven (49.4%) subjects were employed, whereas 57 (32.4%) subjects were unemployed and 32 (18.2%) were retired. Fifty-four (30.7%) had graduated from primary school, 84 (47.8%) from high school, and 38 (21.6%) were university graduates. Overall, they had 9.8 years of education ($SD = 4.0$) on average.

Measures

Structured Clinical Interview for DSM-IV. The diagnosis of alcohol dependence was based on clinical examination using the Turkish version (Corapcioglu, Aydemir, Yildiz, Esen, & Koroglu, 1999) of the Structured Clinical Interview for DSM-IV (SCID-I; First, Spitzer, Gibbon, & Williams, 1997). All interviews were conducted by a psychiatrist (the first author) who had extensive training in the use of the SCID-I.

Dissociative Experiences Scale. The Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) is a 28-item self-report scale. It is not a diagnostic tool, but serves as a screening device for dissociative disorders. Respondents are asked to rate various dissociative experiences that are occurring in their daily life when they are not under the influence of alcohol or drugs. The Turkish version of the scale has reliability and validity as high as its original form (Sar, Kundakci, Kiziltan, Bakim, Yargic, & Tutkun, 1997; Yargic, Tutkun, & Sar, 1995). Cronbach's alpha was 0.95 in the present study. There is also a taxon form of the scale (DES-T) derived

from eight of the original items. Taxometric analysis of these items yields a high probability that an individual is in one of two discrete categories; normal or suffering from pathological dissociation (Waller, Putnam, & Carlson, 1996). Classification is accomplished in this approach by assigning Bayesian taxon membership probabilities for each individual using formulae that are described by Meehl (1973). Assigning Bayesian taxon membership probabilities is explained in detailed in the work of Waller et al. (1996). It can be used as a categorical index of high- and low-dissociators (Waller & Ross, 1997). The DES-T consists of items (3, 5, 7, 8, 12, 13, 22, and 27) concerning dissociative amnesia and fugue, depersonalization and derealization experiences, and identity confusion and auditory verbal hallucinations. These items are determined to discriminate a pathological dissociation from a normative one, which is limited to experiences of heightened absorption ability. Cronbach's alpha was 0.86 for DES-T in the present study.

Temperament and Character Inventory. To evaluate temperament and character traits, the Turkish version (Kose et al., 2004) of the Temperament and Character Inventory (TCI; Cloninger, Svrakic, & Przybeck, 1993) was used. It is a 240-item, forced-choice, self-report scale measuring four temperament (harm avoidance, novelty seeking, reward dependence, and persistence) and three character (self-directedness, cooperativeness, and self-transcendence) dimensions.

Michigan Alcoholism Screening Test. The severity of alcohol dependence was assessed using the Michigan Alcoholism Screening Test (MAST; Gibbs, 1985). This scale is an easily administered and effective screening instrument for lifetime alcohol-related problems and alcoholism consisting of 25 items. The validity and reliability of the Turkish version have been demonstrated on alcohol and drug dependent patients (Coskunol, Bagdiken, Sorias, & Saygili, 1995). The Cronbach's alpha for the scale was 0.74 in the present study.

State-Trait Anxiety Inventory. As a measure of state and trait anxiety, the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970) was administered to all patients. It is a 40-item self-report instrument with good reliability and validity. The Cronbach's alpha was 0.91 for state anxiety and 0.87 for trait anxiety in the present study.

Beck Depression Inventory. The Turkish version (Hisli, 1989) of the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) has good reliability and validity. The Cronbach's alpha for the scale was 0.90 in the present study.

Childhood emotional, physical, and/or sexual abuses. Childhood emotional, physical, and/or sexual abuses were screened using a history form based on definitions by Walker, Bonner, and Kaufmann (1988) for emotional abuse and Brown and Anderson (1991) for physical and sexual abuse. Report of any of these abuse types was considered as presence of a history of childhood trauma. Physical abuse included injuries such as bruises, welts, burns, abrasions, lacerations, wounds, cuts, bone and skull fractures, and other evidence of physical injury. Sexual abuse (including incest) varied from those involving relatively nonspecific charges of assault and battery with intent to gratify sexual desires to more specific ones as fondling or touching in an obscene manner, including anal penetration. Emotional abuse involved excessive verbal threats, ridiculous and personally demeaning

comments, derogatory statements, and threats to the extent that a child's emotional and mental well-being was jeopardized.

Data Analysis

The statistical package SPSS 11.5 for Windows was used for all the analyses. Categorical variables were compared by means of the chi-square statistics. Student's *t* test was used to compare the dissociative and nondissociative groups on continuous demographic variables and scale scores. Correlation analysis (Pearson, bivariate) between scale scores was performed. Predictors of dissociative experiences were evaluated using stepwise linear regression analysis. For all statistical analysis *p* values were two-tailed and level of significance was set at $p = .05$.

Results

The mean DES score of the overall group was 24.8 ($SD = 18.5$). Fifty-eight (33.0%) patients were dissociative taxon members (pathological dissociation group), whereas 118 (67.0%) patients were taxon negative (nondissociative group).

There were no differences in age, age at first alcohol use, mean duration of education, and mean duration of alcohol abuse between two groups (Table 1). In the dissociative group, 27 (57.4%) patients were married, 16 (34.0%) were divorced and 4 (8.5%) were single, whereas 74 patients (69.8%) were married, 25 (23.6%) were divorced, and 7 (6.6%) were single in the nondissociative group ($\chi^2 = 2.25$, $df = 2$, $p = 0.330$).

Table 1 demonstrates a comparison between dissociative and nondissociative groups on scale scores. Mean scores of state (STAI-I) and trait anxiety (STAI-II), depression (BDI), and severity of alcohol use (MAST) were higher among the dissociative group compared to those of the nondissociative group. Dissociative Experiences Scale (DES) scores were correlated with depression (BDI), state (STAI-I) and trait anxiety (STAI-II), and severity of alcohol use (MAST), but not with age

Table 1
A Comparison of Demographic Variables and Scale Scores Between Dissociative and Non-dissociative Alcohol-Dependent Patients

	Nondissociative group ($N = 118$)		Dissociative group ($N = 58$)			
Assessment measures	*M*	*SD*	*M*	*SD*	*t* ($df = 174$)	*p*
Age	43.7	8.2	41.9	8.5	1.37	0.170
Age at onset of alcohol use	18.9	5.6	18.2	5.1	0.86	0.390
Duration of alcohol use (years)	24.8	8.8	23.7	8.7	0.76	0.450
Education (years)	10.1	4.1	9.2	3.6	1.43	0.160
DES total score	14.8	7.9	45.0	17.2	12.72	<0.001
DES-Taxon total score	8.5	6.8	43.1	17.6	14.40	<0.001
STAI-I (State Anxiety)	38.9	9.9	47.5	10.1	5.38	<0.001
STAI-II (Trait Anxiety)	47.5	8.1	56.3	8.6	6.62	<0.001
Beck Depression Inventory	13.7	8.7	22.7	10.3	5.76	<0.001
MAST Total	27.6	10.0	32.6	9.2	3.21	0.002

Note. DES = Dissociative Experiences Scale; STAI = State-Trait Anxiety Inventory; MAST = Michigan Alcoholism Screening Test.

Table 2
Correlations Between Scale Scores Among Patients With Alcohol Dependency

	Age	Age of first substance use	Duration of education	DES	STAI-I	STAI-II	BDI
DES	−0.01	−0.08	−0.18**				
STAI-I	−.011	−0.09	−0.01	0.29*			
STAI-II	−0.17**	−0.19**	−0.15**	0.42*	0.64*		
BDI	−0.15	−0.15**	−0.14	0.40*	0.55*	0.55*	
MAST	−0.15	−0.33*	−0.14	0.31*	0.35*	0.38*	0.30*

Note. DES = Dissociative Experiences Scale; STAI = State-Trait Anxiety Inventory; BDI - Beck Depression Inventory; MAST = Michigan Alcoholism Screening Test.
*$p < 0.001$; **$p < 0.05$ level (two-tailed; correlation significant).

Table 3
A Comparison of Childhood Trauma Reports Between Dissociative and Nondissociative Alcohol-Dependent Patients

	Nondissociative Group ($N = 118$)		Dissociative group ($N = 58$)				
Childhood trauma and self-destructive behavior	*N*	%	*N*	%	$\chi 2$ ($df = 1$)	*P*	Odds ratio (95% CI)
Childhood abuse history	54	45.8	38	65.5	6.08	0.014	2.25 (1.17–4.32)
Suicide attempt history	14	11.9	23	39.7	18.1	<0.001	4.88 (2.27–10.51)
Self-mutilative behavior	25	21.2	26	44.8	10.6	0.001	3.02 (1.53–5.97)

Table 4
Comparison Between Dissociative and Nondissociative Alcohol-Dependent Patients in Temperament and Character Inventory (TCI) Dimension Scores

	Nondissociative group ($N = 118$)		Dissociative group ($N = 58$)			
Personality dimensions	*M*	*SD*	*M*	*SD*	*t* ($df = 174$)	*p*
Temperament dimensions						
Novelty-seeking	18.9	5.2	20.9	3.6	3.06	0.003
Harm -avoidance	18.0	5.7	21.7	6.1	3.94	<0.001
Reward -dependency	14.0	2.7	13.6	2.5	0.82	0.410
Persistence	5.4	1.7	4.2	1.7	4.30	<0.001
Character dimensions						
Self-directedness	25.7	6.3	21.8	4.6	4.58	<0.001
Cooperativeness	29.1	5.1	26.5	4.7	3.37	0.001
Self-transcendence	18.5	5.8	19.7	5.1	1.34	0.180

(Table 2). Apparently, patients with high dissociative experiences had a relatively severe overall psychopathology. A significantly higher proportion of the dissociative group reported childhood trauma, suicide attempts, and self-mutilative behavior than did the nondissociative group (Table 3).

Table 5
Linear Regression Analysis (DES-T Score Taken as Dependent Variable)

Independent variables	*B*	*SE*	*β*	*t*	*p*
Trait anxiety	0.633	0.243	0.294	2.603	0.010
Depression (BDI)	0.462	0.179	0.234	2.574	0.011
Severity of alcohol use (MAST)	0.314	0.154	0.158	2.046	0.042
Cooperativeness	−0.590	0.324	−0.151	−1.822	0.070
Self-transcendence	0.397	0.279	0.112	1.423	0.157
State anxiety	−0.236	0.186	−0.127	−1.272	0.205
Persistence	−1.244	0.925	−0.113	−1.345	0.181
Self-directedness	0.382	0.323	0.117	1.182	0.239
Harm-avoidance	−0.294	0.313	−0.089	−0.939	0.349
Reward-dependency	0.172	0.548	0.023	0.314	0.754
Novelty-seeking	0.030	0.332	0.007	0.089	0.929
Constant	−10.34	19.997		−0.517	0.606

Note. DES = Dissociative Experiences Scale; BDI = Beck Depression Inventory; MAST = Michigan Alcoholism Screening Test. $F = 4.99$, $df = 11, 164$, Adjusted $R^2 = 0.20$, $p < 0.001$.

Table 4 demonstrates the differences on temperament and character dimensions of the TCI between nondissociative and dissociative groups. Novelty-seeking and harm-avoidance scores were higher in the dissociative group than those of the nondissociative group. In contrast, persistence, self-directedness, and cooperativeness scores were lower in the dissociative group. To assess the relative abilities of the variables to predict dissociative experiences, a linear regression analysis was performed using the Dissociative Experiences Scale Taxon (DES-T) score as dependent variable (Table 5). Beside TCI dimensions, BDI, MAST, and STAI were entered as independent variables because they were considered as potentially influencing overall clinical psychopathology. Indeed, none of the character or temperament dimensions of the TCI, but only scores of depression, state and trait anxiety, and severity of alcohol use predicted dissociation (DES-T) score significantly.

Discussion

Among substance-dependent inpatients in Turkey, the rate of the subjects with a DES score of 30 or above was between 25% and 29% and the mean DES scores were between 20.7 and 22.9 (Evren, Sar, et al., 2007; Evren, Ustunsoy, & Cakmak, 2003; Taner, Acikyurek, Cosar, & Arikan, 2006). Although these rates are higher than that obtained in the general population (Akyuz, Dogan, Sar, Yargic, & Tutkun, 1999), the frequency of *DSM-IV* dissociative disorders remained 9% among alcohol-dependent inpatients in one study (Evren, Sar, et al., 2007). Being lower than the 17.2% prevalence yielded among substance users in general (Karadag et al., 2005), this rate is not higher than that obtained in a general psychiatric inpatient unit in Turkey either (Tutkun et al., 1998). Among others, the predominance of a female population in inpatient psychiatric units has certainly a role in this modest prevalence of dissociative disorders among male-dominated alcohol dependency populations compared to a general psychiatric setting. Nevertheless, the current study suggests that there is at least a subgroup among male patients with alcohol dependency who have a pathological level of dissociative experiences observed in a period without alcohol consumption.

The dissociative subgroup in this study reported childhood traumas more frequently than the nondissociative group. Previous studies also documented that dependent patients with childhood abuse history (Dunn, Ryan, & Dunn, 1994; Ellason, Ross, & Fuchs, 1996) or traumatic life experiences (Zlotnick, Shea, Recupero, Bidadi, Pearlstein, & Brown, 1997) had higher scores on the DES than those without. On the other hand, Roesler and Dafler (1993) suggested that many adults victimized as children, use substances to dissociate chemically. The dissociative group also reported suicide attempts and self-mutilative behavior more frequently than did the nondissociative group in the present study. Childhood trauma history has been shown to correlate with self-destructive behavior in several studies (van der Kolk, Perry, & Herman, 1991; Zweig-Frank, Paris, & Guzder, 1994), among substance dependents in particular (Evren & Evren, 2005). Thus, elevated rates of childhood traumas reported systematically in several studies support the significant role of environmental adversities in the development of dissociative experiences in clinical and nonclinical settings including substance-dependent populations.

A previous study of general psychiatric patients suggested that the character traits of high self-transcendence and low self-directedness were significant and independent predictors for dissociation, but temperament traits were not (Grabe et al., 1999). In the present study, although a direct comparison between dissociative and nondissociative groups documented significant differences in both temperament and character features, a regression analysis taking dissociation scores (DES-T) as a dependent variable questioned their role as predictors of dissociation. Namely, only depression, trait anxiety, and severity of alcoholism scores predicted higher dissociation scores. Thus, the present study suggests that dissociation is part of overall psychopathology among male alcohol-dependent patients rather than being directly related to temperament or character dimensions. The differences in findings seem to originate from covering general psychiatric patients from both genders in one study (Grabe et al., 1999). Women predominate in almost all studies on dissociative subjects, including those studies of the general population (Akyuz, Dogan, Sar, Yargic, & Tutkun, 1999). Alcohol-dependent patients show different characteristics in TCI dimensions (Evren, Evren, Yancar, & Erkiran, 2007), and in a meta-analysis, women scored higher in reward dependence and harm avoidance (Miettunen, Veijola, Lauronen, Kantojarvi, & Joukamaa, 2007).

The relationship between chronic anxiety, depression, severity of alcohol use, and dissociative experiences require further explanation. In the present study, the dissociative group had higher scores of novelty seeking and harm avoidance, but lower scores of persistence, self-directedness, and cooperativeness than those of the nondissociative group. As there is no evidence of a direct relationship between these features and dissociative experiences, these findings need to be explained in context of this combined psychopathological condition composed of depression, anxiety, alcohol-consumption, and dissociation. On the one hand, this complex condition overall seems to have a genetic dimension (novelty seeking and harm-avoidance, but low persistence) with a coping behavior aimed toward escape from an adverse situation. On the other hand, low self-directedness and low cooperation represent a rather negative condition characterized by diminished control both from within and in terms of external (social) cues. We hypothesize that without an accompanying overt depression, anxiety, and alcohol-consumption, the dissociative aspects remain usually latent (controlled) among male alcohol-dependent patients. However, this hypothesis does not imply the presence of

chemical dissociation due to alcohol use because all patients were evaluated after a detoxification period.

This study has several limitations. First, only self-reported measures were administered. Although the study was conducted after detoxification, patients might still have had some cognitive problems, which would have prevented them from expressing their experiences correctly. The study was limited to male patients who were seeking treatment. Thus, it is not possible to generalize the findings to nontreatment groups. Finally, it was a noncontrolled and correlational study. Therefore, the results must be interpreted with caution.

We conclude that alcohol dependency is a complex condition with relationships not only with environmental and genetic determinants, but also with situational variables, i.e., comorbidity and actual psychopathological dynamics. Gender differences also may have a tremendous impact on the characteristics of the alcohol use disorder and on the role of dissociative experiences in coping with the condition, which is known to be highly susceptible to gender differences. We hope that better insight into this complex dynamic of psychopathology and coping behavior may be helpful in facilitating cooperation and better outcome in the treatment of alcohol dependency.

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