

## Social anxiety and dissociation among male patients with alcohol dependency

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### Abstract

The aim of this study was to investigate the relationship between social anxiety and dissociation among male patients with alcohol dependency. Participants were 176 male patients consecutively admitted to an alcohol dependency treatment unit. The Liebowitz Social Anxiety Scale, the Dissociative Experiences Scale, the Beck Depression Inventory, the Spielberger State and Trait Anxiety Inventory, the Michigan Alcoholism Screening Test, and the Symptom Checklist-90-Revised were administered to all participants. The dissociative ( $N=58$ , 33.0%) group had significantly higher social anxiety scores than the non-dissociative participants. Patients with a history of suicide attempt or childhood abuse had elevated social anxiety scores compared to those without. In multivariate analysis, dissociative taxon membership predicted both of the two social anxiety subscale scores consisting of fear/anxiety and avoidance in a highly significant level while trait anxiety was a significant covariant for these subscales. Among dissociative symptoms, only depersonalization and amnesia/fugue were predictors of social anxiety. Dissociation and social anxiety are interrelated among alcohol-dependent men. This relationship may have implications for prevention and treatment of alcohol dependency among men with a childhood trauma history in particular.

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### 1. Introduction

Subjects with high levels of social anxiety typically report that alcohol makes them feel more comfortable in social situations (Book and Randall, 2002). Apparently,

alcohol serves as self-medication for them. In line with these reports, both clinical studies (Thomas et al., 1999; Perugi et al., 2002) and those conducted in the general population (Kushner et al., 1990; Himle and Hill, 1991; Schneier et al., 1992; Magee et al., 1996) demonstrated that social anxiety and alcohol use disorder co-occur more frequently than expected by chance. Approximately 25% of individuals with alcohol dependence in the community meet criteria for social anxiety disorder; being women under greater risk for both conditions than men, 30.3% and 19.3%, respectively (Kessler et al.,

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1997). Similar rates of lifetime social anxiety disorder have been obtained from those who seek treatment for alcohol dependency (Thomas et al., 1999). In support of the self-medication hypothesis, social anxiety disorder preceded the onset of alcohol problems in approximately 80% of cases in a community sample (Sareen et al., 2001).

There is recent interest in a possible relationship between social anxiety and dissociation (Hinrichsen et al., 2003; Michal et al., 2005). This approach is not at odds with common sense, because dissociative disorders do not only lead to subjective disturbances but they also affect interpersonal relationships (Liotti, 2006). Dissociation is considered as a post-traumatic developmental psychopathology closely related to child abuse and neglect (Putnam, 1997). Dissociation, which results from a disintegration of consciousness, memory, identity, and perception, is considered to serve as a coping mechanism against intolerable or trauma-associated memories and feelings. Alongside alexithymia, it is also linked to functional somatic symptoms and somatization behavior (Tutkun et al., 2004). As such, dissociation leads gradually to emotional detachment from social environment and to an avoidance of trauma-related and anxiety-provoking stimuli in interpersonal relationships. For instance, childhood sexual abuse is shown to be associated with adult distress indirectly through an impact on mediating variables such as shame or self-blame, interpersonal difficulties, and avoidant coping strategies (Whiffen and Macintosh 2005). Nevertheless, concurrent social anxiety disorder is common among patients with chronic dissociative disorders such as dissociative identity disorder (Ellason et al., 1996; Kiziltan et al., 1998), 45.8% and 23.3% respectively, and depersonalization disorder (Michal et al., 2005; 2006a).

We hypothesize that there is a complex relationship between social anxiety, substance use, dissociation, and childhood trauma. Several studies suggest that this hypothesis is worth to investigate. Like social anxiety disorder, childhood trauma has also been reported as frequent both among dissociative patients (Putnam, 1997) and substance-dependent subjects (Evren et al., 2006). A considerable proportion of treatment-seeking substance users also exhibit elevated levels of dissociative symptoms and disorders (Dunn et al., 1993; Wenzel et al., 1996; Karadag et al., 2005). Childhood emotional abuse also predicted dissociation among subjects with alcohol dependency (Schäfer et al., 2007). In treatment-seeking male alcohol-dependents, the severity of childhood abuse was reported to be associated with social anxiety disorder (Langeland et al., 2004). In a study

evaluating the relationships between childhood sexual abuse, social anxiety, and symptoms of post-traumatic stress disorder in women, pressure, age of onset of abuse, abuse by a family friend, and abuse by other perpetrators predicted adult social anxiety significantly (Feerick and Snow, 2005).

As a part of the hypothesized link, the present study is concerned with the relationship between social anxiety and dissociative experiences among male patients with alcohol dependence as assessed after a detoxification period. In order to eliminate potential influences on the analysis, we also screened depression, anxiety, severity of alcoholism, and overall severity of the psychiatric condition. We see clinical relevance in this relationship, because both concurrent dissociative disorder (Karadag et al., 2005) and/or social anxiety (Book and Randall, 2002) have been demonstrated as significant factors in premature cessation of treatment among patients with substance and/or alcohol dependency.

## 2. Methods

### 2.1. Participants

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 specialized center for substance use disorders with 100 inpatient beds, and accepts patients from all over Turkey. The Ethical Committee of the hospital approved the study. Patient's written informed consent was obtained after the study protocol was thoroughly explained.

Two hundred consecutively admitted alcohol-dependent inpatients without history of any other substance abuse were considered for participation in the study. All participants fit the DSM-IV diagnostic criteria for alcohol dependence. Five patients were excluded due to illiteracy and three patients due to cognitive deficits. Although none of the patients refused to participate in the study, 16 patients were excluded because they left some parts of the scales unfilled, did not give the forms back or left the treatment program prematurely; i.e. before filling the forms. Interviews with the study group were conducted after detoxification period, i.e. 4–6 weeks after the last day of alcohol use.

A total of 176 alcohol-dependent inpatients participated in the study. 101 (57.4%) subjects were married, whereas 55 (29.6%) were divorced and 23 (13.1%) were never married. 87 (49.4%) subjects were employed, whereas 57 (32.4%) subjects were unemployed and 32

(18.2%) were retired. Mean age was 43.1 (S.D.=8.3) (range=23–70). The patients had 9.8 years (S.D.=4.0) of education in average.

## 2.2. Assessment instruments

All patients were assessed by using a semi-structured socio-demographic form. The diagnosis of alcohol dependence in each participating patient based on the clinical examination, a screening interview based on the DSM-IV. The following instruments were administered:

### 2.2.1. Liebowitz Social Anxiety Scale (LSAS)

The LSAS contains 24 situations, selected on the basis of clinical experience, which are rated by the assessor on separate 4-point scales for fear/anxiety and avoidance (Liebowitz, 1987). The scales range from no fear/anxiety (0) to severe fear/anxiety (3) and never avoids (0) to usually avoids (3). Patients are asked to provide ratings based on Turkish version of this scale (Soykan et al., 2003).

### 2.2.2. Beck Depression Inventory (BDI)

Symptoms and severity of depression were evaluated using the Turkish version (Hisli, 1989) of the Beck Depression Inventory (Beck et al., 1961). The Cronbach's alpha was 0.90 for BDI in the present study.

### 2.2.3. State-Trait Anxiety Inventory (STAI)

As a measure of state and trait anxieties, the state and trait form of Spielberger's State-Trait Anxiety Inventory (STAI) was used (Spielberger et al., 1970). The STAI is a forty-item self-report instrument designed to assess state and trait anxiety. Participants indicated their agreement with each item on a Likert scale ranging from 1="not at all" to 4="very much so." The STAI has good reliability and validity. The Cronbach's alpha was 0.91 for State Anxiety and 0.87 for Trait Anxiety in the present study.

### 2.2.4. Michigan Alcoholism Screening Test (MAST)

The severity of dependence was assessed by using the MAST (Coskunol et al., 1995), which was developed as a "rapid and effective screening for lifetime alcohol-related problems and alcoholism" for a variety of populations. It consists of 25 brief true–false items that are self-administered in approximately 10 min. Scoring is accomplished after reverse scoring 4 of the 25 items and assigning weighed scores. These weighed scores are then summed; the sum represents a total score reflecting severity of alcohol-related problems. Turkish version of the MAST is valid and reliable for screening severity of dependency in alcohol-

dependent patients (Gibbs, 1985). The Cronbach's alpha was 0.74 in the present study.

### 2.2.5. Symptom Checklist-Revised (SCL-90-R)

Psychopathologic symptoms were assessed with widely used 90-item Symptom Checklist-Revised (SCL-90-R), a self rating inventory with 9 clinical scales for somatization, obsessive compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism (Derogatis, 1983). The total score and the global severity index (GSI) were considered as a measure of overall psychopathology. The SCL-90-R is a reliable and valid measure of psychopathology and is widely used in psychosomatic researches. In the present study Turkish version of SCL-90-R was used (Dag, 1991). Cronbach's alpha was 0.98 in the present study.

### 2.2.6. Childhood trauma reports

Childhood emotional, physical, and/or sexual abuse were screened using a history form based on definitions by Walker et al. (1988) for emotional abuse and Brown and Anderson (1991) for physical and sexual abuse. Report of any of these abuse types were considered as the 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 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," sodomy, incest, and so forth. Emotional abuse involves the use of excessive verbal threats, ridiculous and personally demeaning comments, derogatory statements, and threats against the young person to the extent that a child's emotional and mental well-being will be jeopardized.

### 2.2.7. Dissociative Experiences Scale (DES)

Dissociative symptoms were assessed using the 28-item self-report Dissociative Experiences Scale (Bernstein and Putnam, 1986). The DES is not a diagnostic tool but serves as a screening device for chronic dissociative disorders. Responders 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. For each item possible scores range from 0 to 100. The DES has adequate test–retest reliability, good split–half reliability, and good clinical validity. The Turkish version of the scale has reliability and validity as high as its original form (Yargic et al., 1995). Cronbach's alpha was 0.95 in the present study.

Table 1

Scale scores among patients with alcohol dependency according to the dissociative taxon status (ANCOVA SCL-90 Global Severity Index and Beck Depression Inventory as covariates)

	Non-dissociative patients ( <i>n</i> = 118)	Dissociative patients ( <i>n</i> = 58)	Taxon	SCL-90 (GSI)	BDI
	(Mean ± S.D.)	(Mean ± S.D.)	F ( <i>P</i> )	F ( <i>P</i> )	F ( <i>P</i> )
Michigan Alcoholism Screening Test	(27.6 ± 10.0)	(32.6 ± 9.2)	0.28 (0.60)	18.30 (<0.001)	0.001 (0.99)
STAI-I (State anxiety)	(38.9 ± 9.9)	(47.5 ± 10.1)	2.37 (0.13)	14.91 (<0.001)	11.48 (0.001)
STAI-II (Trait anxiety)	(47.5 ± 8.1)	(56.3 ± 8.6)	4.76 (0.03)	74.60 (<0.001)	0.94 (0.33)
LSAS — fear/anxiety	(45.0 ± 11.1)	(54.5 ± 10.2)	13.61 (<0.001)	2.74 (0.10)	0.10 (0.75)
LSAS — avoidance	(42.7 ± 10.8)	(51.8 ± 10.1)	12.60 (<0.001)	2.78 (0.10)	0.25 (0.62)

STAI: The Spielberger State and Trait Anxiety Inventory, LSAS: Liebowitz Social Anxiety Scale, GSI: Global Severity Index, BDI: Beck Depression Inventory. The level of significance is set up at 0.01 after Bonferroni correction.

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 et al., 1996). The DES-T has the potential to be used as a dimensional measure, but might also be used as a categorical index of high and low dissociators (Waller and 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 pathological dissociation from normative dissociation, which is limited to experiences of heightened absorption ability. Cronbach's alpha was 0.86 for DES-T in the present study.

### 2.3. Statistical analyses

The statistical package SPSS 11.5 for Windows was used for all the analyses. Frequency and percentage were used for sociodemographic variables. Univariate analysis of covariance was used to identify factors independently associated with dissociation where BDI and SCL-90 — GSI were taken as covariant. Bonferroni correction was employed in order to minimize type I statistical errors.

Mann–Whitney *U* test was used to compare the dissociative and non-dissociative groups on continuously distributed variables. Multivariate analysis of covariance was used to identify factors independently associated with social anxiety. Also a stepwise linear regression was performed for both subscales of the LSAS as the dependent variable and eight items of the DES-T as the independent variables. For all statistical analyses level of significance was set at *P* = 0.05 unless indicated otherwise.

### 3. Results

Fifty-eight (33.0%) of the 176 patients were dissociative taxon members (dissociative group), whereas 118 (67.0%) patients were taxon negative (non-dissociative group). There were no significant differences between the two groups on age, education, and duration of alcohol use. Mean age was 41.9 (S.D. = 8.5) and mean education was 9.2 years (S.D. = 3.6) for the dissociative group, whereas these rates were 43.7 (S.D. = 8.2) and 10.1 (S.D. = 4.1) for the non-dissociative group, respectively (*z* = -1.21, *P* = 0.23; *z* = -1.25, *P* = 0.21, respectively). Mean duration of alcohol use was 24.7 years (S.D. = 8.8) for the dissociative group and 23.7 years (S.D. = 8.7) for the remaining patients (*z* = 0.78, *P* = 0.440).

A comparison between the two groups using the Beck Depression Inventory and the SCL-90 global severity

Table 2

Social anxiety subscale scores according to a history of suicide attempt or childhood abuse

		<i>n</i>	Liebowitz Social Anxiety Scale					
			Fear/anxiety			Avoidance		
			Mean ± S.D.	<i>z</i>	<i>P</i>	Mean ± S.D.	<i>z</i>	<i>P</i>
Suicide attempt	No	139	47.2 ± 11.4	-2.03	0.043	44.8 ± 11.3	-1.98	0.048
	Yes	37	51.6 ± 12.2			49.0 ± 11.2		
Any childhood abuse	No	84	45.9 ± 12.5	-2.64	0.008	44.1 ± 12.7	-2.11	0.035
	Yes	92	50.2 ± 10.5			47.2 ± 9.8		

Table 3

Multivariate Covariance Analysis (MANCOVA) with subscale scores of the Liebowitz Social Anxiety Scale (LSAS) as dependent variables according to the dissociative taxon status

	Dependent variable	Type III sum of squares	Mean square	<i>F</i> ( <i>df</i> =6, 169)	<i>P</i>
DES-Taxon membership	Fear or anxiety	1230.851	1230.851	10.882	0.001
	Avoidance	1183.805	1183.805	11.100	0.001
<i>Covariates</i>					
Michigan Alcoholism Screening Test	Fear or anxiety	0.128	0.128	0.001	0.973
	Avoidance	230.441	230.441	2.161	0.143
STAI-I (State anxiety)	Fear or anxiety	11.278	11.278	0.100	0.753
	Avoidance	69.403	69.403	0.651	0.421
STAI-II (Trait anxiety)	Fear or anxiety	579.428	579.428	5.123	0.025
	Avoidance	422.631	422.631	3.963	0.048
Beck Depression Inventory	Fear or anxiety	5.561	5.561	0.049	0.825
	Avoidance	32.683	32.683	0.306	0.581
SCL-90 — GSI	Fear or anxiety	2.075	2.075	0.018	0.892
	Avoidance	71.659	71.659	0.672	0.414

Fear or anxiety:  $R^2=0.20$  (Adjusted  $R^2=0.17$ ), Avoidance:  $R^2=0.20$  (Adjusted  $R^2=0.17$ ). STAI: The Spielberger State and Trait Anxiety Inventory, DES: Dissociative Experiences Scale, MAST: Michigan Alcoholism Screening Test.

index as covariants revealed that dissociative patients had significantly higher scores than the non-dissociative group on both social anxiety subscales (Table 1). The social anxiety subscales were significantly higher among those with a history of suicide attempt and/or childhood abuse than among the remaining patients (Table 2). The subscale scores of the LSAS were also highly correlated with the Dissociative Experiences Scale-Taxon (DES-T) total score composed of taxon items. The Pearson coefficient was  $r=0.35$  ( $N=176$ ,  $P<0.001$ ) for the avoidance subscale, and  $r=0.40$  ( $N=176$ ,  $P<0.001$ ) for the fear/anxiety subscale.

Multivariate analysis of covariance was performed to assess whether dissociation (positive versus negative taxon membership) resulted in any differences between the LSAS subscales when anxiety, depression, psychiatric symptom severity and severity of alcohol use were

taken as covariants. The overall main effect of dissociation was highly significant for both subscale scores of the LSAS constituting fear/anxiety and avoidance. Among covariants, only trait anxiety had a significant effect on social anxiety subscale scores (Table 3).

In order to determine the relationship between the type of dissociative experiences and social anxiety, two separate linear (stepwise) regression analyses were conducted on LSAS subscales with all items of the DES-T taken as independent variables. Only two of the eight items predicted social anxiety scores significantly. They were dissociative amnesia/fugue and depersonalization (Table 4).

#### 4. Discussion

The present study documented that, among male alcohol-dependent patients, the dissociative subgroup had significantly higher social anxiety scores than the non-dissociative subjects. Dissociative taxon membership was a highly significant predictor of social anxiety in multivariate analysis while only trait anxiety was a significant covariant. Thus, chronic dissociation and social anxiety are interrelated among alcohol-dependent men. In consideration of the elevated social anxiety scores among patients with a history of suicide attempt or childhood abuse, the relationship between dissociation and social anxiety may have implications for prevention and treatment of alcohol dependency at least in a subgroup of alcohol-dependent men.

There are several studies reporting an association between dissociation and interpersonal anxiety. Two studies yielded a relationship between depersonalization and social anxiety disorder (Michal et al., 2005; 2006a).

Table 4

Stepwise linear regression analyses when LSAS subscale scores are taken as dependent variable and 8 items of the DES-T entered as independent variables in the first step

		<i>B</i>	S.E.	Beta	<i>t</i>	<i>P</i>
Constant	Fear/ anxiety	43.76	1.08		40.62	<0.001
	Avoidance	42.05	1.08		39.00	<0.001
Finding oneself in a place but unaware how one got there	Fear/ anxiety	0.11	0.03	0.26	3.26	0.001
	Avoidance	0.07	0.03	0.17	1.99	0.049
Seeing oneself as if looking at another person	Fear/ anxiety	0.09	0.03	0.22	2.71	0.007
	Avoidance	0.10	0.03	0.25	2.96	0.003

Dependent variables: Fear/anxiety ( $F=18.68$ ,  $df=2$ , 175,  $P<0.001$ ), Avoidance ( $F=12.96$ ,  $df=2$ , 175,  $P<0.001$ ).

In a study on patients with social anxiety disorder, social anxiety predicted the variance of dissociation (Fontenelle et al., 2007). Elevated social anxiety was linked to dissociation in anorexic group among patients with eating disorder (Hinrichsen et al., 2003). A link between proneness to dissociation in adulthood and self-reports of childhood trauma has been documented in patients with several anxiety disorders, including social anxiety (Feerick and Snow, 2005). Evren et al. (2006) demonstrated childhood abuse to be highly prevalent among substance-dependent patients and rate of anxiety disorders was higher in this subgroup. A further study yielded that the severity of childhood abuse to be associated with social anxiety disorder in treatment-seeking male alcohol-dependents (Langeland et al., 2004).

The present study found that the subgroup of patients with a childhood trauma or suicide attempt history reported elevated levels of social anxiety. Roy (2004) documented that, also among substance users, childhood trauma scores were correlated with number of suicide attempts, and moreover, an earlier age of the first suicide attempt.

In fact, this relationship is not limited to patients with substance dependency. Childhood trauma and dissociation are related to suicide attempts and self-mutilative behavior both in clinical settings (Van der Kolk et al., 1991; Sar et al., 2004) and in the community (Akyuz et al., 2005; Sar et al., 2007). Thus, our findings supported the accuracy of assessment measures in the present study and the consistency of this relationship in an alcohol-dependent population as well.

Thus, notwithstanding a possible mediator role of other variables, several studies suggest that childhood trauma, social anxiety, dissociation and substance abuse are interrelated phenomena alongside suicidality and childhood trauma history. Although constituting only one aspect of this cluster, the present study focused solely on the relationship between dissociation and social anxiety. Subjects with childhood trauma history and dissociative disorders usually experience affect dysregulation (Van der Kolk et al., 1996) on a range between distressful introspectiveness (Somer, 2002) and alexithymia (Tutkun et al., 2004). Proneness to shame was also associated with dissociative tendencies among college students (Irwin, 1998) and among women with a childhood sexual abuse history (Talbot et al., 2004). Thus, we hypothesize that dissociation is a coping mechanism against trauma-related aversive emotions and memories, however, it creates paradoxically emotional detachment from social environment, leads to misperception of interpersonal contacts as a potential source of re-traumatization, and increases social anxiety.

Besides being in dissociative taxon membership, trait anxiety was a significant covariant for social anxiety in the present study while the severity of alcoholism and the general severity of psychopathology were not. Thus, although being itself a coping mechanism, dissociation does not reduce generalized anxiety either. On the contrary, it may lead to a “distressful introspectiveness” (Somer, 2002) in a traumatized person. Post-traumatic maladaptation is usually a consequence of incomplete processing of traumatic experience both in its cognitive and affective dimensions leading to “completion tendency” (Horowitz, 1976/1986); i.e. to the urge of reaching a resolution for trauma-related contradictory cognitive schemata, persistent painful emotions such as anger and shame, and traumatic reminiscences releasing vivid imagery or flash-back experiences.

In line with these theses, only depersonalization and amnesia/fugue predicted social anxiety among dissociative experiences in the present study. Depersonalization and amnesia are a frequently observed combination of dissociative symptoms (Sar et al., 2007). Apparently, these subjects are stuck in the middle of trauma-processing while they stay in an unproductive oscillation toward the unresolved mental content (Yoshizumi and Murase, 2007); i.e. they either try to detach from (leading to dissociative amnesia) or to approach it (leading to feelings of estrangement and depersonalization). Being trapped in an approach-avoid conflict, interpersonal relationships promise both to be rewarding but also anxiety-provoking in this group of patients (Michal et al., 2006b). Consumption of alcohol with its both anxiety-relieving (Book and Randall, 2002) but also “chemically dissociating” (Langeland et al., 2002) capacities fit exactly to this state of contradictory longings.

The present study has several limitations. First of all, we did not screen the prevalence of social anxiety disorder as a diagnostic group; i.e. social anxiety was assessed as a quantitative variable. Second, the assessment of childhood trauma history was limited to a classification of present and absent. Third, because the current study utilized a cross-sectional research design, it is not possible to make conclusive statements about the temporal order between the measures of social anxiety and dissociation. Fourth, all the patients were male. Namely, female patients have a different profile concerning both dissociative experiences (Karadag et al., 2005) and social anxiety (Ozdemir et al., 2005) and also response to psychological trauma may differ between genders in terms of being complicated by substance use in particular (Brand, 2003). On the other hand, male patients with social anxiety disorder seek treatment more readily than female patients while social

anxiety disorder seems to be more prevalent among women (Ozdemir et al., 2005). Thus, gender specific aspects of this relationship needs further inquiry.

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