Alexithymia and personality dimensions in relation to depression and anxiety in male alcohol-dependent inpatients

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Abstract

Objective. The aim of this study was to determine the relationship of alexithymia and temperament and character model of personality with depression and anxiety symptoms in detoxified male alcohol-dependent inpatients. Methods. The subjects consisted of 176 male alcohol-dependent inpatients according to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition. Patients were investigated with the Beck Depression Inventory, Beck Anxiety Inventory, State and Trait Anxiety Inventory, Michigan Alcohol Screening Test (MAST), Toronto Alexithymia Scale (TAS-20) and Temperament and Character Inventory (TCI). Results. MAST score and scores of all three factors of the TAS-20 significantly predicted depression scale and anxiety scales. Difficulty in identifying feelings and difficulty in describing feelings factors were particularly effective, relative to the externally orientated thinking factor of the TAS-20 for prediction of depression and anxiety. The TCI dimensions emerged as distinct and conceptually meaningful predictors for the depression scale and anxiety scales. Conclusion. Depression and anxiety symptoms among detoxified male alcohol dependents are associated with alexithymia, a broad range of personality dimensions and higher severity of alcohol-related problems, which make these related factors highly relevant for clinical practice.

Key Words: Alcohol dependence, alexithymia, anxiety, character, depression, temperament

Introduction

Many studies focusing on comorbid psychiatric disorders in alcohol-dependent populations showed that comorbidity is common [1]. Particularly elevated rates of depression and anxiety disorders have been consistently documented in alcoholic samples [2]. Results of some studies suggest that individuals with anxiety disorders [3,4] and/or depressive disorder [5], who self-medicate their symptoms with alcohol, may be at increased risk for alcohol use disorders and suicidal behavior. Among recently detoxified Turkish alcohol-dependent inpatients, rate of current anxiety disorders was 46.3% [6] and rate of current depressive disorder ranged between 45.1 and 52.4% [6,7]. These rates are consistent with the studies conducted in other countries among treatment seeking alcohol dependents (24-59% for depression [2,8] and 8-56% for anxiety [9]). In comparison to the limited view provided by using only symptomatology that meets criteria for a diagnosis, the use of continuous measures of psychiatric symptomatology yields a much more accurate picture of psychiatric illness co-occurring with alcoholism [10]. Recent studies have examined the relationships between alcohol dependence and not only anxiety and depressive disorders, but also depressive and anxiety symptoms, which are found to be at least equally important [11]. These symptoms often are observed in patients who are intoxicated or undergoing alcohol detoxification and they commonly emerge during alcohol withdrawal [12]. Usually, anxiety and depressive symptoms will disappear with the alcohol withdrawal treatment, without the need of extra treatment for these symptoms [11,13]. Although these symptoms may reduce during sobriety, data appear to indicate that a protracted withdrawal syndrome, including anxiety and depressive symptoms, may develop following acute alcohol withdrawal and may persist for at least 1 year [12]. It was suggested to treat these symptoms with antidepressants, especially if they are still present after 1 week of abstinence [11].
Clinically, anxiety and depressive symptoms are important, because they may predispose abstinent alcoholics to relapse in an attempt to alleviate the symptoms [1,14,15]. Among patients with these comorbid conditions risk of suicide attempt is higher [16] and they are more disabled and drink more heavily [17] than those without comorbid symptoms. Anxiety and depressive symptoms are also the predictors for alcohol craving [18] and they are considered as a marker of high relapse risk in alcohol dependents [19]. Thus, it is important to differentiate these symptoms [13] and the factors related with them after detoxification; i.e. the social, psychological, and physical problems associated with alcoholism may contribute to the development of depressive disorder among alcohol dependents [12].

One of the factors that might be related to symptoms of anxiety and depression in post-detoxification period is alexithymia. It is a multifaceted personality construct defined as the inability to distinguish one’s feelings from the accompanying bodily sensations, the inability to communicate feelings to others, and an externally oriented cognitive style reflecting an absence of inner thoughts and fantasies [20]. Although alexithymia is thought to be a stable personality trait [20], difficulties in identifying and communicating feelings were positively related to depression and anxiety, which affirmed that certain dimensions are state dependent [21]. A study conducted among patients with depressive and anxiety disorders, showed that alexithymia and depression were separate constructs that may be closely related; in contrast, there were some overlaps between the “difficulty in identifying feelings” dimension of alexithymia and anxiety [22]. The finding of high association between alexithymia and depression in a general population sample [23] and outpatients with major depressive disorder [24], suggested that the state of alexithymia might be a state-dependent phenomenon, resulting from severe anxiety and depression. The model was reconfirmed in another study; anxiety state predicted depression and alexithymia, and depression predicted alexithymia in patients with substance dependence [25]. In contrast, Pinard et al.’s findings supported the view that alexithymia is a stable trait in substance dependents [26]. Similarly, two studies that examined the stability of alexithymia in a population of alcohol-dependent patients reported conflicting results, one viewing alexithymia as a state [27], whereas the other viewed it as a trait [28].

Personality dimensions may also have an effect on severity of anxiety and depression symptoms; i.e. the characteristics associated with “persistence” (P) seem to act as protective factors during alcohol withdrawal, whereas those associated with “harm avoidance” (HA) appear to increase the symptoms of alcohol withdrawal [29]. Although Matsudaira and Kitamura [30] found that a broad range of personality dimensions measured with the Temperament and Character Inventory were associated with depression and anxiety symptoms, usually studies conducted among different populations demonstrated that mainly high HA scores and low “self-directedness” (S) scores are related with both anxiety and depression [31,32].

To the best of our knowledge, previous studies on this topic were based on assessments that were made around the time of treatment program entry, whereas in the present study we used self-rated scales 4-6 weeks after detoxification. Obviously, it is important to determine the severity of depression and anxiety symptoms that persist after detoxification and the factors related to these symptoms. The aim of this study was to determine the relationship of alexithymia and temperament and character model of personality with depression and anxiety symptoms in recently detoxified male alcohol-dependent inpatients. In order to eliminate their potential influences, other than age, we also assessed overall severity of alcohol dependency and carried out a multivariate statistical evaluation.

Methods

Settings

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. The Ethical Committee of the hospital approved the study. Patient’s written informed consent was obtained after the study protocol was thoroughly explained.

Sample

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. They were all Turkish citizens from different regions of Turkey and were Caucasians. Exclusion criteria were illiteracy, mental retardation or cognitive impairment and comorbid psychotic disorder. If suspicion of cognitive impairment was raised during the interview, then the Mini Mental State Examination (MMSE) was used and patients scoring 27 or less were excluded from the study. 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 unfulfilled, did not give the forms back or left the treatment program prematurely; i.e. before filling the forms.
A total of 176 alcohol-dependent inpatients participated in the study.

Patients with psychotic disorders, cognitive impairment and severe depression or anxiety disorders with suicide risk are not admitted to the clinic. Except for emergencies such as delirium tremens, alcohol-dependent patients are only accepted to the clinic if they are willing to undergo treatment. These patients must be alcohol-negative in the alcoholometer test before admission. Thus, they must stop drinking alcohol at least the night before admission, whereas some may have been sober for a period of time and some may have received an outpatient detoxification treatment prior to admission. Only inpatients participated in the study and the clinic has strict rules and control systems for patients. Nevertheless, patients are evaluated for biological markers and alcoholometer routinely, and a urine test for ethyl glucuronide is carried out if there is any suspicion of alcohol use. Also, during the detoxification period all patients are routinely evaluated using the Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) scale for the severity of withdrawal symptoms until they receive zero for all of the 10 withdrawal signs that the scale assesses. Interviews with the study group were conducted after the detoxification period, i.e. 4–6 weeks after the last day of alcohol use. Clinician assessed, with a final clinical examination, whether withdrawal symptoms has disappeared or not. Thus, the patients were free from withdrawal syndrome at the time of interview. They were also free of sedative-hypnotics at least for 1 week, if they had received any for withdrawal symptoms.

**Measures**

**Temperament and Character Inventory (TCI).** To evaluate temperament and character traits, the Temperament and Character Inventory (TCI) [33], Turkish version [34] of a 240-item, forced-choice, self-report scale was used. Dimensions of temperament are: (1) harm avoidance (HA); (2) novelty seeking (NS); (3) reward dependence (RD), and (4) persistence (P). Dimensions of character are: (1) self-directedness (S); (2) cooperativeness (C), and (3) self-transcendence (ST).

**Toronto Alexithymia Scale (TAS-20).** The prevalence of alexithymia was screened using the 20-item version of the Toronto Alexithymia Scale (TAS-20) [35,36], Turkish version [34]. The three dimensions of TAS-20 are: (1) difficulty in identifying feelings (DIF); (2) difficulty in describing feelings (DDF); (3) externally oriented thinking (EOT). The total scores of the TAS-20 were categorized according to the recommendations of Kose et al. [37]; thus, a score of ≥61 indicated alexithymia and one of <61 indicated no alexithymia. Cronbach’s z was 0.76 in the present study.

**Beck Depression Inventory and Beck Anxiety Inventory.** Symptoms and severity of depression were evaluated using the Beck Depression Inventory (BDI) [38], Turkish version [39].

**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 [40]. The STAI is a 40-item self-report instrument designed to assess state and trait anxiety. Cronbach’s z was 0.91 for state anxiety and 0.87 for trait anxiety in the present study.

**Michigan Alcoholism Screening Test (MAST).** The severity of alcohol-related problems was assessed by using the MAST [41], which was developed as a “rapid and effective screening for lifetime alcohol-related problems and alcoholism” for a variety of populations. Total score reflects the severity of alcohol-related problems. The Turkish version of the MAST is valid and reliable for screening severity of dependency of both alcohol- and drug-dependent patients [42]. Cronbach’s z was 0.74 in the present study.

**Statistical methods**

The statistical package SPSS 11.5 for Windows was used for all analyses. Frequency and percentage was used for sociodemographic variables. Correlation analysis (Pearson, bivariate) between duration of education and alexithymia score was performed. The Mann-Whitney U-test was used to compare the alexithymic and non-alexithymic groups according to duration of education. The TCI dimensions, the TAS-20 factors, age and overall severity of alcohol related problems were entered blockwise (multivariate) into each of the three equations (depression, trait anxiety and state anxiety) as independent variables.

**Results**

A total of 176 consecutive alcohol-dependent male inpatients were included in the statistical analyses. The mean age of the participants was 43.1 (SD = 8.3, range = 23–70). 101 (57.4%) subjects were married, whereas 55 (29.6%) were divorced and 23 (13.1%) were single. A total of 87 (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, 81 (47.8%) from high school, and 38 (21.6%) were
university graduates. Overall, they had 9.8 years of education (SD = 4.0) in average. Among 176 alcohol dependents, 53 (30.1%) had alexithymia and 123 (69.9%) had no alexithymia. Although duration of education was not different in alexithymic patients (mean = 9.3 years, SD = 3.4) than non-alexithymic patients (10.0, SD = 4.2) (z = −0.94, P = 0.35), a mild negative correlation was found between alexithymia score and duration of education (r = −0.16, P = 0.034).

Table I shows the mean scores of the scales. The mean age at starting regular alcohol use was 26.4 (SD = 7.6) and the mean duration of alcohol use (years) was 24.4 (SD = 8.7). The age at starting regular alcohol use showed mild negative correlations with depression (r = −0.16, P = 0.03) and trait anxiety scores (r = −0.16, P = 0.04), whereas no significant correlation was found with state anxiety (r = −0.08, P = 0.27). Also, no significant correlation was found between duration of alcohol use and depression (r = −0.05, P = 0.54), state anxiety (r = −0.05, P = 0.54) and trait anxiety (R = −0.04, P = 0.57) scores.

We considered alexithymia as a predictor of anxiety and depression, because of conflicting results raised on these relationships [27,28].

High scores on alexithymia factors and MAST score emerged as predictors for severity of depression and anxiety scores. Among personality dimensions, high scores on HA and ST; low scores on P, S2, and C3 predicted severity of depression and anxiety scores (Table II). A considerable degree of variance of the depression (34%), state anxiety (35%) and trait anxiety (61%) could be explained by the predictors.

Discussion

Severity of alcohol-related problems and alexithymia significantly predicted depression scale and anxiety scale scores. Sub-factors described as “difficulty in identifying feelings” and “difficulty in describing feelings” were particularly effective for prediction, relative to the “externally orientated thinking” factor of TAS-20. Studies suggest relatively high prevalence rates of alexithymia in alcohol-related disorders. The prevalence of alexithymia among alcoholic patients has been reported to range from 42 to 79% in several studies, whereas these rates were not different in alcohol-dependent Turkish men (48–56%) [6,43,44]. Alexithymia is thought to be a stable personality trait and a predisposing risk factor for a variety of psychiatric disorders [20]. Manifestation of alexithymic features might also be a transitory reaction (state-dependent phenomenon) evoked by stressful situations and accompanying depression and anxiety, which is termed a “secondary alexithymia” [45]. This was supported by studies conducted among newly abstinent alcohol dependents [27], in the general population [23] and outpatients with major depressive disorder [24]. Findings of a recent study supported the view of a relative stability of alexithymia, which has the status of a personality trait, but indicate that some factors may also be related to depression; i.e. the “difficulty identifying feelings” factor might act as a coping mechanism against negative affect in periods of alcohol consumption and withdrawal [28]. Concordant with this view, in the present study all the subscales of the TAS-20 predicted both anxiety and depression, although they explained the higher degree of variance for the trait anxiety than the state anxiety and depression. This may suggest that relationship of alexithymia with anxiety and depressive symptoms may differ according to the time of interview. It may be considered as “state” or “seconded”, at least partly, when evaluated during the detoxification period [27,45], in which anxiety and depressive symptoms are apparent and may be considered as “trait” when evaluated after detoxification, when these symptoms diminish but alexithymia still persists.

Although these results are consistent with previous studies, the cross-sectional design of the study is not appropriate to make conclusive statements about the stability of the alexithymia. Longitudinal studies may be necessary to make stronger causal attributions about the effects of alexithymia and personality dimensions on depression and anxiety in alcohol dependents. Nevertheless, in previous studies alexithymia was shown to have a negative relation with the maintenance of abstinence [46] and was associated with poor outcomes in alcoholic inpatients [47,48]. These associations may also be accounted for by the overlap between alexithymia and related or more general constructs, such as positive and negative affects [49].

The TCI dimensions also emerged as distinct and conceptually meaningful predictors for the depression scale and state and trait anxiety scales. But,
Factors related to anxiety and depression

Table II. Relationship of personality, alexithymia, and age to depression and anxiety symptoms in 176 male alcohol-dependent inpatients.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Beck Depression Inventory</th>
<th></th>
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<th>State Anxiety</th>
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<th></th>
<th>Trait Anxiety</th>
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<td></td>
<td>r</td>
<td>β</td>
<td>t</td>
<td>r</td>
<td>β</td>
<td>t</td>
<td>r</td>
<td>β</td>
<td>t</td>
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<tr>
<td>Temperament and Character Inventory Dimensions</td>
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<tr>
<td>Novelty seeking (NS)</td>
<td>0.12</td>
<td>-0.10</td>
<td>-1.44</td>
<td>0.34*</td>
<td>0.15</td>
<td>2.13***</td>
<td>0.26*</td>
<td>0.05</td>
<td>0.97</td>
</tr>
<tr>
<td>Harm avoidance (HA)</td>
<td>0.45*</td>
<td>0.14</td>
<td>1.77</td>
<td>0.34*</td>
<td>0.13</td>
<td>1.61</td>
<td>0.63*</td>
<td>0.34</td>
<td>5.50*</td>
</tr>
<tr>
<td>Reward dependency (RD)</td>
<td>-0.07</td>
<td>-0.04</td>
<td>-0.64</td>
<td>-0.08</td>
<td>0.01</td>
<td>0.157</td>
<td>0.01</td>
<td>0.07</td>
<td>1.31</td>
</tr>
<tr>
<td>Persistence (P)</td>
<td>0.29*</td>
<td>0.15</td>
<td>-0.91</td>
<td>0.35*</td>
<td>0.13</td>
<td>1.73</td>
<td>-0.36*</td>
<td>-0.09</td>
<td>-1.93</td>
</tr>
<tr>
<td>Self-directions (S)</td>
<td>0.46*</td>
<td>0.13</td>
<td>-1.52</td>
<td>0.33*</td>
<td>0.16</td>
<td>1.21</td>
<td>0.52*</td>
<td>0.03</td>
<td>1.45</td>
</tr>
<tr>
<td>Cooperativeness (C)</td>
<td>0.26*</td>
<td>-0.04</td>
<td>-0.48</td>
<td>-0.36*</td>
<td>0.18</td>
<td>-2.47***</td>
<td>-0.33*</td>
<td>-0.07</td>
<td>-1.21</td>
</tr>
<tr>
<td>Self-transcendence (ST)</td>
<td>0.24*</td>
<td>0.15</td>
<td>2.11***</td>
<td>0.16***</td>
<td>0.12</td>
<td>1.68</td>
<td>0.20**</td>
<td>0.07</td>
<td>1.19</td>
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<tr>
<td>Toronto Alexithymia Scale</td>
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<tr>
<td>Difficulties identifying feelings</td>
<td>0.46*</td>
<td>0.27</td>
<td>3.16**</td>
<td>0.47*</td>
<td>0.34</td>
<td>4.0*</td>
<td>0.64*</td>
<td>0.35</td>
<td>5.31*</td>
</tr>
<tr>
<td>Difficulties expressing feelings</td>
<td>0.37*</td>
<td>0.01</td>
<td>0.10</td>
<td>0.29*</td>
<td>-0.07</td>
<td>-0.85</td>
<td>0.51*</td>
<td>0.07</td>
<td>1.06</td>
</tr>
<tr>
<td>Externally oriented thinking</td>
<td>0.21**</td>
<td>0.04</td>
<td>0.62</td>
<td>0.15</td>
<td>-0.01</td>
<td>-0.22</td>
<td>0.25*</td>
<td>0.02</td>
<td>0.34</td>
</tr>
<tr>
<td>Michigan Alcoholism Screening Test</td>
<td>0.30*</td>
<td>0.12</td>
<td>1.70</td>
<td>0.35*</td>
<td>0.18</td>
<td>2.61**</td>
<td>0.38*</td>
<td>0.13</td>
<td>2.50***</td>
</tr>
<tr>
<td>Age</td>
<td>-0.15</td>
<td>-0.07</td>
<td>-1.16</td>
<td>-0.11</td>
<td>-0.03</td>
<td>-0.48</td>
<td>-0.17</td>
<td>-0.05</td>
<td>-1.01</td>
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<tr>
<td>Full model*</td>
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<tr>
<td>F²</td>
<td>8.5*</td>
<td>0.34</td>
<td>5.37</td>
<td>0.35</td>
<td>8.7*</td>
<td>0.61</td>
<td>23.4*</td>
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</tbody>
</table>

*Standardized regression coefficients (β) are presented, which indicate the relative magnitude of prediction for each independent variable.

All individual variables were entered blockwise into a linear regression analysis, with the significance of the explained amount of variance (F², adjusted) for each psychopathology dimension assessed by using analysis of variance (df = 11, 164). *P < 0.001; **P < 0.01; ***P < 0.05.

Among these dimensions, particularly high HA and low S scores predicted the severity of anxiety and depression. In a previous study among students, depression score was predicted by scores of HA, S, and ST, even after controlling for the STAI score, whereas the STAI score was predicted by scores of S and C, even after controlling for the depression score [50]. In studies on mood disorders, compared to the general population, HA scores were found to be much higher before treatment for depression [51,52]. Akvardar et al. [53] found higher HA scores among Turkish alcohol dependents than healthy controls, and suggested that individuals high in HA might use alcohol to relieve negative emotions. In cross-sectional studies [31,54] in the general population [32] and among medical school students and psychiatric outpatients [55], HA scores were highly positively correlated, whereas S scores were highly negatively correlated with depression and anxiety intensity. Among undergraduates, depression was predicted by lower RD, P, S, C, and ST; anxiety was predicted by higher NS, HA, P, and ST, and lower S [30]. Consistent with previous studies, although a broad range of personality dimensions was associated with depression and anxiety symptoms in the present study, particularly high HA scores and low S scores predicted both anxiety and depression [22,30]. As for alexithymia, stability of TCI dimensions is also a question of debate [34]; i.e., Berglund et al. [56] suggested that long duration of excessive alcohol consumption appears to have an influence on personality traits in male alcohol-dependent individuals and these personality traits may therefore be a consequence of, rather than preceding, alcoholism in these individuals. Nevertheless, temperament dimensions of personality traits have direct clinical applications for prediction of relapse in detoxified alcohol dependents [57]. Also in previous studies, personality models like the TCI captured up to 45% of alexithymia variance [58].

The present study has several limitations. All measures used in this study were self-reported. Although the study was conducted as detoxification, patients might still have had some cognitive problems in expressing themselves correctly. Alexithymic subjects might also have been unable to express themselves correctly because of their difficulties in cognitive processing of emotions. Another limitation of the present study was that patients included in this study were all male. Also the study group was restricted to a treatment-seeking population, and therefore it is not possible to generalize the findings to non-treatment groups.

Although it was suggested that, even severely alcohol-dependent patients could benefit from pharmacotherapy [11] and psychotherapy for their anxiety and depressive symptoms [59], remembering that these patients may also have alexithymic features and different personality structure could lead to a change in treatment plans. Indeed different subgroups of alcohol-dependent subjects might benefit from different types of treatment [60]. Alexithymics may perform better in some types of treatment than others; they may have little interest in introspective and analytical cognitive activity [36] and they may have better outcomes in a clinical management condition than in cognitive-behavioral relapse prevention [61]. In a recent study among depressed opiate-dependent methadone-maintained patients, low RD participants displayed a significantly better
mood response to sertraline than high RD participants. Also participants with high HA scores were more likely to be abstinent at the end of the study than low HA participants [62]. Another study found improvements in character dimensions with quetiapin treatment among patients with borderline personality disorder [63]. These results show that responses to pharmacotherapy and psychotherapy may also depend on personality structure [64]. It is also important to remember that both alexithymia [40-48] and personality dimensions [57] influence on the course of the alcohol dependency. Thus, it is important to determine the anxiety and depressive symptoms and the factors related with these symptoms, such as alexithymia and TCI dimensions, since this might increase our understanding for optimal treatment after detoxification.

Key points

- Anxiety and depressive symptoms and factors related with these symptoms, such as alexithymia, personality and alcohol-related problem severity, are important among detoxified alcohol dependents.
- For optimal treatment, not only recognizing anxiety and depressive symptoms, but also remembering that this subgroup of patients may also have alexithymic features and different personality structure may necessitate change of treatment plans.

Statement of interest

Authors do not have any financial support or relationships that may pose conflict of interest.

References


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