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Research / Araştırma

Personality Dimensions and Defense Styles That are Related with Relapse During 12 Month Follow-up in Male Alcohol Dependents

Cuneyt Evren[1], Sera Yigiter[2], Muge Bozkurt[2], Dilara Cagil[2], Serap Ozcetinkaya[2], Yesim Can[2], Elif Mutlu[2]

[1]Assoc. Prof. Dr., Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery, Alcohol and Drug Research, Treatment and Training Center (AMATEM), Istanbul - Turkey
[2]Psychiatrist, Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery, Alcohol and Drug Research, Treatment and Training Center (AMATEM), Istanbul - Turkey

ABSTRACT

Personality dimensions and defense styles that are related with relapse during 12 month follow-up in male alcohol dependents

Objective: The aim of this study was to evaluate the defense styles and the personality dimensions that are related with relapse to alcohol use 12 months after inpatient treatment in male alcohol dependents.

Methods: Participants were 70 consecutively admitted male alcohol dependents. Among these patients 44 were available to examine after 1 year. Patients were investigated with the Temperament and Character Inventory (TCI) and Defense Styles Q (DSQ) at baseline.

Results: Among 44 alcohol dependent inpatients 61.4% (n=27) were considered as relapsed to alcohol use. Current age was lower in relapsed group. Age at regular alcohol use, duration of education, regular income did not differ between groups. Rate of history of self-mutilation and/or suicide attempt at baseline were higher in relapsed group. Rate of changing social environment during 12 months after inpatient treatment was lower in the relapsed group, whereas using drugs and spending time with substance using friends were higher in this group. Mean scores of "acting-out", "devaluation" and "displacement" were higher in the relapsed group. Also same immature defense styles predicted relapse together with self-directedness (SD). When current age was included in the analysis, being younger and high acting-out predicted relapse in alcohol dependents after inpatient treatment.

Conclusions: Clinicians must be careful for younger alcohol dependents with lower SD and for those who use immature defense styles (particularly acting-out) since these variables may be related with relapse.

Key words: Alcohol dependence, character, defense styles, relapse, temperament

ÖZET

Erkek alkol bağımlılarında 12 aylık takip süresindeki depreşme ile ilişkili savunma mekanizmaları ve kişilik boyutları

Amaç: Bu çalışmanın amacı, erkek alkol bağımlılarında yatarak tedaviden sonraki 12 ay içinde alkol kullanımında depreşme ile ilişkili olabilecek savunma mekanizmaları ve kişilik boyutlarını değerlendirmektir.

Yöntem: İlk değerlendirme grubu, ardışık olarak servise yatırılmış 70 erkek alkol bağımlısı hastadan oluşmaktaydı. Bu hastalardan 44'ü ile hastanede yatışlarından 1 yıl sonra görüşme yapılabildi. Hastalar yatarak tedavi sırasında Mizaç ve Karakter Envanteri (MKE) ve Savunma Biçimleri Testi (SBT) ile değerlendirildiler.

Bulgular: Yatarak tedavi gören 44 alkol bağımlısı hastanın %61.4'ü (n=27) alkol kullanımı depreşmiş olarak değerlendirilmiştir. Alkol kullanımı depreşen gruptakilerin o anki yaşları daha küçüktü. Düzenli alkol kullanımına başlama yaşı, eğitim süresi ve düzenli gelir gruplar arasında farklılık göstermedi. İlk görüşmede saptanan kendi kendini yaralama ve özkıyım öyküsü oranları depreşen grupta daha yüksekti. Yatarak tedaviden sonraki 12 ayda sosyal çevreyi değiştirme oranı depreşen grupta düşükken, alkol dışı madde kullanmış olma ve madde kullanan arkadaşlarıyla görüşmeye devam etme oranları yüksekti. Depreşen grupta "eyleme dökme", "değersizleştirme" ve "yer değiştirme" ortalama puanları daha yüksekti. Ayrıca aynı savunma mekanizmaları, düşük düzeyde kendi kendini yönetme (KY) ile birlikte depreşmeyi belirleyen değişkenler olmuştur. Analize o anki yaş eklendiğinde ise, alkol bağımlılarında yatarak tedavi sonrası depreşmeyi genç olma ve yüksek eyleme dökme belirlemiştir.

Sonuç: Klinisyenler düşük KY ve olgunlaşmamış savunma biçimlerine (özellikle eyleme dökme) sahip genç alkol bağımlıları için dikkatli olmalıdırlar, çünkü bu değişkenler depreşme ile ilişkili görünmektedir.

Anahtar kelimeler: Alkol bağımlılığı, karakter, savunma biçimleri, depreşme, mizaç

Address reprint requests to / Yazışma adresi:
Psychiatrist Muge Bozkurt,
Zuhuratbaba Mah. Tatlınar Sokak, Emre Apt. 8/5, 34147 Bakırkoy, Istanbul - Turkey

Phone / Telefon: +90-212-543-6565

Fax / Faks: +90-212-660-0026

E-mail address / Elektronik posta adresi:
mugeulku@gmail.com

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INTRODUCTION

Relapse may be defined as the resumption of alcohol drinking following a prolonged period of abstinence. Events that potently trigger relapse drinking fall into three general categories: exposure to small amounts of alcohol (i.e., alcohol induced priming), exposure to alcohol related (i.e., conditioned) cues or environmental contexts, and stress (1). Among treated patients with alcohol use disorders, estimated rates of relapse range between 20 to 60% within the first few months after treatment (2-4) and as high as 70 to 80% by the end of 1st year (4), depending on the severity of the disorder and the criteria for remission.

Relapse represents a major challenge to treatment efforts for people suffering from alcohol dependence (1). Studies suggest that among these individuals, more frequent and heavier alcohol consumption and more psychological and social drinking problems are associated with a more likelihood of relapse (5,6). Variables involved in relapse include the individual characteristics of the patient, the drug and environmental reinforcers (7,8). Among treated individuals, more severe alcohol-related problems, anxiety and depressive symptoms, lack of self-efficacy, poor coping skills and readiness for change have been associated with short-term relapse (8-13). Compared to individuals who obtain help, those who do not are less likely to achieve long term remission and subsequently are more likely to relapse (14). Nevertheless, relapse is a multi-factored phenomenon and most likely to result from a combination of various factors (7).

Defense mechanisms, a psychoanalytical concept, have been defined as an indicative of how individuals deal with conflict (15). They are known to lie along a continuum ranging from being immature or maladaptive (e.g., acting-out) to being mature or adaptive (e.g., humor) (16). Defense mechanisms are defined in the DSM-IV as "automatic psychological processes that protect the individual against anxiety and from the awareness of internal and external stressors" (17). In other words, defense mechanisms are involuntary cognitive operations that occur on an unconscious level in order to minimize sudden changes in internal and external environments by modifying the conscious experience of thought, feeling, and emotion (16,18). Function of these defenses are considered as to maintain homeostasis and prevent inordinate anxiety forcing its way into consciousness, whether the anxiety arises from conflict within the person or between the person and the environment (19). In the DSM-IV, defense mechanisms are considered almost equivalent to coping mechanisms (17,20). Some studies found a relationship between adaptive coping strategies and mature defenses, as well as between maladaptive coping strategies and immature defenses (21).

According to the early reports, substance dependent individuals use rationalization, projection, denial and suppression defenses more than healthy individuals (22,23). In Turkish substance dependents sublimation, pseudo-altruism, acting-out, isolation and autistic fantasy were found as predictors of patient group (24). In this study, using immature defenses were related with severity of dependency, dissociative experiences, and childhood trauma experiences (24). Also results of a recent study suggested that alcohol dependents are using maladaptive immature defenses more than healthy controls and immature defenses seems to be related with alexithymia (particularly DIF factor), low cooperativeness and high self-transcendence in alcohol dependents (25). Alcohol dependent patients who are using more immature defense styles may need alcohol as a way of coping with the anxiety caused by their conflicts, thus resulting in higher severity of dependence (24). These may suggest that these groups of patients are psychologically more problematic. Thus, for individuals being unable to achieve satisfactory or acceptable outcomes to stressful situation, drinking may become a predominant way of (avoidance) coping (26). In this regard, the use of "avoidant" coping styles has been found to be associated with greater levels of alcohol consumption (27), adverse consequences (28), and relapse (29).

The Temperament and Character Inventory (TCI) is an instrument to measure personality dimensionally, and it evaluates 4 basic temperament and 3 basic character dimensions (30). The psychobiological model

assumes interactions between temperament and character scales, eliciting secondary emotions, which are important in the development of personality (31). Individual differences in personality structure and development have a strong influence on the risk of all forms of psychopathology, including alcohol abuse (32). The defense style is considered to be an important dimension of the individual's structure of personality (33). Basiaux et al. (34) reported that the TCI data add to evidence concerning a higher probability of personality disorder in alcohol-dependent patients. Defense mechanisms are conceptually linked to psychological development, personality traits, and psychopathology (35,36). A previous study found that among temperament dimensions persistence makes a significant contribution to the prediction of latency to relapse following inpatient alcohol-dependence treatment (37). Similarly, the risk of relapse was higher in alcohol dependent patients with a low score in persistence (38).

The question of which factors predict relapse is therefore an important one, since by understanding what such factors are, strategies for minimizing their effects can be developed. Listed among the many predictors of whether or not relapse to alcohol use will occur are life events, mood states, the existence of self-efficacy and coping behaviors (8,10,15). Thus, it is important to evaluate personality dimensions and defense styles as predictors of relapse in alcohol dependents. The aim of this study was to evaluate the clinical variables related with relapse to alcohol use during 12 months follow-up after inpatient treatment in male alcohol dependents.

METHODS

Subjects

This is a cohort study which was conducted in Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery, AMATEM (Alcohol and Drug Research, Treatment and Training Center) between January 2010 and January 2011. The Ethical Committee of the hospital approved the study. Patients' written informed consent was obtained after the study protocol was thoroughly explained.

Seventy consecutively admitted alcohol-dependent inpatients without history of any other substance abuse participated in the study. All participants fit the DSM-IV diagnostic criteria for alcohol dependence. Interviews with the study group were conducted after detoxification period, i.e. 4-6 weeks after the last day of alcohol use. One year later, each of these 70 participants were called with phone to interview. It was possible to reach 44 (62.9%) patients with telephone, among which 61.4% (n=27) relapsed during the 12 months.

Assessments

All patients were assessed by using a semi-structured sociodemographic form both at baseline and at 12 month follow-up. The diagnosis of alcohol dependence in each participating patient based on the clinical examination, a screening interview based on the Structured Clinical Interview for DSM-IV (SCID-I) (39), Turkish version (40), conducted by trained interviewer (CE).

Temperament and Character Inventory

Evaluation of temperament and character traits was conducted by the Turkish version of the TCI, a 240-item, forced-choice, self-report scale (41,42). Dimensions of temperament were (a) Harm avoidence (HA), (b) novelty seeking (NS), (c) Reward dependency (RD), and (d) persistence (P). Dimensions of character were (a) Self-directedness (SD), (b) cooperativeness (C), and (c) Self-transcendence (ST). The reliability and validity of the Turkish version of the TCI were supported by its psychometric properties and construct validity (41).

Defense Style Questionnaire-40 (DSQ-40)

The defense mechanisms were evaluated by the Defense Style Questionnaire (DSQ) (43), a 40-question self-report questionnaire which was translated and recently validated into Turkish (44). The DSQ-40 assesses the defense strategies used by individuals to cope with stressful situations or events. Items are rated

on a nine-point scale and measure the tendency of individuals to endorse specific defenses. The DSQ-40 comprises three factors (mature, neurotic and immature) and 20 defense mechanisms as originally described in the DSM-III-R. Each of the defenses is represented by two items on the DSQ-40. For example, 'denial' is measured by these statements: "People say I tend to ignore unpleasant facts as if they didn't exist" and "I fear nothing". The mature style consists of four defenses (sublimation, humor, anticipation and suppression), as does the neurotic style (undoing, pseudo-altruism, idealization and reaction formation). The immature style consists of twelve defenses (projection, passive-aggression, acting-out, isolation, devaluation, "autistic fantasy", denial, displacement, dissociation, splitting, rationalization and somatization). Coefficient-alphas for defense styles are described as moderate (0.58) to high (0.80) (43).

Statistical Methods

The statistical package SPSS 17.0 for Windows was used for all the analyses. Categorical variables were compared with chi-square test. We used Mann-Whitney U test for independent samples to compare continuous variables. Taken relapse status as dependent variable, three Forward Logistic Regression models were performed. In the first model, age onset of regular alcohol use, main defense styles (mature, neurotic and immature) and temperament and character dimensions were independent variables. In the second model, age of onset of regular alcohol use, 12 immature defense styles and temperament and character dimensions were taken as independent variables. In the third model, current age was added to analysis as an independent variable to the independent variables used in the model 2. For all statistical analyses, p values were two-tailed and differences were considered significant at $p<0.05$.

RESULTS

Among 44 alcohol dependent inpatients, 61.4% (n=27) were considered as relapsed to alcohol use. Current age was lower in the relapsed group. Age at regular alcohol use, duration of education and income did not differ between groups. Rate of history of self-mutilation and/or suicide attempt at baseline were higher in relapsed group. Rate of changing social environment during 12 months after inpatient treatment was lower in the relapsed group, whereas using drugs and spending time with substance using friends were higher in this group (Table 1). Mean scores of "acting out", "devaluation" and "displacement" were higher in the relapsed group (Table 2). Immature defense style and SD predicted relapse in regression analysis, whereas among immature defense styles acting out, devaluation and displacement predicted relapse together with SD (Table 3). When current age was included in the analysis, being younger and high acting-out predicted relapse in alcohol dependents (Table 3).

Table 1: Sociodemographic variables

	Remission		Relapse				
	n=17	%	n=27	%	χ^2	df	p
No income	5	29.4	9	33.3	0.07	1	0.786
History of suicide at baseline	2	11.8	11	40.7	4.21	1	0.040
History of self-mutilation at baseline	5	29.4	17	63.0	4.70	1	0.030
Changed social environment	17	100	16	59.3	9.24	1	0.003
Substance using friends	5	29.4	17	63.0	4.70	1	0.030
Drug use after inpatient treatment	0	0.0	7	25.9	5.24	1	0.032
	Mean	**SD**	**Mean**	**SD**	**z**		**p**
Age	48.29	7.94	38.85	7.90	-3.44		0.001
Duration of education	9.18	3.73	8.70	3.59	-0.39		0.696
Age at first substance use	19.82	4.67	19.22	4.71	-0.21		0.837
Age at regular substance use	26.35	7.49	24.26	7.40	-0.70		0.484

z: Mann Whitney U test, χ^2: Ki kare test, SD: Standard Deviation

Table 2: Scale scores among alcohol dependent men according to the relapse status in 12 months

	Remission (n=17)		Relapse (n=27)			
Scale scores	**Mean**	**SD**	**Mean**	**SD**	**z**	**p**
Defense styles						
Mature	45.29	9.78	42.44	11.21	-0.713	0.476
Neurotic	46.12	9.89	45.96	10.92	-0.072	0.942
Immature	95.24	23.81	110.19	24.20	-1.845	0.065
Immature defense styles						
Acting-out	6.94	5.23	11.15	4.21	-2.879	0.004
Devaluation	5.82	4.68	9.00	3.99	-2.236	0.025
Displacement	5.35	3.50	7.41	2.72	-2.129	0.033
Temperament and Character Inventory						
Novelty seeking	18.53	5.04	21.11	4.72	-1.463	0.143
Harm avoidance	16.88	4.96	19.15	6.25	-1.366	0.172
Reward dependency	13.41	2.79	12.15	2.93	-1.120	0.263
Persistence	5.24	1.75	5.44	1.93	-0.404	0.686
Self-directedness	22.53	5.63	24.37	6.16	-1.135	0.256
Cooperativeness	26.71	5.24	24.93	7.29	-0.543	0.587
Self-transcendence	18.77	6.68	18.19	5.13	-0.085	0.933

z: Mann Whitney U test, SD: Standard Deviation

Table 3. Determinants of relapse in Forward Logistic Regression models in alcohol dependent men (n=44)

							95.0% Confidence Interval	
	B	**S.E.**	**Wald**	**df**	**p**	**Odds Ratio**	**Lower**	**Upper**
Model 1								
Self-directedness	0.215	0.091	5.626	1	0.018	1.240	1.038	1.481
Immature defense style	0.063	0.024	6.977	1	0.008	1.065	1.016	1.116
Model 2								
Self-directedness	0.69	0.26	7.14	1	0.008	1.987	1.201	3.288
History of suicide attempt	-4.55	2.17	4.42	1	0.036	0.011	0.000	0.734
Acting out	0.45	0.19	5.63	1	0.018	1.570	1.082	2.280
Devaluation	0.38	0.18	4.75	1	0.029	1.463	1.039	2.060
Displacement	0.98	0.36	7.27	1	0.007	2.658	1.306	5.411
Model 3								
Acting-out	0.186	0.084	4.934	1	0.026	1.205	1.022	1.420
Age	-0.138	0.049	7.962	1	0.005	0.871	0.792	0.959

Model 1: Temperament and character dimensions and defense styles (immature, neurotic and mature) were independent variables. Model 2: Temperament and character dimensions, immature defense styles, history of suicide attempt and self-mutilative behaviour were independent variables. Model 3: Current age was included in Model 2 as an independent variable. B: Beta, S.E.: Standart Error

DISCUSSION

Among those who were available for interview (n=44) at the end of 12 month, 27 (61.4%) were considered as relapsed to alcohol use during the 12 month follow-up. This rate is same with the previous study conducted in the same clinic, which found 61.8% relapse rate at the end of 1 year after treatment (45) and similar with studies conducted in other countries (57%) (46). A number of studies have identified predictors of alcohol relapse after discharge from an alcohol treatment program. These variables include biological markers, personality features, psychiatric disorders, social characteristics, patterns of substance use and abuse, such as length of drinking history and age of onset, and whether the patient had attempted suicide (47). Consistent with these in the present study, rates of history of self-mutilation and suicide attempt at baseline were higher in relapsed group. Also low SD score, which is an indicative of personality disorder, discriminated this group from those in remission. Nevertheless, the main finding of the present study is

that immature defense style and lower scores on character dimension of SD are associated with relapse at the end of 1 year after inpatient treatment. Consistent with this, the results of the previous studies (48-50) suggested that the pre-treatment use of immature defenses predicts a poor outcome of treatment in psychiatric disorders. Finally, it has been postulated that persons with an immature defense style will respond less effectively to both pharmacological (49) and psychological (48,51,52) treatment. Lower scores on SD was also previously related with less response to treatment (53,54). Consistent with this, in a previous study SD was found to be lower in short-term abstinence patients who may be perceiving higher levels of stress and use non-adaptive coping strategies than long-term abstinence group (55).

Alcoholics experiencing highly threatening or chronic psychosocial stress following treatment are more likely to relapse than abstaining individuals not experiencing such stress, which is also called the stress-vulnerability model of relapse (10,56). Patients should develop strategies to cope with high-risk situations such as negative emotional states and interpersonal conflicts (57). The use of negative (e.g., "avoidant") coping styles has been found to be associated with greater levels of alcohol consumption; the use of positive (e.g., "active") coping styles, with lower levels of alcohol use and problems (27). The distorting and projective mechanisms that under function in alcohol dependence and are part of the defensive mechanism of avoidance might also be related to these associations. This may especially be the case when the age is younger. Higher rates of self mutilation and suicide attempt (58) and seeking treatment in early ages (59) may suggest that severity of psychopathology is higher in younger alcohol dependents and that they may also be using more pathological defense mechanisms (60). Relapse rates are generally greatest for the young, perhaps the younger abstainers are less likely to have voluntarily chosen abstinence as their mode of recovery (e.g., more likely to have become abstinent in response to legal requirements following a drunk driving or other legal offense) and consequently less committed to remaining abstinent. Possibly their initial dependence symptoms are mild enough in nature to make them think that they could safely resume drinking (4). In present study SD seems to be mediating the association between being younger and relapse.

The DSQ 40 was shown to be a valid instrument for the assessment of defense mechanisms and change in these mechanisms after psychotherapy among those with personality disorder comorbidity (61). Several studies among patients with personality disorder reported positive associations between immature (maladaptive or nonadaptive) defenses and personality disorders and negative relations between mature (adaptive) defenses and personality pathology (48,62-64). Although both antisocial personality disorder (APD) and borderline personality disorder (BPD) are associated with primitive defenses, acting-out in particular (65), some findings have supported that BPD may demonstrate higher levels of maladaptive defenses, such as acting-out and passive-aggression, compared to other personality disorder groups (66). The DSQ's acting-out predominantly assesses impulsivity and limited aggression, which may be more likely to be self-reported by individuals with BPD or APD (66). Comorbidities such as APD and BPD are common among substance dependents and appear to be negatively associated with treatment outcome (67). These are Cluster B personality disorders defined as impulsive personalities (68) and low SD is the core feature of these personality disorders (69). Thus, the results of the present study may reflect the personality pathology commonly found among alcohol dependents. Nevertheless since we did not evaluate the personality disorders in present study, this may be considered as one of the limitations.

In treated samples, women and older, married and better-educated individuals tend to experience better short-term outcomes (5,70,71). Nevertheless, a combination of various factors with different impact may cause relapse, and probably there may be no single factor (7). In the present study, sociodemographic factors other than being younger did not differ between groups, suggesting that other risk factors are more important in our sample. Our sample included only male patients and sociodemographic variables as risk

factors may change across genders. Not only sociodemographic but also other risk factors may differ between genders, i.e. for initial post-treatment relapses, women were more likely to have negative affect relapses, and men were more likely to have social pressure relapses (72).

There are several limitations for our findings. First, we have not analysed biological markers (CDT or GGT) nor collected reports of collateral informants, but we consider that the patients' self-reports and information from relatives are valid. All patients were personally interviewed and all patients were well known by the interviewer (S.Y.). Several studies have shown a high validity and high reliability of self-report data of alcohol-dependent patients in treatment compared to toxicologic analyses of blood or collateral informant reports (73,74). Other important limitation of the present study was that no scale were used to evaluate severity of anxiety and depressive symptoms, since they may be related with not only relapse (12,75,76), but also with HSM, HSA and defense styles. Since this study is a cross-sectional one, the longitudinal designs are required to clarify the causal relationship of relapse with defense styles and personality. Findings of previous studies suggest that the improvement in symptom severity is associated with greater use of mature defenses (48-52). The use of maladaptive defenses might be the consequence of alcohol dependency; during the active phase of the disorder, their capacity to use mature adaptive defenses may diminish and they may use more immature defense styles, but if they could stay sober for a long time, and, as the anxious and depressive symptoms remitted, their defensive style may return to a higher degree of maturity (77). Thus, the hypothesis that the use of maladaptive defenses is a state dependent phenomenon cannot be rejected (50,78,79). Future follow-up study should evaluate the changes in defense styles during sobriety period.

Notwithstanding these important limitations, these findings suggest that certain personality related factors, particularly a low level of SD, along with immature defense mechanisms, particularly acting-out, might make younger alcohol dependent individuals more vulnerable to relapse after inpatient treatment. It is possible that this group did not manage to activate strong primitive defense mechanisms during psychological development. It has been argued that no mental status or clinical formulation should be considered complete without an effort to identify the patient's dominant defense mechanisms (80) and avoiding difficult feelings has been suggested to be common phenomenon in alcohol dependents (81), which may offer some explanation as to why the use of immature defenses are more frequent in alcohol dependents. The use of less mature defenses was suggested to be associated with the severity of symptoms, and the clinical improvement to be accompanied by a shift toward the use of more mature defenses in previous studies (78). From a clinical standpoint, this is important because it underscores the value of immature defense styles and lower SD in identifying and evaluating new treatment strategies that may be more effective in battling the problem of relapse, particularly among younger patients.

REFERENCES

1. Becker CH. Alcohol dependence, withdrawal, and relapse. Alcohol Res Health 2008; 31:248-261.
2. Miller WR, Walters ST, Bennett ME. How effective is alcoholism treatment in the United States? J Stud Alcohol 2001; 62:211-220.
3. Monahan S, Finney J. Explaining abstinence rates following treatment for alcohol abuse. A quantitative synthesis of patient, research design, and treatment effects. Addiction 1996; 91:787-805.
4. Dawson DA, Goldstein RB, Grant BF. Rates and correlates of relapse among individuals in remission from DSM-IV alcohol dependence: a 3-year follow-up. Alcohol Clin Exp Res 2007; 31:2036-2045.
5. McLellan AT, Alterman AI, Metzger DS, Grissom GR, Woody GE, Luborsky L, O'Brien CP. Similarity of outcome predictors across opiate, cocaine, and alcohol treatments: role of treatment services. J Consult Clin Psychol 1994; 62:1141-1158.

6. Booth BM, Curran GM, Han X. Predictors of short-term course of drinking in untreated rural and urban at-risk drinkers: effects of gender, illegal drug use and psychiatric comorbidity. J Stud Alcohol 2004; 65:63-73.

7. Bottlender M, Soyka M. Impact of craving on alcohol relapse during and 12 months following, outpatient treatment. Alcohol Alcohol 2004; 39:357-361.

8. Miller WR, Westerberg VS, Harris RJ, Tonigan JS. What predicts relapse? Prospective testing of antecedent models. Addiction 1996; 91:155-171.

9. Yates WR, Booth BM, Reed DA, Brown K, Masterson BJ. Descriptive and predictive validity of a high-risk alcoholism relapse model. J Stud Alcohol 1993; 54:645-651.

10. Brown SA, Vik PW, Patterson TL, Grant I, Schuckit MA. Stress, vulnerability, and alcohol relapse. J Stud Alcohol 1995; 56:538-545.

11. Connors GJ, Maisto SA, Zywiak WH. Understanding relapse in the broader context of post-treatment functioning. Addiction 1996; 91:173-189.

12. Driessen M, Meier S, Hill A, Wetterling T, Lange W, Junghanns K. The course of anxiety, depression and drinking behaviours after completed detoxification in alcoholics with and without comorbid anxiety and depressive disorders. Alcohol Alcohol 2001; 36:249-255.

13. Strowing AB. Relapse determinants reported by men treated for alcohol addiction: the prominence of depressed mood. J Subst Abuse Treat 2000; 19:469-474.

14. Moss RH, Moss BS. Rates and predictors of relapse after natural and treated remission from alcohol use disorders. Addiction 2006; 101:212-222.

15. Blaya C, Kipper L, Heldt E, Isolan L, Ceitlin LH, Bond M, Manfro GG. Brazilian-Portuguese version of the Defense Style Questionnaire (DSQ-40) for defense mechanisms measure: a preliminary study. Rev Bras Psiquiatr 2004; 26:255-258.

16. Vaillant GE. Ego mechanisms of defense and personality psychopathology. J Abnorm Psychol 1994; 103:44-50.

17. American Psychiatric Association Committee on Nomenclature and Statistics. Diagnostic and Statistical Manual Of Mental Disorders. Fourth ed., Washington DC: American Psychiatric Press; 1994.

18. Cramer P. Defense mechanisms and physiological reactivity to stress. J Pers 2003; 71:221-244.

19. Andrews G, Pollock C, Stewart G. The determination of defense style by questionnaire. Arch Gen Psychiatry 1989; 46:455-460.

20. Hyphantis T. The Greek version of the Defense Style Questionnaire: psychometric properties in three different samples. Compr Psychiatry 2010; 51:618-629.

21. Grebot E, Paty B, Girarddephanix N. Relationships between defense mechanisms and coping strategies, facing exam anxiety performance. Encephale 2006; 32:315-324 (Article in French).

22. Miller WR. Motivation for treatment: a review with special emphasis on alcoholism. Psychol Bull 1985; 98:84-107.

23. Ward LC, Rothaus P. The measurement of denial and rationalization in male alcholics. J Clin Psychol 1991; 47:465-468.

24. Taskent V, Karadag F, Topcuoglu V, Akduman I, Evren C. Psychological defense mechanisms, childhood traumas and dissociative experiences in patients with drug and alcohol dependency. Turk Psikiyatri Derg 22; 2011 (Supp.1):58.

25. Evren C, Cagil D, Ulku M, Ozcetinkaya S, Gokalp P, Cetin T, Yigiter S. Relationship between defense styles, alexithymia and personality in alcohol dependent inpatients. Compr Psychiatry 2012; 53: 860-867.

26. Marlatt GA, Baer JS, Donovat DM, Kivlahan DR. Addictive behaviors: etiology and treatment. Annu Rev Psychol 1988; 39:223-252.

27. Moussas G, Dandouti G, Botsis A, Lykouras L. Coping styles of type I and type II alcohol-dependent men undergoing treatment. Compr Psychiatry 2006; 47:63-68.

28. McCreary DR, Sadava SW. Stres, drinking and the adverse consequences of drinking in two samples of young adults. Psychol Addict Behav 1998; 12:247-261.

29. Waisberg JL. Patient characteristics and outcome of inpatient treatment for alcoholism. Advanc Alcohol Subst Use 1990; 8:9-32.

30. Kose S. A psychobiological model of temperament and character: TCI. New Symposium 2003; 41:86-97.

31. De la Rie SM, Duijsens IJ, Cloninger CR. Temperament, character and personality disorders. J Pers Disord 1998; 12:362-72.

32. Cloninger CR, Svrakic DM. Integrative psychobiological approach to psychiatric assessment and treatment. Psychiatry 1997; 60:120-41.

33. Blaya C, Kipper L, Heldt E, Isolan L, Ceitlin LH, Bond M, et al. Brazilian-Portuguese version of the Defense Style Questionnaire (DSQ-40) for defense mechanisms measure: a preliminary study. Rev Bras Psiquiatr 2004; 26:255-258.

34. Basiaux P, le Bon O, Dramaix M, Massat I, Souery D, Mendlewicz J, Pelc I, Verbanck P. Temperament and Character Inventory (TCI) personality profile and sub-typing in alcoholic patients: a controlled study. Alcohol Alcohol 2001; 36:584-587.

35. Bond M, Paris J, Zweig-Frank H. The Defense Style Questionnaire in borderline personality disorder. J Pers Disord 1994; 8:28-31.

36. Hauser ST, Safyer AW. The Contribution of Ego Psychology to Developmental Psychopathology. In Cicchetti D, Cohen DJ (editors). Developmental Psychopathology. New York: John Wiley, 1995, 555-580.

37. Cannon DS, Keefe CK, Clark LA. Persistence predicts latency to relapse following inpatient treatment for alcohol dependence. Addict Behav 1997; 22:535-543.

38. Müller SE, Weijers HG, Böning J, Wiesbeck GA. Personality traits predict treatment outcome in alcohol-dependent patients. Neuropsychobiology 2008; 57:159-164.

39. First MB, Spitzer RL, Gibbon M, Williams JBW. Structured Clinical Interview For DSM-IV Axis I Disorders (SCID-I), Clinical Version. Washington D.C. and London: American Psychiatric Press, Inc, 1997.

40. Çorapcioglu A, Aydemir O, Yildiz M, Esen A., Koroglu E. DSM-IV Eksen I Bozuklukları (SCID-I) İçin Yapılandırılmış Klinik Görüşme, Klinik Versiyon. Ankara: Hekimler Yayın Birliği, 1999 (Article in Turkish).

41. Kose S, Sayar K, Kalelioglu U, Aydin N, Ak I, Kirpinar I, Aydin N, Kalelioglu U, Kirpinar I, Reeves RA, Przybeck TR, Cloninger CR. Turkish version of the TCI: reliability, validity and factorial structure. Bulletin of Clinical Psychopharmacol 2004; 14:107-131 (Article inTurkish).

42. Cloninger CR, Svrakic DM, Przybeck TR. A psychobiological model of temperament and character. Arch Gen Psychiatry 1993; 50:975-90.

43. Andrews G, Singh M, Bond M. The defence style questionnaire. J Nerv Ment Dis 1993; 18:246-256.

44. Yilmaz N, Gencoz T, Ak M. Psychometric properties of the defense style questionnaire: a reliability and validity study. Turk Psikiyatri Derg 2007; 18: 244-253.

45. Evren C, Durkaya M, Dalbudak E, Celik S, Cetin R, Çakmak D. Factors related with relapse in male alcohol dependents: 12 months follow-up study. Düşünen Adam Journal of Psychiatry and Neurological Science 2010; 23:92-99.

46. Soyka M, Hasemann S, Scharfenberg CD, Löhnert B, Bottlender M. New possibilities in treatment and rehabilitation of alcohol-dependent patients: a catamnestic study on the efficiency of outpatient treatment programmes demonstrated by a model procedure. Nervenarzt 2003; 74:226-234.

47. Pedersen MU, Hesse M. A simple risk scoring system for prediction of relapse after inpatient alcohol treatment. Am J Addict 2009; 18:488-493.

48. Bond M, Perry J. Long-term changes in defense styles with psychodynamic psychotherapy for depressive, anxiety and personality disorders. Am J Psychiatry 2004; 161:1665-1671.

49. Kipper L, Blaya C, Teruchkin B, Heldt E, Isolan L, Mezzomo K, Bond M, Manfro GG. Evaluation of defense mechanisms in adult patients with panic disorder: before and after treatment. J Nerv Ment Dis 2005; 193:619-624.

50. Marchesi C, Parenti P, Aprile S, Cabrino C, De Panfilis C. Defense style in panic disorder before and after pharmacological treatment. Psychiatry Res 2011; 187:382-386.

51. Drapeau M, De Roten Y, Perry JC, Despland J. A study of stability and change in defense mechanisms during a brief psychodynamic investigation. J Nerv Ment Dis 2003; 191:496-502.

52. Heldt E, Blaya C, Kipper L, Salum GA, Otto MW, Manfro GG. Defense mechanisms after brief cognitive–behavior group therapy for panic disorder. One year follow-up. J Nerv Ment Dis 2007; 195:540-543.

53. Corchs F, Corregiari F, Ferrão YA, Takakura T, Mathis ME, Lopes AC, Miguel EC, Bernik M. Personality traits and treatment outcome in obsessive-compulsive disorder. Rev Bras Psiquiatr 2008; 30:246-50.

54. Fassino S, Pierò A, Tomba E, Abbate-Daga G. Factors associated with dropout from treatment for eating disorders: a comprehensive literature review. BMC Psychiatry 2009; 9:67.

55. Andó B, Must A, Kurgyis E, Szkaliczki A, Drótos G, Rózsa S, Szikszay P, Horváth S, Janka Z, Almos PZ. Personality traits and coping compensate for disadvantageous decision-making in long-term alcohol abstinence. Alcohol Alcohol 2012; 47:18-24.

56. Sinha R. The role of stress in addiction relapse. Curr Psychiatry Rep 2007; 9:388-395.

57. Larimer ME, Palmer RS, Marlatt GA. Relapse prevention. An overview of Marlatt's cognitive-behavioral model. Alcohol Res Health 1999; 23:151-160.

58. Evren C, Cinar O, Evren B, Celik S. History of suicide attempt in male substance-dependent inpatients and relationship to borderline personality features, anger, hostility and aggression. Psychiatry Res 2011; 190:126-131.

59. Hingson RW, Heeren T, Winter MR. Age of alcohol-dependence onset: associations with severity of dependence and seeking treatment. Pediatrics 2006; 118:755-763.

60. Lewin JD. Treatment Of Alcoholism And Other Addictions. A Self-Psychology Approach. London: Aronson, 1991.

61. Schauenburg H, Willenborg V, Sammet I, Ehrenthal JC. Self-reported defence mechanisms as an outcome measure in psychotherapy: a study on the German version of the Defence Style Questionnaire DSQ 40. Psychol Psychother 2007; 80:355-366.

62. Watson DC. Predicting psychiatric symptomatology with the defense style questionnaire-40. Int J Stress Manag 2002; 9:275-287.

63. Zanarini MC, Weingeroff MA, Frankenburg FR. Defense mechanisms associated with borderline personality disorder. J Pers Disord 2009; 23:113-121.

64. van Wijk-Herbrink M, Andrea H, Verheul R. Cognitive coping and defense styles in patients with personality disorders. J Pers Disord 2011; 25:634-644.

65. Cramer P. Personality, personality disorders, and defense mechanisms. J Pers 1999; 67:535-554.

66. Presniak MD, Olson TR, Macgregor MW. The role of defense mechanisms in borderline and antisocial personalities. J Pers Assess 2010; 92:137-145.

67. Hasin D, Fenton MC, Skodol A, Krueger R, Keyes K, Geier T, Greenstein E, Blanco C, Grant B. Personality disorders and the 3-year course of alcohol, drug, and nicotine use disorders. Arch Gen Psychiatry 2011; 68:1158-1167.

68. Chamorro J, Bernardi S, Potenza MN, Grant JE, Marsh R, Wang S, Blanco C. Impulsivity in the general population: a national study. J Psychiatr Res 2012; 46:994-1001.

69. Svrakic DM, Whitehead C, Przybeck TR, Cloninger CR. Differential diagnosis of personality disorders by the seven-factor model of temperament and character. Arch Gen Psychiatry 1993; 50:991-999.

70. Ornstein P, Cherepon JA. Demographic variables as predictors of alcoholism treatment outcome. J Stud Alcohol 1985; 46:425-432.

71. Jarvis TJ. Implications of gender for alcohol treatment research: a quantitative and qualitative review. Br J Addict 1992; 87:1249-1261.

72. Zywiak WH, Stout RL, Trefry WB, Glasser I, Connors GJ, Maisto SA, Westerberg VS. Alcohol relapse repetition, gender and predictive validity. J Subst Abuse Treat 2006; 30:349-353.

73. Mundle G, Ackermann K, Günthner A, Munkes J, Mann K. Treatment outcome in alcoholism - a comparison of self-report and the biological markers carbohydrate-deficient transferrin and gamma-glutamyl transferase. Eur Addict Res 1999; 5:91-96.

74. Babor TF, Steinberg K, Anton R, Del Boca F. Talk is cheap: measuring drinking outcomes in clinical trials. J Stud Alcohol 2000; 61:55-63.

75. Hasin D, Liu X, Nunes E, McCloud S, Samet S, Endicott J. Effects of major depression on remission and relapse of substance dependence. Arch Gen Psychiatry 2002; 59:375-380.

76. Willinger U, Lenzinger E, Hornik K, Fischer G, Schönbeck G, Aschauer HN, Meszaros K. European fluvoxamine in alcoholism study group. Anxiety as a predictor of relapse in detoxified alcohol-dependent patients. Anxiety as a predictor of relapse in detoxified alcohol-dependent patients. Alcohol Alcohol 2002; 37:609-612.

77. Grebota E, Coffinet A, Laugier C. Changes during detoxification: depression, hopelessness, defence mechanisms and beliefs. J Ther Comport Cogn 2008; 18:77-83 (Article in French).

78. Parker JD, Taylor GJ, Bagby RM. Alexithymia: relationship with ego defense and coping styles. Compr Psychiatry 1998; 39:91-98.

79. Marchesi C, Parenti P, Aprile S, Cabrino C, De Panfilis C. Defense style in panic disorder before and after pharmacological treatment. Psychiatry Res 2011; 187:382-386.

80. Vaillant GE. Ego mechanisms of defense. A guide for clinicians and researchers. American Psychiatric Press, 1992.

81. Hruska B, Fallon W, Spoonster E, Sledjeski EM, Delahanty DL. Alcohol use disorder history moderates the relationship between avoidance coping and posttraumatic stress symptoms. Psychol Addict Behav 2011; 25:405-414.