Original Paper

Psychopathology

Psychopathology 2011;44:34–39
DOI: 10.1159/000318143

Received: September 21, 2009
Accepted after revision: June 22, 2010
Published online: October 28, 2010

Childhood Trauma and Psychopathology among Alcohol-Dependent Men: No Interaction with Temperament and Character

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Key Words
Alcohol abuse · Attachment · Character · Childhood trauma · Temperament

Abstract
Objective: The aim of this study was to evaluate possible interactions between childhood trauma, temperament, character, and psychopathology among alcohol-dependent men. ***Methods:*** Participants were 156 alcohol-dependent men consecutively admitted to a dependency treatment unit. The Childhood Abuse and Neglect Questionnaire, the Temperament and Character Inventory, and the Symptom Checklist-Revised were administered to all participants. ***Results:*** Childhood abuse and neglect did not have any effect on temperament and character scores in multivariate analysis. Whereas childhood abuse had a significant main effect on all types of clinical psychopathology except depression and psychoticism scores, childhood neglect only had a significant main effect on depression scores. There was no interaction between childhood abuse and neglect on these analyses. ***Conclusions:*** Among alcohol-dependent men, childhood abuse and neglect contribute to general psychopathology through distinct clinical consequences, independently of temperamental and characterological features.

Introduction

Cloninger [1] designed an instrument to explore both genetic and environmental factors underlying normal and abnormal personality dimensions. The 4 temperament dimensions measured by Cloninger's personality model (novelty seeking, harm avoidance, reward dependency, persistence) are assumed to be highly heritable and linked to specific neurotransmission systems [1, 2]. In contrast to these, the 3 character dimensions (self-directedness, self-transcendence, cooperativeness) are considered to be more readily influenced by environmental factors. Individual differences in temperament and character have a strong influence on the development of all forms of psychopathology, including alcoholism [3]. While alcoholism seems to be influenced by temperament [4], a long duration of excessive alcohol consumption has also been proposed to have an influence on personality traits in alcohol-dependent men [5].

Early environmental stress has also been reported as one of the factors leading to substance dependency in later life. Childhood abuse and neglect have been demonstrated as common among both drug- and alcohol-dependent patients [6–11] including prospective studies [12–14]. Among male veterans in treatment for substance

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abuse, the prevalence of at least one type of childhood abuse ranged between 34 and 77% [6, 7]. A sizeable proportion (56.1%) of Turkish substance dependents responded to inquiries for childhood emotional, physical or sexual abuse, and/or physical or emotional neglect affirmatively [15].

There are also studies contradicting the role of child maltreatment in alcoholism leading to inconsistencies in the existing body of knowledge about the subject [16, 17]. Contrasting results about the impact of childhood trauma on the development of alcohol dependence in adulthood may originate from additional factors and heterogeneity of the participant groups unaddressed in study designs. Besides the type of childhood psychological trauma, temperamental and characterological features of the subject and concurrent general psychopathology may contribute to the heterogeneity of clinical consequences [18]. Last but not least, age- and gender-related variables should also be considered as potentially significant factors.

The influence of gender-related differences on temperament types among substance-dependent patients have not yet been evaluated systematically. A meta-analysis of studies conducted on populations other than substance dependents demonstrated that harm avoidance and reward dependence were seen predominantly among women, whereas there were no differences in novelty seeking and persistence between genders [19]. Underlining a feature common between genders, two previous studies yielded a relationship between novelty seeking and severity of craving in both women [20] and men [21]. Novelty seeking was suggested to be the main temperament dimension related to substance dependency, whereas findings on harm avoidance and reward dependence have been less consistent [22]. In a prison population, novelty seeking was a crucial vulnerability factor for both alcohol and drug abuse (to the same extent). However, character and childhood adversity only played a significant part in the development of drug abuse [4].

Given the limited evidence on the subject and the heterogeneity of the findings among dependency populations to date, the present study was concerned with possible interactions between childhood psychological trauma, temperament, character, and general psychopathology among alcohol-dependent men. We hypothesized that childhood abuse and neglect would have significant effects on the development of a subset of characterological features and general psychopathology, while interacting with some of the temperamental features.

Subjects and Methods

Patients

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 1st January and 31st December 2007. AMATEM is a specialized center for substance use disorders with 85 inpatient beds, and accepts patients from all over Turkey. The Ethical Committee of the hospital approved the study. Patients' written informed consent was obtained after the study protocol was thoroughly explained.

One hundred and eighty consecutively admitted alcohol-dependent male inpatients without a history of any other substance abuse were considered for participation in the study. All participants met the DSM-IV diagnostic criteria for alcohol dependence. Exclusion criteria were illiteracy, mental retardation or cognitive impairment, and comorbid psychotic disorder. Five patients were excluded due to illiteracy and 3 patients due to cognitive deficits. None of the patients refused to participate in the study. Sixteen patients were excluded because they did not complete the scales fully or left the treatment program before administration of assessment instruments. A total of 156 alcohol-dependent patients participated in the study.

Interviews with the study group were conducted following completion of the detoxification period, i.e. 4–6 weeks after the last day of alcohol use. Detoxification of alcohol-dependent inpatients was carried out in the intensive care unit of AMATEM (10 days) and a subsequent stay in a pre-therapy unit (2–3 weeks). Benzodiazepines were mainly used during this period. A 28-day residential rehabilitation program followed the detoxification process. Psychotropic medications that may influence the psychopathology were not prescribed during the rehabilitation period.

The majority of the patients were married (n = 94, 60.3%), 14 (9.0%) patients were divorced, separated, or widowed, and 48 (30.8%) patients had never been married. Only 36.5% of the patients had a full-time job (n = 57), 51 (32.7%) patients were unemployed, 20 (12.8%) patients had a part-time job, and 28 (17.9%) patients were retired.

Assessment Tools

Structured Clinical Interview for DSM-IV

The alcohol dependency section of the Structured Clinical Interview for DSM-IV (SCID-I) [23] was used in this study. The Turkish version of the instrument has good reliability and validity [24].

Temperament and Character Inventory

The Temperament and Character Inventory (TCI) is a 240-item self-report scale composed by Cloninger et al. [25]. All questions of the TCI are to be answered in a binary fashion. The TCI is designed to assess 4 dimensions of temperament (harm avoidance, novelty seeking, reward dependence, and persistence) and 3 dimensions of character (self-directedness, cooperativeness, and self-transcendence). Reliability and validity of the Turkish version of the TCI have been reported elsewhere [26].

Symptom Checklist-Revised

The Symptom Checklist-Revised (SCL-90-R) assesses 9 groups of psychiatric symptoms, including somatization, obsessive compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism [27]. Items

Table 1. Temperament and character dimension scores according to the childhood abuse and neglect status

	Patient groups (means ± SD)				Covariant		Main effects					
	no trauma (n = 57)	abuse (n = 17)	neglect (n = 44)	abuse and neglect (n = 38)	GSI		abuse		neglect		interaction	
					F	p	F	p	F	p	F	p
Novelty seeking	17.7 ± 4.0	18.5 ± 4.6	19.3 ± 5.0	19.6 ± 4.1	10.96	0.001	0.06	NS	0.92	NS	0.58	NS
Harm avoidance	17.2 ± 6.2	18.5 ± 5.2	18.0 ± 5.5	20.8 ± 5.8	38.62	<0.001	0.15	NS	0.02	NS	0.03	NS
Reward dependency	13.7 ± 2.5	12.7 ± 2.9	13.1 ± 2.7	12.2 ± 2.5	2.34	NS	2.77	NS	0.67	NS	0.10	NS
Persistence	5.3 ± 1.5	4.7 ± 2.1	4.7 ± 1.8	4.9 ± 1.5	3.55	NS	0.02	NS	0.002	NS	2.40	NS
Self-directedness	25.2 ± 6.6	23.5 ± 5.9	22.0 ± 7.0	21.4 ± 5.0	55.33	<0.001	1.01	NS	0.84	NS	1.75	NS
Cooperativeness	29.1 ± 4.6	26.2 ± 7.5	25.8 ± 6.8	25.9 ± 5.1	21.26	<0.001	0.003	NS	0.60	NS	4.09	NS
Self-transcendence	18.9 ± 5.2	20.5 ± 3.0	19.7 ± 6.2	19.7 ± 6.2	5.44	NS	0.11	NS	0.64	NS	0.65	NS

Multivariate analysis (two way ANCOVA) on temperament and character dimensions as dependent variables, and childhood abuse and neglect status as main factors (GSI as covariate). After Bonferroni correction, the level of significance was set at p = 0.007.

are given on a 5-point Likert scale from 0 (none) to 4 (severe). The Global Severity Index (GSI) is considered as a measure of overall psychopathology. Reliability and validity of the Turkish version of the scale has been reported elsewhere [28].

Childhood Abuse and Neglect Questionnaire

Reports of childhood emotional, physical, sexual abuse and (emotional or physical) neglect were obtained using a semi-structured history form developed by Yargic et al. [29]. This form consists of one leading question for each trauma type. Upon an affirmative response to this leading question, further inquiries about the identity and age of perpetrator and subject during the incident are made. Affirmative responses to any of these childhood trauma types were considered as a history of abuse (on condition that the scope of the event fitted the definitions below). This history form has been used successfully in previous studies in Turkey yielding results consistent with quantitative measures applied concurrently [15, 30, 31].

Definitions of childhood abuse and neglect were based on the descriptions of Brown and Anderson [32] and Walker et al. [33]. Childhood physical abuse was defined as physical violence against a person under 16 years old, by someone at least 5 years older or by a family member at least 2 years older than the victim. Childhood sexual abuse was defined as involvement of a person younger than 16 years old in any kind of sexual activities with someone at least 5 years older or with a family member (incest) at least 2 years older than the victim. Emotional abuse involved 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 are jeopardized. Neglect referred to acts of omission in which the child was not properly cared for physically or emotionally.

Statistical Methods

Categorical variables were compared by means of χ^2 statistics. Student's t test was used to compare continuous variables between patient groups. ANCOVA was used for multivariate evaluation of the relationships between various clinical measures and childhood trauma. Bonferroni correction for multiple comparisons was conducted for all statistical analyses.

Results

Eighty-two (52.6%) patients reported childhood neglect, 35 (22.4%) patients physical abuse, 35 (22.4%) patients emotional abuse, and 8 (5.1%) patients had a history of childhood sexual abuse. Overall, 99 (63.5%) patients reported at least one type of childhood neglect and/or abuse. Fifty-eight (37.2%) patients reported only one type of childhood trauma, 24 (15.4%) reported two, 14 (9.0%) reported three, and 3 (1.9%) reported four types. The patients with a history of childhood abuse and/or neglect (mean = 42.9, SD = 8.7) were younger than the remaining patients (mean = 46.5, SD = 9.4; t = 2.45, d.f. = 154, p = 0.015). There was no difference in duration of education between traumatized (mean = 9.2, SD = 3.9) and nontraumatized (mean = 10.3 SD = 3.9; t = 1.63, d.f. = 154, p = 0.110) groups. The traumatized group (mean = 24.7, SD = 7.4) did not differ from the nontraumatized group (mean = 27.1, SD = 9.6) on average age at regular substance use (t = 1.72, d.f. = 154, p = 0.080).

Table 1 presents temperament and character dimension scores according to the childhood abuse and trauma status in 4 groups of patients. Main effects of and interaction between childhood abuse and neglect (independent variables) on temperament and character scores (dependent variables) were calculated using ANCOVA. To eliminate possible effect of concurrent clinical psychopathology, GSI was utilized as covariate. Neither childhood abuse nor childhood neglect had a significant main effect on any of the temperament and character dimensions. GSI was a significant covariant for higher harm avoidance and novelty seeking and lower cooperativeness and self-directedness.

Table 2. SCL-90 scores according to abuse and neglect status

	Patient groups (mean ± SD)				Covariant		Main effects					
	no trauma (n = 57)	abuse (n = 17)	neglect (n = 44)	abuse and neglect (n = 38)	age		abuse		neglect		interaction	
					F	p	F	p	F	p	F	p
Somatization	1.02 ± 0.78	1.45 ± 0.86	1.15 ± 0.86	1.85 ± 0.89	1.76	NS	13.70	<0.001	2.73	NS	1.03	NS
Anxiety	1.07 ± 0.88	1.49 ± 0.90	1.32 ± 0.96	2.15 ± 1.01	8.41	0.004	12.55	0.001	6.25	NS	2.17	NS
Obsessive-compulsive	1.39 ± 0.81	1.65 ± 0.65	1.52 ± 0.86	2.21 ± 0.71	3.60	NS	10.52	0.001	5.28	NS	2.93	NS
Depression	1.31 ± 0.98	1.54 ± 0.85	1.65 ± 0.96	2.27 ± 0.94	5.02	NS	5.43	NS	8.61	0.004	1.78	NS
Interpersonal sensitivity	1.24 ± 0.85	1.63 ± 0.90	1.49 ± 0.98	2.29 ± 0.91	13.58	<0.001	12.02	0.001	6.22	NS	2.52	NS
Psychoticism	0.81 ± 0.64	0.98 ± 0.70	1.04 ± 0.80	1.51 ± 0.74	4.93	NS	5.52	NS	7.70	NS	1.79	NS
Paranoia	1.16 ± 0.83	1.75 ± 0.82	1.56 ± 1.00	2.14 ± 0.98	8.74	0.004	11.31	0.001	4.86	NS	0.03	NS
Hostility	1.02 ± 0.88	1.54 ± 1.02	1.41 ± 1.01	2.06 ± 1.03	12.07	0.001	10.15	0.002	5.66	NS	0.41	NS
Phobia	0.67 ± 0.80	0.97 ± 0.82	0.86 ± 0.88	1.54 ± 1.06	6.98	NS	8.25	0.005	4.79	NS	1.99	NS
GSI	1.13 ± 0.74	1.46 ± 0.72	1.38 ± 0.81	2.04 ± 0.76	1.76	NS	13.70	<0.001	2.73	NS	1.03	NS

ANCOVA: SCL-90 subscales and GSI of SCL-90 as dependent variables, abuse and neglect status as main factors and age, reward dependence and cooperativeness as covariants. After Bonferroni correction, level of significance was set at p = 0.005.

Table 2 presents the SCL-90 subscale and GSI scores according to the childhood trauma status. ANCOVA was conducted to inquire into the possible role of childhood abuse and neglect (independent variables) on types of general clinical psychopathology (dependent variables) as assessed by the SCL-90. Age as a variable potentially influencing the expression of psychopathology was utilized as covariate. After Bonferroni correction, childhood abuse had a significant main effect on all clinical psychopathology scores, except depression and psychoticism. Childhood neglect, on the other hand, predicted only depression. There was no significant interaction between childhood abuse and neglect when predicting any of the clinical psychopathology scores. Age was a significant covariate for anxiety, interpersonal sensitivity, hostility, and paranoia.

Discussion

A considerable proportion (63.5%) of alcohol-dependent men reported childhood abuse and/or neglect. Neither childhood abuse nor neglect had a significant main effect on any of the character and temperament scores. Whereas childhood abuse predicted several types of clinical psychopathology (although not depression and psychoticism), childhood neglect predicted depression only. There was no interaction between childhood abuse and neglect when considering their effect on clinical psychopathology. These findings suggest that, among alcohol dependent men, two types of early traumatization contribute to general psychopathology by distinct clinical consequences and independent of temperament and character features of the subject.

In the present study, childhood abuse was related to all types and general severity of clinical psychopathology, except depression and psychoticism. Chronic anger is one of the emotional consequences of childhood trauma [34]. Several dimensions of psychopathology – such as anxiety, interpersonal sensitivity, hostility, paranoia, and phobia – are known to be related to perceived threat in interpersonal relationships and anger. Apparently, among alcohol-dependent men with a developmental trauma history, expression of anger finds a special gateway in the form of covert interpersonal aggression. In contrast to childhood abuse, childhood neglect had a significant main effect on depression scores. Childhood emotional neglect has been shown as the most specific predictor of depression among other types of childhood adversities [35]. Thus, childhood neglect may require a different pathway than that of childhood abuse in terms of anger management.

A previous study documented the relationship between childhood trauma, dissociation, and social anxiety among alcohol-dependent men [36]. Alcohol is probably utilized to overcome the dilemma of social anxiety in this group of patients. In an earlier study, while clinical variables such as anxiety and depression predicted trauma-related dissociation, none of the temperament/character dimensions yielded a significant effect in this context [18]. Childhood abuse and/or neglect by caregivers affect lifelong attachment behavior (including dependency in interpersonal relationships) and facilitate dissociation and dis-

sociative disorders [37]. Alongside the most healthy one (known as secure attachment), three problematic types have been described: anxious avoidant, anxious resistant, and disorganized/disoriented attachment. Previous studies suggested that the disoriented/disorganized type of attachment was related to dissociation [37].

Insecurely attached female college students were more prone to anger and dissociation with some difference between ambivalent and avoidant types [38]. Whereas dissociative disorders composed of positive symptoms are more typical for female substance dependents compared to men [39, 40], social detachment may be considered as an interpersonal type of dissociation with rather negative features which is common among male alcohol-dependents in particular [36]. One previous study suggested that, in terms of attachment patterns in relationships, more men than women were dismissing avoidant and more women than men were fearful avoidant [41].

Adverse childhood experiences are interrelated rather than occurring independently [42]. Assessment of multiple adverse childhood experiences allows evaluation of a potentially graded relationship between these childhood exposures and health and social outcomes. In the present study, childhood abuse and neglect not only had no main effects on different types of adult psychopathology, but they did not interact either. Thus, rather than leading to an overall cumulative effect, multiple traumatization seems to activate a higher number of clinical syndromes creating true concurrent comorbidities. Nevertheless, excessive psychiatric comorbidity regardless of the main diagnosis has been documented in populations who reported childhood abuse and neglect [43]. An earlier study on alcohol-dependent men documented that there were significant relationships between various dimensions of psychopathology and several characterological/temperamental features except persistence and self-directedness [44]. Thus, whereas temperamental and characterological features may play a role in facilitation of psychopathology, these effects seem to occur separately from those caused by childhood trauma and/or neglect.

Cloninger [1, 45] suggested two distinct pathways to problem alcohol use. Type I is characterized by high reward-dependence, high harm-avoidance, and low novelty-seeking, which lead to such problem behaviors as loss-of-control drinking, difficulty in terminating binges, guilty feelings, and later onset. In contrast, type II is characterized by high novelty-seeking, low harm-avoidance, and low reward-dependence which lead to such behaviors as antisocial personality, persistent seeking of substances for their euphoric effects, and early onset of inability to abstain. Effects of childhood abuse and neglect in the present study seem to represent a paradigm different to the temperament- and/or character-based explanatory models. However, in accordance with Cloninger's observations, age was a significant covariant of the relationship between childhood trauma and anxiety, interpersonal sensitivity, hostility, and paranoia as clinical dimensions of psychopathology.

In the present study, childhood trauma assessment was retrospective and binary. Notwithstanding these important limitations, the present study suggests that among alcohol-dependent men, childhood abuse and neglect contribute to general psychopathology by distinct clinical consequences and independent of temperamental and characterological features. Thus, the hypothesis of the study was supported only partially, i.e. in terms of the relationship between childhood trauma and clinical psychopathology. However, the possibility of an interaction between childhood trauma and temperament and/or character was rejected. Thus, while dealing with adverse childhood experiences of alcohol-dependent men, clinicians should pursue psychotherapy strategies independent of character and/or temperament, but should instead consider concurrent psychopathology as the most powerful marker of the clinical condition.

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