Pattern of temperament and character factors in hospitalized patients with Borderline Personality Disorder

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Abstract

The aim of this study is to investigate Temperament and Character Inventory (TCI-125) profiles in hospitalized patients with borderline personality disorder. BPD patients (29) were assessed using the SCID-II and were compared with healthy control group (30). Patients’ scores on self-directedness and cooperativeness were significantly lower compared with controls. Individuals with BPD exhibited statistically significant higher scores on harm avoidance and novelty seeking. BPD participants did not differ from the control group in terms of reward dependency, persistence and self-transcendence. The results indicate that personality profiles of patients with BPD are significantly different from those of healthy individuals.

Keywords: TCI-125; temperament; character; Cloninger’s theory; borderline personality disorder (BPD)

1. Introduction

Borderline personality disorder (BPD) is a complex and serious mental disorder. Among all patients diagnosed with a cluster B personality disorder, patients with BPD experienced the greatest suffering. It is the most common personality disorder in clinical settings, estimated to be present in 10% of all psychiatric outpatients and 15%-30% of inpatients (Torgersen, 2001; Skodol et al. 2002). Of individuals with a personality disorder, 30% to 60% are diagnosed with BPD (APA, 2000). The prevalence of BPD among general population is roughly 1%-2% (Cloninger et Svarkie, 2005).

Although BPD is one of the most widely researched and written about, it is still a major concern for clinician and yet one of the most controversial diagnosis. These diagnostic dilemmas are rooted in the origin of this concept in one hand, and the descriptive criteria in fourth edition of Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) in the other hand.

According to DSM-IV-TR, BPD is defined as ‘pervasive pattern of instability in interpersonal relationship, self-image, impulse control, interpersonal relationships and affects. Since five criteria from nine bring the diagnosis, there are 154 conditions that make this diagnosis. This makes the heterogeneity and high rate of co-morbidity. In addition, categorical classification doesn’t get any hint to aetiology.

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To solve these problems, dimensional theories focus on common factors between normal people and personality disorders. Empirical data suggested that dimensional approach provides more adequate representation of personality disorder. One of the precise comprehensive theories is Cloninger’s psychobiological model which described personality based on four temperaments and three character dimensions. Temperament is a heritable and stable pattern of stimulus response which is foundation of the personality traits. The four temperament dimensions, being novelty seeking (NS—tendency toward exhilaration in response to novel stimuli or cues which represents behavioral activation), harm avoidance (HA—bias in the inhibition or cessation of behavior which reflects behavioral inhibition), reward dependence (RD—tendency to maintain or pursue ongoing behavior that reflects behavioral maintenance), and persistence (PS—perseverance in behavior despite frustration and fatigue) are defined as genetically homogenous and independently inherited. The character dimensions self-directedness (SD), cooperativeness (CO), and self-transcendence (ST) are defined as reflecting individual differences in self-concepts according to the extent of identification with themselves as autonomous individuals, with the humanity and with the whole universe. Temperament and character inventory (TCI) which is derived from Cloninger’s psychobiological theory is a practical and useful means in PD diagnostics in combination with a categorical approach. Personality disorders have been reported to be a combination of extreme temperament expressions and immature character (Cloninger et al., 1993; 1994). Whereas the maturity of the character provides an indication of whether an individual has a PD or not, the temperament configuration determines the type of PDs. The temperament dimension of novelty seeking, a tendency towards excitement in response to cues of novelty or potential reward, is high in subjects with cluster B personality disorders (Svrakic et al., 1993; Fossati et al., 2007).

Although, studies have shown that BPD is valid construct in the view of categorical classification, researchers have suggested that dimensional approach is more applicable for BPD. However, there are not sufficient researches about BPD utilizing dimensional approach. Regarding the heterogeneity and co-morbidity of this category, more research is needed to get the exact profile of BPD.

In the current study, we aimed to evaluate differences in TCI personality dimensions between inpatients with BPD and health subjects, while controlling the confounding variables; also, we measured IQ, general anxiety symptoms and depression symptoms to examine whether the TCI characteristics were influenced by IQ, depression or anxiety.

2. Methods

2.1 Participants

Twenty-nine patients with BPD were enrolled to our study from patients who were admitted at the psychiatric inpatients service of Psychiatric hospital “Rouzbeh” and Psychiatric Hospital “Razi” from January 2010 to October 2010. Participants were diagnosed with BPD based on the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First et al., 1996). The minimum IQ for admission was 85 and at least 8 grades education was required. Control group was consisted of thirty healthy individuals without past and present Axis-I and Axis-II disorders. All subjects had to be between age 20 and 35. General exclusion criteria were neurological disorders, serious medical illness, active substance abuse, head injury with loss of consciousness, active psychotic symptoms and lifetime psychotic disorders. Patients who reported receiving a history of Electroconvulsive Therapy during the previous 90 days were excluded as well.

All patients were undergoing pharmacotherapy for BPD at the time of testing. Most patients qualified for other Axis I disorders: Obsessive-Compulsive Disorder (10.34%), Bipolar Disorder (41.38%), Bipolar-Mood Disorder (34.48%), Major Depressive Disorder (17.24%), Attention-Deficit Hyper Activity (10.34%); Anxiety Disorders (80.3%), major depressive disorder (77.8%); about 58.7% of patients were diagnosed with an Axis II disorder other than BPD.

2.2 Procedure

Patients were referred by their psychiatrist if they had BPD criteria. All patients completed the questionnaire of SCID-II just after 14 days after being admitted at hospital. BPD and other PDs diagnosis were made by a psychiatric and trained clinical psychologist using SCID-II. Thirty patients were considered for the project. One patient who refused to take part in the study was excluded. The healthy control group was recruited by local advertisement. They
were screened clinically for PD by SCID II.

To assess Axis I disorders, SCID I was administered. Patients were allowed to have comorbid personality disorders and/or axis I disorders except substance abuse disorder or psychotic disorders. Non-patient could not have psychological complaints and could not have any lifetime or present axis I or axis II.

All subjects provided written informed consent after the procedures were clearly explained to them. Subjects were assessed by the Ravan Intelligence task to estimate IQ level. All participants fulfilled the demographic questionnaire, temperament-character inventory-125 (TCI-125), Beck depression inventory (BDI) and (Beck anxiety inventory (BAI).

2.3 Instruments

2.3.1 Temperament Character Inventory

Personality was assessed using the Persian version of Temperament and Character Inventory-125 (TCI-125) (Cloninger et al. 1993, 1994). The TCI is a self-report, paper-pencil and true/false test and can be completed by persons over the age of 15. This inventory evaluates seven higher-order temperament (NS, HA, RD, P) and character (SD, C, ST) dimensions. Some psychometric properties of the Persian version of the TCI-125 in normal Iranian community have been described by Kaviani et al. (2007). They reported that the Persian version of inventory has a reliable factor structure and test–retest properties.

2.3.2 Beck Inventory Depression

Depressive symptoms were assessed using the Persian version of the Beck Depression Inventory (BDI) (Gharai et al, 2002). The inventory consists of 21 items scored on a four-point scale (0–3). The items include cognitive, affective, somatic, and vegetative aspects of depression. A total score is determined by aggregating the item responses. The BDI has demonstrated good test-retest reliability (r=0.73) and Chronbach’s alpha (0.78) in Iranian normal population (N=125, M=9.79, SD=7.96).

2.3.3 Beck Anxiety Inventory

The current level of anxiety was assessed using the state scale of the Persian version of the Beck Anxiety Inventory (BAI). This scale is a well-validated, 21-item questionnaire addressing the somatic, emotional and cognitive aspects of anxiety targeted to the individual’s present feelings. Subjects rate their feelings on a four-point intensity scale. A total score is determined by aggregating the item responses. The BDI has demonstrated good test-retest reliability (r=0.91) and Chronbach’s alpha (0.92) in Iranian normal population.

2.3.4 Structured Clinical Interview for DSM-IV Axis II Personality Disorder

Axis II disorders were assessed using the Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II; First et al., 1997). The SCID-II is an efficient, user-friendly instrument that helps researchers and clinicians to make standardized, reliable, and accurate diagnoses of the DSM-IV PDs. It consists of a 120-item questionnaire to be completed by the participant, followed by an interview.

2.3.5 Structured Clinical Interview for DSM-IV

The Persian Structured Clinical Interview for DSM-IV Axis I disorders was administered to assess Axis I disorders. Kappa coefficient of Persian version of SCID-I was reported 0.6.

2.3.6 Intelligence

Raven's Progressive Matrices (often referred to simply as Raven's Matrices) are multiple choice intelligence tests of abstract reasoning, (Raven, 1936). In each test item, the subject is asked to identify the missing item that completes a pattern. The booklet comprises five sets (A to E) of 12 items each, with items within a set becoming
increasingly difficult, requiring ever greater cognitive capacity to encode and analyze information. It assesses the ability to think clearly and make sense of complexity, which is known as eductive ability.

2.4. Statistical analysis

SPSS for Windows 14.0 version (SPSS Inc, Chicago, IL) was performed for all statistical analyses in this study. Two tailed p values less than 0.05 and a confidence interval of 95% was considered statistically significant for all analyses. T-tests for continuous variables and χ² for categorical variables were used for a comparison of socio demographic characteristics of two groups. Patients’ scores on seven dimensions of TCI-125 were compared with controls by using t test for independent samples. A univariate analysis of covariance was then carried out to examine the difference between borderline patients and healthy subjects on the dimensions of TCI-125, co-varying for the effects of depression (scores on BDI), anxiety (scores on BAI) and intelligence (scores on Ravan).

3. Results

3.1. Demographic features

A total of 29 patients with BPD (18 women and 11 men) and 30 healthy controls (19 women and 11 men) completed the study (χ² =0.10, df=1, p=0.92). The mean age of patients was (24.48 ± 1.94 years) lower than control group (28.20 ± 1.65) (t=2.81, P <0.05). Also, two groups differed significantly on education and IQ. Control subjects were more highly educated than patients (means 11.79 years vs. means 14.30 years, p=0.00).

3.2. Depression, anxiety and IQ

We compared the results between BPD and control group for the BAI and the BDI. BPD patients obtained significantly higher scores than healthy controls across BAI and BDI (t= 4.34, df=41.74, p=0.00 ; t=5.95, df=41.90, p=0.00). Patients, however, had lower scores on IQ scale (100.45 means vs.115.83 means, p=0.00).

3.3 Temperament and character personality dimensions

TCI-R results for the BPD and control group are presented in Table 1. Patients scored significantly higher than healthy controls in temperament dimensions including novelty seeking (NS) and harm avoidance (HA). As for the other temperament dimensions, reward dependence (RD) and persistence (P) the mean scores for both groups were within the normal-range (Kaviani, 2002) and the mean difference was not statistically different, meaning that this temperament dimension does not appear to be appreciably altered in BPD patients.

For Character dimensions, the significant difference was observed at self-directedness (SD) and cooperation (CO), both of which were lower for BPD patients than controls. There was no significant difference between groups with regard to self-transcendence (ST).

Table 1. Comparison of TCI dimensions in 29 patients and 30 controls

<table>
<thead>
<tr>
<th></th>
<th>BPD</th>
<th>Control</th>
<th>P</th>
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<tbody>
<tr>
<td>Mean (SD)</td>
<td></td>
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The personality profiles of patients were compared with controls by means of an ANCOVA and using IQ, anxiety and depression as covariates. There were no significant relationships between the TCI dimensions and anxiety (table 3), depression (table 4) and IQ (table 5) factors. It means that the significant difference between patients and normal individual is not due to the influence of depression, anxiety and IQ.

Table 2. Analyses of covariance with covariates depression (BDI scores) comparing patients and controls

<table>
<thead>
<tr>
<th></th>
<th>F(df=1)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novelty seeking (NS)</td>
<td>0.155</td>
<td>0.70</td>
</tr>
<tr>
<td>Harm avoidance (HA)</td>
<td>2.856</td>
<td>0.10</td>
</tr>
<tr>
<td>Self-directedness (SD)</td>
<td>0.419</td>
<td>0.52</td>
</tr>
<tr>
<td>Cooperativeness (CO)</td>
<td>0.990</td>
<td>0.32</td>
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</table>

Table 3. Analyses of covariance with covariates anxiety (BAI scores) comparing patients and controls

<table>
<thead>
<tr>
<th></th>
<th>F(df=1)</th>
<th>P</th>
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<tbody>
<tr>
<td>Novelty seeking (NS)</td>
<td>1.681</td>
<td>0.20</td>
</tr>
<tr>
<td>Harm avoidance</td>
<td>0.032</td>
<td>0.859</td>
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<tr>
<td>Self-directedness (SD)</td>
<td>0.771</td>
<td>0.384</td>
</tr>
<tr>
<td>Cooperativeness (CO)</td>
<td>1.90</td>
<td>0.173</td>
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Table 3. Analyses of covariance with covariates IQ comparing patients and controls

<table>
<thead>
<tr>
<th></th>
<th>F(df=1)</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Novelty seeking (NS)</td>
<td>2.677</td>
<td>0.177</td>
</tr>
<tr>
<td>Harm avoidance</td>
<td>0.217</td>
<td>0.463</td>
</tr>
<tr>
<td>Self-directedness (SD)</td>
<td>0.146</td>
<td>0.703</td>
</tr>
<tr>
<td>Cooperativeness (CO)</td>
<td>1.120</td>
<td>0.295</td>
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</table>

4. Discussion

The primary purpose of the present study was to find temperament and character dimensions of BPD patients compared to healthy subjects. The main finding of this study are generally consistent with previous findings, (Barnow et al., 2005, Joyce et al., 2003 and Pukrop, 2002) that among the temperament dimensions, patients with
BPD had significantly elevated NS score and HA score, compared to psychiatrically healthy individuals. The combination of these extreme traits could be an indicator of a biological predisposition towards a behavioural disturbance and be related to the highly conflictive approach-avoidance patterns of behaviour in borderline pathology.

Also, BPD patients exhibit low traits character dimensions of self-directedness and cooperativeness and is keeping with previous studies (Barnow et al., 2005, Joyce et al., 2003 and Svrakic et al., 2002) which is in line with Cloninger et al (1993). In self-directedness, related to individuals’ maturity and the ability of behavioural control (Cloninger et al., 1993), BPD patients’ scores on this character dimension were extremely low, indicating chronically low self-esteem, lack of long-term goals and difficulties in accepting responsibility, which is more consistent with BPD pathology. In addition, low scores on cooperativeness shows the deficit in relating to others.

Low SD and CO are substantial and common constituents of PDs corresponds with the suggestion of Fonagy et al (2008) that individuals with a PD are characterized by an impaired mentalizing capacity implying an impaired ability to make sense of their own mental states and that of others, causing problematic interpersonal relationships and impairments in the development of the self.

Our results regarding with confront variables are not consistent with previous studies (Hirano et al., 2002; Conrad et al., 2007) which have shown that depression and anxiety influence the personality profiles. This lack of replication might be due to the limited sample sizes used in this study.

The interpretation of the results of our study is restricted because of several methodological limitations. The first is the small sample size, which is, however, comparable to samples reported previously in BPD studies (Kunert et al., 2003, Lampe et al., 2007 and Lenzenweger et al., 2004). A second limitation is that it was not possible to address possible gender differences; future studies should explore possible gender differences in impulsivity in BPD. Another limitation would be that we did not exclude BPD subjects with current psychotropic treatment at the time of assessment. However, due to the severity inherent to this disorder, hardly a BPD patient is medication-free that is the reason why the majority of studies in BPD do not exclude patients under medication. Nevertheless, we cannot rule out the possibility that personality dimensions might be influenced by this effect. Another limitation is that we did not attend to differences in comorbidity in BPD patients because any samples which are limited to patients with a sole BPD diagnosis of BPD is not considered as representative of BPD as it is diagnosed in clinical population. A clinical comparison group, which should be included in futures studies in order to define the specificity of our findings. Finally, it is worth noting that there was a significant age difference and years of education between both groups, however, we did not control the effect of age and years of education to overcome this limitation of the study.

Our results support previous findings suggesting the Cloninger’s psychobiological model as a useful model to describe the dimensional personality profile in BPD patients, characterized by high scores on temperament dimensions of novelty seeking and harm avoidance, and low character dimensions of self-directedness and cooperativeness.

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References


American Psychiatric Association


