The Relationship between Five-Factor Model and DSM-5 Personality Traits on Patients with Borderline Personality Disorder

Mehdi Amini [1], Abbas Pourshahbaz [1*], Parvaneh Mohammadkhani [1], Mohammad-Reza Khodaie Ardakani [2], Mozhgan Lotfi [3]

1. Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
2. Department of Psychiatry, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
3. Department of Clinical Psychology, Faculty of Education and Psychology, Shahid Beheshti University, Tehran, Iran.

ABSTRACT

Objective: Despite the fact that new criteria for borderline personality disorder (BPD) were resulted from Five-Factor Model (FFM), there are a small number of studies that investigate the relation between proposed personality traits and FFM. Also, cross-cultural study in this field is needed continuously. Though, the aim of the present study was to evaluate the relation between the FFM and DSM-5 pathological traits.

Methods: This study was a cross-sectional study design. The participants consisted of 130 individuals with borderline personality disorder that were selected from prisoners (n=80), outpatients (n=35) and inpatients (n=15). They were recruited from Tehran prisons, and clinical psychology and psychiatry clinics of Razi and Taleghani Hospitals, Tehran, Iran. The Sample was selected based on judgmental sampling. The SCID-II-PQ, SCID-II, NEO-PI-R and DSM-5 Personality Trait Rating Form were used for the diagnosis and assessment of personality disorders. Pearson correlation has been used for data analysis. All statistical analyses were performed using the SPSS 16.

Results: The results indicate that there is a positive significant relationship between neuroticism (N) with emotional lability (r=0.34, P<0.01), anxiousness (r=0.286, P<0.01) and impulsivity (r=0.229, P<0.05). Also, there is a significant relationship between openness (O) and emotional lability (r=0.316, P<0.01) and risk taking (r=0.193, P<0.05), and negative relation with impulsivity (r=-0.244, P<0.01), separation insecurity(r=0.194, P<0.05), and depressivity (r=-0.19, P<0.05). In addition, results showed that there is positive significant relationship between FFM and DSM-5 personality traits with DSM-IV-TR BPD symptoms (P< 0.01).

Conclusion: Results were in line with findings from previous studies and were explained in part by considering how facets/traits of the FFM and DSM-5 personality traits map onto the concept of BPD. Also, the present study helps understand the adequacy of dimensional approach to evaluate personality pathology, specifically on Iranian sample.

1. Introduction

P ersonality disorders are currently diagnosed using the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-Text revised (DSM-IV-TR) (American Psychiatric Association, 2000). The essential problems with the personality disorder (PD) diagnostic system in DSM-IV-TR, led to DSM approach revision to be considered (Kendler, 2009; Widiger, Livesley, & Clark, 2009). Since 2000, after the latest revision of DSM, PD researchers have largely agreed that personality pathology should be represented dimensionally rather than categorically (Widi-

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* Corresponding Author:
Abbas Pourshahbaz, PhD
Address: Department of Psychiatry, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
E-mail: a.pourshahbaz@uswr.ac.ir

ger & Samuel, 2005). So, Many alternative dimensional models of personality have been considered (Cloninger, Svrakic, & Przybeck, 1993; Costa & McCrae, 1992; Livesley, Jackson, & Schroeder, 1992; Widiger & Simonsen, 2006), and ongoing research was used to delineate the conceptual and empirical structure of personality traits in the pathological range (Costa & McCrae, 1992; Krueger et al., 2012).

One of the major catalysts for the advancement of research on personality in recent years has been the growing consensus for a personality model encompassing five broad dimensions, namely Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C) (Terracciano & McCrae, 2006). Finally dimensional model for personality disorders, based on five-factor model (FFM), has been represented. In this model, 25 primary traits are organized by 5 higher order dimensions (Negative Affect, Detachment, Antagonism, Disinhibition, and Psychoticism) (Wright et al., 2012). Dimensional models view personality traits as continuously distributed in populations, and personality psychopathology as extreme variants of these personality traits and domains (Miller, Lynam, Widiger, & Leukefeld, 2001; Skodol et al., 2005; Torgersen, 2009).

The DSM-5 personality disorders are classified in six categories. In these diagnostic categories, criterion A involves impairments in self (i.e. identity and Self-direction) and interpersonal (i.e. empathy and intimacy) functioning tailored to each PD. Criterion B is a constellation of pathological personality traits descriptive of the disorder. Criterion C involves stability across time and situations, Criterion D involves distinguishing culturally or developmentally normative personality features from clinical pathology, and Criterion E is a rule out for medical or substance-related causes of personality problems (Hopwood, Thomas, Markon, Wright, & Krueger, 2012).

Borderline personality disorder (BPD) has been of the most consistently studied personality disorders in community psychiatric surveys. BPD has been found to occur in 1.6% of the population (Torgersen, 2009). BPD is one of the six personality disorders that have proposed for DSM-5. The essential features of BPD in dimensional model are negative affect (characterized by emotional lability, anxiousness, separation insecurity, and depressivity), Disinhibition (characterized by irresponsibility, impulsivity and risk taking) and Antagonism (hostility trait) (American Psychiatric Association, 2012). As mentioned, Widiger et al. (2007) have demonstrated that many of the central elements of personality disorders can be explained in terms of Five-Factor

model (FFM) traits. The FFM profile of personality disorders especially BPD has investigated in many studies. The studies support that BPD is a maladaptive variant of FFM personality traits (Samuel, Carroll, Rounsaville, & Ball, 2013).

Previous studies showed that profile of individuals with BPD composed of large positive associations with N, negative associations with E, A and C, and little relationship to O (Hopwood et al., 2009; Morey & Zanarini, 2000; Morey, 2014; Samuel, 2011). Despite the fact that new criteria for BPD were resulted from FFM, there is a small amount of literature investigating relations between proposed personality traits and FFM. Such relationships have not, however, been demonstrated across BPD patients. Also, cross-culturally study in this field continuously would be needed. Though, one aim of this study was to evaluate the link between the FFM and DSM-5 pathological traits. The issue of how DSM-5 traits and FFM relate is important for a number of reasons. The other aim of present study was to explore that how FFM and DSM-5 personality traits are related with DSM-IV-TR BPD symptoms of Iranian patients.

2. Methods

Participants

This study was a cross-sectional study design. Sample in this study consisted of 130 individuals with borderline personality disorder. Participants selected from prisoners (61.5%), outpatients (27%) and inpatients (11.5%). They were recruited from Tehran prisoners, and clinical psychology and psychiatry clinics of Razi and Taleghani Hospitals, Tehran, Iran. The Sample was selected based on judgmental sampling. Inclusion criteria were diagnosis of borderline personality disorder, at least 18 years of age, had at least secondary education; and exclusion criteria were presence of a psychotic disorder, presence of severe mood disorder, presence of mental retardation, and presence of physical condition that impairs person's mental state. All participants were male. Subjects aged 18 to 60, with guidance school degree of study and higher. History of Axis I disorders, 43 patients (33.1%) without disorder, 47 patients (36.2%) with a history of substance-related disorders, 22 patients (16.9%) with history of mood disorder, and 18 patients (15.8%) with other disorders.

Instruments

Patients in this study were enrolled based on The Structured Clinical Interview for DSM-IV-TR Axis II

Disorders (SCID-II). The dimensional signs and symptoms of antisocial personality disorder were evaluated by DSM-5 Personality Trait Rating.

SCID

SCID and its versions are considered to be the most comprehensive structured diagnostic interviews which are available. In fact, they are a new and wide range of utility instruments, in 1987 by Spitzer, Gibbon, Williams and built in compliance with the criteria of the DSM-IV (Groth-Marnat, 2009). The instrument is established as a gold standard for the reliable assessment of psychiatric disorders. Inter-rater reliability for SCID-I was above .70 for mood, anxiety, schizophrenic disorders, and alcohol abuse; it was somewhat lower for a few other disorders (Skre, Onstad, Torgersen, & Kringlen, 1991), for SCID-II it was reported between .48 and .98 for the categorical diagnoses (Cohen's κ) and .90 to .98 for the dimensional judgments (intra-class correlation coefficient) (Maffei et al., 1997).

Crohnbach's α was found between 0.71 and 0.94 for the SCID-II personality disorder scales (Maffei et al., 1997). Due to high accuracy of the diagnostic criteria and extraordinary compliance with DSM-IV-TR criteria since the codification, translated to and adapted with different languages. In Iran SCID-II and SCID-II-PQ have been translated and adapted by Mohammadkhani, Jokar, Jahani-tabesh, and Tamannaei-far (2011). The duration of the SCID-I was 30 to 90 minutes, the duration of the SCID-II was 30 to 60 minutes.

NEO-PI-R

The NEO-PI-R was designed to measure the Five-Factor Model of personality and yields scores for Neuroticism, Extraversion, Openness to Experience, Agreeableness and conscientiousness. Coefficient alpha for these domains reported 0.92, 0.89, 0.87, 0.86 and 0.90, respectively (Costa & McCrae, 1992). The NEO-PI-R consisted of 240 self-report items rated on a 0-4 point scale (strongly disagree, disagree, neutral, agree, and strongly agree). In Iran NEO-PI-R was translated and adapted by Haghshenas. On the Iranian sample the Crohnbach's α was found between .86 and .92 (2011).

DSM-5 Clinicians Personality Trait Rating Form

DSM-5 personality disorder traits were a combination of 5 pathological trait domains and 25 pathological traits facets. Personality disorder traits were evaluated in two ways: domain assessment and facets assessment. Assessment was performed on a 4-point scale (0–3). 0 indicated the pathological trait domain and facet very little or no descriptive at all, and 3 indicated extremely descriptive.

The personality trait assessment could be conducted both generally and in detail by specified facets (American Psychiatric Association, 2010). These dimensions originally presented the general picture of patient's personality pathology. The five broad trait domains proposed for DSM-5 negative emotionality, detachment, antagonism, disinhibition, and psychoticism which were rated to give a "broad brush" depiction of a patient's primary trait structure. Some of these trait domains and facets were close to DSM-IV-TR personality disorders. The domains figured prominently in the six PD types proposed for DSM-5, as well-for example, a combination of traits from the antagonism and the disinhibition (DS) domains made up the trait profile of the antisocial/psychopathic type (Skodol et al., 2011). Noteworthy, in the study we examined and reported the trait domains and facets based on DSM-5 related with antisocial personality disorder.

The Concurrent validity of DSM-5 Clinicians Personality Trait Rating Form were evaluated with a structured Interview tool and had good validity (Skodol et al., 2011). In terms of content validity, pathological trait domains and facets in DSM-5 was achieved based on extensive statistical analysis, and had good experimental background (American Psychiatric Association, 2012; Berghuis et al., 2012; Hopwood, Thomas, Markon, Wright, & Krueger, 2012; Skodol et al., 2011).

Amini, Pourshabaz, Mohammadkhani, & Khodaei Ardakani (2014) translated DSM-5 Clinicians Personality Trait Rating Form to Farsi, and developed a semi-structured interview. Inter-rater reliability for DSM-5 Clinicians Personality Trait Rating Form items was above 0.78. The DSM-5 Personality Traits and trait domains in correlation with DSM-IV-TR were between 0.22 and 0.67. The duration of the DSM-5 Trait Rating semi-structured was 30 to 60 minutes.

Procedure

In the implementation process, the researcher applied three post graduated in clinical psychology. To avoid probable bias, they were not informed of the exact goal of the research in detail and they were told that the research goal was to study personality disorders. They were entirely uninformed of the disorder types .to control the probable bias, the research associates began to col-

Table 1. Means and standard deviations for the domain and facets of the NEO PI-R and DSM-5 personality traits.

	NEO-PI-R			DSM-5 personality traits	
	Domain and facets	M (SD)		Domain and traits	M (SD)
	Neuroticism	106.93 (8.96)		Negative affectivity	30.79 (1.41)
N1	Anxiety	19.40 (2.63)	NA1	Emotional lability	4.73 (1.77)
N2	Angry hostility	18.31 (2.90)	NA2	Anxiousness	9.86 (4.03)
N3	Depression	16.02 (3.21)	NA3	Separation Insecurity	3.96 (2.12)
N4	Self-consciousness	16.40 (4.14)	NA4	Perseveration	2.06 (2.11)
N5	Impulsiveness	17.90 (2.94)	NA5	Submissiveness	1.34 (1.56)
N6	Vulnerability	18.90 (3.41)	NA6	Hostility	4.33 (2.59)
	Extraversion	104.5 (12.16)	NA7	Depressivity	6.10 (3.27)
E1	Warmth	18.23 (2.95)	NA8	suspiciousness	3.30 (2.34)
E2	Gregariousness	17.64 (3.12)		Detachment	7.90 (5.18)
E3	Assertiveness	15.13 (3.23)	D1	Restricted affectivity	1.30 (1.32)
E4	Activity	17.32 (3.23)	D2	Withdrawal	2.64 (2.22)
E5	Excitement-seeking	18.26 (3.20)	D3	Anhedonia	1.52 (1.80)
E6	Positive emotions	17.91 (2.71)	D4	Intimacy avoidance	2.43 (2.60)
	Openness	110.12 (12.39)		Antagonism	17.73 (10.8)
O1	Fantasy	18.1.9 (2.56)	A1	Manipulativenes	3.70 (3.88)
O2	Aesthetics	17.50 (4.40)	A2	Deceitfulness	3.30 (2.17)
O3	Feeling	18.96 (3.55)	A3	Grandiosity	2.60 (3.03)
O4	Actions	18.77 (3.55)	A4	Attention seeking	5.04 (2.49)
O5	Ideas	18.17 (2.65)	A5	Callousness	3.07 (2.09)
O6	Values	17.77 (3.24)		Disinhibition	24.65 (9.74)
	Agreeableness	101.34 (10.54)	DS	Irresponsibility	3.56 (3.46)
A1	Trust	16.57 (2.41)	DS	Impulsivity	7.53 (3.31)
A2	Straightforwardness	16.70 (3.66)	DS	Distractibility	2.16 (3.17)
A3	Altruism	17.53 (2.20)	DS	Risk taking	3.16 (2.37)
A4	Compliance	15.50 (3.79)	DS	(lack of) Rigid perfectionism	3.63 (3.01)
A5	Modesty	17.24 (9.27)		Psychoticism	1.00 (2.16)
A6	Tender-mindedness	17.77 (3.24)	PSY1	Unusual beliefs and experiences	0.53 (0.97)
	Conscientiousness	99.83 (12.87)	PSY2	Eccentricity	0.29 (0.91)
C1	Competence	16.96 (2.82)	PSY3	Cognitive and perceptual dysregulation	0.17 (0.72)
C2	Order	17.50 (3.83)			
C3	Dutifulness	16.32 (3.07)			
C4	Achievement striving	17.10 (3.79)			
C5	Self-discipline	16.29 (2.58)			
C6	Deliberation	15.63 (3.65)			

Note: N=130, M=Mean, SD=Standard Deviation.

lect data periodically in per steps while they were quite blinded to the outcome of the previous or next steps.

The colleagues were trained to use these instruments. After training under the supervision of the researcher, some people were actually interviewed, and Interviewers bug was fixed. As already mentioned above, there were two groups of patients (patients with personality disorder and normal subjects). Prior to the research onset, the subjects got aware of the research and the process and signed the consent form. To avoid fatigue and reduced motivation in subjects, study for each subject was conducted in two days. In the following days to provide the demographic questionnaire, participants completed SCID-II-PQ.

The cases which had symptoms of antisocial and borderline personality disorder, in the same day, were examined by Structured Clinical Interview for Personality Disorders (SCID-II). On The definitive diagnosis of borderline personality disorder, they were invited to attend the next stage of the interview process based on DSM-5 personality traits and domains. The ethics approval was obtained by the University of Social Welfare and Rehabilitation Sciences Research Ethics Committee, and registered ethical is 92/801/A/2/3110. The participants were fully informed and they gave a written consent.

We calculated Pearson's correlations in order to examine the relationship between DSM-5 personality traits and Five-Factor Model. All statistical analyses were performed using the SPSS 17 for Windows package.

3. Results

Mean and standard deviation for NEO-PI-R and DSM-5 personality traits rating have been shown in Table 1. The results showed that there were not any significant differences between NEO-PI-R domain/facets and DSM-5 personality domain/traits.

Pearson correlation was used for data analysis. First, the relation of NEO-PI-R domains/facets with BPD personality traits in DSM-5 was examined. Then, the relationship between NEO-PI-R domains and DSM-5 domains/traits with the DSM-IV-TR BPD was evaluated. The results were shown in the tables.

Table 2 presents the bivariate correlations between the NEO-PI-R domains/facets and DSM-5 traits for BPD. The results of Table 2 indicate that there is a positive significant relationship between N with emotional lability (r=0.34, P<0.01), hostility (r=0.19, P<0.05), anxiousness (r=0.28, P<0.01) and impulsivity (r=0.22, P<0.05). Also there are significant relationships between O and emotional lability (r=0.31, P<0.01) and risk taking (r=0.19, P<0.05), and negative relationship with impulsivity (r=-0.24, P<0.01), separation insecurity (r=0.19, P<0.05), and depressivity (r=-0.19, P<0.05). In addition, there is a negative relationship between E, A, and C and emotional lability (r=-0.23, -0.31, -0.26 respectively, P<0.01). In addition, as shown in the table 2 there is positive and significant relationship between N facets and BPD traits, specially anxiety, angry hostility and impulsiveness (P<0.05, P<0.01).

Table 3 shows the relationship between NEO-PI-R domains and DSM-5 domains/traits with the DSM-IV-TR BPD symptoms.

As seen in the Table 3 there is a positive significant relationship between N and O with DSM-IV-TR BPD symptoms (r=0.29 and 0.231 respectively, P<0.01), and there is a negative relationship between E and A with BPD symptoms (r=-0.20 and -0.17 respectively, P<0.05). Also, negative affectivity and disinhibition have positive significant relation with DSM-IV-TR BPD symptoms (r=0.35 and 0.26 respectively, P<0.01), and detachment has negative relation with DSM-IV-TR BPD symptoms (r=.-0.40, P<0.01). Furthermore, table 3 indicates that, except depressivity, there is a positive significant relationship between DSM-5 traits and DSM-IV-TR BPD symptoms. As seen in the table the relation range are r=0.19 (P<0.01) to r=0.38 (P<0.05).

4. Discussion

The authors extended previous work on the hypothesis that borderline personality disorder (BPD) can be understood as a maladaptive variant of personality traits included within the 5-factor model (FFM) of personality. This study evaluated the relationship between FFM and DSM-5 pathological traits for BPD. There were three overall findings. First, BPD features correlated positively with neuroticism and openness, and negatively with extraversion and agreeableness. These results were consistent with the findings of Morey and Zanarini (2000), Stepp & Trull (2007), Douglas (2012), and Pereira, Huband, and Duggan (2008). FFM had good relation with BPD. Second, except hostility other DSM-5 pathological traits for BPD significantly related to FFM, especially to neuroticism. Third, the significant relationship found between FFM dimensions especially N and O, and DSM-5 personality domains/traits with DSM-IV-TR BPD symptoms. Results indicated that the

Table 2. Coefficient correlations between NEO-PI-R facets with BPD personality traits in DSM-5.

NEO-PI-R facets		DSM-5 personality traits						
		Em. Lab.	Anx.	Sep. In.	Host.	Dep.	Imp.	Risk T.
N	Neuroticism	0.34**	0.28**	0.16	0.19*	0.12	0.22*	-0.13
N1	Anxiety	0.31**	0.20*	0.19*	0.08	0.19*	0.22*	0.16
N2	Angry hostility	0.35**	-0.04	-0.02	0.38**	-0.13	0.21*	0.23**
N3	Depression	0.12	0.26**	-0.13	-0.00	0.5	0.19*	-0.22*
N4	Self-consciousness	-0.17*	-0.06	-0.17	-0.08	0.14	-0.04	-0.09
N5	Impulsiveness	0.12	-0.09	-0.03	-0.04	0.27**	0.27**	0.17
N6	Vulnerability	-0.04	-0.05	0.1	0.01	-0.05	0.00	-0.04
E	Extraversion	-0.23**	-0.14	-0.15	-0.08	-0.11	-0.27**	-0.26**
E1	Warmth	-0.23**	-0.17	-0.15	-0.05	-0.16	-0.24**	0.18*
E2	Gregariousness	-0.02	-0.02	0.04	0.01	-0.01	-0.10	-0.23**
E3	Assertiveness	-0.23**	-0.12	-0.03	-0.01	-0.17	-0.04	0.02
E4	Activity	-0.18*	-0.19*	-0.25**	-0.04	-0.08	-0.020*	-0.16
E5	Excitement-seeking	0.21*	-0.15	-0.10	-0.24**	-0.11	0.30**	0.28**
E6	Positive emotions	-0.03	0.12	-0.12	0.02	.0.13	-0.11	-0.20*
O	Openness	0.31**	-0.16	-0.19*	-0.13	-0.19*	-0.24**	0.19*
O1	Fantasy	-0.18*	-0.08	-0.19*	0.05	-0.11	-0.23**	-0.7
O2	Aesthetics	-0.28**	0.00	-0.07	-0.07	0.08	0.05	0.00
O3	Feeling	-0.21*	0.00	-0.09	-0.17*	-0.09	-0.19*	-0.08
O4	Actions	-0.24**	-0.34**	-0.07	-0.06	-0.32**	-0.21*	-0.09
O5	Ideas	-0.25**	0.01	-0.13	-0.14	-0.10	-0.03	0.08
O6	Values	-0.23**	-0.18*	-0.18*	-0.13	-0.21*	-0.35**	-0.14
A	Agreeableness	-0.31**	-0.04	-0.11	-0.08	0.03	0.00	0.00
A1	Trust	-0.28**	0.071	-0.00	-0.06	0.00	0.13	0.18*
A2	Straightforwardness	-0.21*	0.115	-0.06	0.00	0.19*	0.17*	0.12
A3	Altruism	-0.19*	-0.102	-0.12	-0.03	0.06	-0.02	-0.07
A4	Compliance	-0.25**	-0.27**	0.01	-0.02	-0.23**	-0.08	0.0
A5	Modesty	-0.03	0.17*	-0.10	0.10	0.09	0.18*	0.11
A6	Tender-mindedness	-0.09	-0.12	-0.10	-0.27**	0.00	-0.34**	-0.34**
C	Conscientiousness	-0.26**	0.03	-0.11	-0.02	0.00	0.80	0.02
C1	Competence	-0.13	0.14	0.02	-0.14	0.21*	0.11	0.00
C2	Order	-0.06	0.04	0.09	0.02	-0.08	0.22*	0.13
C3	Dutifulness	-0.10	0.0	-0.13	0.09	0.13	0.14	0.07
C4	Achievement striving	-0.32**	0.05	-0.13	-0.05	-0.07	-0.02	0.02
C5	Self-discipline	-0.00	-0.01	-0.07	0.15	0.07	0.10	-0.01
C6	Deliberation	-0.26**	-0.15	-0.16	-0.09	-0.15	-0.22**	-0.12

Note: N=130, BPD=Borderline Personality Disorder, Em. Lab.=Emotional Lability, Anx.=Anxiousness, Sep. In.=Separation Insecurity, Host.=Hostility, Dep.=Depressivity, Imp.=Impulsivity, Risk T.=Risk Taking, * P<0.05, ** P<0.01.

Table 3. Correlation between NEO-PI-R domains and DSM-5 domains/traits with the DSM-IV-TR BPD symptoms.

NEO-PI-R domains	DSM-IV-TR BPD symptoms	DSM-5 BPD domains	DSM-IV-TR BPD symptoms	DSM-5 BPD traits	DSM-IV-TR BPD symptoms
Neuroticism	0.29**	Negative affectivity	0.35**	Emotional lability	0.38**
Extraversion	-0.20*	Detachment	-0.40**	Anxiousness	0.25**
				Separation insecurity	0.19*
Openness	0.23**	Antagonism	-0.11	Hostility	0.22*
Agreeableness	-0.17*	Disinhibition	0.26**	Depressivity	-0.01
				Impulsivity	0.29**
Conscientiousness	-0.11	Psychoticism	-0.16	Risk taking	0.32**

Note: N=130, BPD=Borderline Personality Disorder, * P<0.05, ** P<0.01.

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FFM correlated highly with DSM-5 traits of BPD. Thus overall, the hypothesis that FFM and DSM-5 personality traits are related to one another was approved.

These results are consistent with the findings of Samuel et al. (2013) and Mullins-Sweatta et al. (2008) that showed BPD was maladaptive representation of extreme versions of the same traits that described normal personality. Also findings indicated that normal personality traits, such as those assessed by the five-factor model (FFM), shared a common structure and obtained reasonably predictable correlations with the BPD. Further, these results revealed that DSM-5 criteria for BPD have good theoretical background.

This is the first study of DSM-5 dimensional model of personality disorders on Iranian sample. We investigated the relation of FFM and DSM-5 personality traits together, and with DSM-IV-TR BPD symptoms on Iranian patients. The findings were the same as the other studies. It means that Dimensional model of DSM-5 is a valid approach to personality diagnosis in Iranian culture. Overall, the present study helps to understand the adequacy of dimensional approach to evaluation of personality pathology, specifically on Iranian sample.

The findings provide further evidence for dimensional understanding of personality pathology and suggest that a trait model in DSM-5 should span normal and abnormal personality functioning, but also focus on the extremes of these common traits. The authors' findings indicate that the traits specified in criterion B for the DSM-5 BPD have significant relationship with BPD symptoms in DSM-IV-TR, except depressivity. This may be explained that DSM-5 traits used for depicting this disorder were generally adequate. These results were consistent with findings of Hopwood, Thomas, Markon, Wright, & Krueger (2012), Peters, Upton, and Baer (2012), Hopwood et al. (2009) and Torgersen et al. (2008).

However, the study also has several limitations and future research is needed. The results were based on a relatively small number of cases and so caution should be used for interpreting the data. Other limitation was the nature of the sample, which was drawn from BPD. Future research should replicate findings in larger samples and with multiple personality disorders. In addition, data gathered by a semi-structured interview and future work should focus on other relevant instruments. Also, the most participants in the study were male. So, other research is needed to investigate the relation between FFM and DSM-5 pathological traits on female. Finally, future research should identify which aspects of dimensional model are best predicted symptoms of BPD.

Acknowledgements

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