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Defense Mechanisms Associated with Borderline Personality Disorder

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Abstract

This study assessed the defensive functioning of 290 criteria-defined borderline patients and compared it to that of 72 patients with other forms of axis II psychopathology. The Defense Style Questionnaire, a self-report measure with demonstrated criterion validity and internal consistency, was administered to 362 axis II inpatients diagnosed using semistructured interviews of proven reliability. Borderline patients had significantly higher scores than axis II comparison subjects on three of the four defense styles assessed by the DSQ: self-sacrificing, maladaptive action, and image-distorting defenses. They also had significantly higher scores than axis II comparison subjects on eight of the 19 defense mechanisms studied. More specifically, borderline patients had significantly higher scores on one neurotic-level defense (undoing), four immature defenses (acting out, emotional hypochondriasis, passive aggression, and projection), and two image-distorting/borderline defenses (projective identification and splitting). In contrast, axis II comparison subjects had a significantly higher score than borderline patients on one mature defense (suppression). When all significant defenses were considered together, three were found to be significant predictors of a borderline diagnosis: acting out, emotional hypochondriasis, and undoing. This model has both good sensitivity (.95) and positive predictive power (.86). Taken together, the results of this study suggest that the defensive profile of borderline patients is distinct from that of patients with other forms of axis II pathology. They also suggest that the defensive triad of acting out, emotional hypochondriasis, and undoing may serve as a useful clinical marker for the borderline diagnosis, particularly in settings where the base rate of the disorder is high.

Forty years ago, Kernberg published his seminal paper describing his view of the essential features of borderline psychopathology (Kernberg, 1967). Among these features, he listed the five following defense mechanisms: devaluation, omnipotence, primitive idealization, projective identification, and splitting. In the ensuing decades, these defenses have become strongly associated with the borderline diagnosis. Despite intense interest by dynamically oriented clinicians, relatively little research has been conducted in this area. This gap has been due in large measure to the lack of reliable methods for assessing the presence of a range of defenses or at least, their conscious derivatives. In the past 20 years, only six studies have been published that have attempted to delineate the mechanisms of defense used by borderline patients and only five of these studies have tried to determine if these defenses discriminate borderline patients from those with other diagnoses. Two of these six studies (Perry & Cooper, 1986; Bond, 1990) relied on information obtained from videotaped clinical interviews rated according to reliable criteria developed by Perry and Cooper (1986). The other four (Bond, 1990; Bond, Paris, & Zweig-Frank, 1994; Koenigsberg et al., 2001; Paris, Zweig-Frank, Bond, & Guzder, 1996) used the Defense Style Questionnaire

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(DSQ), a paper and pencil self-report measure developed by Bond and his colleagues (1991) that is designed to assess the conscious derivatives of unconscious mechanisms of defense.

In the first of the interview-based studies, Perry and Cooper (1986) assessed the defensive functioning of 73 patients meeting DSM-III criteria for borderline or antisocial personality disorder as assessed by semistructured interview. They found that both what they termed action defenses (acting out, hypochondriasis, passive aggression) and image distorting/ borderline defenses (projective identification, splitting) were significantly correlated with a dimensional score of borderline psychopathology. They also found that what they termed narcissistic defenses (devaluation, idealization, omnipotence) were significantly correlated with a dimensional score of antisocial psychopathology. However, they were unable to distinguish the two diagnostic groups using multivariate techniques.

In the second interview-based study, Bond (1990) studied the defenses employed during a clinical interview by six clinically diagnosed borderline patients, 21 patients with other forms of personality disorder, and 131 patients with other clinical diagnoses. He found that borderline patients had significantly higher scores on scales measuring maladaptive action and image distorting/borderline defenses than the axis II comparison subjects and all comparison subjects taken together.

Bond also conducted the first of the DSQ studies (1990). The DSQ was administered to 25 clinically diagnosed borderline patients, 26 patients with other forms of axis II pathology, and 167 patients with other types of clinical diagnoses, ranging from psychotic disorders to adjustment disorders. Borderline patients were not distinguished from other patient groups on any of the four levels of defense assessed by the DSQ (adaptive, self-sacrificing, maladaptive action, image distorting/borderline defenses).

In the second of the DSQ studies, Bond, Paris, and Zweig-Frank (1994) administered the DSQ to 150 female outpatients; 78 meeting Revised Diagnostic Interview for Borderlines (DIB-R) (Zanarini, Gunderson, Frankenburg, & Chaucey, 1989) criteria for BPD and 72 meeting DSM-III-R criteria for another type of axis II disorder. They found that borderline patients had significantly higher scores than axis II comparison subjects on the scales measuring maladaptive action and image distorting/borderline defenses and a significantly lower score on the scale measuring adaptive defenses.

Paris, Bond, and colleagues (1996) also administered the DSQ to 121 male outpatients; 61 meeting DIB-R criteria for BPD and 60 meeting DSM-III-R criteria for another type of personality disorder. They found, as with their female sample, that male borderline patients had significantly higher scores than male axis II comparison subjects on the scales measuring maladaptive action and image distorting/borderline defenses. However, unlike their female counterparts, the adaptive defense scale scores of male borderlines were not significantly lower than those of male axis II comparison subjects.

Koenigsberg and colleagues (2001) studied the relationship between the BPD traits of affective instability and impulsive aggression and the DSQ scores for 20 defense mechanism in a sample of 140 patients with axis II diagnoses (41 of whom met DSM-III-R criteria for BPD). It was found that scores on affective instability were significantly correlated with scores on six defense mechanisms: undoing, acting out, passive aggression, projection, schizoid fantasy, and splitting. In contrast, scores on impulsive aggressive were only significantly correlated with the defense of acting out.

The design of the current study is distinguished by the large size of the patient groups being studied, the rigor with which they were diagnosed, and its inclusion of male as well as female patients. It is also the first large-scale study to assess the presence of specific

defenses in patients with criteria-defined borderline personality disorder and axis II comparison subjects.

Method

All subjects were inpatients at McLean Hospital in Belmont, Massachusetts. Each patient was initially screened to determine that he or she: 1) was between the ages of 18–35, 2) had normal or better intelligence, and 3) had no history or current symptomatology of a serious organic condition that can cause psychiatric symptoms, schizophrenia, schizoaffective disorder, or bipolar I disorder.

Written informed consent was obtained from each patient. Three semistructured diagnostic interviews were then administered to each patient blind to his or her clinical diagnosis. These instruments were: 1) the Structured Clinical Interview for DSM-III-R Axis I Disorders (SCID I) (Spitzer, Williams, Gibbon, & First, 1992), 2) the Revised Diagnostic Interview for Borderlines (DIB-R) (Zanarini, Gunderson, Frankenburg, & Chauncey, 1989), and 3) the Diagnostic Interview for DSM-III-R Personality Disorders (DIPD-R) (Zanarini, Frankenburg, Chauncey, & Gunderson, 1987). The inter-rater and test-retest reliability of all three of these measures have been found to be good-excellent (Zanarini & Frankenburg, 2001; Zanarini, Frankenburg, & Vujanovic, 2002).

The defensive style of each patient was measured by administering the Defense Style Questionnaire (DSQ) – an 88 item self-report measure that assesses the presence of both defensive styles and specific defense mechanisms. The DSQ has been found to be internally consistent and to have criterion validity (Bond, 1991). In addition, a number of studies have found that there is a significant correspondence between specific defenses rated on the DSQ and both the cross-sectional interview method of Perry and Cooper and the longitudinal method of Vaillant (Bond, Perry, Gautier, Goldenberg, Oppenheimer, & Simand, 1989; Vaillant, Bond, & Vaillant, 1986).

Each DSQ item is rated on a nine-point likert scale. Individual defenses are assessed using anywhere from one to nine questions. We added three items to more fully measure the defense of emotional hypochondriasis that we have described elsewhere (Zanarini & Frankenburg, 1994). These three items (No matter how often I tell people how miserable I feel, no one really seems to believe me; No matter what I say or do, I can’t seem to get other people to really understand how much emotional agony I’m in; I often act in ways that are self-destructive to get other people to pay attention to the tremendous emotional pain that I’m in) were combined with the three already present to measure the related defense of help-rejecting complaining (Doctors never really understand what is wrong with me; My doctors are not able to help me really get over my problems; No matter how much I complain, I never get a satisfactory response). The combined defense of emotional hypochondriasis was found to have an alpha of .77, compared to the alpha of .64 found for the defense of help-rejecting complaining.

As the mean DSQ data were not normally distributed, between-group comparisons were conducted using the nonparametric Wilcoxon rank-sum test. We also calculated effect sizes for each of these comparisons by subtracting the means attained by each group and dividing by the pooled standard deviation. A forced entry logistic regression with borderline diagnosis (yes/no) as the dependent variable was conducted next to determine the relative importance of the defense mechanisms found in between-group analyses to be significantly more common among borderline patients than axis II comparison subjects.

Results

All told, these research interviews were administered to 362 consecutive inpatients at McLean Hospital as part of a larger study. The methodology of that study has been described elsewhere (Zanarini, Frankenburg, Hennen, & Reich, 2003). Two hundred and ninety patients met both DIB-R and DSM-III-R criteria for BPD and 72 met DSM-III-R criteria for at least one nonborderline axis II disorder (and neither criteria set for BPD).

Baseline demographic data have been reported before (Zanarini et al., 2003). Briefly, 77.1% (N=279) of the subjects were female and 87% (N=315) were white. The average age of the subjects was 27 years (SD=6.3), the mean socioeconomic status was 3.3 (SD=1.5) (where 1=highest and 5=lowest), and their mean GAF score was 39.8 (SD=7.8) (indicating major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood).

Table 1 shows the mean scores and standard deviations of borderline patients and axis II comparison subjects for each of Bond's four defensive styles, which were derived from factor analyses. As can be seen, borderline patients had significantly higher scores than axis II comparison subjects on each of the styles except that measuring adaptive or higher-level defenses. In addition, the following effect sizes were found: adaptive defense style (0.17), image distorting defense style (0.46), self-sacrificing defense style (0.53), and maladaptive action defense style (1.02). Only one of these was large (0.8 or higher) using Cohen's guidelines (1988) and the other three were small (0.2) to medium (0.5).

Table 2 shows the mean scores and standard deviations of borderline patients and axis II comparison subjects for each of 19 specific defenses studied. These defenses are organized partly by Vaillant's empirically derived hierarchy of defenses: mature, neurotic, and immature defenses. The remaining defenses are organized according to Kernberg's theoretical model of borderline defenses. As can be seen, borderline patients had significantly higher scores than axis II comparison subjects on one neurotic-level defense (undoing), four immature defenses (acting out, emotional hypochondriasis, passive aggression, and projection), and two image-distorting/borderline defenses (projective identification and splitting). In contrast, axis II comparison subjects had significantly higher scores than borderline patients on one mature defense (suppression). In terms of effect sizes, only three were large using Cohen's guidelines: undoing (0.82), acting out (0.98), and emotional hypochondriasis (0.88). The remaining effect sizes were small to medium: altruism (0.33), anticipation (0.02), humor (0.04), sublimation (0.02), suppression (0.41), isolation (0.35), reaction formation (0.41), denial (0.26), fantasy (0.12), passive aggression (0.53), projection (0.79), devaluation (0.07), omnipotence (0.02), primitive idealization (0.26), projective identification (0.41), and splitting (0.48).

As Table 3 shows, three defenses were found in multivariate analyses to be significantly associated with a borderline diagnosis: acting out, emotional hypochondriasis, and undoing. In terms of these three defenses, a patient's risk of meeting DIB-R and DSM-III-R criteria for BPD was about 35–46% greater for each point higher on that defense's mean score.

Overall, this model was highly significant (χ^2=83.73, df=3, p<0.0001) (Table 4) and correctly classified 83% of the 362 subjects in the study. More specifically, it had high levels of sensitivity (.95) and positive predictive power (.86) but substantially lower levels of specificity (.36) and negative predictive power (.63). Looked at another way, 95% (275/290) of the borderline patients in this study exhibited high levels of this defensive triad and 86% (275/321) of those with this defensive constellation met study criteria for BPD. However, 64% (46/72) of OPD subjects were false positives (i.e., had a high score on this defensive trio).

Discussion

Three main findings have emerged from this study. The first finding is that the defense styles originally defined through factor analyses by Bond and his colleagues significantly discriminated borderline patients from axis II comparison subjects. This is not a new finding as two earlier DSQ studies had also found that borderline patients report higher scores than axis II comparison subjects on both the maladaptive action and the image-distorting defense styles.

The second main finding is that borderline patients were found to have significantly higher scores than axis II comparison subjects on seven specific defenses. Four of these defenses were immature according to Vaillant's classification system: acting out, emotional hypochondriasis, passive aggression, and projection. All four of these defenses underlie clinical features (impulsivity, demandingness, masochism, and suspiciousness) have been found to be extremely common among borderline patients (Zanarini, Gunderson, Frankenburg, & Chauncey, 1990). However, only demandingness has been found to be specific for the disorder (Zanarini et al., 1990).

Two image distorting/borderline defenses were also found to discriminate borderline patients from axis II comparison subjects. More specifically, borderline patients had significantly higher mean scores on the defenses of projective identification and splitting than axis II comparison subjects. Of equal importance is that three other image distorting/ borderline defenses were not found to discriminate borderline patients from axis II comparison subjects: devaluation, omnipotence, and primitive idealization. Taken together, these results are consistent with the earlier findings of Perry and Cooper who found that what they termed borderline defenses (projective identification and splitting) were strongly associated with borderline psychopathology, while what they termed narcissistic defenses (devaluation, omnipotence, and primitive idealization) were not. This failure to confirm Kernberg's defensive typology may well be due to the broader concept of borderline personality organization that Kernberg espoused; a concept that includes patients with other severe personality disorders as well as BPD.

The third main finding is that a trio of defenses (acting out, emotional hypochondriasis, and undoing), all of which had large effect sizes, significantly discriminated borderline patients from axis II comparison subjects. This finding makes clinical sense as impulsivity, demandingness, and making amends are aspects of a pattern that is characteristic of borderline patients. This finding also indicates that the presence of this trio of defenses is a good marker for the borderline diagnosis, particularly in settings where BPD is common. This is so because this defensive triad has both good sensitivity and positive predictive power but poor specificity and only adequate negative predictive power.

However, it is important to note that we are suggesting that clinicians can and should make this determination during the course of their usual clinical work with patients. Due to time constraints and the added effort involved, it seems unlikely that clinicians would administer the DSQ (or any other measure) to make this determination. We recognize that not all clinicians believe in the existence of defense mechanisms or even if they do, are trained to recognize them. Luckily all three defenses mentioned above are behaviorally oriented and clinicians can be taught to recognize that acting out is associated with impulsivity, undoing with making amends, and emotional hypochondriasis with insistent and persistent demands that attention be paid to one's inner pain. Clinicians can also use the defensive functioning of their borderline patients to track their symptomatic progress over time. The advantage of such an approach is that tracking defensive functioning fits into an intellectual framework (i.e., ego psychology) that can guide treatment, while viewing each act of impulsivity or

each exasperated demand as a separate and somewhat surprising event can lead clinicians to feel unnecessarily discouraged or even nihilistic.

This emphasis on clinical skills does not mean that further DSQ-based research pertaining to the defensive structure of BPD should not proceed. It would be important to know how this purported marker functions in an outpatient setting. It is also important to document if and how defensive functioning changes in criteria-defined borderline patients (and axis II comparison subjects) over time. However, it should be noted that there are shorter versions of the DSQ (Andrews, Singh, & Bond, 1993) and these versions will not permit the study of individual defense mechanisms.

Taken together, the results of this study suggest that the defensive profile of borderline patients is distinct from that of patients with other forms of axis II pathology. They also suggest that the defensive triad of acting out, emotional hypochondriasis, and undoing may serve as a useful clinical marker for the borderline diagnosis, particularly in settings where BPD is common.

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Table 1

Mean DSQ Defense Styles Scores among Borderline Patients and Axis II Comparison Subjects

	BPD (N=290)		OPD (N=72)		BPD vs. OPD	
Defense Style	**Mean**	**SD**	**Mean**	**SD**	**z-score**	**p-value**
Adaptive	4.96	1.24	5.17	1.10	−1.29	NS
Self-sacrificing	4.51	1.13	3.90	1.13	3.78	0.0002
Image-distorting	3.36	0.99	2.90	1.06	4.11	<0.0001
Maladaptive Action	4.06	0.79	3.19	0.75	7.70	<0.0001

Table 2

Mean DSQ Defense Scores among Borderline Patients and Axis II Comparison Subjects

	BPD (N=290)		OPD (N=72)		BPD vs. OPD	
Defense	**Mean**	**SD**	**Mean**	**SD**	**z-score**	**p-value**
Vaillant's Mature Defenses						
Altruism	6.54	2.29	5.77	2.44	2.52	NS
Anticipation	5.47	1.99	5.43	1.84	0.06	NS
Humor	4.75	1.78	4.68	1.81	0.49	NS
Sublimation	4.08	2.48	4.03	2.54	0.15	NS
Suppression	4.52	1.88	5.29	1.68	−3.24	0.0012
Vaillant's Neurotic Defenses						
Isolation	4.22	1.56	3.67	1.60	2.60	NS
Reaction Formation	4.57	1.32	4.01	1.43	2.75	NS
Undoing	4.61	1.81	3.11	1.29	6.50	<0.0001
Vaillant's Immature Defenses						
Acting Out	5.61	1.61	3.91	1.56	7.37	<0.0001
Denial	4.20	1.10	3.93	0.92	1.97	NS
Emotional Hypochondriasis	4.90	1.73	3.34	1.39	6.65	<0.0001
Fantasy	4.15	2.55	3.84	2.91	1.21	NS
Passive Aggression	4.24	1.23	3.58	1.26	4.11	<0.0001
Projection	3.36	1.22	2.38	1.06	6.39	<0.0001
Image Distorting or Borderline Defenses						
Devaluation	2.36	1.64	2.23	1.84	1.35	NS
Omnipotence	2.53	1.30	2.49	1.51	0.66	NS
Primitive Idealization	3.49	2.11	2.94	1.94	1.92	NS
Projective Identification	3.98	2.79	2.85	2.58	3.32	0.0009
Splitting	3.40	1.83	2.54	1.51	3.65	0.0003

Bonferroni correction for multiple comparisons (.05/19) indicates significance level of p<0.0026

Table 3

Forced Entry Logistic Regression of Significant Associations Between DSQ Defenses and Borderline Diagnosis

	Odds Ratio	SE	z-score	p-level	95% Confidence Interval
Acting Out	1.4589	.1581	3.484	<0.0001	1.1796–1.8042
Undoing	1.4626	.1612	3.449	0.001	1.1784–1.8154
(Emotional) Hypochondriasis	1.3478	.1473	2.731	0.006	1.0879–1.6697

Model χ^2 = 83.73, p<0.0001, N=290 BPD/72 OPD patients

Table 4

Receiver Operating Characteristics of Defensive Triad of Acting Out, Undoing, Emotional Hypochondriasis

Defensive Marker	BPD	OPD	N
+	True Positive (275)	False Positive (46)	321
−	False Negative (15)	True Negative (26)	41
N	290	72	362