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Comorbid personality disorders in subjects with panic disorder: do personality disorders increase clinical severity?

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Abstract

Personality disorders are common in subjects with panic disorder. Personality disorders have been shown to affect the course of panic disorder. The purpose of this study was to examine which personality disorders affect clinical severity in subjects with panic disorder. This study included 122 adults (71 women, 41 men) who met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) criteria for panic disorder (with or without agoraphobia). Clinical assessment was conducted by using the Structured Clinical Interview for *DSM-IV* Axis I Disorders, the Structured Clinical Interview for *DSM-IV* Axis II Personality Disorders, and the Panic and Agoraphobia Scale, Global Assessment Functioning Scale, Beck Depression Inventory, and State-Trait Anxiety Inventory. Patients who had a history of sexual abuse were assessed with Sexual Abuse Severity Scale. Logistic regressions were used to identify predictors of suicide attempts, suicidal ideation, sexual abuse, and early onset of disorder. The rates of comorbid Axes I and II psychiatric disorders were 80.3% and 33.9%, respectively, in patients with panic disorder. Patients with panic disorder with comorbid personality disorders had more severe anxiety, depression, and agoraphobia symptoms, had earlier ages at onset, and had lower levels of functioning. The rates of suicidal ideation and suicide attempts were 34.8% and 9.8%, respectively, in subjects with panic disorder. The rate of patients with panic disorder and a history of childhood sexual abuse was 12.5%. The predictor of sexual abuse was borderline personality disorder. The predictors of suicide attempt were comorbid paranoid and borderline personality disorders, and the predictors of suicidal ideation were comorbid major depression and avoidant personality disorder in subjects with panic disorder. In conclusion, this study documents that comorbid personality disorders increase the clinical severity of panic disorder. Borderline personality disorder may be the predictor of a history of sexual abuse and early onset in patients with panic disorder. Paranoid and borderline personality disorders may be associated with a high frequency of suicide attempts in patients with panic disorder.

1. Introduction

In psychiatry, about one half of all patients have personality disorder, which are frequently comorbid with Axis I conditions. Personality factors interfere with the response to treatment of all Axis I syndromes and increase personal incapacitation, morbidity, and mortality of these patients. Moreover, personality disorders are a predisposing factor for many other psychiatric disorders, including substance use disorders, suicide, mood disorders, impulse-control disorders, eating disorders, and anxiety disorders [1].

Personality disorders are common in subjects with panic disorder. The comorbidity rates of panic disorder and personality disorders are reported to be between 35% and 95% [2-8].

Starcevic et al [9] found high rates of Axes I and II psychiatric disorders in subjects with panic disorder (88.6% and 48.6%, respectively). These rates were higher in subjects with suicidal thoughts (92% and 76.7%, respectively). Borderline and dependent personality disorders were the most prevalent personality disorders (22.7%). Borderline personality disorder was the most prevalent personality disorder in subjects with suicidal thoughts (48%).

Reich [10] reported high rates of cluster B (antisocial, borderline, histrionic, and narcissistic) and cluster C (avoidant, dependent, and obsessive-compulsive) personality disorders in patients with panic disorder. It has been found

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a strong negative association between the outcome of treated panic disorder and the presence of antisocial, borderline, histrionic, and narcissistic personality disorders. Skodol et al [11] found that panic disorder, either current or lifetime, is associated with borderline, avoidant, and dependent personality disorders. Their results indicated that anxiety disorders with personality disorders are characterized by chronicity and lower levels of functioning compared with anxiety disorders without personality disorders.

Dammen et al [12] found that borderline and avoidant personality disorders were significantly more often in patients with panic disorder than in patients without panic disorder. In patients with panic disorder, the presence of any personality disorder was significantly associated with higher scores of self-reported anxiety-agoraphobia symptoms, neuroticism, and the presence of suicidal thoughts. Mavissakalian et al [13] found that the major personality disorders identified in panic/agoraphobic patients were avoidant, dependent, histrionic, and borderline personality disorders.

Personality disorders have been shown to affect the course of panic disorder. Individuals with comorbid panic disorder and personality disorder were twice as likely as patients with panic disorder but without personality disorder to have a history of depression, a history of childhood anxiety disorder, and a chronic unremitting course [14].

Langs et al [3] found a rate of 41.7% comorbid major depressive disorder in subjects with panic disorder. The rate of comorbid personality disorder in subjects with pure panic disorder (40.8%) is lower than subjects with panic disorder and comorbid depressive disorder (68.6%). A significant statistical association was found between personality disorder and depression in subjects with panic disorder. Starcevic et al [9] reported that suicidal thoughts, comorbid personality disorders (especially clusters C and B), and depression affect the severity of panic disorder.

The effects of personality disorders on the short-term treatment of panic disorder were examined in a study by Black et al [15]. These investigators examined 66 patients who had completed 3 weeks of treatment with fluvoxamine (n = 23), cognitive therapy (n = 20), or placebo (n = 23). Treatment response was weakened by the presence of comorbid personality disorders. A similar response was displayed in a study by Fava et al [16]. One hundred ten patients with panic disorder and agoraphobia were treated with behavioral exposure at an outpatient clinic. Sixteen of these patients (19.8%) met the criteria for a personality disorder (dependent, avoidant, histrionic, or narcissistic). As in the study of Black et al [15], poorer outcome was associated with the presence of a personality disorder.

Personality disorders are prevalent in subjects with panic disorder. The presence of personality disorders affects the prevalence of depression and other Axis I psychiatric disorders, the risk of suicide, the severity of illness, and the outcome of treatment in patients with panic disorder. It is important to diagnose comorbid personality disorders in patients with panic disorder to plan treatment and to predict prognosis.

The purpose of this study was to examine which personality disorders affect clinical severity in subjects with panic disorder.

2. Methods

2.1. Subjects

This study was conducted at the Psychiatric Outpatients Clinic of the Medical School of Dicle University. A consecutive sample of outpatients (n = 112), comprising 71 women and 41 men, who met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) criteria for panic disorder (with or without agoraphobia) was recruited in a 6-month period. Seventy-three subjects were diagnosed as having panic disorder with agoraphobia. Exclusion criteria were current or previous diagnosis of schizophrenia or other psychotic disorders and the presence of neurological or general medical conditions (thyroid tests, electrocardiogram, chest X ray, and neurological examination were conducted on all patients). All patients provided written informed consent for participation in this research.

2.2. Assessment procedures

Clinical assessment was conducted by an experienced psychiatrist (MO) using the Structured Clinical Interview for *DSM-IV* Axis I Disorders (SCID-I) [17], the SCID Axis II Personality Disorders (SCID-II) [18], the Panic and Agoraphobia Scale (PAS) [19], Global Assessment Functioning Scale (GAF) [20], Beck Depression Inventory (BDI) [21], and State-Trait Anxiety Inventory (STAI) [22].

Derealization, depersonalization, and other symptoms during panic attacks were assessed by asking subjects about each of the *DSM-IV* panic attack symptoms within the clinical interview.

Childhood sexual abuse was investigated in the history of patients. Patients who had a history of sexual abuse were assessed with Sexual Abuse Severity Scale [23]. In this scale, (1) abuse type (eg, exposure, fondling and caressing, or penetration), (2) duration (eg, single episode or ongoing abuse), and (3) perpetrator (eg, stranger, distant relative, sibling, or parent) were investigated. Fourteen patients had a history of sexual abuse (12 women, 2 men). All patients had a history of fondling and caressing. There was no history of penetration. Frequency of sexual abuse was a few times for 3 women and the others gave a history of ongoing sexual abuse. The perpetrators of the investigated cases were distant relatives (n = 5), a parent (n = 1), and siblings (n = 8).

Suicidal thoughts and suicide attempts in the last year were investigated and assessed.

2.3. Statistical analyses

The comparison of comorbid personality disorders with panic disorder based on the presence of comorbid Axis I

Table 1
Comparison of comorbid personality disorders with panic disorder based on the presence of comorbid Axis I psychiatric disorders, major depression, and history of sexual abuse

	Patients with comorbid Axis I condition (n = 90)		Patients without comorbid Axis I condition (n = 22)		*df* = 1		Patients with comorbid major depression (n = 61)		Patients without comorbid major depression (n = 51)		*df* = 1		Patients with a history of sexual abuse (n = 14)		Patients without a history of sexual abuse (n = 98)		*df* = 1	
	n	%	n	%	χ^2	*P*	n	%	n	%	χ^2	*P*	n	%	n	%	χ^2	*P*
Any personality disorder	35	38.9	3	13.6	5.0	.02	29	47.5	9	17.6	11.0	.001	10	71.4	28	28.6	10.0	.002
More than one comorbid personality disorders	22	24.4	1	4.5	4.2	.03	20	32.7	3	5.8	12.3	.000	9	64.3	14	14.3	18.7	.000
Any cluster B personality disorder	24	26.7	2	9.1		NS	22	36.0	4	7.8	12.4	.000	9	64.3	17	17.3	15.1	.000
Any cluster C personality disorder	27	30.0	1	4.5	6.1	.01	21	34.4	7	13.7	6.3	.01	9	64.3	19	19.4	13.1	.000
Paranoid personality disorder	7	7.8	1	4.5		NS	6	9.8	2	3.9		NS	2	14.3	6	6.1		NS
Histrionic personality disorder	15	16.7	2	9.1		NS	15	24.5	2	3.9	9.2	.002	5	35.7	12	12.2	5.2	.02
Borderline personality disorder	16	17.8	0		4.5	.03	14	22.9	2	3.9	8.2	.004	7	50.0	9	9.2	16.6	.000
Narcissistic personality disorder	8	8.9	0			NS	7	11.4	1	1.9		NS	3	21.4	5	5.1	4.9	.02
Avoidant personality disorder	9	10.0	1	4.5		NS	6	9.8	4	7.8		NS	4	28.6	6	6.1	5.3	.02
Dependent personality disorder	8	8.9	0			NS	6	9.8	2	3.9		NS	3	21.4	5	5.1	4.9	.02
Obsessive-compulsive personality disorder	12	13.3	1	4.5		NS	11	18.0	2	3.9	5.3	.02	3	21.4	10	10.2		NS

psychiatric disorders, major depression, a history of sexual abuse, suicide attempt, suicidal thoughts, and agoraphobia was performed by using χ^2 tests. Patients with panic disorder, with and without comorbid personality disorders, were compared with regard to age at onset and psychometric scores using independent samples *t* tests (2-tailed). A series of logistic regression analyses were performed to determine if any of the comorbid personality disorders or major depression predicted suicide attempt, suicidal thoughts, sexual abuse, and early age at onset among patients with panic disorder. All patients with comorbid personality disorders (paranoid, histrionic, borderline, narcissistic, avoidant, dependent, and obsessive-compulsive) and major depression were included in the regression analysis. The Statistical Package for Social Sciences (SPSS 9.0, SPSS Inc, Chicago, IL) was used for all statistical analyses.

3. Results

3.1. Patient characteristics

Comorbid Axis I psychiatric disorders were diagnosed in 90 patients (80.4%) with panic disorder. Sixty-one patients (54.4%) had comorbid major depression. Comorbid Axis II psychiatric disorders were common in patients with panic disorder. The number (percentage) of these conditions were

Table 2
Comparison of comorbid personality disorders with panic disorder based on the presence of suicide attempt, suicidal thoughts, and agoraphobia

	Patients with a history of suicide attempt (n = 11)		Patients without a history of suicide attempt (n = 101)		*df* = 1		Patients with suicidal thoughts (n = 40)		Patients without suicidal thoughts (n = 72)		*df* = 1		Patients with agoraphobia (n = 73)		Patients without agoraphobia (n = 39)		*df* = 1	
	n	%	n	%	χ^2	*P*	n	%	n	%	χ^2	*P*	n	%	n	%	χ^2	*P*
Any personality disorder	7	63.6	31	30.7	4.8	.02	23	57.5	15	20.8	15.4	.000	28	38.4	10	26.6		NS
More than one comorbid personality disorders	6	54.5	17	16.8	8.6	.003	17	42.5	6	8.3	18.3	.000	19	26.0	4	10.3	3.8	.04
Any cluster B personality disorder	6	54.5	20	19.8	6.7	.01	18	45.0	8	11.1	16.5	.000	20	25.9	6	15.4		NS
Any cluster C personality disorder	4	36.3	24	23.8		NS	20	50.0	8	11.1	20.7	.000	22	30.1	6	15.4		NS
Paranoid personality disorder	4	36.3	4	3.9	15.7	.000	5	12.5	3	4.2		NS	6	8.2	2	5.1		NS
Histrionic personality disorder	3	27.2	14	13.9		NS	10	25.0	7	9.7	4.6	.03	12	16.4	5	12.9		NS
Borderline personality disorder	6	54.5	10	9.9	16.1	.000	12	30.0	4	5.6	12.5	.000	14	19.2	2	5.1	4.0	.04
Narcissistic personality disorder	2	18.2	6	5.9		NS	6	15.0	2	2.8	5.7	.01	8	11.0	0		4.6	.03
Avoidant personality disorder	2	18.2	8	7.9		NS	6	15.0	4	5.6	9.0	.003	8	11.0	2	5.1		NS
Dependent personality disorder	2	18.2	6	5.9		NS	6	15.0	2	2.8	5.7	.01	7	9.6	1	2.6		NS
Obsessive-compulsive personality disorder	1	9.1	12	11.9		NS	9	22.5	4	5.6	10.8	.001	9	12.3	4	10.3		NS

Table 3
Group mean age at onset and psychometric scores

	Total sample (n = 112)		CPD (n = 38)		NCPD (n = 74)		CPD (n = 38) vs NCPD (n = 74)		
	Mean	SD	Mean	SD	Mean	SD	P^a	Student *t*	*df*
Age at onset	27.1	7.5	23.2	5.2	29.1	7.7	.000	4.2	110
BDI	18.9	10.0	23.0	9.6	16.8	9.6	.002	−3.2	110
STAI	52.7	8.6	57.3	6.8	50.4	8.4	.000	−4.3	110
GAF	55.4	8.2	50.1	7.3	58.1	7.3	.000	5.4	110
PAS	25.8	8.8	30.7	8.7	23.2	7.7	.000	−4.6	110

[a] Significance of the difference between patients with panic disorder and comorbid personality disorders (CPD) as compared with those of without comorbid personality disorders (NCPD).

38 (33.9%) with any personality disorder, 23 (20.5%) with more than 1 personality disorder, 8 (7.1%) with any cluster A personality disorder, 26 (23.2%) with any cluster B personality disorder, 28 (25%) with any cluster C personality disorder, 17 (15.2%) with histrionic personality disorder, 16 (14.3%) with borderline personality disorder, 8 (7.1%) with narcissistic personality disorder, 10 (8.9%) with avoidant personality disorder, 8 (7.1%) with dependent personality disorder, and 13 (11.6%) with obsessive compulsive personality disorder. Fourteen patients (12.5%) had a history of sexual abuse, 11 (9.8%) had attempted suicide, 40 (35.7%) had suicidal thoughts, and 73 (65.2%) had agoraphobia.

3.2. Comparison of comorbid personality disorders with panic disorder based on the presence of comorbid Axis I psychiatric disorders, major depression, a history of sexual abuse, suicide attempt, suicidal thoughts, and agoraphobia

One or more comorbid personality disorders, any cluster C personality disorder, and borderline personality disorder were significantly more prevalent in patients with comorbid Axis I conditions. One or more comorbid personality disorders, any cluster B, any cluster C, histrionic, borderline, or obsessive-compulsive personality disorders were significantly more prevalent in patients with comorbid major depression. One or more comorbid personality disorders, any cluster B, any cluster C, histrionic, borderline, narcissistic, avoidant, or dependent personality disorders were significantly more common in patients with a history of sexual abuse (Table 1).

One or more comorbid personality disorders, any cluster B, paranoid, or borderline personality disorders were significantly more common in patients with a history of suicide attempt. One or more comorbid personality disorders, any cluster B, any cluster C, histrionic, borderline, narcissistic, avoidant, dependent, or obsessive-compulsive personality disorders were significantly more prevalent in patients with suicidal thoughts. More than 1 comorbid personality disorder, borderline personality disorder, or narcissistic personality disorder were significantly more common in patients with agoraphobia (Table 2).

Table 4
Comorbid personality disorders and major depression as predictors of suicide attempt, suicidal thoughts, sexual abuse, and early age at onset (n = 112)

	Wald test (*df*)	*P*	*R*	
Paranoid personality disorder	3.88 (1)	.04	0.161	Suicide attempt
Borderline personality disorder	6.15 (1)	.01	0.240	
Major depression	20.01 (1)	.000	0.351	Suicidal thoughts
Avoidant personality disorder	7.25 (1)	.007	0.189	
Borderline personality disorder	12.86 (1)	.000	0.358	Sexual abuse
Borderline personality disorder	13.81 (1)	.000	0.351	Early onset (23 patients <20 years old)

3.3. Comparison of comorbid personality disorders with panic disorder based on BDI, STAI, GAF, and PAS scores and age at onset in patients with panic disorder

Patients with a comorbid personality disorder had higher BDI ($t = -3.2$, $P = .002$), STAI ($t = -4.3$, $P = .000$), and PAS ($t = -4.6$, $P = .000$) scores. On the contrary, these patients had lower GAF scores ($t = 5.4$, $P = .000$) and had earlier age at onset ($t = 4.2$, $P = .000$) than the patients without any personality disorder (Table 3).

3.4. Results of stepwise logistic regression in patients with panic disorder

Stepwise logistic regression identified 2 predictors of suicide attempt: paranoid and borderline personality disorders. It was found that major depression and avoidant personality disorder were the predictors of suicidal thoughts. Comorbid borderline personality disorder was the predictor of sexual abuse and early age at onset in patients with panic disorder (Table 4).

4. Discussion

It has been found that 38 patients (33.9%) with panic disorder have 1 or more personality disorder. This rate is slightly lower than previously reported [2,3,6-8,24,25].

Comorbid Axis I psychiatric disorders are prevalent in patients with panic disorder. Starcevic et al [9] found high rates of Axis I psychiatric disorders in patients with panic disorder (88.6%). We found similar rates of comorbid Axis I psychiatric disorders in patients with panic disorder

(80.3%). Patients with comorbid Axis I psychiatric disorders had a higher rate of comorbid personality disorders (38.9% to 13.6%) than patients without comorbid Axis I psychiatric disorders. The rate of comorbid depressive disorders was 54.4%. Patients with comorbid depressive disorders had a higher rate of comorbid personality disorders (47.5% to 17.6%) than patients without comorbid depressive disorders. These rates are similar to previous reports [9,26]. Langs et al [3] found that comorbid major depressive disorder is common in patients with panic disorder (41.7%), patients with panic disorder and comorbid depressive disorders had higher rate of comorbid personality disorders (68.6%) than patients with panic disorder but without comorbid personality disorders (40.8%), and there was a significant relation between depressive and personality disorders in patients with panic disorder.

Patients with panic disorder and comorbid personality disorders had more severe anxiety, depression, and agoraphobia symptoms, had earlier ages at onset, and had lower levels of functioning. These results show that comorbid personality disorders are predictors of more severe symptoms in patients with panic disorder. It has been reported that comorbid personality disorders are associated with poor prognosis and insufficient response to treatment [7,10,15,16].

The negative effects of comorbid personality disorders on panic attack symptoms were previously reported. Reich [10] found that cluster B (antisocial, borderline, histrionic, and narcissistic) and cluster C (avoidant, dependent, and obsessive-compulsive) personality disorders are prevalent in patients with panic disorder. Skodol et al [11] found that borderline, avoidant, and dependent personality disorders are common and are associated with chronicity and lower levels of functioning in patients with panic disorder. Major personality characteristics identified in panic/agoraphobic patients were borderline, avoidant, dependent, and histrionic [12,13].

Suicidal ideation and suicide attempts are common in patients with panic disorder [27]. Comorbid depression and personality disorders are related with suicidal ideation and suicide attempts. Cox et al [28] found that whereas 31% of patients with panic disorder had suicidal ideation, only 1 patient (less than 1%) had reported suicide attempt. Warshaw et al [29] reported that 9% of patients with panic disorder had attempted suicide. Factors associated with suicidal behavior were depressive disorders, substance abuse, eating disorders, posttraumatic stress disorder, and personality disorders, as well as early onset of the first anxiety or depressive disorder. Noyes et al [30] followed up 74 patients with panic disorder for 7 years, and 5 reported serious suicide attempts and 3 had completed suicide; more of the serious attempters had personality disorders and coexisting major depression. Starcevic et al [9] reported that panic disorder with agoraphobia was more severe among suicide ideators, and they were significantly more likely to have a personality disorder and more than 1 comorbid Axes I and II disorders. In this study, suicidal ideation and suicide attempts associated with comorbid personality disorders in patients with panic disorder were observed. The rates of suicidal ideation (34.8%) and suicide attempts (9.8%) in subjects with panic disorder in this study are similar to previous reports [28-31].

Which comorbid personality disorders are related to suicidal ideation and suicide attempts in subjects with panic disorder? Friedman et al [31] found that borderline personality disorder is a predictor of suicidality in subjects with panic disorder; suicide attempts were reported by 2% of the patients with panic disorder, compared with 25% of the patients with both panic disorder and borderline personality disorder; in addition, suicidal ideation were reported by 2% of the patients with panic disorder, compared with 27% of the patients with panic disorder and borderline personality disorder. Starcevic et al [9] reported that comorbid cluster C personality disorders have a stronger positive correlation with suicidal ideation than comorbid cluster B personality disorders in subjects with panic disorder. In the present study, it is observed that the predictors of suicide attempt were comorbid paranoid and borderline personality disorders, and the predictors of suicidal ideation were major depression and avoidant personality disorder in subjects with panic disorder.

Some reports have suggested that there may be a link between the experience of physical and sexual abuse in childhood and adolescence and the development of panic disorder in adults [21,32-34]. Moisan and Engels [35] found that 23 reported histories of childhood sexual abuse among 43 women with panic disorder. Stein et al [32] found that childhood sexual abuse is higher among women with anxiety disorders (45.1%) than among comparison women (15.4%) and is higher among women with panic disorder (60.0%) than among women with other anxiety disorders (30.8%). Friedman et al [31] examined the incidence and influence of early traumatic life events in outpatients with panic disorder, other anxiety disorder, major depression, and chronic schizophrenia. They found no significant differences among the 4 diagnostic groups. Across all outpatients groups, a history of physical or sexual abuse was positively correlated to clinical severity. Patients with panic disorder who reported childhood physical or sexual abuse were more likely to be diagnosed with comorbid depression, to have more comorbid Axis I disorders and more severe clinical symptoms, and to report a higher frequency of suicide attempts. Other work supports the role of childhood sexual abuse. Incest victims have high rates of panic disorder, agoraphobia, social and simple phobias, major depression, and alcohol abuse and dependence [36].

In the present contribution, the rate of patients with panic disorder who had a history of childhood sexual abuse was 12.5%. Comorbid borderline personality disorder had a significant relation with childhood sexual abuse. Zanarini et al [37] found 4 significant risk factors for the development of borderline personality disorder: female gender, sexual

abuse by a male noncaretaker, emotional denial by a male caretaker, and inconsistent treatment by a female caretaker. Other studies support that a history of childhood sexual abuse is a significant risk factor for the development of borderline personality disorder [38,39].

Agoraphobia is common in subjects with panic disorder. The rate of agoraphobia was 65.1% in this study. Agoraphobia is more common in early-onset (at or before 20 years old) panic disorder [40]. Panic disorder with agoraphobia has more severe clinical symptoms [41]. In this article, patients with panic disorder and agoraphobia had more borderline and narcissistic personality disorders and more than 1 comorbid Axis II diagnosis than those without agoraphobia.

Early age at onset has been associated with increased clinical severity and comorbidity in panic disorder [40]. We found that comorbid borderline personality disorder was more prevalent in early-onset (at or before 20 years old) panic disorder.

5. Conclusions

In conclusion, this study documents that comorbid personality disorders increase the clinical severity of panic disorder. Patients with comorbid Axis I psychiatric disorders, especially major depression, had higher rate of comorbid personality disorders. Borderline personality disorder may be the predictor of a history of sexual abuse and early onset in patients with panic disorder. Paranoid and borderline personality disorders may be associated with a high frequency of suicide attempts in patients with panic disorder.

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