COMORBİD PERSONALITY DISORDERS IN SUBJECTS WITH PANIC DISORDER: WHICH PERSONALITY DISORDERS INCREASE CLINICAL SEVERITY?

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SUMMARY

Personality disorders are common in subjects with panic disorder. Personality disorders have shown to affect the course of panic disorder. The purpose of this study was to examine which personality disorders effect clinical severity in subjects with panic disorder. This study included 122 adults (71 female, 41 male), who met 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 (SCID-I), the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) and the Panic and Agoraphobia Scale (PAS), Global Assessment Functioning Scale (GAF), Beck Depression Inventory (BDI), and State-Trait Anxiety Inventory (STAI). 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, agoraphobia, different panic attack symptoms, sexual abuse, and early onset of disorders. The rates of comorbid Axis I and Axis II psychiatric disorders were 80.3% and 33.9%, consecutively, in patients with panic disorder. Panic disorder patients with comorbid personality disorders had more severe anxiety, depression and agoraphobia symptoms, and had earlier ages of onset, and lower levels of functioning. The rates of suicidal ideation and suicide attempts were 34.8% and 9.8%, consecutively, in subjects with panic disorder. The rate of patients with panic disorder had a history of childhood sexual abuse was 12.5%. The predictor of sexual abuse was more than one comorbid Axis II diagnosis. The predictors of suicide attempt were comorbid paranoid and borderline personality disorders, and the predictor of suicidal ideation was major depressive disorder in subjects with panic disorder. In conclusion, this study documents that comorbid personality disorders increase the clinical severity of panic disorder. Patients with more than one comorbid Axis II diagnosis had more severe clinical symptoms. Borderline, Cluster B and -with a lower effect- Cluster C personality disorders seem to increase the clinical severity of panic disorder.

Key Words: *Panic Disorder, Personality Disorders*

Introduction

In psychiatry, about one half of all patients have personality disorder, 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% (2-3).

Starcevic et al. (4) found high rates of Axis I and Axis II psychiatric disorders in subjects with panic disorder (88.6% to 48.6%). These rates were higher in subjects with suicidal thoughts (92% to 76.7%). 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 (5) 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 a strong negative association between the outcome of treated panic disorder and the presence of antisocial, borderline,

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histrionic, and narcissistic personality disorders. There was also a mild negative association with avoidant personality disorder. Skodol et al. (6) 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 characterized by chronicity and lower levels of functioning compared with anxiety disorders without personality disorders.

Dammen et al. (7) found that borderline and avoidant personality disorders were significantly more often in patients with panic disorder than in patients without panic disorder. In panic disorder patients, 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. (8) found that the major personality disorders identified in panic/agoraphobic patients were avoidant, dependent, histrionic, and borderline personality disorders.

Personality disorders have shown to affect the course of panic disorder. Individuals with comorbid panic disorder and personality disorder were twice as likely as those panic disorder patients without a personality disorder to have a history of depression, a history of childhood anxiety disorder, and a chronic, unremitting course (9).

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 that was found in subjects with pure panic disorder lower than subjects with panic disorder who had comorbid depressive disorder (40.8% to 68.6%). A significant statistical association was found between personality disorder and depression in subjects with panic disorder. Starcevic et al. (4) reported that suicidal thoughts, comorbid personality disorders (especially cluster C and cluster B) and depression effects the severity of panic disorder. Ball et al. (10) found that the correlates of dissosiative symptoms were severity of depression, social anxiety, and personality disorders in patients with panic disorder.

Subjects with borderline personality disorder had more Axis I psychiatric disorders such as panic disorder with agoraphobia and major depressive disorder than subjects with other personality disorders (11).

The effects of personality disorders on the short-term treatment of panic disorder were examined in a study by Black et al. (12). 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.

Personality disorders are prevalent in subjects with panic disorder. The presence of personality disorders effect 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 effect clinical severity in subjects with panic disorder.

Methods

Subjects

This study was conducted at the Psychiatric Outpatients Clinic of the Medical School of Dicle University. This study included, randomly selected, 122 adults (71 female, 41 male), who met DSM-IV criteria for panic disorder (with or without agoraphobia). 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 (throid tests, EKG, a chest X-ray and a neurological examination conducted on all patients). All subjects gave an informed consent to participate in the study.

Assessment Procedures

Clinical assessment was conducted by an experienced psychiatrist (M.O.) using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) (13), the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) (14) and the Panic and Agoraphobia Scale (PAS) (15), Global Assessment Functioning Scale (GAF) (16), Beck Depression Inventory (BDI) (17), and State-Trait Anxiety Inventory (STAI) (18).

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 (19). In this scale: 1) abuse type (e.g., exposure, fondling and caressing, or

penetration); 2) duration (e.g., single episode or ongoing abuse); and 3) perpetrator (e.g., stranger, distant relative, sibling, or parent) were investigated. Fourteen patients had a history of sexual abuse (twelve female and two male). All patients had a history of fondling and caressing. There was no history of penetration. Frequency of sexual abuse was a few times for three females, 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), siblings (n=8).

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

Statistical analyses

A two-tailed two-sample t-test was used to compare independent variables (mean BDI scores, mean STAI scores, mean GAF scores, mean age of onset, and mean PAO scores) between the patients with or without comorbid personality disorders.

Analyses for categorical variables were performed by chi-square test.

Linear stepwise logistic regression was performed to identify significant predictors of sexual abuse, suicide attempts, suicidal thoughts, agoraphobia, age of onset, and DSM-IV panic attack symptoms seen among patients with comorbid personality disorders. Pearson correlation test was performed to BDI scores, STAI scores, GAF scores, age of onset, and PAS scores.

Results

Patient Characteristics

Comorbid Axis I psychiatric disorders were diagnosed in 90 (80.4%) patients with panic disorder. Sixty (53.6%) patients had comorbid major depression. Comorbid Axis II psychiatric disorders were common in patients with panic disorder. The number and percent of these conditions were 38 (33.9%) with any personality disorder, 23 (20.5%) with more than one 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, 13 (11.6%) with obsessive compulsive personality disorder. A history of sexual abuse was taken from 14 patients (12.5%). Eleven patients (9.8%) attempted suicide, forty patients (35.7%) had suicidal thoughts. Seventythree patients (65.2%) had agoraphobia.

The 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

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

Table 1
The 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

	Patient with comorbid Axis I condition (n= 90)		Patients without comorbid Axis I condition (n= 22)		df=1		Patients with comorbid major depression (n= 60)		Patients without comorbid major depression (n= 52)		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 pers. disorder	35	38.9	3	13.6	5.0	0.025	29	48.3	9	17.3	12.0	0.001	10	71.4	28	28.6	10.0	0.002
More than one comorbid pers. dis.	22	24.4	1	4.5	4.3	0.038	20	33.3	3	5.8	13.0	0.000	9	64.3	14	14.3	18.8	0.000
Any cluster B pers. disorder	24	26.7	2	9.1	NS		22	36.7	4	7.7	13.1	0.000	9	64.3	17	17.3	15.1	0.000
Any cluster C pers. disorder	27	30.0	1	4.5	6.1	0.013	21	35.0	7	13.5	6.9	0.009	9	64.3	19	19.4	13.2	0.000
Paranoid personality disorder	7	7.8	1	4.5	NS		6	10.0	2	3.8	NS		2	14.3	6	6.1	NS	
Histrionic personality disorder	15	16.7	2	9.1	NS		15	25.0	2	3.8	9.7	0.002	5	35.7	12	12.2	5.2	0.022
Borderline personality disorder	16	17.8	0		4.6	0.033	14	23.3	2	3.8	8.6	0.003	7	50.0	9	9.2	16.7	0.000
Narcissistic personality disorder	8	8.9	0		NS		7	11.7	1	1.9	4.0	0.046	3	21.4	5	5.1	4.9	0.027
Avoidant personality disorder	9	10.0	1	4.5	NS		6	10.0	4	7.7	NS		4	28.6	6	6.1	7.6	0.006
Dependent personality disorder	8	8.9	0		NS		6	10.0	2	3.8	NS		3	21.4	5	5.1	4.9	0.027
Obsessive-compulsive pers.dis.	12	13.3	1	4.5	NS		11	18.3	2	3.8	5.7	0.017	3	21.4	10	10.2	NS	

A history of suicide attempt was significantly more common in patients with comorbid one or more personality disorders, any cluster B, paranoid or borderline personality disorders. Suicidal thoughts were significantly more prevalent in patients with comorbid one or more personality disorders, any cluster B, any cluster C, histrionic, borderline, narcissistic, dependent or obsessive-compulsive personality disorder. Agoraphobia was significantly commoner in patients with comorbid more than one personality disorders, borderline or narcissistic personality disorders. Table-2.

The comparison of comorbid personality disorders with panic disorder based on BDI, STAI, GAF, PAO scores, and the age of onset in patients with panic disorder

Patients with a comorbid personality disorder had higher BDI (t=3.21, p=0.002), STAI (t=4.35, p=0.000), PAO (t=4.61, p=0.000) scores; on the contrary lower GAF scores (t=-5.43, p=0.000) and the age of onset (t=-4.21, p=0.000) than the patients without any personality disorder.

Patients with comorbid more than one personality disorders had higher BDI scores (t=3.06, p=0.004), but lower the age of onset (t=-2.92, p=0.006) than patients with comorbid one personality disorder.

Table 2
The 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 agora-phobia (n= 73)		Patients without agora-phobia (n= 39)		df=1	
	n	%	n	%	χ^2	p	n	%	n	%	χ^2	p	n	%	n	%	χ^2	p
Any pers. disorder	7	63.6	31	30.7	4.8	0.028	23	57.5	15	20.8	15.4	0.000	28	38.4	10	26.6	NS	
More than one comorbid pers. dis.	6	54.5	17	16.8	8.6	0.003	17	42.5	6	8.3	18.4	0.000	19	26.0	4	10.3	3.9	0.049
Any cluster B pers. disorder	6	54.5	20	19.8	6.7	0.010	18	45.0	8	11.1	16.6	0.000	20	25.9	6	15.4	NS	
Any cluster C pers. disorder	4	36.3	24	23.8	NS		20	50.0	8	11.1	20.7	0.000	22	30.1	6	15.4	NS	
Paranoid personality disorder	4	36.3	4	3.9	15.7	0.000	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	4.7	0.031	12	16.4	5	12.9	NS	
Borderline personality disorder	6	54.5	10	9.9	16.1	0.000	12	30.0	4	5.6	12.5	0.000	14	19.2	2	5.1	4.1	0.043
Narcissistic personality disorder	2	18.2	6	5.9	NS		6	15.0	2	2.8	5.8	0.016	8	11.0	0		4.6	0.032
Avoidant personality disorder	2	18.2	8	7.9	NS		6	15.0	4	5.6	NS		8	11.0	2	5.1	NS	
Dependent personality disorder	2	18.2	6	5.9	NS		6	15.0	2	2.8	5.8	0.016	7	9.6	1	2.6	NS	
Obsessive-compulsive pers.dis.	1	9.1	12	11.9	NS		9	22.5	4	5.6	7.2	0.007	9	12.3	4	10.3	NS	

Patients with comorbid any cluster B personality disorder had higher PAO scores (t=2.07, p=0.046), but lower the age of onset (t=-2.81, p=0.008) than patients with other comorbid personality disorders.

Patients with comorbid borderline personality disorder had lower GAF scores (t=-2.75, p=0.009) and the age of onset (t=-3.62, p=0.001) than patients with other comorbid personality disorders. Table-3.

Table 3
Mean BDI, STAI, GAF, PAS scores and the age of onset in patients with panic disorder who had comorbid personality disorders.

	BDI	STAI	GAF	PAS	The age of onset
More than one personality disorders	26.5± 9.6	57.5± 6.5	49.8± 7.0	32.1± 8.9	21.4± 4.8
Any personality disorder	23.0± 9.7	57.4 ± 6.9	50.1 ± 7.4	30.7 ± 8.8	23.3 ± 5.2
Any cluster B personality disorder	24.7 ± 9.6	56.7 ± 6.7	50.0 ± 7.5	32.7 ± 8.0	21.8 ±5.0
Any cluster C personality disorder	23.0 ± 9.7	57.7 ± 6.6	49.6 ± 5.9	31.0 ± 9.2	23.6± 5.1
Paranoid personality disorder	24.1±1. 2.5	59.4 ± 6.8	49.4 ± 8.6	29.6 ± 10.9	21.2 ± 4.5
Histrionic personality disorder	25.7± 10.3	56.1 ± 7.4	51.2 ± 8.4	31.4± 7.7	22.5 ± 5.2
Borderline personality disorder	26.2± 9.7	58.3 ± 6.1	46.6 ± 5.4	33.8± 8.1	20.1 ± 4.7
Narcissistic personality disorder	26.1 ± 11.9	56.1 ± 6.7	51.2 ± 7.4	34.1 ± 7.5	21.5 ± 4.5
Avoidant personality disorder	22.6 ± 9.7	59.4 ± 6.8	49.5 ± 5.5	32.3 ± 8.2	21.8 ± 4.8
Dependent personality disorder	24.1 ± 10.0	59.5 ± 7.1	48.1 ± 3.7	35.8 ± 7.4	23.1 ± 5.7
Obsessive-compulsive personality disorder	23.5 ± 11.1	57.1 ± 7.0	50.8 ± 7.0	28.0 ± 11.2	24.8 ± 4.7
All patients	18.9 ± 10.1	52.8 ± 8.6	55.4 ± 8.2	25.8 ± 8.8	27.1 ± 7.5

The comparison of comorbid personality disorders with panic disorder based on distribution of DSM-IV panic attack symptoms in patients with panic disorder

Trembling or shaking was more frequent in patients with comorbid any personality disorder than the other patients with panic disorder (χ^2 =4.96, p=0.026). The fear of losing control was more frequent in patients with comorbid more than one personality disorders (χ^2=6.85, p=0.009), paranoid (χ^2 =3.92, p=0.048), or narcissistic personality disorder (χ^2=3.92, p=0.048) than other patients with panic disorder. Trembling or shaking (χ^2=6.59, p=0.010) and shortness of breath (χ^2 =4.00, p=0.045) were more frequent in patients with comorbid cluster B personality disorder than the other patients with panic disorder. Trembling or shaking (χ^2=8.84, p=0.003), derealization-depersonalization (χ^2=6.96, p=0.008), and the fear of losing control (χ^2=5.43, p=0.020) were more frequent in patients with comorbid borderline personality disorder than other patients with panic disorder. Table-4.

Table 4
The distribution of DSM-IV panic attack symptoms in patients with panic disorder with comorbid personality disorders (in percent)

	Palpitation	Sweating	Trembling or shaking	Shortness of breath	Feeling of choking	Chest pain	Nausea	Dizziness	Derealization	Fear of losing control	Fear of dying	Paresthesias	Chills of hot flushes
More than one personality disorder	91.3	73.9	82.6	87.0	78.3	87.0	69.6	82.6	60.9	91.3*	95.7	87.0	73.9
Any personality disorder	86.8	76.3	81.6*	92.1	71.1	86.8	60.5	76.3	50.0	76.3	97.4	65.8	68.4
Any cluster B pers. dis.	92.3	73.1	88.5*	88.5	80.8*	92.3	57.7	76.9	57.7	80.8	96.2	76.9	69.2
Any cluster C pers. dis.	89.3	78.6	78.6	89.3	67.9	82.1	67.9	78.6	57.1	78.6	96.4	71.4	71.4
Paranoid pers. dis.	75.0	87.5	75.0	87.5	75.0	87.5	75.0	75.0	50.0	100.0*	100.0	62.5	75.0
Histrionic pers. dis.	94.1	70.6	82.4	88.2	82.4	94.1	58.8	76.5	47.1	76.5	100.0	64.7	58.8
Borderline pers. dis.	93.8	75.0	100.0*	87.5	81.3	87.5	62.5	75.0	75.0*	93.8*	93.8	87.5	81.3
Narcissistic pers. dis.	100.0	75.0	87.5	87.5	87.5	87.5	50.0	75.0	62.5	100.0*	100.0	87.5	87.5
Avoidant pers. dis.	100.0	60.0	80.0	100.0	70.0	90.0	70.0	90.0	60.0	80.0	100.	80.0	60.0
Dependent pers. dis.	87.5	87.5	87.5	100.0	62.5	87.5	50.0	62.5	75.0	75.0	87.5	62.5	75.0
Obsessive-compulsive pers. dis.	84.6	84.6	76.9	76.9	69.2	76.9	76.9	84.6	53.8	84.6	100.0	76.9	76.9
All patients	90.2	70.5	67.9	90.2	64.3	84.8	66.1	76.8	44.6	68.8	93.8	71.4	64.3

The results of stepwise logistic regression in patients with panic disorder

Stepwise logistic regression identified three predictors of suicide attempt: paranoid personality disorder, borderline personality disorder and major depression. It was found that major depression was the predictor of suicidal thoughts, agoraphobia and dizziness; more than one comorbid personality disorders were the predictors of sexual abuse or the fear of losing control; comorbid borderline personality disorder was the predictor of early onset, derealization-depersonalization or shaking-trembling; comorbid Cluster B personality disorder was the predictor of shortness of breath. Table-5.

Table 5
The results of stepwise logistic regression in patients with panic disorder

	B	SE	P	t	Relative Risk	
Paranoid personality disorder	0.384	0.105	0.000	3.655	0.332	
Borderline personality disorder	0.249	0.079	0.002	3.154	0.293	Suicıde attempt
Major depression	0.110	0.084	0.034	2.149	0.184	
Major depression	0.237	0.093	0.012	2.552	0.236	Suicidal thoughts
Major depression	0.333	0.086	0.000	3.890	0.348	Agoraphobia
More than one comorbid Axis II diagnosis	0.335	0.071	0.000	4.706	0.409	Sexual abuse
Borderline personality disorder	0.563	0.096	0.000	5.852	0.487	Early onset (23 patients <20 age)
Borderline personality disorder	0.354	0.131	0.008	2.700	0.249	Derealization-depersonalization
Borderline personality disorder	0.375	0.122	0.003	3.071	0.281	Trembling or shaking
Any Cluster B personality disorder	0.215	0.106	0.046	2.020	0.189	Shortness of breath
Major depression	0.186	0.079	0.020	2.356	0.219	Dizziness
More than one comorbid personality disorder	0.289	0.106	0.009	2.678	0.247	Fear of losing control

Pearson correlations between BDI, STAI, GAF, PAS scores and the age of onset in patients with panic disorder BDI scores were correlated with STAI and PAS scores, and inversely correlated with the age of onset in patients with panic disorder.

STAI scores were inversely related to the GAF scores and the age of onset; GAF scores were related to the age of onset, and inversely related to the PAS scores. The ages of onset were inversely correlated with PAS scores. Table-6.

Table 6
Pearson correlations between BDI, STAI, GAF, PAS scores and age of onset in patients with panic disorder

	STAI	GAF	Age of onset	PAS
BDI	0.272	-0.173	-0.281	0.305
	p=0.004	p=0.068	p=0.003	p=0.001
STAI		-0.242	-0.287	0.165
		p=0.010	p=0.002	p=0.083
GAF			0.348	-0.268
			p=0.000	p=0.004
Age of onset				-0.218
				p=0.021

The comorbidity of Axis II diagnoses

There was no single comorbid personality disorder in patients with borderline or narcissistic personality disorder. All patients with comorbid personality disorders had about two or three comorbid personality disorders. Table-7.

Table 7
The comorbidity of Axis II diagnoses

	Single comorbid personality disorder	Two comorbid personality disorders	Three comorbid personality disorders	Four or more comorbid personality disorders
Paranoid personality disorder	1	2	3	2
Histrionic personality disorder	5	3	6	3
Borderline personality disorder	-	5	7	4
Narcissistic personality disorder	-	1	4	3
Avoidant personality disorder	3	3	4	-
Dependent personality disorder	3	1	2	2
Obsessive-compulsive personality disorder	3	5	1	4

Discussion

It has been found that 38 (33.9%) patients with panic disorder have one or more personality disorder. This rate is slightly lower than previously reported (2,3, 20, 21).

Comorbid Axis I psychiatric disorders are prevalent in patients with panic disorder. Starcevic et al. (4) found high rates of Axis I psychiatric disorders (%88.6) in patients with panic disorder. We found similar rates of comorbid Axis I psychiatric disorders (80.3%) in patients with panic disorder. Patients with comorbid Axis I psychiatric disorders had higher rate of comorbid personality disorders (38.9% to 13.6%). The rate of comorbid depressive disorders was 53.6%. Patients with comorbid Axis I psychiatric disorders had higher rate of comorbid personality disorders (48.3% to 17.3%). These rates are similar to previously reported (4, 22). Langs et al. (3) found that comorbid major depressive disorder is common in patients panic disorder (41.7%), panic disorder patients with comorbid depressive disorders had higher rate of comorbid personality disorders than panic disorder patients without comorbid personality disorders (68.6% to 40.8%), and there was a significant relation between depressive disorders and personality disorders in patients with panic disorder.

Panic disorder patients with comorbid personality disorders had more severe anxiety, depression and agoraphobia symptoms, had earlier ages of onset, and had lower levels of functioning.

These results show that comorbid personality disorders are the predictors of more severe symptoms in patients with panic disorder. It has been reported that comorbid personality disorders associated with poor prognosis and insufficient response to treatment (5, 12). Another result of our study was that panic disorder patients with more than one comorbid personality disorders had more severe panic symptoms. Panic disorder patients with comorbid Cluster B personality disorders had lower ages of onset and higher panic-agoraphobia scores than patients with other comorbid personality disorders. Patients with comorbid borderline personality disorder had lower age of onset and lower levels of functioning than patients with other comorbid personality disorders.

The negative effects of comorbid personality disorders on panic attack symptoms were previously reported. Reich (5) found that Cluster B (antisocial, borderline, histrionic, narcissistic) and Cluster C (avoidant, dependent, and obsessive-compulsive) personality disorders are prevalent in patients with panic disorder. Skodol et al. (6) found that borderline, avoidant, and dependent personality disorders are common, and 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 (7,8).

Suicidal ideation and suicide attempts are common in patients with panic disorder (23). Comorbid depression and personality disorders are related with suicidal ideation and suicide attempts. Cox et al. (24) found that whereas 31% of patients with panic disorder had suicidal ideation, only one patient (less than 1%) had reported suicide attempt. Warshaw et al. (25) reported 9% of patients with panic disorder had attempted suicide. Factors associated with suicidal behavior were depressive disorders, substance abuse, eating disorders, PTSD and personality disorders as well as having early onset of the first anxiety or depressive disorder. Henriksson et al. (26) reported that the prevalence of panic disorder was higher among female than male suicides, and suicide in people with panic disorder was associated with superimposed major depression, substance abuse and personality disorders. Noyes et al. (27) followed up 74 panic disorder subjects for 7 years, five reported serious suicide attempts and three had completed suicide; more of the serious attempters had personality disorders and coexisting major depression. Starcevic et al. (4) reported that the severity of panic disorder with agoraphobia was greater among suicide ideators, and they were significantly more likely to have a personality disorder and more than one comorbid Axis I and Axis II disorder. In this study suicidal ideation and suicide attempts associated with comorbid personality disorders in patients with panic disorder was observed. Depression was identified as a predictor of suicidal ideation and suicide attempts. The rates of suicidal ideation (34.8%) and suicide attempts (9.8%) in subjects with panic disorder those found in this study are similar to previously reported.

Which comorbid personality disorders are related to suicidal ideation and suicide attempts in subjects with panic disorder? Friedman et al. (28) 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 to 25% of the patients with both panic disorder and borderline personality disorder; in addition, 2% of the patients with panic disorder, compared to 27% of the patients with panic disorder and borderline personality disorder. Starcevic et al. (4) 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 predictor of suicidal ideation was major depressive 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 (15, 29). Moisan and Engels (30) found that 23 reported histories of childhood sexual abuse among 43 women with panic disorder. Stein et al. (29) 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. (28) 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 four diagnostic groups. Across all outpatients group 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, more severe clinical symptoms as well as reporting a greater history 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 (31).

In the present contribution, the rate of patients with panic disorder which has a history of childhood sexual abuse was 12.5%. The predictor of sexual abuse was comorbid more than one Axis II diagnosis. Comorbid borderline personality disorder had a significant relation with childhood sexual abuse. Zanarini et al. (32) found four significant risk factors for the development of borderline personality disorder: female gender, sexual abuse by a male noncaretaker, emotional denial by a male caretaker, inconsistent treatment by a female caretaker. Other study support that a history of childhood sexual abuse a significant risk factor for the development of borderline personality disorder (33).

Agoraphobia is common in subjects with panic disorder. The rate of agoraphobia was 65.18% in this study. Agoraphobia is more common in early onset (at or before 20 years old) panic disorder (34). Panic disorder with agoraphobia has more severe clinical symptoms (35). In the present paper, panic disorder patients with agoraphobia had more borderline, narcisistic personality disorder and more than one comorbid Axis II diagnosis than those without agoraphobia.

Early age at onset has been associated with increased clinical severity, and comorbidity in panic disorder (34). We found that some comorbid personality disorders (any, more than one, Cluster B, and borderline personality disorders) were more prevalent in early onset (at or before 20 years old) panic disorder.

Dissociative symptoms were correlated with comorbid Cluster B personality disorders in patients with panic disorder (10). Depersonalization and derealization symptoms were more prevalent in patients had earlier onset of panic disorder (36). Subjects with Cluster B personality disorders primarily use immature defence mechanisms, such as, denial, dissociation, and conversion (37). It has been observed that derealization and depersonalization symptoms in panic attacks were more prevalent in subjects with comorbid borderline disorder than those with other comorbid personality disorder. The predictor of derealization-depersonalization symptoms was borderline personality disorder.

We found that the pattern of panic attack symptoms may differ in subjects with comorbid personality disorder. Trembling or shaking were more common in comorbid any, Cluster B and borderline personality disorders; shortness of breath was more common in comorbid Cluster B personality disorders; fear of losing control was more common in comorbid more than one, paranoid, borderline, and narcisistic personality disorders. Some authors studied the relation between symptom pattern and age of onset in patients with panic disorder. Segui et al. (38) reported that shortness of breath, palpitation, chest pain, sweating, derealization-depersonalization, paresthesias, fear of dying and trembling or shaking were more prevalent in patients with panic disorder had an age at onset earlier than 60 years old.

Conclusions

In conclusion, this study documents comorbid personality disorders increases the clinical severity of panic disorder. Patients with more than one comorbid Axis II diagnosis had more severe clinical symptoms. Although patients with panic disorder usually had multiple comorbid personality disorders and it is difficult to find which comorbid personality disorders effect the clinical severity of panic disorder; borderline, Cluster B and -with a lower effect- Cluster C personality seem to increase the clinical severity of panic disorder.

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