

The Assessment of MMPI in Panic and Somatisation Disorders: A Comparative Study



Emel Koçer, Adnan Özçetin, Celalettin İçmeli, Ahmet Ataoğlu

Düzce University, Düzce Medical Faculty, Psychiatry Department, Düzce-Turkey

Eur J Gen Med 2010;7(1):81-87

ABSTRACT

Aim: We aimed to investigate the relationship between anxiety disorders and somatisation disorders described in ICD-10 within the title of neurotic disorders, and the personality characteristics related to both groups.

Method: Fifty-eight individuals who were either have DSM-IV panic disorder (PD) and or somatisation disorder (SD) completed the Minnesota Multiple Personality Inventory (MMPI). Intergroup differences of MMPI scores and personality disorders were analyzed.

Result: The scores obtained from the clinical subscales of PD (n:28) and SD patients (n:30), and in the MMPI test were similar in comparison. The differences between the MMPI scores of PD and SD patients were statistically significant regarding the passive-aggressive personality disorder, avoidant personality disorder, borderline personality disorder and obsessive-compulsive personality disorder scores. The mean values of the study conducted in a Turkish population sample were used as cut-points, the results were greater than normal in the psychastenia and depression subtest scores in group PD, and in deny subtest in group SD ($p<0.01$).

Conclusion: The findings were compatible with those in the literature. All of these personality disorders above-mentioned and found high in PD with an exception of the borderline personality disorder share high comorbidity with neuroticism. However, comparative studies following treatment are required whether these characteristics are related to the personality structure or the nature of PD.

Key words: MMPI, Panic disorder, Somatisation disorder, Personality, Scale

Correspondence: Emel Koçer, MD
Düzce University, Düzce Medical Faculty, Psychiatry Department, Düzce-Turkey.

Phone : +905056229293

E-mail: dremelkocer@yahoo.com

INTRODUCTION

Personality characteristics and correlated defense mechanisms have important roles in the cause and outcome of the development of psychiatric disorders. However, it is not fully known which personality characteristic causes tendency to which psychiatric disorder. The reason why similar stress factors trigger signs and symptoms through physiological mechanisms in some people while through mechanisms that are not physiological or organic is yet not fully explained.

In this study, we aimed to investigate the relationship between anxiety disorders and somatoform disorders, which developmentally appear as two different branches among the neuroses but are described in ICD-10 within the title of neurotic disorders, and the personality characteristics related to both groups (1). In DSM-IV, these two groups are described under two different titles, and have never been compared in any study (2). In order to overcome diagnostic confusion, we have conducted our study in two subgroups, in which the clinical pictures are clear in both diagnostic groups. Evaluated according to the DSM-IV diagnostic criteria, the patients were divided into the Panic Disorder (PD) and Somatization Disorder (SD) groups. The patients in both groups were evaluated according to their personalities and characteristics using the Minnesota Multiple Personality Inventory (MMPI), the reliability and validity of which have been assessed by Işık Savaşır et al in the Turkish population (3). The scores and differences that have been obtained were compared regarding statistical significance. The answers to the following questions were sought: "Is there a difference between PD and SD patients regarding personality characteristics, or are these two groups' indeed different entities of each other with different clinical presentation?"

MATERIAL AND METHODS

Subjects

Subjects were 58 individuals who presented to the Psychiatry Outpatient Clinics of Düzce Medical Faculty Research Hospital and completed the MMPI. All subjects were older than fifteen and had a result of >80 from IQ test. All participating subjects have a DSM-IV PD or SD diagnosis. Subjects were grouped according to diagnosis. Group 1 contained subjects diagnosed with PD (n = 28). Group 2 consisted of subjects with SD diagnosis (n= 30). Measures and Procedure

Subjects were interviewed by an advanced clinical

psychiatrist (EK) according to the DSM-IV. At the conclusion of the diagnostic interview, the subjects were given the MMPI as part of the assessment package. The entire 566 items were administered in an individual assessment format. The conductor of this study read the MMPI items for two subjects who did not know neither reading nor writing. The mean values of the study conducted by Işık Savaşır in a Turkish population sample were used as cut-points (3). Subsequently, each of the answer sheets was hand-scored and the results entered onto computer disks from which all-additional analyses were accomplished. Data analyses relied on raw scores on the MMPI. K-corrections were utilized. Intergroup differences of MMPI scores and personality disorders were analyzed.

Statistical analysis

The numeric sociodemographic variables were compared between cases and controls using independent t-tests. Means for each subtests and scales were compared using Man-Whitney U, Chi-square and Kruskal Wallis tests. The correlation analyzes (Spearman's test) were used for comparison of subtest results in each group. P value lower than 0.05 was accepted as significant.

RESULTS

The sociodemographic data of our patients are displayed in detail in Table 1. There were no differences between groups regarding sex, age distribution and marital status. When evaluated with regard to their educational status, PD patients were found to be statistically more educated than SD patients were ($p<0.05$).

When the scores obtained from the clinical subscales of PD and SD patients were compared, no significant difference was found at all ($p>0.05$). Likewise, the subscale scores obtained in the MMPI test were similar (Table 2). However, when the same evaluation was conducted with the personality subtests, the differences between the MMPI scores of PD and SD patients were statistically significant regarding the passive-aggressive personality disorder, avoidant personality disorder, borderline personality disorder and obsessive-compulsive personality disorder scores (Table 3).

The distributions of the MMPI subtest scores and the results of the nonparametric analyses in which the mean values of the study conducted by Işık Savaşır (3) in a Turkish population sample were used as cut-points are displayed in Table 4.

Table 1. Comparison of study groups in the aspects of sociodemographic variables

Variable	Group		Total	p value
	PD	SD		
Age (year)	Mean±S.D.	37.03±10.42	42.63±11.66	39.93±11.34
Gender	<i>Male</i>	10	6	16
	<i>Female</i>	18	24	42
Education level	<i>Subjects who do not know reading</i>	0	2	2
	<i>Subject who knows reading</i>	1	6	7
	<i>Primary and secondary school</i>	14	14	28
	<i>High school</i>	8	5	13
	<i>University</i>	5	3	8
Marital status	<i>Married</i>	21	24	45
	<i>Single</i>	5	2	7
	<i>Wise</i>	0	3	3
	<i>Divorced</i>	2	1	3

Statistically significant differences between the PD and SD groups were found in deny, depression and psychastenia subtests. The results were greater than normal in the depression and psychastenia subtests in group PD, and in the deny subtest in group SD.

Another finding was that despite the lack of a difference between groups, both the avoidant personality disorder and narcissistic personality disorder scores were the greatest scores in all members of both diagnostic groups.

Table 2. Comparison of the scores obtained from the clinical subscales of PD and SD patients

Clinical subscales	PD Group	SD Group	t score	p value
	Mean ± S.D.	Mean ± S.D.		
Lying	5.96 ± 2.39	6.86 ± 2.25	-1.442	.149
Validity	11.28 ± 5.42	13.40 ± 5.49	-1.483	.138
Deny	9.92 ± 3.57	10.66 ± 4.16	-0.672	.501
Hypochondriasis	22.31 ± 5.17	22.78 ± 5.08	-0.265	.791
Depression	30.17 ± 5.24	28.90 ± 5.83	-1.092	.275
Hysteria	29.71 ± 5.82	30.03 ± 5.34	-0.016	.988
Psychopathic deviate	26.98 ± 4.35	25.14 ± 5.25	-1.335	.166
Masculinity-Femininity	0.60 ± 3.21	4.80 ± 11.22	-1.678	.093
Paranoia	14.00 ± 3.25	14.56 ± 4.91	-0.313	.754
Psychastenia	36.46 ± 5.86	34.30 ± 5.64	-1.313	.190
Schizophrenia	34.53 ± 7.43	36.70 ± 8.20	-1.084	.279

Table 3. Comparison of the scores obtained from the subtests related to personality disorders in PD and SD patients

Personality disorder type	PD Group Mean ± S.D.	SD Group Mean ± S.D.	t score	p value
Paranoid	8.21 ± 2.43	7.90 ± 3.03	-0.196	.845
Schizoid	6.67 ± 3.03	7.20 ± 3.57	-0.966	.334
Schizotypal	12.17 ± 4.38	12.90 ± 3.86	-0.977	.328
Antisocial	8.25 ± 2.81	7.70 ± 3.03	-0.927	.354
Borderline	12.53 ± 3.80	10.40 ± 3.65	-1.969	.049
Histrionic	11.57 ± 2.91	10.60 ± 2.60	-1.397	.162
Narcissistic	17.50 ± 3.72	15.73 ± 3.81	-1.861	.063
Avoidant	18.73 ± 5.30	16.36 ± 4.15	-2.037	.042
Dependent	8.28 ± 4.27	7.30 ± 3.22	-0.571	.568
Obsessive-compulsive	10.53 ± 2.09	9.30 ± 2.43	-2.195	.028
Passive-aggressive	8.07 ± 2.76	6.63 ± 2.20	-2.053	.040

DISCUSSION

The Axis-I disorders, which are classified by the recent classification systems within various diagnostic groups such as the anxiety disorders, dissociative disorders, and somatoform disorders, were classified in the older classifications within the title of neuroses (2,4). Despite this classification is not preferred currently, it is within the current issues of debate that a general neurotic syndrome is present and neuroticism is related to neurotic disorders (5,6). Novel approaches on the bases of neuroses adopt the idea that the anxiety disorders and other neurotic disorders share many common properties. The similarities between the neurotic disorders share various common causes, the most significant of which

is the tendency to be excited abruptly and excessively under stress (7,8). Likewise, Zinbarg, Barlow and Spence have reported the presence of a general superstructure that dissociates the healthy from unhealthy, while they have stressed that many subfactors contribute to the dissociation of patient groups within themselves (9-11). In our study, no statistically significant difference was found in the clinical subtests when the MMPI profiles of PD and SD, which we have chosen as prototypes among neurotic patient groups, were compared. Despite the lack of significant difference, we have found increments in all of the hypochondriasis, depression and hysteria subtests, displaying neuroticism in both the PD and SD groups, and this finding was compatible with those in

Table 4. The distributions of the MMPI subtest scores and the results of the nonparametric analyses.

MMPI subtest scores over cut-off value	Group				Total		p value
	PD		SD		n	%	
	n	%	n	%	n	%	
Lg	13	46.4	18	60.0	31	53.4	0.30
Fg	16	57.1	15	50.0	31	53.4	0.58
Kg	4	14.3	13	43.3	17	29.3	0.015
Hsg (1)	19	67.9	20	66.6	39	67.2	0.92

the literature, in which neuroticism was reported to be high in PD and SD (12-14).

The personality characteristics that are prominent in PD and SD differ in various studies. Stern et al have found the personality disorder rate to be 36% in all of the anxiety disorders, while it was 72% in SD (15). Koenisberg et al (16) have reported that the Axis I diagnosis with the highest frequency of personality disorders was PD, with a personality disorder frequency of 50%, while the most commonly encountered personality disorders were dependent, borderline and histrionic personality disorders. On the other hand, Reich et al (17) have demonstrated that the rate of personality disorders depends on the scale being employed, and the most common diagnosis was within the anxious cluster (cluster C) and was particularly the dependent personality disorder. In SD, the most commonly encountered personality disorders were the avoidant, paranoid, self-defending, obsessive-compulsive, histrionic and antisocial personality disorders (18). These differences may arise from the difference of the personality tests and diagnostic criteria that have been used, but also might source from negligence of the comorbidity (19). In this study, instead of evaluating them separately, we have compared SD and PD and have found significantly higher rates of borderline, obsessive-compulsive, avoidant and passive-aggressive personality disorders in PD cases. All of these personality disorders except the borderline personality disorder others belong to the cluster C, which is also known as the anxious cluster, and have clinical pictures sharing high comorbidity with neuroticism (20,21). Among the cognitive-behavioral approaches, the most commonly adopted one about the development of PD is the 'anxiety sensitivity' theory, which has been shown to correlate positively with the personality disorders in cluster C (21). It has been suggested that the patients with PD misperceive harmless somatic sensitizations due to their high sensitivity to anxiety (22). This connection between PD and the personality structures within cluster C might also be the case in our samples. Our findings suggest that the infrastructural factors that dissociate PD from SD, both of which appear to be neurotic disorders, may be the personality disorders or characteristics, and these indeed might be the personality structures of the cluster C. In our study, it is difficult to explain how the borderline personality, which is among the cluster B personality structures, has separated from its own cluster and become prominent like the cluster C. Although a positive correlation has also been found with sensitivity to anxiety for the cluster B (21), the main

correlation is expected to arise from a characteristic that is shared with the cluster C but differs from cluster B. At this point, it might be useful to refer to the emphasis made by Mavissakalian on the affective instability in borderline personality (23).

The other findings we have found in our study were that, when the mean values established in the study conducted by İşık Savaşır (3) in a sample of Turkish population were regarded as the cut-points, the denial score was higher in SD, while the psychastenia and depression scores increased together in PD. The obsessive-compulsive personality characteristics, which were formerly named psychastenia, were more prominent in the patients with PD. Our results were compatible with those of Brooks et al (24), who have suggested that the perfectionist personality and PD correlate. The higher depression scores of our patients with PD, being the reflection of a subclinical affect, might influence the other clinical and personality subtest scores. It has been reported in previous studies that the personalities from cluster C, particularly the avoidant and dependent personalities, are affected by the levels of anxiety and depression, and therefore are encountered more commonly than they actually exist (25). Besides, the avoidant and narcissistic personalities have scores above the community means in both groups in our study. This does not mean that all have personality disorders; however, whatever the levels of their sources are, patients with PD and SD might be experiencing both the narcissistic fragility and intensive avoidance together. While the intensive avoidance experienced by PD patients (with or without agoraphobia) can be explained by their disease, the somatized complaints in SD patients might already be conducting this function without naming it. On the other hand, the significantly high K scores in SD patients reflect the level of denial and defensiveness in these individuals (26). Besides, the fact that our patients did not have high scores in the lying subtest reflects that the denial and defensiveness is not conscious but sources from subconscious processes. For further comments, cross-validity studies of all subtests among each other and with all diagnostic groups should be conducted.

In conclusion, PD and SD display a common neurotic structure. However, depressive and obsessive characteristics, cluster C personality disorders, and borderline personality disorder have been found to be higher in PD than SD. On the other hand, denial and defensiveness were more common in SD. The higher scores of cluster C in PD have been attributed to the

high sensitivity to anxiety. The high denial rate has been correlated with the chronic nature of SD and the suggestion that somatization might be learned as a defense mechanism in the early phases of psychosexual development.

In our study, the features related to personality structure have been highlighted. However, as these personality characteristics (such as avoidant, dependent, and obsessive-compulsive) might develop secondary to panic attacks, comparative studies to be conducted in the recovery period of PD following treatment are required for understanding whether these characteristics are related to the primary personality structure of the patient or the nature of PD.

REFERENCES

1. ICD-10. International Statistical Classification of Diseases and Related Health Problems, Tenth revision.
2. DSM-IV-TR. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision. American Psychiatric Publishing, 2000.
3. Savaşır I: MMPI Handbook (Standardized for Turkish population). Sevinç Press, Ankara, 1981.
4. Zimmerman M, Spitzer RL. Psychiatric classification. In: Turkish Translation of Sadock VA & Sadock BJ (Ed.), Comprehensive Textbook of Psychiatry, 8th edition, New York: W&W Waverly Company, 2005, Part 9, by Aydin H & Bozkurt A. Ankara: Güneş Company, 2007, pp 1003-1033.
5. Kendler KS. Major depression and generalised anxiety disorder. Same genes (partly) different environments-revisited. Br J Psychiatry 1996; 30:68-75.
6. Andrews G, Steward GW, Morris-Yates A. Evidence for a general neurotic syndrome. Br J Psychiatry 1990;157:6-12.
7. Andrews G. Comorbidity and the general neurotic syndrome. Br J Psychiatry 1996;30:76-84.
8. Cassano GB, Michelini S, Shear MK. The panic-agoraphobic spectrum: a descriptive approach to the assessment and treatment of subtle symptoms. Am J Psychiatry 1997;154:27-38.
9. Zinbarg RE, Barlow DH. The structure of anxiety and the anxiety disorder: a hierarchical model. J Abnorm Psychol 1996;105:181-93.
10. Spence SH, Rapee R, McDonakj C, Ingram M. The structure of anxiety symptoms among preschoolers. Behav Res Ther 2001;39:1293-316.
11. Spence SH. The structure of anxiety symptoms among children: a confirmatory factor-analytic study. J Abnorm Psychol 1997;106:280-97.
12. Guggenheim FG, Smith GR. Somatoform disorders. In: Kaplan HI, Sadock BJ(Ed.), Comprehensive Textbook of Psychiatry, 6th edition. New York: W&W Waverly Company, 1994, Part18,pp 1259.
13. Borden JW, Clum GA, Broyles SE. MMPI Correlates of Panic Disorder and Panic Attacks. Journal of Anxiety Disorders 1989;3:107-15.
14. Ceyhun B, Gürçan F. The assesment of MMPI subtests and Wiggins' scales in neurotic patients. The 25th National Psychiatry and Neurological Sciences Congress, Congress Book, Mersin, 1989, pp 165-75.
15. Stern J, Murphy M, Bass C. Personality disorders in patients with somatisation disorder. A controlled study. Br J Psychiatry 1993;163:785-9.
16. Koenisberg HW, Kaplan RD, Gilmore MM. The relationship between syndrome and personality disorder in DSM-III: experience with 2462 patients. Am J Psychiatry 1985;142: 207.
17. Reich J, Noyes RJr, Troughton E. Dependent personality disorders associated with phobic avoidance in patients with panic disorder. Am J Psychiatry 1987;142:207.
18. Abbey SE. Somatisation and somatoform disorders. In: Rundell JR, Wise MG(Ed.) Textbook of Consultation-Liasion Psychiatry. London: APP,1996,pp 369-401.
19. Van Velzen CJM, Emmelkamp PMJ. The relation between anxiety disorders and personality disorder: Prevalance rates and comorbidity models. In: Derkzen, Maffei JC and Groen H(Eds.), Treatment of Personality Disorders. New York: 1999, pp 129-53.
20. Tyrer P, Seivewright H, Johnson T. The core elements of neurosis: mixed anxiety-depression and personality disorder. J Pers Dis 2003;17:129-38
21. Lilienfeld SO, Pena S. Anxiety sensitivity: relations to psychopathy, DSM-IV personality disorder features and personality traits. Journal of Anxiety Disorders, 2001;15:367-93.
22. Cox BJ, Borger SC, Enns MW. Anxiety sensitivity and emotional disorders: psychometric studies and their theoretical implications. In: Taylor S(Ed.) Anxiety sensitivity: theory, research and treatment of the fear of anxiety. Erlbaum: Mahwah, 1999, pp 115-48.

23. Mavissakalian M. *The relationship between panic disorder/agoraphobia and personality disorders*. Psychiatr Clin North Am 1990; 13:661-84.
24. Brooks RB, Baltazar PL, McDowell DE, Munjack DJ, Bruns JR. *Personality disorders cooccurring with panic disorder with agoraphobia*. J Personality Disorders 1991; 5:328-36.
25. Reich JH, Geen Al . *Effect of personality on outcome of treatment*. J Nerv Ment Dis 1991; 179: 74-82.
26. Graham JR. *MMPI Practice and Evaluation Handbook*. In: *Turkish Translation by Sorias O*. Ankara, Turkish Psychiatry Association Pres, 1998, pp 35.