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Original Research Article

PERSONALITY DISORDERS IN PATIENTS WITH SOMATOFORM DISORDER: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Somatoform disorders are characterized by persistent physical symptoms accompanied by psychological distress and functional impairment. Personality pathology may influence symptom perception, coping, interpersonal functioning, health-care utilization, and treatment engagement. Indian evidence describing categorical and dimensional personality profiles and their socio-demographic correlates remains limited. **Aim:** To describe socio-demographic characteristics, substance-use patterns, and personality-disorder profiles among patients with somatoform disorder and to explore associations between selected socio-demographic variables and dominant personality profiles.

Materials and Methods: This hospital-based cross-sectional observational study was conducted in the Department of Psychiatry of a tertiary-care teaching hospital in North India. Adults aged 18–60 years meeting ICD-10 criteria for somatoform disorder were recruited consecutively. Personality disorders were assessed using the International Personality Disorder Examination (IPDE). The minimum calculated sample size was 72; 113 participants were enrolled to improve precision and account for non-response. Ethical approval was obtained from the Institutional Ethics Committee, Netaji Subhash Chandra Bose Medical College, Jabalpur (IEC/2022/8629-58; 05 September 2022). Descriptive statistics and Pearson chi-square (χ^2) tests were used. Additional exploratory association analyses were performed on the 62 somatoform-disorder records for which patient-level cross-tabulation data were available.

Results: Among the full study cohort (n=113), mean age was 34.26 ± 12.71 years. Borderline/impulsive (25.7%) and antisocial/dissocial (24.8%) were the most frequent categorical personality diagnoses; borderline/impulsive, avoidant/anxious, and histrionic traits showed the highest dimensional scores. In the analyzable patient-level somatoform subgroup (n=62), dominant personality category was not significantly associated with gender (χ^2=8.957, df=7, p=0.256), residence (χ^2=8.701, df=14, p=0.850), or substance-use history (χ^2=4.950, df=7, p=0.666).

Conclusion: Personality pathology among patients with somatoform disorder was heterogeneous, with prominent Cluster B and Cluster C profiles. The exploratory analyses did not demonstrate statistically significant demographic clustering. Structured personality assessment may nevertheless provide clinically useful information for individualized biopsychosocial management.

Keywords: Somatoform disorder; personality disorder; IPDE; Cluster B; Cluster C; substance use; socio-demographic correlates.

INTRODUCTION

Somatoform disorders comprise persistent and distressing physical symptoms that are not adequately accounted for by conventional biomedical explanations,[1] and are associated with substantial psychological distress, functional impairment, repeated health-care use, and therapeutic complexity. Contemporary classifications have progressively moved from a narrow emphasis on medically unexplained symptoms toward broader constructs that incorporate excessive symptom-related thoughts, feelings, and behaviours.[2]

Personality characteristics are clinically relevant because enduring patterns of affect regulation, interpersonal behaviour, impulsivity, avoidance, dependency, and illness perception may influence how bodily symptoms are experienced and communicated. Earlier work identified substantial personality dysfunction among patients with somatization, with Cluster B and Cluster C patterns repeatedly described.[3] Dimensional approaches are increasingly important because categorical diagnoses may obscure clinically meaningful trait variation. A 2021 systematic review found consistent overlap between somatization and dimensional personality pathology, particularly negative affectivity and impaired personality functioning. More recent studies have also demonstrated associations between somatic symptom disorder and maladaptive personality functioning.[4]

Evidence from India remains comparatively limited,[5] particularly regarding structured IPDE-based personality profiling and socio-demographic correlates. The present study therefore examined socio-demographic characteristics, substance-use patterns, and categorical and dimensional personality profiles in patients with somatoform disorder, with additional exploratory analyses of gender, residence, and substance-use history in relation to dominant personality category.

Aim and Objectives

Aim: To describe the socio-demographic characteristics, substance-use patterns, and personality-disorder profiles among patients diagnosed with somatoform disorder.

Objectives: (1) To characterize socio-demographic and substance-use patterns; (2) to identify categorical and dimensional personality profiles using the IPDE; and (3) to explore associations of dominant personality disorder with gender, residence, and substance-use history.

MATERIALS AND METHODS

This hospital-based cross-sectional observational study was conducted in the Department of Psychiatry of a tertiary-care teaching hospital in North India. Recruitment was undertaken during the study period from psychiatric outpatient and inpatient services. The study followed a predefined clinical assessment protocol, and all participants provided written informed consent before enrolment.

Adults aged 18–60 years fulfilling ICD-10 diagnostic criteria for somatoform disorder were screened. Consecutive sampling was used to minimize investigator-driven selection during recruitment. A total of 124 potentially eligible patients were approached; 11 declined participation, yielding 113 enrolled participants and a response rate of 91.1%.

The minimum sample size was estimated using $n = Z^2pq/d^2$, where $Z=1.96$ for a 95% confidence level, $p=0.75$ as the anticipated prevalence of personality disorder among patients with somatoform disorder based on prior literature, $q=1-p=0.25$, and $d=0.10$ as the absolute precision. The calculated minimum sample size was approximately 72. To improve precision and accommodate non-response or incomplete observations, recruitment continued consecutively and 113 participants were ultimately included.

Inclusion criteria were age 18–60 years, diagnosis of somatoform disorder according to ICD-10 criteria, and willingness to provide written informed consent. Patients were excluded when an organic medical illness adequately explained the presenting symptoms, intellectual disability prevented valid assessment, severe psychiatric comorbidity substantially impaired interview participation, or consent was declined.

A semi-structured proforma recorded age, sex, marital status, religion, education, occupation, per-capita monthly income according to the modified B.G. Prasad classification, family type, residence, clinical history, and substance-use history. Personality pathology was evaluated using the International Personality Disorder Examination (IPDE), generating categorical dominant personality diagnoses and dimensional percentage scores. Clinical information was obtained through interview and available records. Assessments were conducted by trained psychiatric personnel.

The study was approved by the Institutional Ethics Committee, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh (IEC No. IEC/2022/8629-58, dated 05 September 2022). Written informed consent was obtained from all participants. Confidentiality was maintained through anonymized study records, and participation was voluntary.

Data were analyzed using IBM SPSS Statistics version 25. Continuous variables were summarized as mean ± standard deviation and categorical variables as frequencies and percentages. Pearson chi-square (χ^2) tests were used for categorical associations, with degrees of freedom and exact p-values reported where available. Statistical significance was defined as a two-sided $p<0.05$. Additional exploratory cross-tabulations examined dominant personality category by gender, residence, and substance-use history in the analyzable patient-level somatoform subgroup. Because several personality categories produced small expected cell

counts, these multi-category χ^2 analyses were interpreted cautiously and regarded as exploratory rather than confirmatory.

RESULTS

The full manuscript cohort comprised 113 patients with somatoform disorder. These analyses are therefore presented explicitly as subgroup analyses and should not be interpreted as n=113 analyses. Out of the studied cases there were 33 males and 29 females with a M:F ratio of 1:0.8.

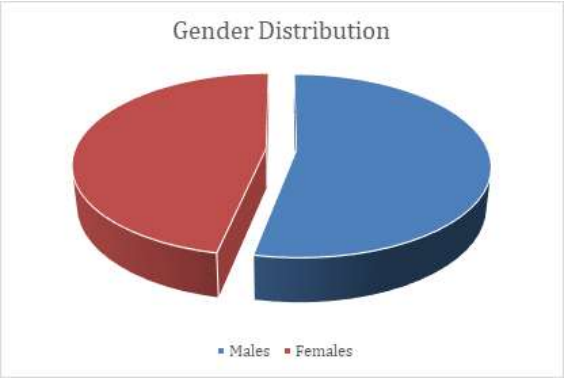


Figure 1: Gender Distribution of the studied cases.

Mean age was 34.26 ± 12.71 years. Borderline/impulsive personality disorder (25.7%) and antisocial/dissocial personality disorder (24.8%) were the most frequently recorded categorical diagnoses. Dimensional IPDE scores were highest for borderline/impulsive (64.68 ± 20.29), avoidant/anxious (62.25 ± 20.40), and histrionic traits (61.52 ± 19.90). Patient-level cross-tabulation data suitable for the association analyses were available for 62 records categorized as somatoform disorder.

Table 1: Gender wise distribution of dominant personality disorder

Dominant personality	Female	Male	Total
Borderline/Impulsive	9	4	13
Antisocial/Dissocial	2	9	11
Avoidant/Anxious	3	7	10
Histrionic	5	5	10
Paranoid	3	3	6
Anankastic/OCPD	3	3	6
Dependent	3	2	5
Schizoid	1	0	1
Total	29	33	62

He analysis of the residence-wise distribution of dominant personality disorders among the studied cases showed that borderline/impulsive personality disorder was the most common, seen in 13 (21.0%) patients, followed by antisocial/dissocial personality disorder in 11 (17.7%) patients. Avoidant/anxious and histrionic personality disorders were each observed in 10 (16.1%) patients. Overall, urban residents constituted the largest group with 31 (50.0%) patients, followed by rural residents, reported in the table as 23 (37.1%), and suburban residents with 7 (11.3%). There was no statistically significant association between residence and dominant personality disorder (χ^2=8.701, df=14, p=0.850), as the p-value was greater than 0.05.

Table 2: Residence-wise distribution of dominant personality disorders among the studied cases

Dominant personality	Rural	Suburban	Urban	Total	P value
Borderline/Impulsive	7	2	4	13	χ^2=8.701, df=14, p=0.850.
Antisocial/Dissocial	4	1	6	11	
Avoidant/Anxious	4	2	4	10	
Histrionic	2	2	6	10	
Paranoid	2	0	4	6	
Anankastic/OCPD	3	0	3	6	
Dependent	2	0	3	5	
Schizoid	0	0	1	1	
Total	23	7	31	62	

The analysis of substance-use status in relation to dominant personality disorders among the studied cases showed that substance use was present in 43 (69.4%) patients, while it was absent in 19 (30.6%) patients. Borderline/impulsive personality disorder was the most common, observed in 13 (21.0%) patients, followed by antisocial/dissocial personality disorder in 11 (17.7%), while avoidant/anxious and histrionic personality disorders were each seen in 10 (16.1%) patients. There was no statistically significant association between substance-use history

and dominant personality disorder (χ^2=4.950, df=7, p=0.666), as the p-value was greater than 0.05.

Table 3: Distribution of dominant personality disorders according to substance-use status among the studied cases

Dominant personality	Substance use absent	Substance use present	Total	P value
Borderline/Impulsive	5	8	13	
Antisocial/Dissocial	3	8	11	
Avoidant/Anxious	1	9	10	
Histrionic	3	7	10	χ^2=4.950, df=7, p=0.666.
Paranoid	2	4	6	
Anankastic/OCPD	2	4	6	
Dependent	2	3	5	
Schizoid	1	0	1	
Total	19	43	62	

Overall, the additional analyses did not identify statistically significant associations between dominant personality category and gender, residence, or substance-use history. These negative findings are clinically informative because they suggest that the observed personality heterogeneity was not reducible to simple demographic clustering in this sample.

DISCUSSION

The present study demonstrates a heterogeneous pattern of personality pathology among patients with somatoform disorder, with particularly prominent borderline/impulsive, antisocial/dissocial, avoidant/anxious, and histrionic profiles. The coexistence of Cluster B and Cluster C characteristics is clinically plausible because somatic symptom presentations may occur alongside affective instability, interpersonal dysregulation, impulsivity, avoidance, anxiety, dependency, and maladaptive illness behaviour.[6] Earlier studies cited in the manuscript similarly reported substantial personality dysfunction in patients with persistent somatic complaints.[7]

The dimensional findings are especially relevant in light of contemporary literature. Macina et al. systematically reviewed dimensional personality pathology in somatization and somatic symptom disorder and reported consistent associations with impaired personality functioning and negative affectivity.[8] More recently, von Schrottenberg et al. found that somatic symptom disorder was associated with impaired personality functioning and maladaptive traits including negative affectivity, psychoticism, disinhibition, and anankastia.[9] These observations support interpreting the present IPDE dimensional scores as clinically informative trait patterns rather than treating categorical diagnoses as the sole representation of personality pathology.

A 2024 systematic review and meta-analysis by Smakowski et al. further demonstrated substantial associations of somatic symptom disorder with depression, anxiety, health anxiety, and alexithymia, while emphasizing the need for more longitudinal work on psychological risk factors.[10] This broader psychological vulnerability framework may help explain why personality features coexist with persistent somatic symptoms without implying that personality pathology is a singular cause.[11] A 2025 systematic review and meta-analysis of functional somatic disorders similarly reported higher neuroticism and lower extraversion relative to healthy or unspecified controls, reinforcing the relevance of personality dimensions across functional somatic presentations.[12]

The association analyses extend the descriptive findings. Gender was not significantly associated with dominant personality category (χ^2=8.957, df=7, p=0.256), although borderline/impulsive profiles were numerically more frequent among females and antisocial/dissocial profiles among males. Residence was also unrelated to dominant personality category (χ^2=8.701, df=14, p=0.850), suggesting that personality pathology was distributed across rural, suburban, and urban backgrounds rather than being restricted to a particular residential context.[13] Similarly, substance-use history was not significantly associated with dominant personality category (χ^2=4.950, df=7, p=0.666). These findings argue against simplistic demographic explanations and favor individualized assessment.

Contemporary classification is increasingly dimensional. Widiger and Smith highlighted the continuing shift toward dimensional conceptualizations of personality pathology,[14] while recent empirical work in somatic symptom disorder has shown clinically meaningful links between personality functioning and symptom burden.[15] This direction is compatible with the present use of both categorical IPDE diagnoses and dimensional percentage scores. It also supports a clinical approach in which personality assessment informs formulation, communication, engagement, and treatment planning rather than functioning merely as a diagnostic label.

The results should nevertheless be interpreted within the constraints of the study design. Cross-sectional data cannot establish whether personality characteristics precede, follow, or reciprocally interact with somatic symptoms. The lack of a healthy or psychiatric comparison group prevents estimation of whether the observed personality distribution is specific to somatoform disorder. In addition, the association analyses were possible only in the patient-level somatoform subgroup available for cross-tabulation, and several contingency cells

were sparse. Accordingly, the inferential results are exploratory and should not be overinterpreted.

The findings support integrating structured personality assessment into the comprehensive psychiatric evaluation of patients presenting with persistent somatic symptoms. The IPDE,[16] can provide clinically useful information about enduring patterns of affect regulation, interpersonal functioning, impulsivity, avoidance, dependency, and coping that may influence symptom interpretation and treatment engagement. Identification of prominent borderline/impulsive, antisocial/dissocial, avoidant/anxious, or histrionic characteristics should not be used to attribute physical symptoms to personality alone; rather, it should contribute to a broader biopsychosocial formulation after appropriate medical assessment.

In practice, personality information may help clinicians tailor communication and therapeutic planning. Patients with marked affective instability or impulsivity may benefit from clear treatment boundaries, consistent follow-up, emotion-regulation strategies, and coordinated psychiatric care. Prominent avoidant or anxious characteristics may require gradual engagement, reassurance that does not reinforce repeated investigations,[17] and evidence-based psychological interventions addressing health anxiety, avoidance, and maladaptive coping.[18] Assessment of substance use remains important regardless of personality category because the present analysis did not demonstrate a disorder-specific association.

The absence of significant associations with gender or residence further emphasizes that clinicians should avoid demographic stereotyping when considering personality pathology. Structured assessment should be guided by individual clinical features rather than assumptions based on sex, rural or urban background, or substance-use status. Multidisciplinary collaboration among psychiatry, primary care, medicine, psychology, and where appropriate social services may reduce fragmented care and improve continuity.[19] Recent literature also supports dimensional assessment of personality functioning and psychological vulnerability in somatic symptom presentations.[20] Thus, incorporating personality assessment into routine formulation may improve therapeutic alliance, identify barriers to adherence, support individualized psychotherapy, and facilitate realistic long-term management goals.

This study has several limitations. First, its cross-sectional design precludes temporal or causal inference between personality pathology and somatoform symptoms. Second, recruitment from a single tertiary-care psychiatric centre may limit generalizability to community, primary-care, and other regional populations. Third, the absence of a healthy or psychiatric comparison group limits the ability to determine whether the observed personality profile is specific to somatoform disorder or reflects broader psychiatric morbidity. Fourth, substance-use and some historical variables were based on participant report and may be affected by recall or reporting bias. Fifth, several personality categories contained small numbers, producing sparse contingency tables and limiting the robustness of multi-category χ^2 analyses. Finally, patient-level data suitable for the additional association analyses were available for a 62-patient somatoform subgroup rather than the complete descriptive cohort of 113; these subgroup findings should therefore be considered exploratory. Multicentric prospective studies with comparison groups, larger samples, dimensional personality measures, and longitudinal follow-up are needed.

CONCLUSION

Patients with somatoform disorder in this study demonstrated heterogeneous personality pathology, with prominent Cluster B and Cluster C characteristics. Borderline/impulsive and antisocial/dissocial categories were common in the descriptive cohort, while dimensional assessment also highlighted avoidant/anxious and histrionic traits. Exploratory patient-level analyses did not demonstrate statistically significant associations between dominant personality disorder and gender, residence, or substance-use history, suggesting that personality profiles cannot be explained by simple demographic clustering. These findings support structured, individualized personality assessment as part of a comprehensive biopsychosocial evaluation. Personality findings should inform clinical formulation, communication, treatment engagement, and psychotherapy planning without being interpreted as evidence of causation. Larger multicentric and longitudinal studies with appropriate comparison groups are required to clarify the direction, specificity, and prognostic significance of the relationship between somatoform symptoms and personality pathology.

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