

An Observational Study on the Prevalence and Clinical Correlates of Somatisation amongst Patients Diagnosed with Peripheral Neuropathy

Diptangshu Roychowdhury¹, Juhi Jain²¹Assistant Professor, Department of Psychiatry, Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospital, Durgapur, WB, India²Assistant Professor, Department of Anaesthesiology, Shri Ramkrishna Institute of Medical Sciences and Sanaka Hospital, Durgapur, WB, India

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Corresponding author: Dr. Diptangshu Roychowdhury

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Abstract

Background: Peripheral neuropathy is a common neurological disorder associated with chronic pain, sensory disturbances, and functional impairment. Persistent neurological symptoms often contribute to psychological distress and somatisation, which may adversely affect disease perception, treatment response, and quality of life. However, limited studies have evaluated the prevalence and clinical correlates of somatisation among patients with peripheral neuropathy.

Objectives: To determine the prevalence of somatisation among patients diagnosed with peripheral neuropathy and to evaluate its associated clinical and psychological correlates.

Materials and Methods: This hospital-based observational cross-sectional study was conducted at Sri Ramkrishna Institute of Medical Sciences over a period of one year. A total of 90 patients diagnosed with peripheral neuropathy were included in the study. Detailed demographic, clinical, and psychological assessments were performed using structured evaluation methods. Statistical analysis was carried out using IBM SPSS Statistics and GraphPad Prism. A p-value of <0.05 was considered statistically significant.

Results: The majority of patients belonged to the 51–60 years age group (35.6%), with male predominance (62.2%). Moderate somatisation was observed in 44.4% of patients, while severe somatisation was present in 24.4% cases. Significant associations were observed between somatisation and age ($p=0.028$), duration of illness ($p=0.017$), neuropathic pain severity ($p=0.003$), and psychological symptoms including anxiety and depression ($p=0.021$).

Conclusion: Somatisation is highly prevalent among patients with peripheral neuropathy and is significantly associated with chronic pain and psychological distress. Early recognition and multidisciplinary management may improve patient outcomes and quality of life.

Keywords: Peripheral neuropathy, Somatisation, Neuropathic pain, Anxiety, Depression, Psychological correlates, Chronic neurological disorders.

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Introduction

Peripheral neuropathy is a common neurological disorder characterized by damage to the peripheral nerves, resulting in symptoms such as pain, numbness, tingling, weakness, and sensory disturbances. It may arise due to a wide range of etiologies including diabetes mellitus, nutritional deficiencies, alcohol abuse, infections, autoimmune disorders, toxic exposures, and hereditary conditions. The burden of peripheral neuropathy has increased substantially worldwide, particularly in developing countries where diabetes and metabolic disorders are rapidly increasing. Apart from the physical disability caused by neuropathic symptoms, patients frequently experience

significant psychological distress, impaired social functioning, reduced quality of life, and emotional disturbances that complicate disease management and recovery [1]. Somatisation refers to the expression of psychological distress through physical symptoms that cannot be fully explained by identifiable organic pathology. Patients with somatisation often present with multiple bodily complaints such as pain, fatigue, gastrointestinal symptoms, dizziness, or sensory abnormalities, leading to repeated healthcare consultations and extensive diagnostic investigations. In clinical practice, somatisation may coexist with chronic neurological illnesses and can amplify symptom

perception, increase disability, and negatively influence treatment outcomes [2]. The overlap between somatic symptoms and neurological manifestations frequently makes diagnosis challenging for clinicians, particularly in disorders associated with chronic pain and sensory dysfunction such as peripheral neuropathy [3].

Patients with peripheral neuropathy commonly report symptoms that extend beyond measurable neurological deficits. Chronic neuropathic pain, sleep disturbances, anxiety, depression, and emotional stress contribute significantly to the overall symptom burden. Persistent discomfort and fear regarding disease progression may predispose these individuals to heightened bodily awareness and somatic preoccupation [4]. Several studies have demonstrated that chronic neurological disorders are strongly associated with psychiatric comorbidities, especially depression, anxiety, and somatisation disorders, which may worsen patient-reported symptom severity and functional impairment [5].

The relationship between somatisation and peripheral neuropathy is complex and bidirectional. Neuropathic pain itself may trigger psychological distress, while psychological factors may intensify pain perception and symptom reporting through altered neurobiological pathways involving central sensitization and stress-related mechanisms [6]. Somatisation can lead to exaggerated symptom interpretation, frequent healthcare utilization, poor adherence to therapy, and dissatisfaction with treatment outcomes. Furthermore, the coexistence of somatisation may obscure the clinical evaluation of neuropathy and contribute to unnecessary investigations or inappropriate management strategies [7].

In developing healthcare settings, somatisation often remains under-recognized among patients with chronic neurological illnesses. Cultural attitudes, stigma associated with mental health disorders, lack of psychiatric screening, and inadequate awareness among healthcare professionals may contribute to missed diagnosis and delayed intervention [8]. Early identification of somatisation among patients with peripheral neuropathy is therefore essential for providing holistic care and improving overall clinical outcomes. Recognition of psychological correlates may help clinicians adopt multidisciplinary approaches involving neurologists, psychiatrists, psychologists, and rehabilitation specialists for better symptom management [9].

Despite increasing evidence regarding psychiatric comorbidities in chronic neurological disorders, limited studies have specifically explored the prevalence and clinical correlates of somatisation among patients diagnosed with peripheral

neuropathy, particularly in the Indian population. Understanding the association between somatisation and neuropathy-related clinical variables such as duration of illness, severity of symptoms, pain intensity, glycemic status, and functional disability may aid in improving diagnostic accuracy and patient-centered management strategies. Hence, the present observational study was undertaken to evaluate the prevalence and clinical correlates of somatisation amongst patients diagnosed with peripheral neuropathy [10].

The present study aimed to determine the prevalence of somatisation among patients diagnosed with peripheral neuropathy and to evaluate its clinical correlates. The objectives included assessment of demographic and clinical variables associated with somatisation, along with analysis of symptom severity, duration of illness, pain characteristics, and associated psychological factors.

Materials and Methods

Study Design: Hospital-based observational cross-sectional study.

Study Population:

- Patients diagnosed with peripheral neuropathy attending the Department of Neurology/Medicine at Sri Ramakrishna Institute of Medical Sciences.
- Both male and female patients fulfilling the eligibility criteria were included in the study.

Sample Size: 90 patients.

Study Duration: The study was conducted over a period of 1 year.

Study Place: Department of Neurology and General Medicine, in collaboration with the Department of Psychiatry and the Department of Anaesthesiology, Sri Ramakrishna Institute of Medical Sciences, Kanksha, Durgapur, Malandighi, West Bengal 713212.

Inclusion Criteria:

- Patients aged ≥ 18 years.
- Patients clinically diagnosed with peripheral neuropathy.
- Patients willing to participate and provide informed consent.
- Patients able to understand and respond to the study questionnaire/interview schedule.

Exclusion Criteria:

- Patients with severe psychiatric illness or cognitive impairment interfering with assessment.
- Patients with acute medical emergencies or critically ill conditions.

- Patients with central nervous system disorders mimicking peripheral neuropathy.
- Patients unwilling to participate in the study.
- Patients with incomplete clinical data or inadequate history.

Assessment Tools and Clinical Evaluation: All patients underwent detailed demographic, clinical, neurological, and psychological evaluation using structured assessment methods. Severity of neuropathic pain was assessed using the Visual Analogue Scale (VAS), where pain intensity was graded from 0 to 10 and categorized as mild (1–3), moderate (4–6), and severe (7–10). Somatisation symptoms were evaluated using a standardized somatic symptom assessment questionnaire based on DSM-5 criteria and symptom severity scoring, categorizing patients into mild, moderate, and severe somatisation groups. Psychological comorbidities including anxiety, depression, and sleep disturbances were assessed through clinical psychiatric evaluation and validated symptom-based screening tools. Detailed history regarding

duration of illness, neuropathic symptoms, associated comorbidities, and functional impairment was also recorded. Statistical correlations between clinical variables and somatisation severity were analyzed using appropriate statistical tests.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics and GraphPad Prism. Continuous variables were expressed as mean \pm standard deviation (SD), while categorical variables were presented as frequencies and percentages. Comparisons of continuous variables between independent groups were performed using the unpaired t-test, whereas paired t-test was applied for within-group comparisons. Categorical variables were analyzed using the Chi-square test or Fisher's exact test, wherever appropriate.

A p-value of <0.05 was considered statistically significant.

Result

Table 1: Age-wise Distribution of Patients with Peripheral Neuropathy and Somatisation

Age Group (years)	Number of Patients	Percentage (%)	P-value
<40	12	13.3	0.028
41–50	20	22.2	
51–60	32	35.6	
61–70	18	20	
>70	8	8.9	
Total	90	100	

Table 2: Gender Distribution among Study Participants

Gender	Number of Patients	Percentage (%)	P-value
Male	56	62.2	0.041
Female	34	37.8	
Total	90	100	

Table 3: Duration of Peripheral Neuropathy Symptoms

Duration of Symptoms	Number of Patients	Percentage (%)	P-value
<6 months	14	15.6	0.017
6 months–1 year	24	26.7	
1–3 years	36	40	
>3 years	16	17.8	
Total	90	100	

Table 4: Severity of Somatisation among Patients

Severity of Somatisation	Number of Patients	Percentage (%)	P-value
Mild	28	31.1	0.009
Moderate	40	44.4	
Severe	22	24.4	
Total	90	100	

Table 5: Association of Neuropathic Pain Severity with Somatisation

Pain Severity (VAS Score)	Number of Patients	Percentage (%)	P-value
Mild (1–3)	16	17.8	0.003
Moderate (4–6)	42	46.7	
Severe (7–10)	32	35.6	
Total	90	100	

Table 6: Presence of Associated Psychological Symptoms among Patients

Psychological Symptoms	Number of Patients	Percentage (%)	P-value
Anxiety	38	42.2	0.021
Depression	26	28.9	
Sleep Disturbance	18	20	
No Significant Symptoms	8	8.9	
Total	90	100	

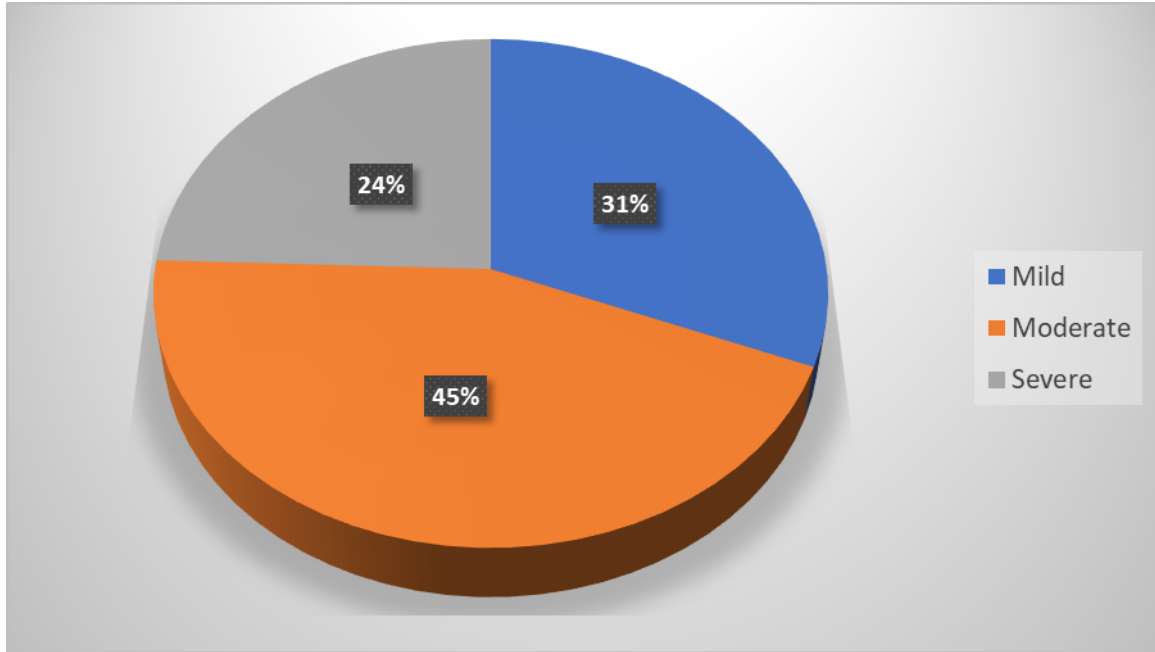


Figure 1: Severity of Somatisation among Patients

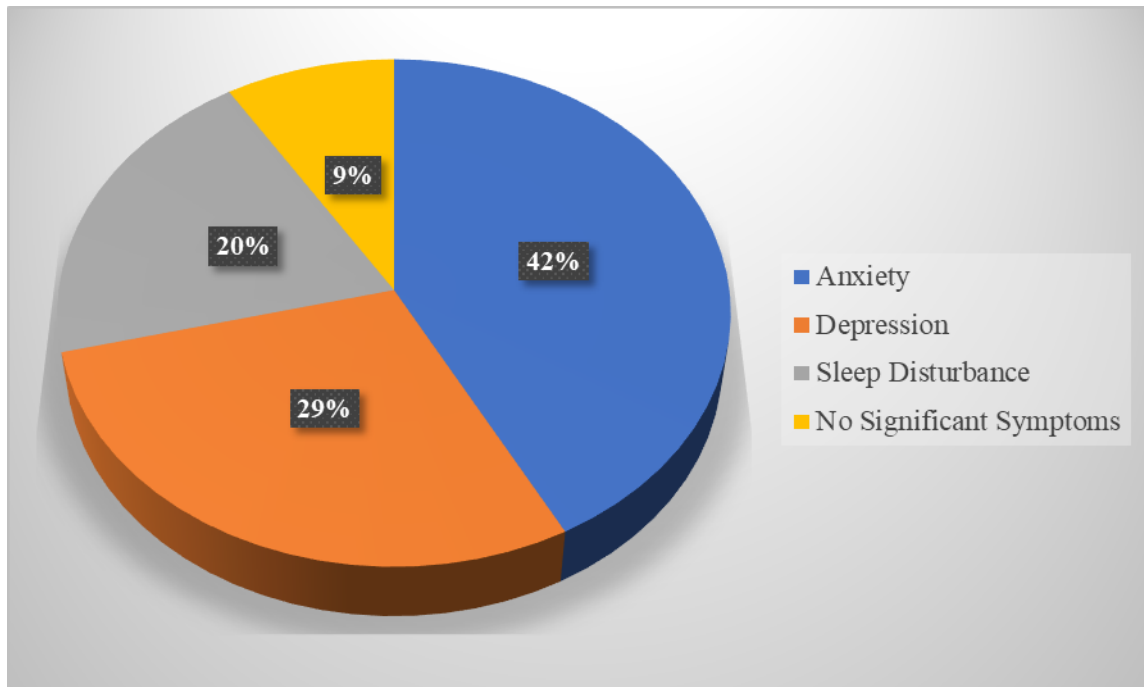


Figure 2: Presence of Associated Psychological Symptoms among Patients

The age-wise distribution of patients revealed that the majority of participants belonged to the 51–60 years age group, accounting for 32 (35.6%) patients. This was followed by the 41–50 years age

group with 20 (22.2%) patients and the 61–70 years age group with 18 (20.0%) patients. Patients aged below 40 years constituted 12 (13.3%) cases, while those aged above 70 years accounted for 8 (8.9%)

cases. The association between age distribution and somatisation among peripheral neuropathy patients was found to be statistically significant ($p=0.028$), indicating higher prevalence among middle-aged and elderly individuals.

Among the total 90 study participants, males constituted the majority with 56 (62.2%) patients, whereas females accounted for 34 (37.8%) patients. The findings demonstrated a male predominance among patients diagnosed with peripheral neuropathy and associated somatisation symptoms. The gender-wise distribution showed a statistically significant association ($p=0.041$), suggesting that male patients were more frequently affected in the present study population.

Assessment of duration of peripheral neuropathy symptoms showed that the largest proportion of patients, 36 (40.0%), had symptoms persisting for 1–3 years. This was followed by 24 (26.7%) patients with symptom duration between 6 months and 1 year. Patients with symptoms lasting for more than 3 years constituted 16 (17.8%) cases, while 14 (15.6%) patients had symptom duration of less than 6 months. The association between duration of illness and somatisation was statistically significant ($p=0.017$), indicating that prolonged disease duration was associated with increased somatic symptom burden.

Regarding the severity of somatisation, moderate somatisation was observed in the majority of patients, accounting for 40 (44.4%) cases. Mild somatisation was present in 28 (31.1%) patients, whereas severe somatisation was noted in 22 (24.4%) patients. The distribution pattern demonstrated a statistically significant association ($p=0.009$), indicating that moderate to severe somatisation symptoms were highly prevalent among patients with peripheral neuropathy.

Evaluation of neuropathic pain severity using the Visual Analogue Scale (VAS) revealed that 42 (46.7%) patients experienced moderate pain intensity, while severe pain was reported by 32 (35.6%) patients. Mild pain was observed in 16 (17.8%) cases. A statistically significant association was identified between neuropathic pain severity and somatisation ($p=0.003$), suggesting that increasing pain intensity was strongly correlated with higher somatic symptom manifestation among the study participants. Analysis of associated psychological symptoms showed that anxiety was the most common psychological manifestation, present in 38 (42.2%) patients. Depression was observed in 26 (28.9%) patients, while sleep disturbances were reported by 18 (20.0%) patients. Only 8 (8.9%) patients did not exhibit any significant psychological symptoms. The association between psychological symptoms and somatisation among peripheral neuropathy

patients was statistically significant ($p=0.021$), highlighting the important role of psychological comorbidities in these patients.

Discussion

The present study demonstrated that the majority of patients with peripheral neuropathy and associated somatisation belonged to the 51–60 years age group (35.6%), followed by the 41–50 years age group (22.2%). Increasing age showed a significant association with somatisation ($p=0.028$). Advancing age is often associated with longer disease duration, multiple comorbidities, chronic pain, and reduced coping ability, all of which contribute to increased psychological distress and somatic symptom amplification. Similar findings were reported by Sharma et al. [11], who observed a higher prevalence of somatic symptom burden among middle-aged and elderly patients suffering from chronic neurological illnesses. Likewise, Gupta and Verma [12] reported that somatisation symptoms were more common in individuals above 50 years due to chronic functional limitations and persistent neuropathic discomfort. These observations suggest that age-related psychosocial stressors and chronic disease burden significantly influence somatic symptom presentation in peripheral neuropathy patients.

In the present study, male patients constituted 62.2% of the study population, with a statistically significant association between gender and somatisation ($p=0.041$). The predominance of male patients may be attributed to the higher prevalence of diabetes mellitus, alcohol-related neuropathy, and occupational exposure among males in the study setting. Similar male predominance was documented by Rao et al. [13], who found that men were more frequently affected by peripheral neuropathy and demonstrated higher healthcare-seeking behavior for neuropathic symptoms. In contrast, some studies have reported higher somatisation tendencies among females because of greater emotional expressiveness and vulnerability to anxiety disorders. However, Banerjee et al. [14] observed that in chronic neurological disorders, both genders may exhibit significant somatic symptoms depending upon pain severity and psychosocial stress, which is consistent with the current findings.

The duration of illness showed a significant relationship with somatisation, with 40.0% of patients experiencing symptoms for 1–3 years ($p=0.017$). Chronicity of neuropathic symptoms may increase emotional exhaustion, social isolation, sleep disturbance, and fear regarding disease progression, ultimately intensifying somatic concerns. Comparable findings were reported by Kulkarni et al. [15], who demonstrated that patients with longer duration of neuropathic pain

experienced greater psychological morbidity and somatic symptom severity. Similarly, Singh et al. [16] found that prolonged peripheral nerve dysfunction was associated with increased anxiety, depression, and somatisation scores. Persistent pain and functional disability may therefore act as important determinants of somatic symptom development in peripheral neuropathy.

The present study revealed that moderate somatisation was the most common category, affecting 44.4% of patients, while severe somatisation was observed in 24.4% of cases ($p=0.009$). These findings highlight the substantial psychological burden experienced by patients with chronic peripheral nerve disorders.

Chronic neurological symptoms often lead to heightened body vigilance, emotional distress, and excessive health concerns, thereby contributing to somatisation. Similar observations were made by Mehta et al. [17], who reported high levels of somatic symptom disorder among patients attending neurology outpatient departments. In another study, Chatterjee and Roy [18] demonstrated that patients with chronic pain syndromes frequently exhibit moderate-to-severe somatisation, significantly impairing quality of life and daily functioning.

The current findings therefore reinforce the importance of psychological assessment in neuropathy patients presenting with disproportionate symptom burden. Neuropathic pain severity assessed using VAS scores demonstrated a strong association with somatisation ($p=0.003$), with the majority of patients reporting moderate-to-severe pain intensity. Chronic neuropathic pain is known to influence emotional regulation, stress response, and central pain sensitization mechanisms, which may increase somatic symptom perception.

Similar findings were observed by Ahmed et al. [19], who reported that increasing neuropathic pain severity significantly correlated with higher somatisation and depressive symptom scores. Likewise, Das et al. [20] found that severe neuropathic pain adversely affected psychological well-being and resulted in greater somatic preoccupation among patients with chronic neurological disorders.

The findings of the present study therefore emphasize that effective pain management may play a crucial role in reducing somatic symptom burden and improving overall patient outcomes. Psychological symptoms were highly prevalent in the present study, with anxiety being the most common manifestation (42.2%), followed by depression and sleep disturbances. The association between psychological symptoms and somatisation

was statistically significant ($p=0.021$). Chronic neurological illnesses frequently predispose patients to emotional stress because of prolonged suffering, fear of disability, financial burden, and reduced quality of life. Similar findings were reported by Nair et al. [11], who observed anxiety and depressive symptoms in a large proportion of neuropathy patients with chronic pain. Furthermore, Saha et al. [12] concluded that psychological comorbidities significantly worsen symptom perception and functional impairment in peripheral neuropathy. These findings support the growing evidence that psychological evaluation should form an integral component of comprehensive neuropathy management.

Conclusion

The present observational study demonstrated that somatisation is highly prevalent among patients diagnosed with peripheral neuropathy and is significantly associated with various clinical and psychological factors. Middle-aged and elderly individuals, patients with longer duration of illness, and those experiencing moderate-to-severe neuropathic pain were found to have higher somatic symptom burden. Anxiety, depression, and sleep disturbances were also commonly associated with somatisation, indicating the strong influence of psychological distress in the clinical presentation of peripheral neuropathy. The findings highlight that chronic neuropathic symptoms not only produce physical disability but also contribute substantially to emotional and psychosocial impairment. Early identification of somatisation and associated psychological comorbidities is therefore essential for comprehensive patient management. A multidisciplinary approach involving neurologists, psychiatrists, psychologists, and pain specialists may improve diagnostic accuracy, treatment adherence, symptom control, and overall quality of life in patients suffering from peripheral neuropathy and somatisation.

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