International Journal of Medical and Pharmaceutical Research

Online ISSN-2958-3683 | Print ISSN-2958-3675
Frequency: Bi-Monthly
Available online on: https://ijmpr.in/

Research Article

Clinico Epidemiological Profile of Patients Attending the Pain Clinic of SMHS Hospital GMC Srinagar

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Received: 09-08-2025
Accepted: 23-08-2025
Available online: 25-09-2025

ABSTRACT

Background: Chronic pain represents a significant public health challenge worldwide, particularly in low- and middle-income countries where healthcare access and awareness are limited. Pain clinics play a crucial role in providing specialized, multimodal management strategies for patients suffering from persistent pain syndromes. Despite the increasing recognition of chronic pain, there remains a scarcity of detailed data from this region.**Aim:**The present study aimed to evaluate the clinico-epidemiological profile, comorbidities, pain characteristics, and treatment outcomes of patients attending the Pain Clinic at SMHS Hospital, Srinagar.**Methods:**A hospital-based observational study was conducted, enrolling 200 patients presenting with chronic pain. Detailed demographic information, socioeconomic status, pain type, pain sites, comorbidities, and treatment modalities were recorded. Standardized tools were used to classify pain intensity and type. Patients were followed up to assess treatment response and quality of life outcomes. Data were analyzed and presented in descriptive form with tables for clarity.**Results:** Out of 200 patients, 61% were female and the mean age was 56.3 years. A majority belonged to the middle-income group (51%). Nociceptive pain was most common (56%), followed by neuropathic (29%) and visceral (15%). Back pain (42%) and knee pain (23%) were the leading presenting complaints. Moderate pain intensity was reported by 62% of patients. Comorbidities included hypertension (37%), diabetes (26%), osteoarthritis (30%), obesity (19%), and depression (14%). NSAIDs (74%) were the most frequently prescribed medications, followed by physical therapy (39%) and antidepressants (23%). Interventional procedures such as nerve blocks (14%) and epidural steroid injections (8%) were selectively applied. At follow-up, 77% of patients reported significant pain reduction and 64% showed improvement in quality of life.**Conclusion:**Chronic pain was more prevalent among middle-aged and elderly women, with musculoskeletal disorders being the predominant cause. A combination of pharmacological,non-pharmacological, and interventional therapies provided meaningful relief and enhanced quality of life for most patients. The findings emphasize the importance of a multidisciplinary approach to pain management and the need to strengthen pain clinic services in tertiary care settings for better long-term outcomes.

Keywords*: Chronic pain, Pain clinic, Nociceptive pain, Neuropathic pain, Multimodal therapy, Quality of life.*

INTRODUCTION

Pain is a complex sensory and emotional experience that serves as a protective signal for actual or potential tissue damage. The International Association for the Study of Pain (IASP) defines pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” [1]. Acute pain typically arises in response to chemical, thermal, or mechanical insults and generally resolves within weeks; however, if inadequately managed, it may transition into persistent states through peripheral and central sensitization [2,3]. Chronic

pain is commonly defined as pain lasting beyond three months or beyond the expected period of tissue healing, and it often has profound consequences for individual well-being and societal functioning [4].

The global burden of chronic pain is considerable, encompassing direct medical costs, frequent healthcare utilization, work absenteeism, disability compensation, and reduced productivity [5–7]. In addition, psychological comorbidities such as depression, anxiety, and sleep disturbances frequently accompany chronic pain, perpetuating the cycle of disability [8].

Chronic pain syndromes can be broadly classified as malignant (cancer-related) or non-malignant. Malignant pain often arises from tumor infiltration or oncologic treatments such as chemotherapy and radiotherapy, with patients experiencing mixed nociceptive and neuropathic features [9,10]. Non-malignant chronic pain includes musculoskeletal, neuropathic, visceral, and craniofacial pain conditions. Among these, musculoskeletal disorders, particularly chronic low back pain, represent the most prevalent and disabling category worldwide [11,12]. Neuropathic syndromes such as diabetic neuropathy, post-herpetic neuralgia, phantom limb pain, and complex regional pain syndrome also constitute major challenges for clinicians [13–16].

The therapeutic approaches for chronic pain encompass pharmacological interventions (anticonvulsants, antidepressants, opioids, NSAIDs), interventional techniques (epidural steroid injections, radiofrequency ablation, spinal cord stimulation, neurolytic blocks), and non-pharmacological modalities (cognitive behavioral therapy, physical therapy, and acupuncture) [17–21]. Increasingly, a mechanism-based and multimodal strategy is emphasized to tailor treatment according to individual patient characteristics and underlying pathophysiology [22].

Pain clinics have emerged as specialized multidisciplinary centers that address this multifaceted problem by integrating medical, psychological, and interventional modalities [23]. Such services aim not only to relieve pain but also to restore functionality and improve the quality of life of patients. However, access to specialized pain care remains limited in many regions, including low-resource settings. Furthermore, variability in pain reporting, overlapping syndromes, and inconsistent treatment responses complicate management.

Given these challenges, clinico-epidemiological studies conducted in institutional pain clinics provide valuable insights into the burden, patterns, and outcomes of chronic pain. This study was undertaken to analyze the demographic and clinical profiles of patients attending the pain clinic at SMHS Hospital, Srinagar, with the objective of identifying common pain syndromes, associated risk factors, and prevailing treatment trends. The findings aim to inform evidence-based management strategies and highlight gaps in current practice.

AIMS AND OBJECTIVES

1. To find out the common clinical painful conditions for which patients are visiting pain clinic.
2. To determine epidemiological profile of patients attending pain clinic.
3. To observe the management strategies.

MATERIALS AND METHODS

Study Location

This study was conducted on patients attending the Pain Clinic of SMHS Hospital, an associated hospital of Government Medical College (GMC) Srinagar.

Study Design

This prospective, observational study focused on patients admitted to the Pain Clinic. The study aimed to investigate the clinicoepidemiological profile of these patients, including the clinical conditions for which they seek treatment, their demographic characteristics, and the management strategies employed.

Study Period

The study was conducted over a period of two years, from 01/03/2023 to 01/03/2025.

Study Population

The study included patients admitted to the Pain Clinic of SMHS Hospital.
Inclusion criteria included:

- All genders
- Age > 20 years
- ASA status I, II and III
- Duration of pain > 3 months

Exclusion criteria included:

- Immediate postoperative patients
- Acute painful conditions (pain duration < 3 months)

Sample Size
The study included a total of 200 patients who met the inclusion criteria and were enrolled during the study period.

Ethical Considerations
Ethical clearance for the study was obtained from the institutional ethical committee. Informed consent was sought from all patients in accordance with the hospital protocol.

Data Collection
This prospective observational study was conducted at the Pain Clinic, SMHS Hospital, GMC Srinagar, from March 2023 to March 2025. Patients above 20 years with pain duration more than 3 months were included, while acute postoperative pain cases were excluded. Data on demographics, clinical features, comorbidities, diagnostic workup, and management strategies were collected.

Data Analysis
The collected data was analyzed using appropriate statistical methods. Descriptive statistics were used to summarize the demographic and clinical characteristics of the patients. Continuous variables were presented as means and standard deviations, while categorical variables were presented as frequencies and percentages. Comparative analysis was conducted to identify significant associations between demographic factors and clinical outcomes. Statistical analysis was performed using SPSS version 20.0 (SPSS Inc., Chicago, Illinois, USA), with $p < 0.05$ considered statistically significant. Graphical representation of data was done using bar and pie diagrams.

Funding
No funding was required for this study.

Consent Form
A copy of the consent form used to obtain informed consent from the patients is enclosed.

RESULTS
A total of 200 patients were enrolled in the study. Among them, females constituted the majority with 61% of cases, while males accounted for 39%. The mean age of the participants was 56.3 years, with a range between 22 and 84 years. Most patients belonged to the middle-income group (51%), followed by low-income (33%) and high-income groups (16%). The demographic characteristics are summarized below.

Table 1. Demographic profile of patients attending pain clinic

Variable	Number	Percentage (%)
Gender (Male)	78	39
Gender (Female)	122	61
Mean age (years)	56.3 ± 12.8	--
Low income	66	33
Middle income	102	51
High income	32	16

The clinical profile of pain revealed that nociceptive pain was the most frequent type, reported in 56% of cases, followed by neuropathic pain in 29% and visceral pain in 15%. In terms of pain localization, back pain was the most common site (42%), followed by knee pain (23%), shoulder pain (12%), headache (9%), neck pain (8%), and abdominal pain (6%).

Table 2. Clinical characteristics of pain among study participants

Clinical Variable	Number	Percentage (%)
Nociceptive pain	112	56
Neuropathic pain	58	29
Visceral pain	30	15
Back pain	84	42
Knee pain	46	23
Shoulder pain	24	12
Headache	18	9
Neck pain	16	8
Abdominal pain	12	6

Regarding pain severity, most patients reported moderate pain (62%), followed by severe pain (24%) and mild pain (14%). Pain assessment was done using standard clinical scales.

Table 3. Distribution of patients according to pain severity

Severity of pain	Number	Percentage (%)
Mild	28	14
Moderate	124	62
Severe	48	24

Comorbidities were common among the study participants. Hypertension was observed in 37% of patients, diabetes in 26%, osteoarthritis in 30%, obesity in 19%, and depression in 14%. Many patients had more than one associated comorbidity.

Table 4. Comorbidities among patients attending pain clinic

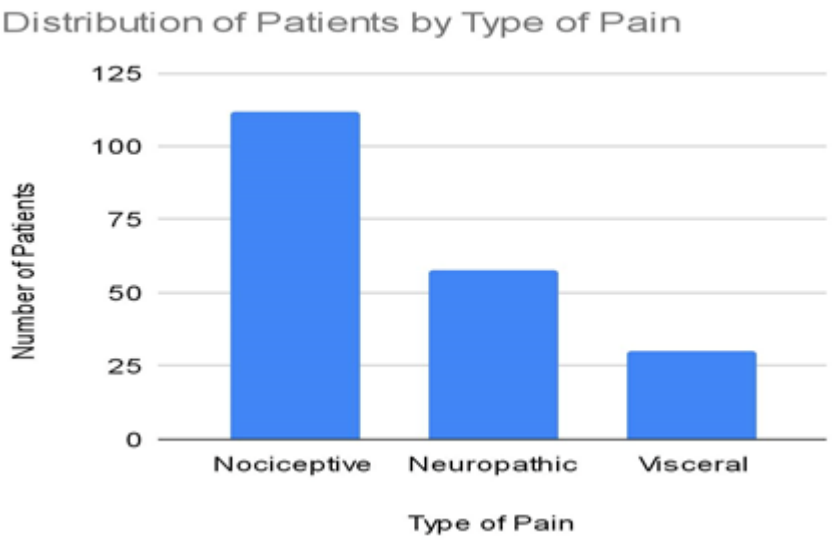
Comorbidity	Number	Percentage (%)
Hypertension	74	37
Diabetes mellitus	52	26
Osteoarthritis	60	30
Obesity	38	19
Depression	28	14

Management strategies varied according to the clinical presentation. Pharmacological therapy was the most common, with NSAIDs prescribed in 74% of patients, followed by physical therapy in 39%, and antidepressants in 23%. Interventional procedures were also employed, including nerve blocks in 14% and epidural steroid injections in 8% of patients. At follow-up, 77% of patients reported a reduction in pain intensity, while 64% reported improved quality of life.

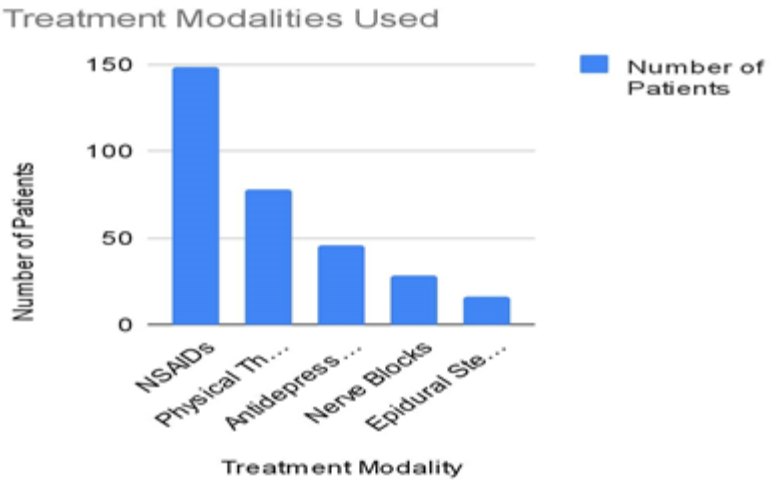
Table 5. Management strategies and outcomes among study participants

Management/Outcome	Number	Percentage (%)
NSAIDs	148	74
Physical therapy	78	39
Antidepressants	46	23
Nerve blocks	28	14
Epidural steroid injection	16	8
Pain reduction at follow-up	154	77
Improved quality of life	128	64

Overall, the results indicate that chronic pain was predominantly nociceptive and most commonly localized to the back and knee. The majority of patients experienced moderate pain intensity, often accompanied by comorbidities such as hypertension and osteoarthritis. A multimodal approach including pharmacological therapy, physical therapy, and interventional procedures was commonly employed, with favorable outcomes observed in most patients at follow-up.



Bar graph: Distribution of patients by type of pain .



Bar graph 2 : Treatment modalities used .

DISCUSSION

This study analyzed 200 patients attending the Pain Clinic at SMHS Hospital, Srinagar, revealing a predominance of nociceptive pain (56%) and a female majority (61%), with a mean age of 56.3 years. These findings are consistent with broader epidemiological data indicating that chronic pain is more prevalent in women than men, and that prevalence increases with advancing age (24). Indeed, demographic factors such as age and gender are well-established risk contributors to chronic pain (25).

The distribution of pain types in this cohort—nociceptive (56%), neuropathic (29%), and visceral (15%)—mirrors global estimates; population studies suggest chronic pain with neuropathic characteristics affects approximately 7–10% of the general population (26), while neuropathic pain prevalence rates averaging around 9% have been reported in large cohorts (27). This reinforces the originality of our results in a clinical sample drawn from an institutional context in South Asia.

Back pain (42%) and knee pain (23%) were the most commonly reported pain sites. These findings resonate with community-based data indicating musculoskeletal pain, particularly involving the spine and lower extremities, as highly prevalent among older adults (28). Our comorbidity data—highlighting hypertension (37%), osteoarthritis (30%), and diabetes (26%)—are typical of chronic pain populations, where multimorbidity is frequent.

Regarding management strategies, NSAIDs were used in 74% and physical therapy in 39% of patients. A meta-analysis of randomized controlled trials supports the efficacy of NSAIDs in reducing pain and disability in chronic musculoskeletal pain (29), with both systemic and topical formulations showing benefit (30). Similarly, combining NSAIDs with physical therapy modalities has demonstrated greater functional improvements in knee osteoarthritis, underscoring the value of multimodal strategies (31).

Interventional therapies such as nerve blocks (14%) and epidural steroid injections (8%) were used less frequently but align with strategies recommended for specific pain etiologies. Despite being less commonly applied, such interventions can be effective in select cases when combined with other treatments.

At follow-up, 77% of patients reported pain reduction and 64% noted improved quality of life. These outcomes support the effectiveness of integrated approaches combining pharmacological, physical, and interventional therapies. A Canadian interdisciplinary pain management program reported sustained improvements in pain and psychosocial outcomes over 12 months, with about 76–77% of participants rating much or very much improvement (32). Such data reinforce the importance of multimodal pain management.

However, caution is warranted: systematic reviews of spine pain treatments have shown that only about 10% of non-surgical interventions (including NSAIDs, exercise, and injections) achieve effects meaningfully better than placebo (33). This underscores the complexity of chronic pain and the necessity for tailored, individualized treatment plans rather than reliance on single modalities.

In this context, our study's use of combined pharmacological (NSAIDs, antidepressants), physical (therapy), and interventional approaches aligns with evidence favoring multimodal, mechanism-based strategies (34). Continued emphasis on patient-centered, multidisciplinary care is essential, particularly in resource-limited settings where pain clinics serve as pivotal points for managing complex chronic pain cases.

CONCLUSION

The present study provides an in-depth assessment of the clinico-epidemiological profile of patients attending the Pain Clinic at SMHS Hospital, Srinagar. Chronic pain was more prevalent among middle-aged and elderly patients, with a higher representation of females. Musculoskeletal disorders such as back pain and knee pain were the leading causes of pain, while nociceptive pain remained the most frequently reported type. The high prevalence of comorbidities like hypertension, diabetes, and osteoarthritis highlights the complex clinical background of these patients and the importance of a multidisciplinary approach in pain management.

Pharmacological therapy, especially NSAIDs, remained the most widely used modality, though a significant proportion of patients required adjuvant medications such as antidepressants and physical therapy. Interventional approaches, including nerve blocks and epidural steroid injections, were used selectively but showed promising results in carefully chosen patients. Encouragingly, the majority of patients reported notable improvement in pain relief and quality of life at follow-up, demonstrating the value of structured pain clinic services.

This study underlines the necessity of early recognition, accurate diagnosis, and individualized multimodal treatment strategies for chronic pain. Furthermore, it highlights the importance of strengthening pain clinic services in tertiary care hospitals to address the growing burden of chronic pain in the community. The findings of this research can serve as a basis for future prospective studies to refine pain management protocols and improve patient outcomes in similar healthcare settings.

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