



Original Research Article

OBSERVATIONAL STUDY OF PSYCHIATRIC MANIFESTATIONS IN PATIENTS WITH CHRONIC PAIN DISORDERS

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ABSTRACT

Background: Chronic pain is a multidimensional condition that affects physical functioning, sleep, emotional well-being, interpersonal relationships, and quality of life. Psychiatric manifestations such as depression, anxiety, insomnia, irritability, somatic preoccupation, hopelessness, and suicidal ideation frequently coexist with chronic pain and may worsen pain perception, disability, treatment adherence, and clinical outcomes. Early identification of these manifestations is essential for comprehensive and multidisciplinary management. **Aim:** To assess the pattern and frequency of psychiatric manifestations among patients with chronic pain disorders and to evaluate their association with pain-related clinical characteristics, sleep disturbance, and functional disability.

Materials and Methods: A hospital-based, cross-sectional observational study was conducted at a tertiary care hospital and included 125 consecutive adult patients with chronic pain lasting at least three months. Sociodemographic and clinical information was collected using a predesigned proforma. Pain severity was assessed using the Numerical Rating Scale, depressive symptoms using the Patient Health Questionnaire-9, anxiety symptoms using the Generalized Anxiety Disorder-7 scale, insomnia using the Insomnia Severity Index, and pain-related disability using the Brief Pain Inventory. Psychiatric diagnoses were established through detailed clinical assessment and mental status examination. Data were analysed using IBM SPSS Statistics for Windows, version 27.0. Chi-square tests and binary logistic regression were applied, and a p-value of less than 0.05 was considered statistically significant.

Results: Psychiatric morbidity was present in 83 of 125 patients (66.40%). Clinically significant depressive symptoms were observed in 52.80%, anxiety symptoms in 44.80%, and moderate-to-severe insomnia in 46.40%. Fatigue or reduced energy was reported by 57.60%, impaired concentration by 40.80%, irritability by 39.20%, somatic preoccupation by 36.00%, hopelessness by 24.80%, and suicidal ideation by 12.80%. Psychiatric morbidity increased with pain severity, from 40.00% among patients with mild pain to 80.00% among those with severe pain ($p=0.007$). It was also significantly associated with sleep disturbance (77.27% versus 40.54%, $p<0.001$) and functional disability ($p<0.001$). On multivariable analysis, severe pain (AOR=3.42, $p=0.012$), sleep disturbance (AOR=4.08, $p=0.001$), and severe functional disability (AOR=5.26, $p=0.003$) independently predicted psychiatric morbidity.

Conclusion: Psychiatric manifestations were highly prevalent among patients with chronic pain disorders. Severe pain, sleep disturbance, and functional

disability were major independent predictors of psychiatric morbidity. Routine psychiatric screening and integrated multidisciplinary care should be incorporated into chronic pain management.

Keywords: Chronic pain; Psychiatric morbidity; Depression; Anxiety; Insomnia.

INTRODUCTION

Chronic pain is a complex and persistent health condition that extends beyond the expected period of tissue healing and continues or recurs for more than three months. It may arise from musculoskeletal disorders, neuropathic conditions, headache disorders, arthritis, spinal diseases, malignancy, previous injury, surgery, or other medical conditions. Contemporary classifications recognize that chronic pain may occur as a disease in its own right or as a consequence of another underlying disorder. The International Classification of Diseases, Eleventh Revision, categorizes chronic pain into chronic primary pain and several forms of chronic secondary pain. This framework emphasizes that pain should not be understood only as a physical symptom because emotional distress and functional disability are integral components of many chronic pain conditions. The recognition of these psychosocial dimensions has strengthened the need for comprehensive clinical evaluation rather than an assessment based exclusively on pain intensity or structural pathology.^[1] Chronic pain places a considerable burden on affected individuals, their families, healthcare systems, and society. Persistent pain may interfere with mobility, sleep, self-care, household responsibilities, employment, social participation, and interpersonal relationships. Repeated consultations, investigations, medication use, physiotherapy, hospitalization, and interventional procedures may further increase the financial and emotional burden. Some patients experience progressive restriction of activity because movement is perceived as harmful or likely to increase pain. This avoidance may lead to physical deconditioning, greater dependence, reduced confidence, and loss of occupational functioning. Therefore, the clinical importance of chronic pain is determined not only by the intensity of the painful sensation but also by its effect on daily functioning, emotional well-being, quality of life, and participation in meaningful activities.^[2] The relationship between chronic pain and psychiatric illness is multidimensional and frequently bidirectional. Persistent pain may contribute to sadness, excessive worry, irritability, helplessness, hopelessness, reduced motivation, and loss of interest in previously enjoyable activities. Conversely, depression, anxiety, trauma-related symptoms, and maladaptive patterns of thinking may increase attention to pain, reduce pain tolerance, and intensify the perceived severity of physical symptoms. Shared biological pathways involving stress-response systems, inflammatory processes, neurotransmitters,

and neural circuits related to emotion and pain processing may partly explain this overlap. Psychiatric manifestations may also develop because of disability, unemployment, financial strain, social isolation, disturbed family roles, or uncertainty regarding recovery. In conditions such as fibromyalgia, psychiatric symptoms and multiple pain-related complaints may coexist and create substantial diagnostic and therapeutic challenges.^[3] Psychological responses to pain vary considerably between individuals. Some patients maintain meaningful activities and emotional stability despite continuing pain, whereas others develop marked distress and disability even when the apparent physical pathology is similar. Pain catastrophizing, fear of movement, avoidance behaviour, poor coping, low self-efficacy, perceived injustice, and excessive monitoring of bodily sensations may contribute to greater psychological distress. In contrast, acceptance, adaptive coping, resilience, supportive relationships, and psychological flexibility may enable patients to function despite persistent symptoms. Psychological flexibility refers to the capacity to remain aware of difficult experiences while continuing to engage in behaviour consistent with personal values and goals. Assessment of these psychological processes can provide information that is not captured by conventional pain-intensity ratings and may help identify patients requiring focused psychological or psychiatric intervention.^[4] Sleep disturbance is another important feature of chronic pain disorders and may present as difficulty initiating sleep, frequent awakening, non-restorative sleep, early-morning awakening, or daytime sleepiness. Pain may interrupt sleep through physical discomfort, difficulty maintaining a comfortable position, medication-related effects, and persistent worry about symptoms. In turn, inadequate sleep may increase fatigue, emotional reactivity, cognitive difficulties, and sensitivity to painful stimuli. This creates a self-perpetuating cycle in which pain disrupts sleep and impaired sleep further aggravates pain and psychological distress. Depression, anxiety, irritability, impaired concentration, and reduced coping ability may become more pronounced when pain and insomnia coexist. Consequently, the evaluation of patients with chronic pain should include systematic inquiry into sleep quality and insomnia severity rather than considering sleep disturbance merely as a secondary complaint.^[5] Psychiatric manifestations associated with chronic pain may include depressive symptoms, generalized anxiety, panic symptoms, somatic preoccupation, irritability, fatigue, reduced concentration, sleep disturbance, substance use, and behavioural changes. Severe or prolonged pain may also be accompanied

by hopelessness, demoralization, suicidal thoughts, and misuse of prescribed analgesics. Suicide-risk assessment is therefore particularly important when chronic pain is associated with depression, insomnia, social isolation, functional dependence, substance use, or perceived burdensomeness. Psychiatric symptoms can additionally influence adherence to analgesic treatment, participation in physiotherapy, expectations of recovery, healthcare utilization, and satisfaction with treatment. Failure to identify these manifestations may result in repeated investigations or medication changes while the psychological and social factors maintaining disability remain insufficiently addressed.^[6]

MATERIALS AND METHODS

A hospital-based, cross-sectional observational study was conducted in the Department of Psychiatry in collaboration with the departments treating chronic pain disorders at a tertiary care hospital. The study was designed to assess the pattern and frequency of psychiatric manifestations among patients suffering from chronic pain disorders and to examine their relationship with the clinical characteristics, severity, and functional consequences of pain. The study included 125 consecutive patients diagnosed with chronic pain disorders who attended the outpatient or inpatient services of the tertiary care hospital. Patients referred to the Department of Psychiatry for psychological or psychiatric evaluation were also considered for participation. Chronic pain was defined as pain persisting or recurring for at least three months. Patients with different types of chronic pain, including musculoskeletal pain, neuropathic pain, headache disorders, low-back pain, cervical pain, arthritis-related pain, and other medically diagnosed chronic pain conditions, were included.

Inclusion Criteria

Patients of either sex aged 18 years or older, having pain for a minimum period of three months, and diagnosed with a chronic pain disorder by the treating physician or relevant specialist were included. Participants were required to be clinically stable, able to understand the questions and assessment procedures, and willing to provide written informed consent. Patients receiving treatment for chronic pain, irrespective of the type of treatment, were also eligible for inclusion.

Exclusion Criteria

Patients with acute pain, pain lasting less than three months, severe cognitive impairment, intellectual disability, delirium, dementia, altered sensorium, or any medical condition that prevented a reliable interview were excluded. Patients who were critically ill, unable to communicate, or unwilling to participate were also excluded. Individuals with psychiatric symptoms occurring exclusively due to an acute medical emergency, intoxication, or withdrawal state at the time of assessment were not included.

Methodology

Patients fulfilling the eligibility criteria were interviewed in a private setting using a predesigned and pretested data collection proforma. Information was obtained directly from the patient and, wherever necessary, verified using medical records, treatment prescriptions, laboratory reports, imaging findings, and information provided by a reliable caregiver. Each participant underwent a detailed assessment of sociodemographic characteristics, chronic pain-related clinical variables, psychiatric manifestations, medical and psychiatric comorbidities, treatment history, sleep disturbances, substance use, and functional impairment.

Sociodemographic Assessment

The sociodemographic parameters recorded included age, sex, place of residence, religion, marital status, educational qualification, occupation, employment status, monthly family income, socioeconomic status, type of family, number of family members, and availability of family or social support. Additional information regarding financial dependence, work absenteeism, loss of employment, and changes in occupational functioning due to chronic pain was documented.

Clinical Assessment of Chronic Pain

A detailed pain history was recorded for each participant. The clinical variables included the primary diagnosis responsible for pain, anatomical site, duration, onset, course, frequency, radiation, and nature of pain. The character of pain was classified as burning, throbbing, aching, stabbing, electric shock-like, or mixed. Aggravating and relieving factors, diurnal variation, precipitating events, previous injury or surgery, and the presence of associated neurological or systemic symptoms were noted. Pain was also categorized as nociceptive, neuropathic, or mixed, based on the clinical diagnosis made by the treating specialist.

Assessment of Pain Severity

The intensity of pain was assessed using the 11-point Numerical Rating Scale, in which a score of 0 indicated no pain and a score of 10 represented the worst imaginable pain. Participants were asked to rate their current pain, average pain, and worst pain experienced during the preceding week. Pain severity was categorized as mild, moderate, or severe according to the obtained scores. The effect of pain on walking, routine activities, work, interpersonal relationships, mood, enjoyment of life, and sleep was also evaluated.

Psychiatric Assessment

All participants underwent a detailed psychiatric evaluation based on clinical history and mental status examination. Psychiatric diagnoses were established according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision criteria, wherever applicable. The assessment focused on depressive symptoms, anxiety symptoms, somatic preoccupation, irritability, hopelessness, anhedonia, fatigue, reduced concentration, suicidal ideation, panic symptoms, trauma-related symptoms, obsessive symptoms, psychotic symptoms, and

behavioural changes associated with chronic pain. Previous psychiatric illness, psychiatric treatment, hospitalization, family history of psychiatric disorders, and use of psychotropic medication were recorded.

Assessment of Depression

Depressive symptoms were assessed using the Patient Health Questionnaire-9. The scale evaluates nine depressive symptoms, including loss of interest, low mood, sleep disturbance, fatigue, appetite changes, feelings of worthlessness, impaired concentration, psychomotor changes, and thoughts of self-harm. The total score was used to classify depressive symptoms as minimal, mild, moderate, moderately severe, or severe. Any positive response to the item related to death wishes or self-harm was followed by a detailed suicide-risk assessment.

Assessment of Anxiety

Anxiety symptoms were assessed using the Generalized Anxiety Disorder-7 scale. The scale measures nervousness, excessive worry, difficulty controlling worry, restlessness, irritability, inability to relax, and fear of something unpleasant happening. Based on the total score, anxiety symptoms were classified as minimal, mild, moderate, or severe.

Assessment of Sleep Disturbance

Sleep-related problems were evaluated by obtaining information regarding sleep onset, sleep maintenance, early-morning awakening, total sleep duration, sleep quality, daytime sleepiness, and the use of sleeping medication. The Insomnia Severity Index was used to quantify insomnia symptoms and their effect on daytime functioning. Sleep disturbance was categorized according to the severity of the obtained score.

Assessment of Functional Disability and Quality of Life

The impact of chronic pain on daily functioning was assessed by evaluating limitations in self-care, mobility, household activities, occupational duties, social interaction, recreation, and family responsibilities. The Brief Pain Inventory was used to assess pain severity and pain-related interference with general activity, mood, walking ability, normal work, relationships, sleep, and enjoyment of life. The degree of dependence on family members and the number of workdays lost because of pain were also recorded.

Assessment of Substance Use

Participants were assessed for current and past use of tobacco, alcohol, opioids, cannabis, sedatives, and other psychoactive substances. Information regarding the type of substance, frequency, quantity, duration of use, dependence symptoms, and any relationship between substance use and pain relief was documented. The use of prescribed opioid analgesics and sedative medications was separately recorded to identify possible misuse, tolerance, or dependence.

Medical and Treatment-Related Variables

Relevant medical comorbidities, including diabetes mellitus, hypertension, thyroid disorders,

neurological diseases, rheumatological conditions, malignancy, and other chronic illnesses, were recorded. Details of analgesics, antidepressants, anticonvulsants, muscle relaxants, opioid medications, physiotherapy, psychotherapy, interventional pain procedures, and surgical treatment were documented. Treatment adherence, perceived treatment response, adverse effects, repeated consultations, and history of doctor-shopping were also assessed.

Mental Status Examination

A comprehensive mental status examination was conducted for every participant. Appearance, behaviour, psychomotor activity, speech, mood, affect, thought form, thought content, perception, cognition, insight, and judgement were evaluated. Particular attention was given to depressive cognitions, excessive health-related concerns, catastrophizing thoughts, hopelessness, suicidal ideas, psychotic symptoms, and the patient's understanding of the relationship between psychological factors and pain.

Statistical Analysis

Data were entered into a Microsoft Excel spreadsheet and analysed using **IBM SPSS Statistics for Windows, version 27.0**. Categorical variables were summarized as frequencies and percentages. Continuous variables were assessed for normality and presented as mean with standard deviation for normally distributed data or median with interquartile range for non-normally distributed data. The chi-square test or Fisher's exact test was used to examine associations between categorical variables. The independent-samples Student's *t*-test was used to compare the means of two groups for normally distributed variables, while the Mann-Whitney *U* test was applied to non-normally distributed variables. Analysis of variance or the Kruskal-Wallis test was used for comparisons involving more than two groups, as appropriate. Pearson's or Spearman's correlation coefficient was calculated to evaluate relationships between pain severity, psychiatric symptom scores, sleep disturbance, and functional impairment. Binary logistic regression analysis was performed to identify independent predictors of psychiatric morbidity after controlling for relevant sociodemographic and clinical confounders. Adjusted odds ratios with 95% confidence intervals were reported. A two-tailed *p*-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 125 patients with chronic pain disorders were included in the study. The prevalence of psychiatric morbidity among the study participants was 66.40% (83/125), while 33.60% (42/125) did not exhibit clinically significant psychiatric morbidity.

Sociodemographic Characteristics and Their Association with Psychiatric Morbidity

Table 1 presents the sociodemographic profile of the study participants and its association with psychiatric morbidity. The largest proportion of patients belonged to the 31–45 years age group, accounting for 43 (34.40%) participants, followed by the 46–60 years age group comprising 39 (31.20%) participants. Patients aged 18–30 years and those older than 60 years constituted 24 (19.20%) and 19 (15.20%) participants, respectively. An increasing trend in psychiatric morbidity was observed with advancing age. Psychiatric morbidity was present in 50.00% of patients aged 18–30 years, increasing to 62.79% among those aged 31–45 years, 74.36% among those aged 46–60 years, and 78.95% among patients above 60 years. However, the association between age and psychiatric morbidity was not statistically significant ($p=0.133$).

With respect to sex distribution, females constituted a slightly higher proportion of the study population (53.60%) compared to males (46.40%). Psychiatric morbidity was more common among females, affecting 74.63% of female participants, whereas 56.90% of male participants exhibited psychiatric morbidity. Although a higher burden of psychiatric symptoms was observed among women, the association did not achieve statistical significance ($p=0.057$).

Regarding residence, 70 (56.00%) patients were from urban areas and 55 (44.00%) from rural areas. Psychiatric morbidity was reported in 68.57% of urban residents and 63.64% of rural residents. The difference between the two groups was minimal and statistically non-significant ($p=0.697$), indicating that residence had no significant influence on psychiatric morbidity in the present study.

Most participants were married, accounting for 95 (76.00%) individuals, while 30 (24.00%) were unmarried, widowed, or divorced. Psychiatric morbidity was observed in 71.58% of married participants compared to 50.00% among unmarried, widowed, or divorced individuals.

Analysis of socioeconomic status revealed that 60 (48.00%) participants belonged to the middle socioeconomic group, followed by 37 (29.60%) from the upper group and 28 (22.40%) from the lower group. Psychiatric morbidity showed a progressive increase with declining socioeconomic status. It was present in 51.35% of upper-class participants, 70.00% of middle-class participants, and 78.57% of lower-class participants. Although the trend was clinically notable, statistical significance was not reached ($p=0.051$).

Clinical Profile of Chronic Pain Disorders

The clinical characteristics of chronic pain disorders are summarized in Table 2. Musculoskeletal pain was the most common chronic pain condition and was reported by 40 (32.00%) participants. Low-back or cervical pain was the second most common diagnosis, affecting 31 (24.80%) patients. Neuropathic pain accounted for 24 (19.20%) cases, while chronic headache disorders and arthritis-related

pain contributed 13.60% and 10.40% of cases, respectively.

Based on the underlying pain mechanism, nociceptive pain was observed in 47 (37.60%) patients, neuropathic pain in 45 (36.00%), and mixed pain in 33 (26.40%). Thus, nociceptive and neuropathic pain constituted almost equal proportions of the study population.

The duration of pain demonstrated that chronic pain was a long-standing problem for most patients. Nearly two-fifths of participants (38.40%) had experienced pain for 13–36 months, while 37.60% reported pain persisting for more than 36 months. Only 24.00% had pain duration between 3 and 12 months.

Pain severity assessment using the Numerical Rating Scale revealed that moderate pain was the most frequent category, affecting 60 (48.00%) participants. Severe pain was reported by 45 (36.00%) patients, while only 20 (16.00%) experienced mild pain. These findings indicate that the majority of participants experienced substantial pain intensity.

Functional disability assessment showed that 58 (46.40%) participants had moderate disability and 39 (31.20%) had severe disability, whereas only 28 (22.40%) had mild disability. Furthermore, sleep disturbances were highly prevalent and were reported by 88 (70.40%) participants, highlighting the considerable impact of chronic pain on sleep quality and daily functioning.

Distribution of Psychiatric Manifestations and Symptom Severity

Table 3 depicts the prevalence and severity of psychiatric manifestations among study participants. Assessment of depressive symptoms using the PHQ-9 demonstrated varying levels of severity. Minimal depression was identified in 27 (21.60%) participants, while mild depression was observed in 32 (25.60%). Moderate depression was present in 30 (24.00%) patients, moderately severe depression in 23 (18.40%), and severe depression in 13 (10.40%). Combining moderate, moderately severe, and severe categories revealed that clinically significant depressive symptoms affected 52.80% of the study population.

Anxiety assessment using the GAD-7 scale revealed minimal anxiety in 35 (28.00%) participants and mild anxiety in 34 (27.20%). Moderate anxiety was observed in 33 (26.40%) participants, while severe anxiety was reported by 23 (18.40%). Overall, 44.80% of participants experienced clinically significant anxiety symptoms.

Sleep assessment using the Insomnia Severity Index showed that only 37 (29.60%) participants had no clinically significant insomnia. Subthreshold insomnia was identified in 30 (24.00%) patients, moderate clinical insomnia in 40 (32.00%), and severe clinical insomnia in 18 (14.40%).

Specific Psychiatric and Behavioural Manifestations

The distribution of specific psychiatric and behavioural manifestations is shown in Table 4.

Fatigue or reduced energy was the most frequently reported symptom and was present in 72 (57.60%) participants. Clinically significant depressive symptoms were reported by 66 (52.80%) patients, making depression the most common psychiatric disorder identified in the study.

Moderate or severe insomnia was observed in 58 (46.40%) participants, while clinically significant anxiety symptoms affected 56 (44.80%). Impaired concentration was reported by 51 (40.80%) patients, and irritability was present in 49 (39.20%). Somatic preoccupation, characterized by excessive concern about bodily symptoms and health, was noted in 45 (36.00%) participants.

Hopelessness was reported by 31 (24.80%) patients, reflecting the psychological burden associated with persistent pain. Current substance use was identified in 29 (23.20%) participants, suggesting that a subset of patients may use psychoactive substances as a coping mechanism for pain or psychological distress. Previous psychiatric treatment was documented in 24 (19.20%) participants, indicating pre-existing mental health concerns in a proportion of patients.

Particularly noteworthy was the finding that 16 (12.80%) participants reported suicidal ideation. Although this represented a minority of the study population, it underscores the significant psychological impact of chronic pain and highlights the need for routine psychiatric screening and suicide risk assessment in these patients. Excessive use or misuse of prescribed analgesics was identified in 12 (9.60%) participants.

Association of Clinical Characteristics with Psychiatric Morbidity

Table 5 demonstrates the relationship between selected clinical variables and psychiatric morbidity. A statistically significant association was observed between pain severity and psychiatric morbidity ($\chi^2=10.03$, $p=0.007$). Psychiatric morbidity was present in only 40.00% of patients with mild pain but increased to 65.00% among those with moderate pain and 80.00% among those experiencing severe pain.

Although psychiatric morbidity appeared to increase with longer pain duration, the association was not statistically significant ($\chi^2=4.56$, $p=0.102$). Psychiatric morbidity was present in 53.33% of patients with pain duration of 3–12 months, 64.58% among those with pain duration of 13–36 months, and 76.60% among those with pain persisting for more than 36 months.

The type of pain also showed no statistically significant association with psychiatric morbidity ($\chi^2=3.11$, $p=0.211$). Nevertheless, psychiatric morbidity was more frequent among patients with mixed pain (75.76%) and neuropathic pain (68.89%) than among those with nociceptive pain (57.45%).

Sleep disturbance demonstrated a highly significant association with psychiatric morbidity ($\chi^2=14.15$, $p<0.001$). Among participants reporting sleep disturbance, psychiatric morbidity was present in 77.27%, whereas only 40.54% of patients without sleep disturbance exhibited psychiatric symptoms.

Functional disability also showed a highly significant relationship with psychiatric morbidity ($\chi^2=16.79$, $p<0.001$). Psychiatric morbidity was present in only 39.29% of patients with mild disability but increased to 65.52% among those with moderate disability and reached 87.18% among participants with severe disability.

Multivariable Analysis of Factors Associated with Psychiatric Morbidity

The results of binary logistic regression analysis are presented in Table 6. After adjusting for potential confounding variables, female sex and pain duration greater than 36 months were not found to be independent predictors of psychiatric morbidity. Female participants had 1.68 times higher odds of psychiatric morbidity compared with males; however, this association was not statistically significant (AOR=1.68, 95% CI: 0.73–3.87, $p=0.223$). Similarly, patients with pain duration exceeding 36 months had 1.74 times greater odds of psychiatric morbidity, but the association was not significant (AOR=1.74, 95% CI: 0.73–4.17, $p=0.211$).

In contrast, severe pain emerged as a significant independent predictor. Patients with severe pain had 3.42 times higher odds of developing psychiatric morbidity compared with those without severe pain (AOR=3.42, 95% CI: 1.31–8.94, $p=0.012$). Sleep disturbance was another significant predictor and increased the likelihood of psychiatric morbidity by approximately four-fold (AOR=4.08, 95% CI: 1.72–9.67, $p=0.001$).

The strongest predictor identified in the multivariable model was severe functional disability. Patients with severe disability had 5.26 times higher odds of psychiatric morbidity compared with those without severe disability (AOR=5.26, 95% CI: 1.76–15.74, $p=0.003$).

Table 1: Sociodemographic characteristics and their association with psychiatric morbidity

Sociodemographic variable	Total, n (%)	Psychiatric morbidity present, n (%)	Psychiatric morbidity absent, n (%)	p-value
Age group				0.133
18–30 years	24 (19.20%)	12 (50.00%)	12 (50.00%)	
31–45 years	43 (34.40%)	27 (62.79%)	16 (37.21%)	
46–60 years	39 (31.20%)	29 (74.36%)	10 (25.64%)	
More than 60 years	19 (15.20%)	15 (78.95%)	4 (21.05%)	
Sex				0.057
Male	58 (46.40%)	33 (56.90%)	25 (43.10%)	
Female	67 (53.60%)	50 (74.63%)	17 (25.37%)	
Residence				0.697

Urban	70 (56.00%)	48 (68.57%)	22 (31.43%)	
Rural	55 (44.00%)	35 (63.64%)	20 (36.36%)	
Marital status				0.050
Married	95 (76.00%)	68 (71.58%)	27 (28.42%)	
Unmarried/widowed/divorced	30 (24.00%)	15 (50.00%)	15 (50.00%)	
Socioeconomic status				0.051
Upper	37 (29.60%)	19 (51.35%)	18 (48.65%)	
Middle	60 (48.00%)	42 (70.00%)	18 (30.00%)	
Lower	28 (22.40%)	22 (78.57%)	6 (21.43%)	
Total	125 (100.00%)	83 (66.40%)	42 (33.60%)	

Table 2: Clinical profile of chronic pain disorders

Clinical characteristic	Frequency, n	Percentage
Primary chronic pain disorder		
Musculoskeletal pain	40	32.00%
Low-back or cervical pain	31	24.80%
Neuropathic pain	24	19.20%
Chronic headache disorder	17	13.60%
Arthritis-related pain	13	10.40%
Clinical type of pain		
Nociceptive pain	47	37.60%
Neuropathic pain	45	36.00%
Mixed pain	33	26.40%
Duration of pain		
3–12 months	30	24.00%
13–36 months	48	38.40%
More than 36 months	47	37.60%
Pain severity on Numerical Rating Scale		
Mild pain	20	16.00%
Moderate pain	60	48.00%
Severe pain	45	36.00%
Functional disability		
Mild disability	28	22.40%
Moderate disability	58	46.40%
Severe disability	39	31.20%
Sleep disturbance reported		
Present	88	70.40%
Absent	37	29.60%

Table 3: Distribution of psychiatric manifestations and symptom severity

Psychiatric assessment	Frequency, n	Percentage
Overall psychiatric morbidity		
Present	83	66.40%
Absent	42	33.60%
PHQ-9 depression severity		
Minimal depression	27	21.60%
Mild depression	32	25.60%
Moderate depression	30	24.00%
Moderately severe depression	23	18.40%
Severe depression	13	10.40%
GAD-7 anxiety severity		
Minimal anxiety	35	28.00%
Mild anxiety	34	27.20%
Moderate anxiety	33	26.40%
Severe anxiety	23	18.40%
Insomnia Severity Index category		
No clinically significant insomnia	37	29.60%
Subthreshold insomnia	30	24.00%
Moderate clinical insomnia	40	32.00%
Severe clinical insomnia	18	14.40%

Table 4: Specific psychiatric and behavioural manifestations among the study participants

Psychiatric or behavioural manifestation	Frequency, n	Percentage
Clinically significant depressive symptoms	66	52.80%
Clinically significant anxiety symptoms	56	44.80%
Moderate or severe clinical insomnia	58	46.40%
Irritability	49	39.20%
Somatic preoccupation	45	36.00%
Fatigue or reduced energy	72	57.60%
Impaired concentration	51	40.80%
Hopelessness	31	24.80%

Suicidal ideation	16	12.80%
Current substance use	29	23.20%
Excessive use or misuse of prescribed analgesics	12	9.60%
Previous psychiatric treatment	24	19.20%

Table 5: Association of clinical characteristics with psychiatric morbidity

Clinical variable	Psychiatric morbidity present, n (%)	Psychiatric morbidity absent, n (%)	Chi-square value	p-value
Pain severity			10.03	0.007
Mild	8 (40.00%)	12 (60.00%)		
Moderate	39 (65.00%)	21 (35.00%)		
Severe	36 (80.00%)	9 (20.00%)		
Duration of pain			4.56	0.102
3–12 months	16 (53.33%)	14 (46.67%)		
13–36 months	31 (64.58%)	17 (35.42%)		
More than 36 months	36 (76.60%)	11 (23.40%)		
Clinical type of pain			3.11	0.211
Nociceptive	27 (57.45%)	20 (42.55%)		
Neuropathic	31 (68.89%)	14 (31.11%)		
Mixed	25 (75.76%)	8 (24.24%)		
Sleep disturbance			14.15	<0.001
Present	68 (77.27%)	20 (22.73%)		
Absent	15 (40.54%)	22 (59.46%)		
Functional disability			16.79	<0.001
Mild	11 (39.29%)	17 (60.71%)		
Moderate	38 (65.52%)	20 (34.48%)		
Severe	34 (87.18%)	5 (12.82%)		

Table 6: Multivariable analysis

Independent predictor	Adjusted odds ratio	95% confidence interval	p-value
Female sex	1.68	0.73–3.87	0.223
Pain duration greater than 36 months	1.74	0.73–4.17	0.211
Severe pain	3.42	1.31–8.94	0.012
Sleep disturbance	4.08	1.72–9.67	0.001
Severe functional disability	5.26	1.76–15.74	0.003

DISCUSSION

The present study demonstrated a substantial burden of psychiatric morbidity among patients with chronic pain, with 83 of 125 participants (66.40%) exhibiting clinically significant psychiatric manifestations. This prevalence was considerably higher than that reported by Søndergård et al. (2018), who found that 17.80% of patients presenting to a multidisciplinary pain centre had received a mental-disorder diagnosis during a 10-year period. The difference may be related to variations in case ascertainment because the present study used systematic psychiatric interviews and symptom-rating scales, whereas register-based diagnoses may identify only patients who had previously sought or received psychiatric care. The tertiary-care setting and inclusion of patients referred for psychiatric evaluation may also have increased the observed prevalence in the present sample.^[7]

Psychiatric morbidity in the present study increased from 50.00% among patients aged 18–30 years to 78.95% among those older than 60 years, although the association with age was not statistically significant ($p=0.133$). Females had a higher prevalence than males (74.63% versus 56.90%), but this difference also remained statistically non-significant ($p=0.057$). Aaron et al. (2025), in a meta-analysis of 376 studies involving 347,468 adults with chronic pain, reported a mean age of 51.3 years and a

female representation of 70.00%; female predominance was associated with higher depression and anxiety prevalence. However, their analysis found higher symptom prevalence in younger rather than older samples. Thus, the female trend in the present study was broadly consistent with previous evidence, whereas the age-related pattern differed, possibly because older patients in this hospital-based population had greater disability, medical comorbidity, and persistent pain exposure.^[8]

Musculoskeletal pain was the most frequent pain disorder in the present study, accounting for 32.00% of cases, followed by low-back or cervical pain in 24.80%, neuropathic pain in 19.20%, chronic headache in 13.60%, and arthritis-related pain in 10.40%. In addition, 48.00% of participants had moderate pain, 36.00% had severe pain, 46.40% had moderate disability, and 31.20% had severe disability. These findings indicate that most participants had clinically important pain accompanied by functional limitations. Rikard et al. (2023) reported that 20.90% of United States adults experienced chronic pain and 6.90% experienced high-impact chronic pain; chronic pain was reported by 52.40% of adults with disability, while high-impact chronic pain was present in 32.00% of disabled adults. Although that study was population based and the present study was conducted in a tertiary hospital, both demonstrate a close relationship between persistent pain and disability,

with the higher disability burden in the present study being expected because it involved treatment-seeking patients.^[9]

Clinically significant depressive symptoms were present in 52.80% of the present participants, including moderate depression in 24.00%, moderately severe depression in 18.40%, and severe depression in 10.40%. Clinically significant anxiety affected 44.80%, comprising moderate anxiety in 26.40% and severe anxiety in 18.40%. Mullins et al. (2023), using nationally representative United States data, found moderate and severe depressive symptoms in 11.40% and 8.70% of adults with chronic pain, respectively, while moderate and severe anxiety were present in 8.50% and 8.00%, respectively. Therefore, moderate-to-severe depression and anxiety were more common in the present clinical sample than in the population-based study. This difference may reflect referral patterns, greater pain severity, longer pain duration, functional impairment, and the use of a tertiary-care sample in the present investigation.^[10]

The present study identified clinically significant anxiety symptoms in 56 patients (44.80%), while the multivariable model showed that severe pain independently increased the odds of psychiatric morbidity by 3.42 times (95% CI: 1.31–8.94, $p=0.012$). Abd Rahman et al. (2024) reported a lower generalized anxiety disorder prevalence of 18.90% among 201 Malaysian chronic-pain patients. Nevertheless, their predictors were similar to those observed in the present study: severe pain was associated with markedly increased odds of generalized anxiety disorder (AOR=18.75), while female sex (AOR=7.94) and longer pain duration (AOR=1.30) were also significant. In the present analysis, female sex and pain duration greater than 36 months showed elevated adjusted odds of 1.68 and 1.74, respectively, but did not reach statistical significance. Differences in diagnostic instruments, anxiety definitions, sample composition, and confidence-interval width may explain the variation in effect sizes.^[11]

Sleep disturbance was reported by 70.40% of participants in the present study, while 46.40% had moderate or severe clinical insomnia. Psychiatric morbidity was significantly more frequent among patients with sleep disturbance than among those without it (77.27% versus 40.54%; $\chi^2=14.15$, $p<0.001$), and sleep disturbance remained an independent predictor in regression analysis (AOR=4.08, 95% CI: 1.72–9.67, $p=0.001$). Alhalal et al. (2021), in a study of 233 chronic-pain patients attending two tertiary hospitals, found poor sleep quality in 66.10% and depression in 36.00%. They further reported that pain intensity and disability explained 7.40% of the variance in sleep efficiency and 15.00% of the variance in perceived sleep quality. The slightly higher sleep-disturbance prevalence and depression burden in the present study reinforce the bidirectional relationship between pain, sleep impairment, and psychiatric symptoms.^[12]

Fatigue or reduced energy was the most frequent individual symptom in the present study, affecting 57.60% of patients, followed by depression in 52.80%, insomnia in 46.40%, anxiety in 44.80%, impaired concentration in 40.80%, irritability in 39.20%, and somatic preoccupation in 36.00%. Wilson et al. (2002) found that chronic-pain patients with concurrent major depression and insomnia had the greatest affective distress, pain interference, loss of life control, and pain severity compared with patients who did not have both conditions. Although their study classified patients according to major depression and insomnia rather than reporting all individual symptoms as percentages, its findings support the clustering observed in the present study. Fatigue, concentration difficulty, irritability, sleep disturbance, and depressive symptoms may represent interconnected manifestations of prolonged pain-related distress rather than isolated psychiatric complaints.^[13]

Suicidal ideation was reported by 16 participants (12.80%) in the present study, while hopelessness was present in 24.80%, current substance use in 23.20%, and excessive use or misuse of prescribed analgesics in 9.60%. Kwon et al. (2023), in a systematic review and meta-analysis involving 3,312,343 individuals with chronic pain, reported a pooled lifetime suicidal-ideation prevalence of 28.90%, a past two-week prevalence of 25.87%, and a lifetime suicide-attempt prevalence of 10.83%. The lower suicidal-ideation rate in the present study may be related to differences in assessment periods, instruments, pain diagnoses, and sociocultural characteristics. Nevertheless, the finding that approximately one in eight participants reported suicidal thoughts is clinically important, particularly because depression, hopelessness, substance use, analgesic misuse, and severe pain may collectively increase suicide risk.^[14]

Pain severity and functional disability were the most important clinical correlates of psychiatric morbidity in the present study. Psychiatric morbidity increased from 40.00% in patients with mild pain to 65.00% in those with moderate pain and 80.00% in those with severe pain ($p=0.007$). Similarly, it increased from 39.29% among patients with mild disability to 65.52% among those with moderate disability and 87.18% among those with severe disability ($p<0.001$). In the adjusted analysis, severe functional disability was the strongest predictor of psychiatric morbidity (AOR=5.26, 95% CI: 1.76–15.74, $p=0.003$), followed by sleep disturbance and severe pain. Bisby et al. (2023) likewise found that greater pain intensity and disability were associated with increased odds of elevated anxiety or depressive symptoms among adults entering an internet-delivered chronic-pain management programme. Taken together, these findings suggest that psychiatric morbidity is determined not only by the presence or duration of pain but more importantly by its intensity, sleep-related consequences, and interference with everyday functioning.^[15]

CONCLUSION

Psychiatric morbidity was highly prevalent among patients with chronic pain disorders, affecting nearly two-thirds of the study population. Depression, anxiety, insomnia, fatigue, irritability, and impaired concentration were the most common manifestations. Greater pain severity, sleep disturbance, and functional disability were significantly associated with psychiatric morbidity and remained important independent predictors. Routine psychiatric screening and integrated multidisciplinary management should therefore be incorporated into the care of patients with chronic pain.

REFERENCES

1. Barke A, Korwisi B, Jakob R, Konstanjsek N, Rief W, Treede RD. Chronic pain in the ICD-11: new diagnoses that clinical psychologists should know about. *Clin Psychol Eur*. 2022;4(Spec Issue):e9833. doi: 10.32872/cpe.9833.
2. Cohen SP, Vase L, Hooten WM. Chronic pain: an update on burden, best practices, and new advances. *Lancet*. 2021;397(10289):2082-2097. doi: 10.1016/S0140-6736(21)00393-7.
3. Kleykamp BA, Ferguson MC, McNicol E, Bixho I, Arnold LM, Edwards RR, et al. The prevalence of psychiatric and chronic pain comorbidities in fibromyalgia: an ACTION systematic review. *Semin Arthritis Rheum*. 2021;51(1):166-174. doi: 10.1016/j.semarthrit.2020.10.006.
4. McCracken LM. Psychological flexibility, chronic pain, and health. *Annu Rev Psychol*. 2024;75:601-624. doi: 10.1146/annurev-psych-020223-124335.
5. Jain SV, Panjeton GD, Martins YC. Relationship between sleep disturbances and chronic pain: a narrative review. *Clin Pract*. 2024;14(6):2650-2669. doi: 10.3390/clinpract14060209.
6. Chincholkar M, Blackshaw S. Suicidality in chronic pain: assessment and management. *BJA Educ*. 2023;23(8):320-326. doi: 10.1016/j.bjae.2023.05.005.
7. Søndergård S, Vaegter HB, Erlangsen A, Stenager E. Ten-year prevalence of mental disorders in patients presenting with chronic pain in secondary care: a register-based study. *Eur J Pain*. 2018;22(2):346-354. doi: 10.1002/ejp.1136.
8. Aaron RV, Ravvits SG, Carnahan ND, Bhattiprolu K, Harte N, McCaulley CC, et al. Prevalence of depression and anxiety among adults with chronic pain: a systematic review and meta-analysis. *JAMA Netw Open*. 2025;8(3):e250268. doi: 10.1001/jamanetworkopen.2025.0268.
9. Rikard SM, Strahan AE, Schmit KM, Guy GP Jr. Chronic pain among adults—United States, 2019-2021. *MMWR Morb Mortal Wkly Rep*. 2023;72(15):379-385. doi: 10.15585/mmwr.mm7215a1.
10. Mullins PM, Yong RJ, Bhattacharyya N. Associations between chronic pain, anxiety, and depression among adults in the United States. *Pain Pract*. 2023;23(6):589-594. doi: 10.1111/papr.13220.
11. Rahman NA, Ariaratnam S, Hashim NA, Azhar ZI. Prevalence and factors associated with generalized anxiety disorder among patients with chronic pain: a single-center cross-sectional study in Malaysia. *PLoS One*. 2024;19(7):e0307992. doi: 10.1371/journal.pone.0307992.
12. Alhalal EA, Alhalal IA, Alaida AM, Alhweity SM, Alshojaa AY, Alfaori AT. Effects of chronic pain on sleep quality and depression: a cross-sectional study. *Saudi Med J*. 2021;42(3):315-323. doi: 10.15537/smj.2021.42.3.20200768.
13. Wilson KG, Eriksson MY, D'Eon JL, Mikail SF, Emery PC. Major depression and insomnia in chronic pain. *Clin J Pain*. 2002;18(2):77-83. doi: 10.1097/00002508-200203000-00002.
14. Kwon CY, Lee B. Prevalence of suicidal behavior in patients with chronic pain: a systematic review and meta-analysis of observational studies. *Front Psychol*. 2023;14:1217299. doi: 10.3389/fpsyg.2023.1217299.
15. Bisby MA, Chandra SS, Dudeney J, Scott AJ, Titov N, Dear BF. Can internet-delivered pain management programs reduce psychological distress in chronic pain? Exploring relationships between anxiety and depression, pain intensity, and disability. *Pain Med*. 2023;24(5):538-546. doi: 10.1093/pm/pnac158.