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Prevalence of Depression Among Fibromyalgia Patients and its Effect on Quality of Life of Patients Attending Rheumatology OPD

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ABSTRACT

Background: Fibromyalgia (FM) is a chronic pain disorder characterized by widespread pain, fatigue, and cognitive dysfunction. Depression is a common comorbidity in FM, significantly impacting patients' quality of life (QoL). This study explores the prevalence of depression among FM patients and evaluates its impact on QoL. **Methods:** A cross-sectional study was conducted among 20 FM patients attending a rheumatology outpatient department. Depression was assessed using the Hamilton Depression Rating Scale (HAM-D), and QoL was measured through the Health Assessment Questionnaire (HAQ) and Fibromyalgia Impact Questionnaire (FIQR). Patients were categorized into groups with and without depression, and comparisons were made using appropriate statistical tests. **Results:** Patients with depression demonstrated significantly higher HAQ and FIQR scores compared to those without depression, indicating greater functional impairment and disease burden ($p<0.05p < 0.05p<0.05$). Depression severity was positively associated with reduced QoL, with severe depression correlating with higher FIQR scores across emotional, physical, and social domains ($p<0.05p < 0.05p<0.05$). No significant differences were observed in demographic factors between the groups, highlighting the clinical basis of disparities.**Conclusion:** Depression significantly deteriorates the QoL in FM patients. Early identification and management of depression are crucial for improving outcomes, emphasizing the need for integrated, multidisciplinary care approaches targeting both physical and psychological aspects of FM.

INTRODUCTION

Fibromyalgia (FM) is a chronic disorder characterized by persistent widespread pain, accompanied by symptoms such as fatigue, sleep disturbances, and cognitive impairments. It is fundamentally understood as a disorder of central pain processing, with heightened responses to both painful and non-painful stimuli resulting from central sensitization. Affecting approximately 2–5% of the population, FM is particularly prevalent among women and tends to peak in individuals aged 60–70 year. Its pathophysiology remains complex, often involving genetic, environmental, and neurological factors [1-4].

The diagnostic process for FM is challenging due to over lapping symptoms with other chronic conditions and the absence ofspecific biomarkers. Patients often experience delays in diagnosis, contributing to increased psychological distress and a . diminished quality of life (QoL). A multidisciplinary approach combining pharmacological and non-pharmacological treatments is typically recommended, but effective management is still difficult to achieve. Understanding the broader impacts of FM, including its psycho-logical dimensions, is critical for improving patient care[1,5 ,6]

Depression is one of the most common comorbidities observed in FM, with nearly 47% of patients experiencing moderate to severe depressive symptoms. The prevalence of depression in FM patients is linked to shared pathophysiological mechanisms, including dysregulation of serotonin and norepinephrine, which exacerbate both pain and mood disturbances. These comorbidities not only complicate the management of FM but also intensify its overall impact on the patient's life .[7-10]

Depression exacerbates the pain experienced by FM patients, leading to higher perceived pain severity and increased levels of stress and anxiety. Additionally, depressive symptoms contribute to cognitive impairments and chronic fatigue, compounding the challenges faced by FM patients. As a result, addressing depression is a critical component of effective FM management, as it directly affects the overall symptom burden and quality of life [8,11-13].

The QoL of FM patients is significantly impaired by the physical and psychological dimensions of the disorder. Reduced physical functioning, chronic pain, and emotional distress limit their ability to engage in daily, social, and professional activities. Several standardized methods are available to assess QoL and functional disability in patients with rheumatic diseases, including FM. Tools such as the Short Form-36 (SF-36), Fibromyalgia Impact Questionnaire (FIQR), and the Health Assessment Questionnaire (HAQ) are widely used to quantify the impact of the disease on physical, emotional, and social dimensions [12,14-16]. These instruments allow clinicians and researchers to monitor patient progress and evaluate the effectiveness of interventions.

Beyond depression and anxiety, psychosocial factors such as loneliness and vital stress play a significant role in determining the QoL of FM patients. These factors are often underexplored but have been shown to correlate directly with the levels of suffering reported by patients [14-17]. Addressing these dimensions through comprehensive interventions is essential for achieving better outcomes.

While significant progress has been made in under standing FM and its associated psychological impacts, gaps remain in the development of integrative treatment appro aches. Effective management of depression in FM patients has been shown to improve not only mood but also physical symptoms and pain tolerance. However, more research is needed to identify specific strategies for optimizing care in outpatient settings [18].This study aims to assess the prevalence of depression among FM patients and evaluate its impact on their QoL, with a focus on individuals attending rheumatology outpatient departments (OPDs). By identifying the interplay between depression, pain, and QoL, the research seeks to inform the development of compre hensive, multidisciplinary care models tailored to the needs of FM patients.

METHODS

Study Design and Participants

This cross-sectional study was conducted among patients attending the Rheumatology Outpatient Department (OPD). A total of 20 fibromyalgia (FM) patients were enrolled, meeting the American College of Rheumatology (ACR) criteria for FM. These criteria include a history of widespread pain lasting at least three months and the presence of at least 11 out of 18 specified tender points. Patients were divided into two groups based on the presence or absence of depression, determined using the Hamilton Depression Rating Scale (HAM-D). Exclusion criteria included individuals with a history of psychiatric disorders, substance abuse, chronic inflammatory or endocrine diseases, or pregnancy.

Clinical and Psychological Evaluation

The clinical evaluation involved a thorough assessment of tender points using the ACR criteria, where a standard digital force of 4 kg was applied to designated anatomical sites. Tender Point Count (TPC) and Tender Point Index (TPI) were computed to quantify pain sensitivity and distribution. Functional disability was assessed using the Health Assessment Questionnaire (HAQ), which evaluates eight dimensions of daily activities, including dressing, walking, and hygiene, with scores ranging from 0 (no difficulty) to 3 (unable to perform). The Fibromyalgia Impact Questionnaire (FIQR) was employed to measure physical functioning, pain, fatigue, sleep, emotional well-being, and overall quality of life.

Psychological evaluation was conducted by a trained psychiatrist, using the HAM-D to categorize depression severity into no depression, moderate depression, and severe depression. This evaluation adhered to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) criteria, ensuring robust diagnosis. Patients with coexisting psychiatric disorders, such as major depressive disorder or personality disorders, were excluded to isolate the impact of FM-related depression.

Data Collection and Outcome Measures

Baseline demographic data, including age, gender, marital status, and socioeconomic status, were recorded for all participants. Depression severity and quality-of-life (QoL) measures were collected. HAQ and FIQR scores were the primary outcomes for QoL, while HAM-D scores determined depression severity. Additional clinical metrics, such as pain intensity and functional disability, were recorded to explore associations between FM severity and depression.

Statistical Analysis

Data were analyzed using SPSS (version 25.0). Descriptive statistics summarized baseline characteristics. Independent t-tests and chi-square tests were employed to compare continuous and categorical variables, respectively, between groups. Non-normally distributed data were analyzed using the Mann-Whitney U test, while the Kruskal-Wallis test examined differences across depression severity categories. Statistical significance was set at p<0.05p < 0.05p<0.05.

RESULT

The comparison of baseline characteristics between fibrom yalgia patients with and without depression revealed no statistically significant differences across the assessed parameters. For age, the mean ± SD was similar between the two groups, with a p-value of 0.806 (independent t-test). Among categorical variables (sex, socioeconomic status, marital status, education, and occupation), no significant associations were observed, as all p-values exceeded 0.05 (chi-squared test). For example, the distribution of socioeconomic status and marital status was nearly identical between the groups, suggesting that these demographic and social factors are not significantly different between patients with and without depression in this cohort. These results indicate a lack of significant variation in baseline characteristics, highlighting the need to focus on other potential clinical and psychological differences between the groups ($P > 0.05$).

Table 1: Baseline Characteristics of Fibromyalgia Patients with and without Depression

Variables	Without Depression	With Depression
Age (Mean ± SD)	42.89 ± 13.35	41.45 ± 12.03
Sex, Count (%)		
Female	9 (100.00%)	11 (100.00%)
Socioeconomical Status, Count (%)		
Lower Middle Class	5 (55.56%)	7 (63.64%)
Upper Middle Class	4 (44.44%)	4 (36.36%)
Marital status, Count (%)		
Married	9 (100.00%)	11 (100.00%)
Education		
Graduate	4 (44.44%)	5 (45.45%)
High School	5 (55.56%)	4 (36.36%)
Post Graduate	0 (-)	2 (18.18%)
Occupation, Count (%)		
Professional	2 (22.22%)	0 (-)
Semi-Professional	1 (11.11%)	4 (36.36%)
Skilled Labour	0 (0%)	1 (9.09%)
Unemployed	5 (66.67%)	6 (54.55%)

Statistically no significant difference between groups (independent Student's *t*-test, chi-square test or Fisher's exact test).

The analysis revealed significant differences between patients with and without depression in terms of both HAQ scores and FIQR score categories. Patients without depression had a significantly lower mean HAQ score (1.44 ± 0.53) compared to those with depression (2.55 ± 0.52), as indicated by the Mann-Whitney U test ($p = 0.0015$). Furthermore, a chi-square test showed a statistically scores. significant difference ($p = 0.0143$) in the distribution of FIQR score categories between the two groups. Specifically, 88.89% of patients without depression had FIQR scores below 23, compared to only 27.27% of patients with depression. Conversely, 54.55% of patients with depression had FIQR scores in the 40–63 range, whereas no patients without depression fell into this category. These findings suggest that depression is associated with higher HAQ scores and greater fibromyalgia impact, as reflected in higher FIQR scores.

Table 2: Comparison HAQ and FIQR scores between Fibromyalgia Patients with and without Depression.

Parameter	Without Depression	With Depression	Test	p-value
HAQ Score (Mean ± SD)	1.44 ± 0.53	2.55 ± 0.52	Mann-Whitney U	0.0015
FIQR Score (Count, %)				
<23	8 (88.89%)	3 (27.27%)	Chi-square	0.0143
23-40	1 (11.11%)	2 (18.18%)		
40-63	0 (0.00%)	6 (54.55%)		
Total	9 (100.00%)	11 (100.00%)		

The analysis reveals significant differences in HAQ scores across depression severity categories. Patients with No Depression had the lowest mean HAQ score (1.44 ± 0.53), indicating minimal functional impairment, whereas patients with Moderate Depression and Severe Depression had higher mean HAQ scores (2.50 ± 0.53 and 2.67 ± 0.58, respectively), reflecting greater disability. The Kruskal-Wallis test confirmed that these differences are statistically significant (p = 0.0053). The boxplot visually highlights this trend, with increasing median HAQ scores and variability as depression severity progresses. These findings underscore the relationship between worsening depression severity and greater functional impairment in patients.

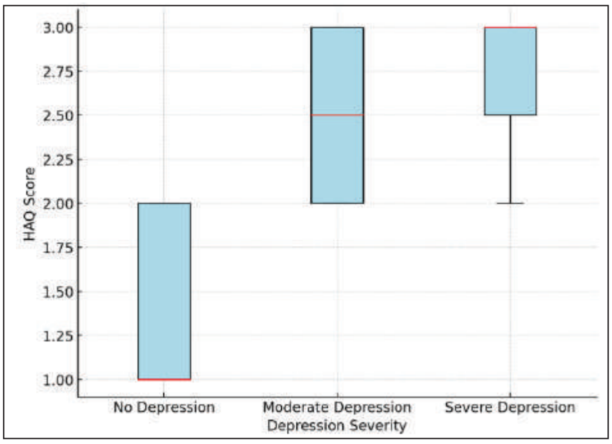

Figure 1: HAQ Scores by Depression Severity Categories

The analysis explored the relationship between FIQR score categories (<23, 23–40, and 40–63) and HAM-D depression levels (No Depression, Moderate Depression, and Severe Depression). A total of 20 patients were included in the study, distributed across the categories. Among patients with FIQR <23, 88.89% (8 patients) had no depression, while 37.5% (3 patients) had moderate depression. In the 23–40 FIQR category, 11.11% (1 patient) had no depression, 12.5% (1 patient) had moderate depression, and 33.33% (1 patient) experienced severe depression. For the 40–63 category, 50% (4 patients) had moderate depression, and 66.67% (2 patients) had severe depression, with no cases of no depression.

A Chi-Square test of independence yielded a Chi-Square statistic of 9.88 with 4 degrees of freedom and a p-value of 0.042, indicating a statistically significant association between FIQR scores and HAM-D depression levels ($p < 0.05$). This finding suggests that functional impairment and quality of life, as reflected by FIQR scores, are significantly associated with the severity of depression symptoms.

Table 3: FIQR vs HAM-D Categories

FIQR SCORE category	No Depression	Moderate Depression	Severe Depression	Total
23-40	1.0 (11.11%)	1.0 (12.5%)	1.0 (33.33%)	3 (15.0%)
40-63	NA	4.0 (50.0%)	2.0 (66.67%)	6 (30.0%)
<23	8.0 (88.89%)	3.0 (37.5%)	NA	11 (55.0%)
Total	9.0 (100.0%)	8.0 (100.0%)	3.0 (100.0%)	20 (100.0%)

The descriptive analysis of HAQ scores revealed distinct differences between patients with and without depression. Among patients without depression (HAM-D: No Depression), the mean HAQ score was 1.44 ± 0.53, ranging from 1 to 2, with a total of 9 individuals. In contrast, patients with depression (HAM-D: Moderate or Severe Depression) had a significantly higher mean HAQ score of 2.55 ± 0.52, ranging from 2 to 3, with a total of 11 individuals. These results suggest that individuals with depression experience greater functional impairment, as reflected by higher HAQ

Table 4: Descriptive Statistics for HAQ Scores

Statistic	No Depression	With Depression
Mean	1.444444	2.545455
Standard Deviation	0.527046	0.522233
Minimum	1	2
Maximum	2	3
Count	9	11

DISCUSSION

Fibromyalgia (FM) is a chronic pain disorder with significant implications for physical, psychological, and social well-being. In this study, we investigated the relationship between depression and quality of life (QoL) in FM patients, revealing that depression significantly exacerbates the impact of FM. Patients with depression scored higher on the Fibromyalgia Impact Questionnaire (FIQR) and Health Assessment Questionnaire (HAQ), reflecting greater functional impairment and lower QoL. This finding aligns with existing literature emphasizing the detrimental role of depression in FM, where comorbid psychological conditions amplify symptom severity and disability [2].

The prevalence of depression in FM patients has been reported to range from 47% to 70%, with shared pathophysiological mechanisms, including serotonergic and noradrenergic dysregulation, contributing to this comorbidity (9). Our study identified a similar trend, with patients experiencing moderate to severe depression exhibiting significantly higher HAQ and FIQR scores compared to those without depression. These findings support the hypothesis that depression not only coexists with FM but also worsens its clinical outcomes through mechanisms such as central sensitization and heightened pain perception [1].

Our results also demonstrate that demographic variables such as age, marital status, and socioeconomic status showed no significant differences between patients with and without depression, underscoring the clinical rather than demographic basis of the observed disparities in QoL. This finding aligns with studies indicating that the interplay between pain and psychological factors rather than external demographic factors primarily determines disease impact [12].

The strong correlation between depression severity and higher FIQR scores highlights the critical role of psychological health in FM management. Patients with severe depression reported greater pain, fatigue, and functional disability, mirroring findings from studies that emphasize the cyclical relationship between pain and mood disturbances [2]. Depression likely exacerbates FM symptoms through increased stress and reduced coping capacity, further impairing daily functioning.

Another key finding is the association between depression and HAQ scores, which measure physical disability. Patients with severe depression were significantly more impaired in physical activities, suggesting that psychological interventions targeting depression may also improve physical functionality. Similar conclusions have been drawn in previous studies, where psychological therapies and antidepressants significantly reduced disability in FM patients [8]. These findings support a multidisciplinary approach to FM management, integrating mental health support into routine care.

The relationship between depression and FIQR categories also reflects the influence of mood on disease-specific QoL domains. Patients with severe depression consistently scored higher in areas such as emotional well-being, social isolation, and overall symptom burden. Addressing these domains through comprehensive interventions, including cognitive-behavioral therapy and stress management, has been shown to improve outcomes [14]. Such strategies may also mitigate the neurobiological effects of chronic stress and central sensitization.

Our study's implications extend to clinical practice, emphasizing the need for early screening and targeted management of depression in FM patients. Given the bidirectional relationship between pain and depression, addressing psychological distress may not only improve mental health but also reduce the overall symptom burden of FM. This holistic approach aligns with recommendations advocating for personalized treatment plans that address both physical and psychological dimensions [7].

In conclusion, this study highlights the profound impact of depression on QoL in FM patients, emphasizing the importance of addressing psychological comorbidities to improve overall outcomes. Future research should explore the longitudinal effects of integrated treatment models, focusing on how interventions targeting depression influence long-term FM prognosis. Incorporating routine mental health evaluations into FM care protocols may help optimize patient outcomes and reduce the overall disease burden.

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