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DEMOGRAPHIC CHARACTERISTICS AND CLINICAL FEATURES OF FIBROMYALGIA IN PATIENTS PRESENTING IN RHEUMATOLOGY OPD OF TERTIARY CARE HOSPITAL

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Abstract

Background: Fibromyalgia is characterized by chronic pain affecting approximately 2% to 4% of common population. It is manifested by pervasive pain, cognitive problems, fatigue and sleep disturbances. Fibromyalgia can affect individuals of any age, gender, or ethnicity; however, it is more prevalent in women than in men, and it is typically diagnosed in middle age. ‘

Objectives: We investigated demographic as well as clinical characteristics of fibromyalgia in patients presenting to Rheumatology OPD of Mayo Hospital, Lahore.

Methods: This research was conducted from August 2021 to January 2023, in a metropolitan facility of Mayo Hospital Lahore. Patients who met the 2016 revised fibromyalgia diagnostic criteria were included in the study. Demographic information, medical history, clinical characteristics, and laboratory investigations were recorded for each patient.

Results: A total of 139 fibromyalgia patients were included in the study, having average age of 41.87±10.19 years, 76.95±12.92 Kg was their average weight and 23.72 mean BMI and 94.96% of them were females. Before being diagnosed with fibromyalgia, patients reported extensive pain (100%), fatigue (93.52%) and sleep disturbances (84.17%), headache (82.01%), cognitive difficulties (80.57%) as their most prevalent clinical manifestations.

Conclusion: Fibromyalgia is a prevalent disorder observed in rheumatology clinics, particularly among middle-aged women. Fibromyalgia is manifested by pervasive pain, sleep disturbances, fatigue

and cognitive complexes. Early diagnosis and treatment of fibromyalgia can enhance patients' quality of life and reduce healthcare expenditures.

Keywords: Chronic ache; Demographic variables; Healthcare cost; Sleep disturbance; Women disorders.

INTRODUCTION

Fibromyalgia is a chronic pain disorder affecting millions of persons worldwide [1]. It is manifested by pervasive pain, fatigue, sleep disturbances, and cognitive difficulties. Despite its prevalence, fibromyalgia is frequently misdiagnosed or ignored due to its non-specific symptoms and lack of definitive diagnostic tests. Fibromyalgia's pathophysiology is not completely understood [2-4]. Nevertheless, it is thought to involve dysfunction of the central nervous system and abnormalities in pain processing pathways [5-6]. Studies have revealed that fibromyalgia patients have a heightened sensitivity to excruciating stimuli, which may be the result of abnormal processing of pain signals in the brain [7]. In addition, abnormalities in neurotransmitter levels, including serotonin and norepinephrine, associated with fibromyalgia [8].

Fibromyalgia is manifested by pervasive pain, that is frequently illustrated as profound, aching pain in multiple body parts including neck, back, hips, and shoulders [9]. Additionally, patients with fibromyalgia may experience headaches, irritable bowel syndrome, and depression [10]. Fibromyalgia can be difficult to diagnose because there are no definitive diagnostic tests. Typically, the diagnosis is based on a combination of clinical characteristics and the exclusion of other conditions that may manifest with similar symptoms [11]. In addition to a history of widespread pain and the presence of multiple tender sites, revised diagnostic criteria for fibromyalgia in 2016 also include fatigue, sleep disturbances, and cognitive difficulties [12-13].

Rheumatologists are frequently the first line of therapy for patients with fibromyalgia. However, data pertaining to demographic and clinical characteristics of fibromyalgia in patients presenting to rheumatology clinics are scarce. Understanding these characteristics is essential for enhancing the diagnosis and treatment of this condition [14-15].

This study seeks to examine the demographic and clinical characteristics of fibromyalgia in patients presenting to the Rheumatology Outpatient Department of a tertiary hospital. The findings of this study can assist clinicians in recognizing the clinical characteristics of fibromyalgia at an early stage, thereby facilitating timely diagnosis and treatment. In turn, this can enhance the quality of life for patients and reduce the associated healthcare costs.

MATERIAL AND METHODS

Study Design

This was a cross-sectional investigation, done at Mayo Hospital, Lahore, Pakistan from August 2021 to January 2023. We investigated demographic and clinical characteristics of fibromyalgia in patients presenting to Rheumatology OPD of Mayo Hospital, Lahore.

Research Participants

Patients with fibromyalgia who presented to the Rheumatology OPD were included in the study. The 2016 revised diagnostic criterion for fibromyalgia necessitate a history of insidious pain and the presence of multiple tender points, in addition to other symptoms such as fatigue, sleep disturbances, and cognitive difficulties. Excluded from research were patients having history of other rheumatic or chronic pain disorders.

Data Collection

Each patient's demographic information, medical history, clinical characteristics, and laboratory investigations were recorded. Included in demographic data were age, gender, and location. The patient's medical history included the duration of chronic pain prior to fibromyalgia diagnosis,

comorbidities, and medication history. Clinical manifestations included pervasive pain, fatigue, sleep disturbances, cognitive problems, headache, and depression. In laboratory tests, serum creatine kinase levels were measured.

Analytical Statistics

The demographic and clinical characteristics of population were summarized by descriptive statistics. Categorical variables were reported as frequencies, while continuous variables were reported as Mean±SD. Student's t-test was used to examine the relationship between categorical variables, bearing p-value of 0.05 or less was deemed statistically significant.

Sample Size Calculation

Sample size was determined based on estimated 10% prevalence of fibromyalgia in general population using WHO sample size calculator, keeping 95% confidence interval and 5% margin of error. It was determined that a sample size of 139 was sufficient for detecting significant differences in demographic and clinical characteristics. Management of Data The data were input into a Microsoft Excel and analyzed employing SPSS version 23.0.

Ethical Approval

Institutional ethical committee and review board was approached to acquire the ethical approval to perform this investigation and all the participants provided willfulness consent in writing and were duly inculcated regarding the investigation purpose.

RESULTS

We investigated 139 patients affected with fibromyalgia during the study period and the data was gathered on pre-designed and approved questionnaire. The demographic values of study patients contained age, weight, gender, BMI and life style. We found that 43.16% ($p<0.05$) of patients fell within the age range of 36-50 years. The next most prevalent age range was between 26 and 35 years, with 23.02% of patients belonging to this group. 18 years was the least frequent age range, with only 2 patients (1.43%) falling into this category (Table 1). The F-value of 289.875 indicated that there was a significant difference in the number of fibromyalgia patients between age groups (Table 1).

Weight range of fibromyalgia patients who participated in study was also calculated, as well as the number and percentage of patients in each weight range. The preponderance of patients (57 patients, or 41%) weighed between 61 and 80 kg ($p<0.05$). The next most common weight range included 39 patients (28.05%) who weighed between 81 and 100 kg. 30 kg was the least frequent weight range, with only 2 patients (1.43%) falling into this category (Table 2). This table provided crucial information about weight distribution of fibromyalgia patients in the study, suggesting that there may be a correlation between weight and fibromyalgia prevalence. Figure 1 depicted the astounding gender distribution of study's participants: 94.96 percent of the participants were female ($p<0.05$), while only 5.03% were male, with the number of 132 and 07 out of 139, respectively (Figure 1). BMI of the patients depicted that the highest number of patients (48.2%) had BMI value of 18.5-24.9 ($p<0.05$), followed by 38.1% with BMI ranging from 25.0-29.9, 7.9% population had BMI of 30-34.9 and the lowest percentage of BMI <18.5 was noted for only 2.8% patients (Figure 2).

Genetic predisposition was calculated from the family history and it was found that only 5.03% patients stated that they had positive family history for fibromyalgia, while 94.9% patients did not have any family history (Figure 3). Life style of the patients revealed that such patients had zero percentage for sports, exercise, field work and gym *etc.* Significant proportion of the patients ($p<0.05$) described their routine home activities (92%), 15.1% revealed sedentary life style, 10% patients were addicted to junk food and cold drinks and 7.9% had official activities (Figure 4).

Clinical characteristics of fibromyalgia patients who participated were recorded along with their number and frequency of patients exhibiting each characteristic. It also included mean, standard

deviation, and p-value for ANOVA test performed on data. Overall 139 (100%) fibromyalgia patients exhibited diffuse pain ($p<0.05$), which was the most prevalent clinical symptom in this sample. Thirty-three patients (93.52%) exhibited fatigue, making it the second most prevalent clinical feature. 117 patients (84.17%) and 114 patients (82.01%) exhibited sleep disturbances and migraines, respectively. The mean score for widespread pain, for instance, was 99.75±33.95. This data can be used to gain a deeper understanding of the severity of each symptom in sample. The p-value of 0.00001* indicated that there was a significant difference in number of fibromyalgia patients exhibiting each symptom between clinical features. This suggests that some symptoms may be associated with fibromyalgia more strongly than others (Table 3). Pain assessment of patients was done on Achilles' tendon pinch test and a significant proportion of individuals exhibited (84.17%), while 15.83% were negative to Achilles' tendon pinch test (Figure 5).

Table 1: Age range of participating patients with fibromyalgia

S. No	Age ranges (years)	Patients (n)	Frequency (%)	F-value	p-value
1	<18	2	1.43	289.875	**0.00001***
2	18-25	18	12.94		
3	26-35	32	23.02		
4	36-50	60	43.16		
5	51-65	21	15.10		
6	>65	6	4.31		

* indicated significant value ($p<0.05$)

Table 2: Weight of participating patients with fibromyalgia

S. No	Weight ranges (Kg)	Patients (n)	Frequency (%)	F-value	p-value
1	<30	2	1.43	488.818	**0.00001***
2	31-45	5	3.59		
3	46-60	28	20.14		
4	61-80	57	41.0		
5	81-100	39	28.05		
6	>100	8	5.75		

* indicated significant value ($p<0.05$)

Figure 1: Gender of participating patients with fibromyalgia

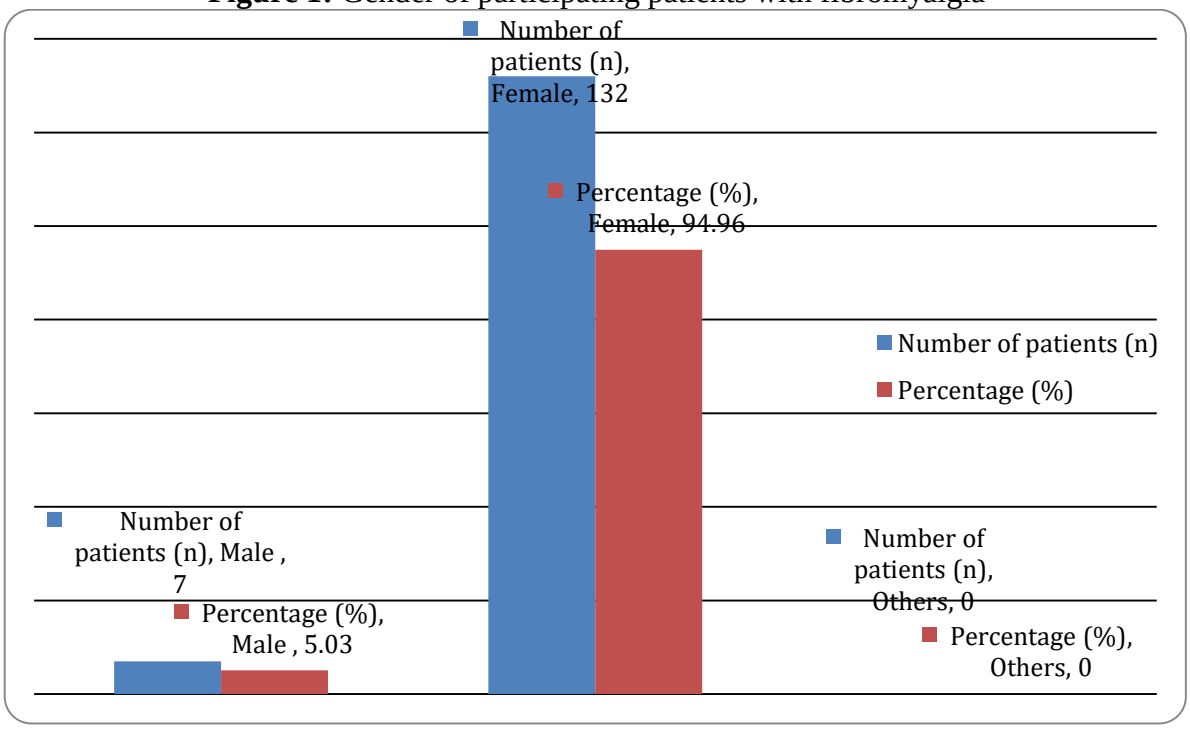


Figure 2: BMI of participating patients with fibromyalgia

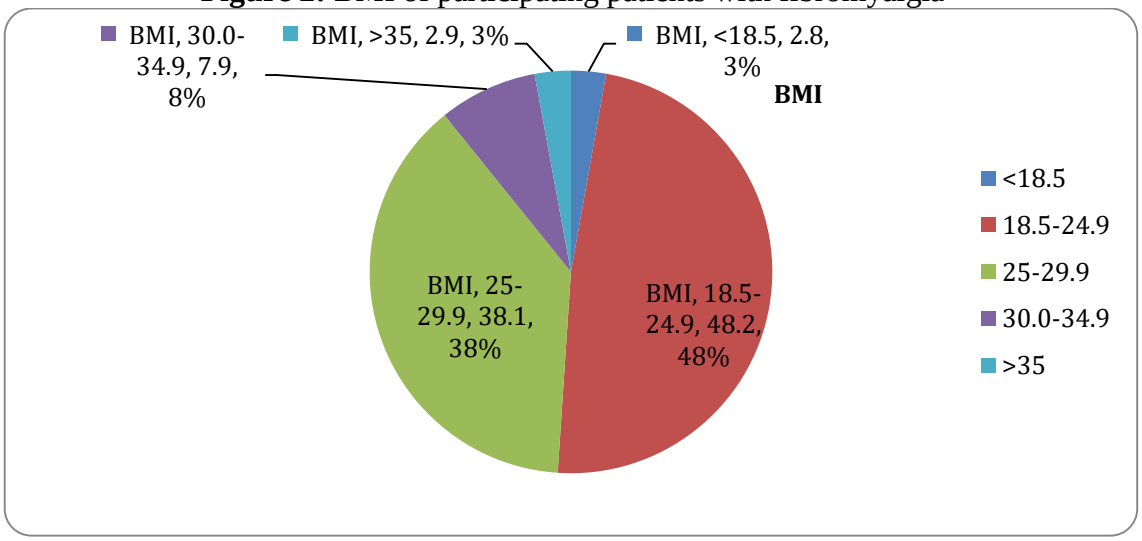


Figure 3: Family history of joint/autoimmune disorders

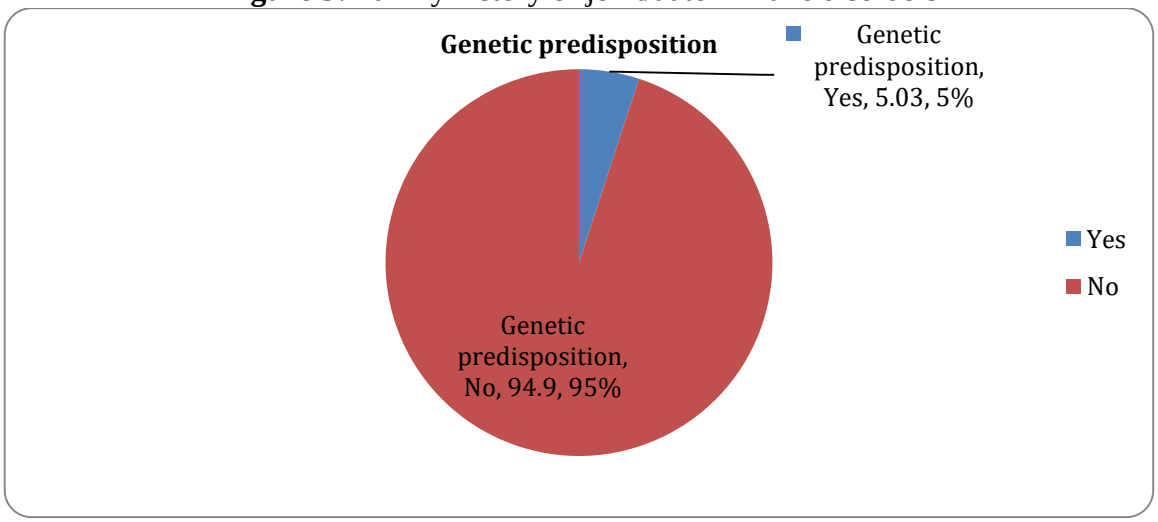


Figure 4: Life style status of the individuals

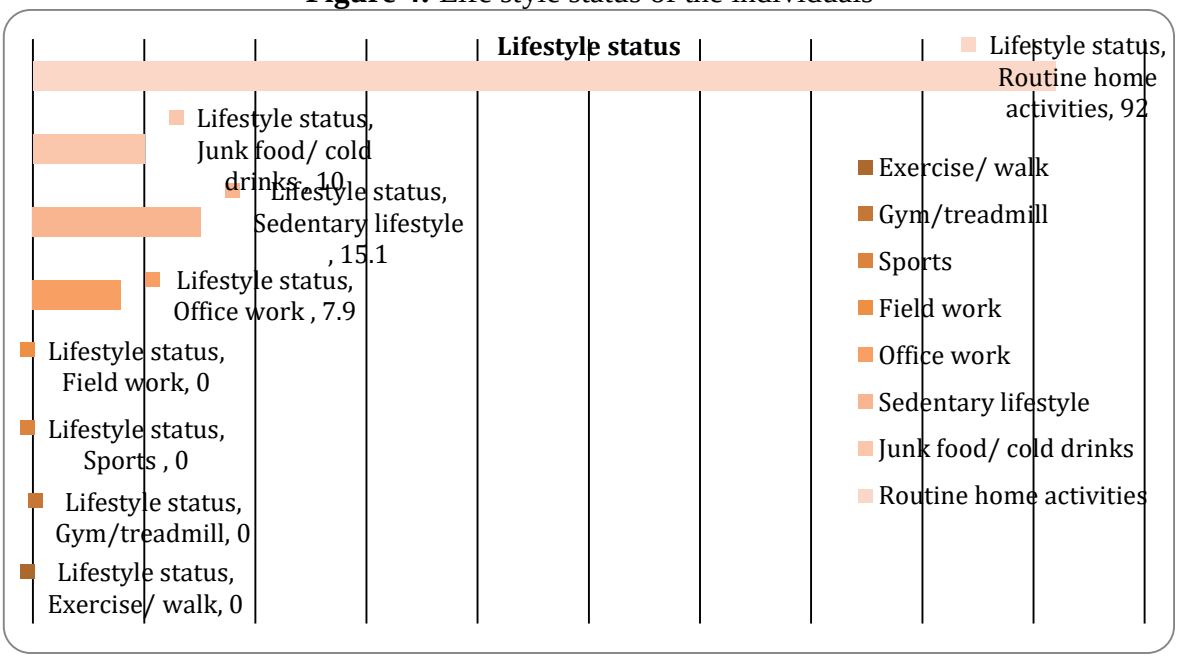
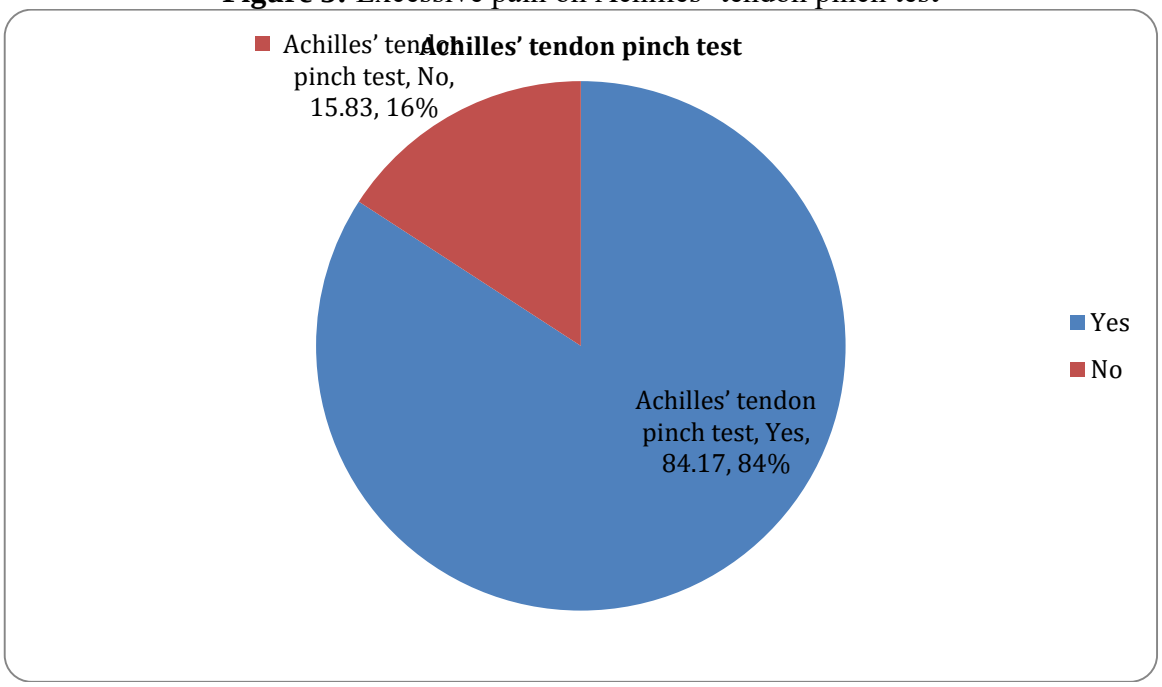


Table 3: Clinical features of patients with fibromyalgia

S. No	Clinical features	Patients (n)	Frequency (%)	Mean±SD	p-value
1	Widespread pain	139	100	99.75±33.95	**0.00001***
2	Fatigue	130	93.52		
3	Sleep disturbance	117	84.17		
4	Headache	114	82.01		
5	Cognitive difficulties	112	80.57		
6	Mood disorders	97	69.78		
7	Numbness or tingling	46	33.09		
8	Sensitivity to light or noise	43	30.93		

* indicated significant value (p<0.05)

Figure 5: Excessive pain on Achilles' tendon pinch test



DISCUSSION

We investigated 139 patients affected with fibromyalgia during the study period and their demographic and clinical characteristics were gathered. A total of 139 fibromyalgia patients were included in the study. The average age of the patients was 41.87±10.19 years, 76.95±12.92 Kg was their average weight and 23.72 mean BMI and 94.96% of them were females. Before being diagnosed with fibromyalgia, patients reported extensive pain (100%), fatigue (93.52%) and sleep disturbances (84.17%), headache (82.01%), cognitive difficulties (80.57%) as their most prevalent clinical manifestations. Genetic predisposition revealed that only 5.03% patients had positive family history for fibromyalgia. Life style of the patients revealed that such patients had zero percentage for sports, exercise, field work and gym *etc*. Significant proportion of the patients (p<0.05) described their routine home activities (92%), 15.1% revealed sedentary life style, 10% patients were addicted to junk food and cold drinks and 7.9% had official activities. The mean score for widespread pain, for instance, was 99.75±33.95. Other studies also demonstrated that Fibromyalgia predominantly affected the females [16-17].

Our findings were in liaison with the study conducted in Beijing, China, whereby majority of participants were female (86.3%), married (78.2%), had a mean age of 49.4 years, and had experienced symptoms for a median of 24 months. In comparison to their female counterparts, male patients were younger, more likely to be employed, had a higher income, and had higher rates of smoking and alcohol consumption (p<0.05). A significant percentage of patients experienced

moderate to severe pain (69.4%), severe fatigue (70.2%), and moderate to severe melancholy (53.3%). A minor percentage (19.4%) suffered from poor sleep quality, while more than one-third (37.1%) experienced moderate to severe stress. Less than one-third (27.5%) of patients with fibromyalgia had moderate to severe effects on their health. Men had substantially lower SF-36 mental component summary ($p = 0.043$) and role emotional ($p = 0.006$) scores than women, indicating that their mental health was significantly impaired [18]. However, they reported overall prevalence of fibromyalgia in Beijing to be 0.03-0.12% [19].

Our findings were also coinciding with the study conducted in American college of Rheumatology, in which preponderance of 201 patients registered for Juvenile Primary Fibromyalgia Syndrome (JPFS) were Caucasian/White (85%), non-Hispanic (83%) and female (83%). The patients' ages ranged from 9 to 20, with mean of 15.4 2.2 years. The most frequently reported symptoms included widespread musculoskeletal pain (91%), fatigue (84%), sleep disturbances (84%), and migraines (68%). Pain intensity was rated as moderate to severe (mean = 6.3% 2.4% on a 1-10 scale). Indicators of function and well-being deteriorated or remained comparatively unchanged over time for the 37% of the initial cohort for whom follow-up data were available [20]. A researcher reported that acute symptoms (76.9%), polyarticular onset (69.2%), persistent hand synovitis (90.7%), and protracted morning stiffness (157 minutes) were the presenting symptoms of patients and had a high average score for excruciating (18.6) and swollen (13.9) joints, as well as a high prevalence of rheumatoid nodules (15.3%), indicating an aggressive disease presentation in its early stages [21-22].

CONCLUSION

Fibromyalgia is complicated chronic pain disorder that influencing sizeable portion of the population. This study highlighted demographic and clinical features of fibromyalgia in patients presenting to Rheumatology Outpatient Department of a tertiary hospital. The study revealed that fibromyalgia was more prevalent in middle-aged women and duration of chronic pain prior to fibromyalgia diagnosis was frequently lengthy. Furthermore, the study revealed that pervasive pain, fatigue, and sleep disturbances were the most prevalent clinical manifestations of fibromyalgia. Fibromyalgia was difficult to diagnose due to its non-specific symptoms and dearth of definitive diagnostic tests. Typically, the diagnosis was based on a combination of clinical characteristics and the exclusion of other conditions that may manifest with comparable symptoms. It is essential to diagnose fibromyalgia at an early stage in order to reduce healthcare costs and enhance patients' life quality. In conclusion, findings of this research provided valuable insights into demographic and clinical characteristics of fibromyalgia in patients presenting to Rheumatology OPD of tertiary hospital. To better understand the underlying mechanisms of fibromyalgia and to develop more effective treatment strategies, additional research is required. Because our investigation was conducted in a single location, its applicability to other settings may be limited. Lastly, fibromyalgia was diagnosed based on clinical criteria, which may have led to misclassification of some patients.

CONFLICT OF INTEREST

None.

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