ORIGINAL ARTICLE

Prevalence of Fibromyalgia among Patients with Chronic Pain in a Tertiary Pain Management Centre of Bangladesh

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Abstract

Background: Fibromyalgia (FM) is one of the most common chronic pain disorders deteriorating the quality of life of the patients all over the world. The objective of the present study was to estimate the prevalence of fibromyalgia in chronic pain patients attending in a pain clinic of a university teaching hospital Bangladesh.

Methods: This cross sectional study was conducted among 262 consecutive patients visiting the pain clinic of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from January 2019 to June 2019. FM was diagnosed according to the American College of Rheumatology in 2016. Chi-square test, Fisher's exact test, independent t-test was used for comparison, as needed. A p-value of <0.05 was considered statistically significant.

Results: The overall prevalence of FM was 12.6%. The prevalence was higher among female (20.5%) compared to male (2.6%) ($p < 0.001$). The duration and intensity of pain were significantly higher among patients with fibromyalgia (duration 5.9 years vs 5.1 years, $p = 0.004$; VAS score 6.12 ± 1.09 vs 5.40 ± 0.96, $p = 0.002$). The WPI and SS scale score difference between patients with or without fibromyalgia was also significant ($p < 0.001$). The mean (SD) number of tender points was 15.4 (1.4).

Conclusion: The prevalence of FM among patients attending pain clinic of BSMMU was high. Besides, pain duration and intensity was also high among these patients which potentially has negative impact on their quality of life.

Keywords: Fibromyalgia, Chronic Pain, Widespread Pain Index, Prevalence, Bangladesh

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Introduction

Fibromyalgia (FM) is characterized by chronic widespread body pain with associated symptoms of fatigue, sleep disturbance and other somatic symptoms for which no alternative cause can be identified and often associated with comorbidities like various rheumatologic diseases, with adverse effect on health and well-being [1]. It represents the extreme end of the spectrum of musculoskeletal pain in the general population and has no single specific feature but represents a symptom complex of self-reported or elicited findings. There is a large body of evidence for a generalized lowering of pressure pain thresholds in FM patients, but the mechanical pain hypersensitivity (allodynia) of FM patients is not limited to tender points and appears to be widespread [2,3].

Despite lack of unifying theory connecting the disparate aspects of FM, there is convincing evidence that it is a central nervous system (CNS) disorder characterized by central sensitization, whereby patients with FM have an augmented pain response to normally non-painful stimuli[4]. The pathophysiology includes increased connectivity among brain networks involved in pain transmission and perception and decreased connectivity in anti-nociceptive brain networks [5–7]. Besides these organic changes, socio-cultural influences, emotional state like anger, fear, and depression strongly influence the pain[8].

FM is one of the most prevalent chronic pain disorders all over the world. Existing evidence reported the estimated prevalence of FM as 0.5 to 5% among general population and as high as 15.7% in pain clinics[9]. However, the prevalence varies in different countries and population. The overall prevalence of FM in the United States population was estimated as 2 to 3.3%, while it was 3% in Canada[10]. Similar prevalence rates have been reported in Western European countries, including Germany (3.0%), Spain (2.4%), Italy (2.2%), Denmark (1.0%) and Sweden (2.5%)[11]. A Community Oriented Program for Control of Rheumatic Disorder study on prevalence of rheumatic disorders in rural and urban communities of Bangladesh, a developing country in South Asia, estimated the prevalence of FM as 4.4%, 3.2%, and 3.3% in the rural, urban slum and urban affluent community, respectively[12].

FM often remained undiagnosed especially in resource-poor settings. Despite the availability of the diagnostic criteria, it is not widely used in most clinics and a diagnosis of FM remains largely one of the exclusions[13]. While there are a number of estimates of the occurrence of fibromyalgia in rheumatology clinic populations, studies of its prevalence among the patients suffering from chronic pain attending the pain clinics are lacking. Thus, this study was designed to estimate the prevalence of fibromyalgia in chronic pain patients which will improve the recognition and management of patients with FM.

Methods

Study design and setting

This is a cross sectional study conducted at the Pain Medicine Outpatient Unit and specialized pain OPD (Kosaka Pain Clinic), Department of Anaesthesia, Analgesia and Intensive Care Medicine, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from January 2019 to June 2019.

Participants

Consecutive patients visiting the pain clinic during the specified period were included in the study. Further inclusion criteria were adult patients (aged more than 18 years) of either gender presenting with chronic pain persisting for more than 3 months.

The exclusion criteria were: (i) patients with psychiatric disease and receiving antipsychotic drugs, (ii) patients with cognitive dysfunction and (iii) patients with history of drug abuse.

Data collection procedure

A face-to-face interview using a structured pre-tested questionnaire following the doctor-patient consultation was carried out by trained physicians for data collection. The first portion of the questionnaire was for the sociodemographic information and the second portion was for fibromyalgia screening pain characteristics.

Measurements

Widespread Pain Index (WPI): The WPI is a

measurement to assess bodily distribution of pain in 18 designated body locations over the past 7-days (e.g., 'neck', 'right upper arm', 'left lower leg'). Each location is equal to a score of 1 and the summation yields a total score, with higher scores indicating greater widespread pain[14]. A validated self-report body diagram was used to locate pain.

Symptom Severity Scale (SS Scale): The SS Scale is a 6-item scale to assess presence of clinical symptoms like abdominal pain, headache, depression etc. over the past 6-months, and the severity of cognitive symptoms like fatigue, trouble thinking or remembering, waking up tired/unrefreshed over the past 7-days. The presence of a clinical symptom is equal to a score of 1. The severity of cognitive symptoms is scored on a 4-point Likert scale, 0 indicating 'no problem' and 3 indicating 'severe problem'. A total score of 12 is possible, higher score indicating greater symptom severity[14].

Visual Analogue Scale (VAS): The intensity of pain was assessed by a Visual Analogue Scale (VAS). This tool has been widely used in pain studies consists of a straight line scale with which pain can be quantified. VAS scale marked in 10 cm (100mm) and marked from 0-10 cm (0-100mm). The most common VAS consists of a horizontal or vertical line with its two endpoints represents '0'means 'no pain' and '10' means 'worst pain' ever (or similar verbal descriptions)[15].

Diagnostic criteria of fibromyalgia

The diagnostic criteria defined by American College of Rheumatology in 2016 were used in the present study[16-18]. According to the ACR 2016, fibromyalgia was diagnosed in adults when all of the following criteria were met:

1. Generalized pain, defined as pain in at least 4 of 5 regions, was present;
2. Symptoms had been present at a similar level for at least 3 months;
3. Widespread pain index (WPI) ≥ 7 and symptom severity scale (SS scale) score ≥ 5 or WPI of 4–6 and SS scale score ≥ 9.

Statistical analysis

Quantitative variables were expressed as mean with standard deviation (SD), such as age, duration of pain, WPI score, SS scale score, and VAS score. Qualitative variables were expressed as proportion and percentages such as gender, positive/negative for fibromyalgia, and location of tenderness. Statistical tests like Chi-square test, Fisher's exact test, as needed, for comparison of categorical variables. The student's t test was used to compare quantitative variables. A p-value of <0.05 was considered statistically significant. SPSS version 23.0 was used to perform statistical analysis.

Results

A total of two hundred and sixty two patients were included aged 45 years on average with a female predominance (56%). Among the patients, thirty three were found to be positive for fibromyalgia according to ACR criteria, 2016 yielding the overall prevalence of 12.60% (95% CI: 8.6 – 16.6). The prevalence was higher among female (20.55%, 95% CI: 14.0 – 27.1) compared to male (2.6%, 95% CI: 0.0 – 5.5) which was statistically significant ($p < 0.001$) (Table I). There was no significant difference in age distribution between patients with or without fibromyalgia ($p = 0.794$) (Table I). However, the age group of 45-54 years suffered more (18%, 95% CI: 10.3-25.9) from fibromyalgia while the prevalence was low in young adults aged less than 25 years; then appeared to rise from age 25 to 34 through age 45 to 54 and then declined dramatically. Fig 1 depicts the prevalence of fibromyalgia according to age groups.

The mean (SD) duration of pain was 5.2 (1.4) months which was significantly higher among patients with fibromyalgia (5.9 years vs 5.1 years, $p = 0.004$). The overall mean (SD) of pain intensity measured by VAS was 5.6 (1.0). The difference between patients with or without fibromyalgia was significant (6.12 ± 1.09, 5.40 ± 0.96; $p = 0.002$). The WPI and SS scale score difference between patients with or without fibromyalgia was also significant ($p < 0.001$) (Table I). Patients with fibromyalgia were assessed for tenderness at 18 tender points of the body. The mean (SD) number of tender points was 15.4 (1.4) (Fig 2).

Table I: Demographic and clinical characteristics of the patients

Characteristics	Total	Patients with fibromyalgia	Patients without fibromyalgia	P Value
Age (years)	45.16 (9.28)	44.78 (8.35)	45.22 (9.20)	0.794
Gender				
Male	116 (44.27)	3 (2.58)	113 (97.42)	0.001
Female	146 (55.73)	30 (22.55)	116 (79.45)	
Duration of pain(months)	5.21 (1.42)	5.90 (1.54)	5.11 (1.43)	0.004
Intensity of pain (VAS score)	5.61 (1.02)	6.12 (1.09)	5.40 (0.96)	0.002
Widespread Pain Index score	6.50 (3.24)	10.15 (2.38)	6.41 (3.99)	0.001
Symptoms Severity Score	5.49 (3.02)	8.46 (2.63)	3.80 (2.04)	0.001

Values are expressed as mean±SD or absolute number, within parenthesis are percentage.

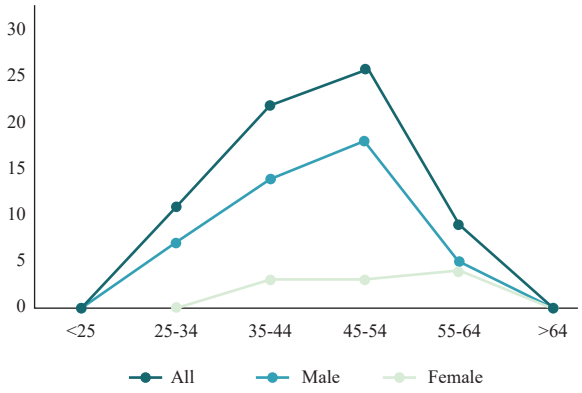

Fig. 1: Age and gender distribution of prevalence of fibromyalgia among the chronic pain patients

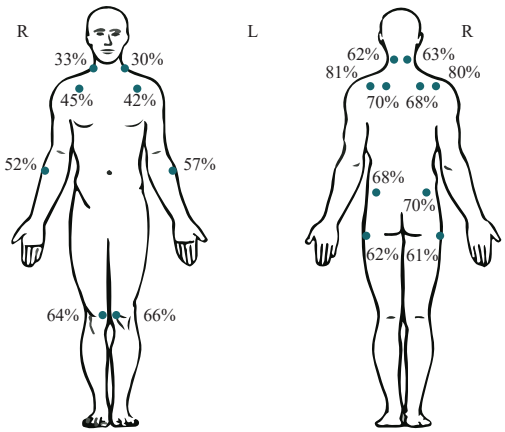

Fig. 2: Distribution of tender points reported by patients. Low cervical (right-33%, left-30%), Second rib (right-45%, left-42%), Lateral epicondyle (right-52%, left-57%), Knee (right-64%, left-66%), Occiput (right-63%, left-62%), Trapezius (right-80%, left-81%), Supraspinatus (right-68%, left-70%), Gluteal (right-70%, left-68%), Greater trochanter (right-61%, left-62%).

Discussion

Chronic pain is a major source of suffering of the patients which constitutes a highly prevalent and burdensome condition spanning the globe. Fibromyalgia, a common chronic widespread pain disorder is one of the conditions contributing to the pervasiveness and expense of chronic pain as a whole[8].

The present study provides an estimate of prevalence of fibromyalgia among patients with chronic pain attending in a tertiary pain clinic in Bangladesh. Our results demonstrated that the overall prevalence of FM in pain clinic was 12.6%. It is much higher compared to those found in general population of the country (4.4%, 3.2%, and 3.3% in the rural, urban slum and urban affluent community respectively)[12]. Besides, studies from different countries from America and Europe reported the population level prevalence as 1 to 3.3%[10,11]. However, clinic based studies reported similar prevalence of FM in Mexico, Spain, Australia, and the United States, ranging from 10.2% to 15.7% in rheumatology clinics[9].

Our study found that females were almost eight times more likely to suffer from FM (prevalence was 20.5%in female and 2.6% in men). The female predominance of this disease has been observed in several studies conducted in different countries[9–11]. However, the gender based disparity in FM prevalence varied according to diagnostic criteria. For example, the female male ratio was 13.7:1 for ACR 1990 criteria, 4.8:1 for ACR 2010 criteria and 2.3:1 for modified ACR criteria in a population based study conducted in the USA[10]. The age distribution of our patients demonstrated that the middle aged patients were suffering more likely from FM. This finding contrasts with the finding from a study conducted in European population, where the prevalence was highest among the elderly people[11]. However, our finding corroborates with a study from Korea where

the peak prevalence was observed in the fourth decade of life in women and the sixth decade of life in men[19].

In the present study, both duration and intensity of pain was higher in patients with FM compared to their counterpart. All the scores of WPI, SS scale and VAS was higher among FM patients which is consistent with some previous studies[19–21]. In the current study, patients reported tenderness at multiple sites. The most commonly affected areas were the shoulders, back, knees and buttock. The average number of tender points was 15.40 ± 1.41 and the results are consistent with the previous studies[19,20].

Though the present study provides an overview on the prevalence of fibromyalgia among patients attending a pain clinic with chronic pain, it has several limitations. First of all, the study was performed on painful patients seeking medical attention in a tertiary pain clinic, which cannot be inferential for overall population of the country. Furthermore, detailed information on sociodemographic variables and comorbidities those could have influential role on the prevalence on FM were not explored extensively. To estimate more accurate prevalence of FM, studies involving large number of patients in multiple centers are needed.

Conclusion

In summary, it may be stated that FM is very common among patients suffering from chronic pain in Bangladesh. Besides, the higher duration and intensity of pain among these patients potentially deteriorates their quality of life. It needs particular attention to improve the adequate diagnosis and management of FM and chronic pain in general.

Declaration

Ethics approval:

The ethical permission of the study was obtained from the Institutional Review Board (IRB) of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. Informed written consent form was signed by all the participants before enrollment.

Author contributions:

Conception and development of the idea:
AKMA, MMK
Data collection: MMK, KD, MJH
Data analysis: MMK, SA
Writing - Original Draft Preparation: MMK, SA
Review & Editing: AKMA, MMK

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