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Research Article

**PREVALENCE OF FIBROMYALGIA IN OBESE PATIENTS  
TREATED AT THE BARIATRIC SURGERY**<sup>1</sup>Dr Muhammad Usama Hayyan Rana, <sup>2</sup>Dr Asfan Akram, <sup>3</sup>Dr Sara Fatima<sup>1</sup>MBBS, Nawaz Sharif Medical College, Gujrat.<sup>2,3</sup>MBBS, Services Institute of Medical Sciences, Lahore.**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

*The second most effecting condition to the bone, soft tissues and muscles is known as fibromyalgia. It is a chronic pain syndrome which is characterized by combination of muscle pain at touch, all over body pain and other symptoms such as morning stiffness, fatigue, uncomfortable sleep and emotional changes. The classification of fibromyalgia has based on the presence of widespread pain, plus pain upon palpation in at least 11 of 18 predefined points (tender points). This criterion was defined by the American College of Rheumatology (ACR) in 1990. Pain in upper and lower segments as well as in both right and left sides of the body is known as widespread pain also called axial pain.*

*The study has concluded that there is a high prevalence of obesity with indication of bariatric surgery. Depression was shown to be important factor in regarding the association between fibromyalgia and obesity. Fibromyalgia has more impacts on the quality of life in obese patients such as making their daily life more difficult and their treatment extra challenge which surely need multidisciplinary approach.*

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**INTRODUCTION:**

The second most effecting condition to the bone, soft tissues and muscles is known as fibromyalgia. It is a chronic pain syndrome which is characterized by combination of muscle pain at touch, all over body pain and other symptoms such as morning stiffness, fatigue, uncomfortable sleep and emotional changes. The classification of fibromyalgia has based on the presence of widespread pain, plus pain upon palpation in at least 11 of 18 predefined points (tender points). This criterion was defined by the American College of Rheumatology (ACR) in 1990. Pain in upper and lower segments as well as in both right and left sides of the body is known as widespread pain also called axial pain. A new diagnostic criteria was developed by ACR in 2010, the new criteria contains widespread pain index (WPI) score and symptom severity score (SSS). Patients having WPI score  $\geq 7$  and SSS  $\geq 5$  or WPI of 3–6 and SSS  $\geq 9$  are diagnosed with fibromyalgia.

In 2011 tender points were more defined in a practical use whereas the new criteria do not contain the score of these tender points. It has well known that skeletal muscle pain and physical dysfunction is more in common in obese patients as compared to normal weight patients. Obesity is linked with various rheumatic conditions for example knee osteoarthritis, carpal tunnel syndrome and non-specific low back pain. Fibromyalgia and obesity has interrelated by different possible mechanisms. In many studies the patients with fibromyalgia are either overweight or obese and the conditions can more worsen with the passage of time. It could be due to many factors such as obstructive sleep apnea syndrome, other sleep disorders, depression and thyroid dysfunction and cytokine profile. A study conducted in patients with bariatric surgery has shown that there was remarkable improvement in symptoms after weight loss.

It is important to maintain balance between achieving proper treatment and improved quality of life of these patients and to obtain early diagnosis of fibromyalgia in obese patients. The aim of the study was to evaluate the presence of fibromyalgia in population who had undergone bariatric surgery.

**MATERIALS AND METHODS STUDY DESIGN:**

It was a cross sectional study conducted on obese patients who has undergone bariatric surgery. 110 participants were included in the study who met the inclusion criteria. The age ranged between 18-60 years old. Participants who do not met inclusion criteria were excluded from the study. The patients

were provided a written informed consent after explaining the purpose of the study. Patients were analyzed regarding their age gender, weight, height, BMI, and presence of comorbidities through medical record analysis.

The diagnosis of fibromyalgia was marked with presence or absence with reference to both criteria defined in 1990 and 2010. Patients were asked about the presence of widespread pain and in affirmative cases, how long the pain had been present. All patients were evaluated for the presence of tender points. If there were 11 or more than 18 positive tender points, the patient was classified with FM according to the 1990 criteria. Widespread pain index was also evaluated which ranges from 0 to 19 depending on the number of painful areas as well as the Symptom Severity Score (SSS), which evaluates the associated symptoms such as fatigue, repairing sleep and cognitive symptom. The degree of each item varies from 0-3, where 0 represents no problem; 1 represents slight/occasional; 2 demonstrate as moderate; 3 represent severe or persistent major problems. In a very simplified way somatic symptoms were also evaluated. Participants were questioned about the associated symptoms such as abdominal pain depression and headaches and were marked according to the level of severity. Fibromyalgia impact questionnaire was applied to all patients.

In this study for parametric data and comparison of means student's t-test was used whereas for non-parametric data and Wilcoxon-Mann test were used. For data analysis SPSS was used. Pearson's test was used to evaluate the correlations and for proportions chi-square t-test was used.

**RESULTS:**

Patients were assessed according to the inclusion criteria and 110 participants were recruited in the study. In 110 participants, there were 93 women and 17 were men. There was no significant difference found between obese patients with fibromyalgia in relation to BMI and age. The mean age of women was 43.07 and the mean BMI was 46.54. Out of 93 participants, 30 patients had FM according to 1990 criteria whereas according to 2010 criteria 47 participants had FM while 26 patients had FM by both criteria. There was no difference in age, BMI, score and prevalence of other disease in patients that met the 1990 criteria. Depression was seen more common in patients who were having fibromyalgia. According to the 2011 fibromyalgia diagnosis criteria only 12.06% patients had been reported previously diagnosed. BMI showed not correlation with FM-

related indexes, such as the number of tender points, the FIQ, and the fibromyalgians index in the group that met the 1990 criteria.

When the fibromyalgia was analyzed with the age of the patients there was positive association of WPI and the fibromyalgians index. Regardless of the criteria used for FM diagnosis these correlations were similar. According to the 1990 criteria, these correlations were stronger. Those patients who met 2011 criteria there was a positive correlation of fibromyalgians index and tender points.

The tender points, in turn, showed a correlation with the WPI in both criteria. Twenty-six patients met both the 1990 and the 2011 criteria. Out of 17 men, fourteen had fibromyalgia, in which nine were diagnosed according to 1990 criteria and five by the 2011 criteria. The characteristics between men and women did not vary in this study regardless of the criteria used for diagnosis.

#### DISCUSSION:

The estimated prevalence of fibromyalgia was 3.2%. The prevalence of fibromyalgia is more common in women who are approximately in 3.8% and 0.6% in men. Fibromyalgia and obesity has positive association but the mechanism of this correlation has not been well established yet. There is no clear declaration about whether obesity is the cause or the consequence of fibromyalgia, or if the two diseases have similar pathophysiological mechanisms.

Among the mechanisms proposed to explain this association are impaired physical activity, cognitive and sleep disorders, depression and other psychiatric comorbidities, thyroid and neuroendocrine axis dysfunction and endogenous opioid system disorder. The prevalence of obesity and overweight is approximately 32–50% and 21–35% respectively in the population of fibromyalgia. The current study has found that the prevalence of fibromyalgia varies between 34–35% depending upon the criteria used. There was no association was found between FM and BMI with any of the criteria. A study conducted by Arreghini *et al.*, 2014 also shown compatible results as shown by current study. A study conducted by Cordero *et al* reported in 2014 has stated that obesity in patients with FM and there was a weak correlation between BMI and tender points. However, many studies have evaluated the impact of FM before and after weight loss that showed weight loss has impact in pain indexes. Therefore the fact that the current study has found no association between weight and fibromyalgia in obese patients. In terms of comorbidities the current study has found higher

prevalence of depression among patients suffering from fibromyalgia despite of the criteria used for evaluation.

The association between depression and fibromyalgia was well documented by other studies. The prevalence of depression in fibromyalgia ranges 62–86% of patients. Depression has many impacts on one's life such as it lowers the pain threshold and worsens physical inactivity, worsening functional limitation and impairing quality of life. Therefore fibromyalgia has associated with depression their joint treatment is important, sometimes with psychiatric care.

The study has showed remarkable difference between the FIQ and fibromyalgians indexes, in patients having higher values of fibromyalgia as compared to those who are not suffering from fibromyalgia, using both criteria. Literature has confirms that the negative impact of disease has also positive effect on a patient's daily lives, with a decreased pain threshold and greater functional limitation.

It diverts the concentration towards the complexity of the treatment of patients with FM and obesity. Both scales are useful for patient follow-up as the correlation between FIQ and fibromyalgians confirms it. The 1990 criteria have showed a positive association between FIQ and the apnea scale. Since fibromyalgians is an FM intensity scale, consisting of the WPI and SSS, and there was an association of tender points with WPI, it is not surprising that there is also an association between fibromyalgians and tender points. However, it should be noted that all patients were evaluated according to both criteria, so patients who only had the diagnosis by the 2011 criteria had the assessment of tender points available, making the analysis possible. The incidence of men with FM found in this study is well above that reported in the literature. Wolfe *et al.* reported that only 0.5% men were affected, whereas in our sample we had 50% of men with fibromyalgia. However, the literature has proved that the incidence of fibromyalgia in male is not high as in females. It could be due to limited sample size.

The study has concluded that there is a high prevalence of obesity with indication of bariatric surgery. Depression was shown to be important factor in regarding the association between fibromyalgia and obesity. Fibromyalgia has more impacts on the quality of life in obese patients such as making their daily life more difficult and their treatment extra challenge which surely need multidisciplinary approach.

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