CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187
http://doi.org/10.5281/zenodo.4104519

**Available online at:** http://www.iajps.com *Research Article*

# EVALUATION OF IMPACTS OF FIBROMYALGIA ON PARITY, GRAVIDITY, BREASTFEEDING AND MENARCHE AGE

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**Article Received:** August 2020 **Accepted:** September 2020 **Published:** October 2020

**Abstract:**

***Objectives:*** *Fibromyalgia Syndrome is a complication normally influencing the females in their fertility age. However, there is no research work on the association of pregnancy and Fibromyalgia Syndrome. Impact of Fibromyalgia Syndrome on pregnancy course is poorly examined in present literature. In this research work, we examine the impacts of Fibromyalgia Syndrome on parity, breastfeeding duration, gravidity and menarche age.*

***Methodology:*** *In this prospective research work, we included 187 non-pregnant females attending the Shaikh Zayed Hospital Lahore from April 2020 to August 2020. 111 patients among them were identified with presence of Fibromyalgia Syndrome according to ACR (American Rheumatology Association) criteria and we categorized them in Group-1. 76 healthy females without pregnancy were the participants of Group-1. We asked from all the females about their marriage age, menarche age, parity, gravidity and breastfeeding duration with help of questionnaire. We recorded the BMI of the patients. We evaluated the parameters about depression with the help of BDS (Beck Depression Scale).*

***Results:*** *Mean age of the patients in Group-1 was 39.040 ± 9.210 (Fibromyalgia Syndrome) and average age of participants of Group-2 was 38.470 ± 9.650 years, 1st menarche age was 13.280 ± 1.380 years in Fibromyalgia Syndrome group and 13.590 ± 1.540 years in Group-2. Marriage age in patients of Group-1 was 20.10 ± 3.62 & 20.69 ± 3.9 years for the group of controls, correspondingly. We found no significant difference between the values of BMI (Group-1, 27.760 ± 4.950; Group-2 26.9 ± 4.56 kg/m2). Results of examination were similar in both groups in terms of parity, gravidity and duration of breastfeeding with no important difference statistically (P=0.2520, 0.0930, 0.0750, respectively). We found the significant difference in the parameters of depression. Results of BDS were different for both groups, higher in the patients of Group-1 (P=0.000).*

***Conclusion:*** *There was occurrence of Fibromyalgia Syndrome as a result of symptoms like disorder of mood, anxiety, sleep disorders and hormonal alterations; there is no establishment of the exact cause. This complication usually occurs in fertility age of the females. In accordance with the results of this research work, there is no adverse effect of Fibromyalgia Syndrome on the outcome of parity, gravidity and breastfeeding duration of females. There is need of further research works to examine the effects of Fibromyalgia Syndrome on the pregnancy course.*

***KEYWORDS:*** *Fibromyalgia Syndrome, Breastfeeding, Parameters, Depression, Gravidity, Parity, Menarche Age, Complication, Outcome, Depression.*

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*Please cite this article in press Ozair Bilal Ahmed et al,* ***Evaluation Of Impacts Of Fibromyalgia On Parity, Gravidity, Breastfeeding And Menarche Age .,*** *Indo Am. J. P. Sci, 2020; 07(10).*

## INTRODUCTION:

Fibromyalgia Syndrome is a chronic complication which involves a wide symptom's range as disorder of sleep, diffuse pain and disorder of cognitive function especially depression [1, 2]. There is occurrence of Fibromyalgia Syndrome usually seen in the females from 30 to 50 years of age and range of its rate of prevalence is from 1.0% to 4.0% [3]. Pathogenesis and etiology of this complication is still unknown but it is acknowledged that there are multiple factors responsible for this complication. Neural activity alterations in CNS (Central Nervous System), anomalous metabolism of the biogenic amines & immunologic issues may cause the incidence of this complication. Subjectivity of narratives of Fibromyalgia Syndrome, which is much same with the psychosomatic symptoms and chronic pain, makes it problematic for differential diagnosis [4].

Fibromyalgia Syndrome is disorder of chronic pain that have impact on females in their fertile age, but the association between pregnancy and Fibromyalgia Syndrome is not much researched. Symptoms of Fibromyalgia Syndrome effect the status of pregnancy, spontaneous miscarriage, and mensuration, usage of oral contraceptive and duration of breastfeeding [5]. The objective of this research work was to investigate the impacts Fibromyalgia Syndrome on parity, gravidity and duration of breastfeeding in Pakistani females.

## METHODOLOGY:

111 patients from April 2020 to August 2020 who visited Shaikh Zayed Hospital Lahore and diagnosed with Fibromyalgia Syndrome in accordance with the criteria defined in 2010 [6]. The research work was a prospective study. We included only non-pregnant females in this research work. We conducted a questionnaire survey for all the patients of this research work. In that questionnaire, we asked the patients about gravidity, parity, age at the time of menarche, marriage age and breastfeeding duration. We recorded the BMI of the patients. We evaluated the parameters of the depression with the utilization of BDS (Beck Depression Scale). Seventy-six non-pregnant healthy females were the participants of control group. We informed all the patients about the purpose of this research work and received their verbal consent according to the Helsinki Declaration.

Ethical committee of the institute gave the permission to conduct this research work. We excluded all the patients suffering from other serious diseases, malignancies, acute infections, pregnancy and co-existing complications. We used the SPSS V.23 for the statistical analysis of the collected information. We used the Kolmogorov-Smirnov test for the normal distribution of the collected data. We provided the comparison of every parameter for all the patients of both groups. We used the T-test for normally distributed groups whereas we used the Mann-Whitney U-test for the abnormal distribution. We considered the P value of less than 0.050 as significant statistically.

## RESULTS:

There were 187 participants in this research work in which 111 were the patients of Fibromyalgia Syndrome and 76 were the healthy controls. Average age of the patients of Group-1 was 39.040 ± 9.210 and average age for the participants of Group-2 was 38.470 ± 9.650 years. Average menarche age was 13.280±1.380 years for the patients of Group-1 and 13.590±1.540 years for the participants of Group-2. Average age at the time of marriage for the patents of Group-1 was 20.10±3.62 years in Group-1 and 20.690±3.90 years for Group-2. We did not find any significant difference between the values of BMI (P=0.5980) (Group-1, 27.760±4.950; Group-2 26.90±4.560 kg/m2). Gravidity for the patients of Group-1 was from 1 to 13 and for Group-2 from 1 to 7.

Parity number for the patients of Group-1 was from 1 to 8 and for the participants of Group-2 was 1 to 8. We found no statistically significant difference in this value (P=0.2520 and 0.0930, respectively). Breastfeeding duration for the patients of Group-1 and participants of Group-2 was 36.20±22.190 months and 31.520±23.530 months, correspondingly. BDI (Beck Depression Index) for Group-1 and Group-2 was 3.0:23, 4.0:31, 5.0:16, 6.0:1.0 and 1.0:49, 2.0:22, 3.0:2.0, 4.0:3.0, 1.0:17, 2.0:23, correspondingly. According to these findings, BDI was much higher in the patients of Group-1 (P=0.00). All these described results are provided with summary in Table-1.

**Table-I: Main Study Findings**

| Findings | Control group | Fibromyalgia group | P-value |
|---|---|---|---|
| Number of patients | 76 | 111 | |
| Age (years) | 38.47±9.65(22-64) | 39.04±9.21(24-65) | 0.574 |
| Body mass index (BMI) | 26.90±4.56 | 27.76±4.95 | 0.598 |
| Age at menarche (years) | 13.59±1.54(9-17) | 13.28±1.38(10-17) | 0.178 |
| Age at marriage (years) | 20.69±3.90(14-37) | 20.1±3.62(13-33) | 0.251 |
| Number of pregnancies(gravidity) | 2.93±1.49(1-7) | 3.23±1.74(1-13) | 0.252 |
| Number of births (parity) | 2.51±1.31(1-8) | 2.76±1.27(1-8) | 0.093 |
| Duration of breastfeeding (months) | 31.52±23.53(2-114) | 36.20±22.19(0-96) | 0.075 |
| Beck depression index (BDI) | Median: 1, mode: 1 | Median: 3, mode: 4 | 0 |

## DISCUSSION:

Since after the publication of the criteria of ACR classification, amount of the research works investigating the long-term impacts and etiology of Fibromyalgia Syndrome has increased. In 2010, there was evaluation of the new criteria for the simplification of the clinical diagnosis [6, 7]. There is common presence of Fibromyalgia Syndrome in the females in fertile age and it has adverse effects on QoL of these females. In addition, it can have impacts on gravidity, pregnancy course and breastfeeding duration in terms of imbalance in hormonal status, cognitive complications, disorder of sleep and mood disorders like anxiety and depression. There is much deficiency in the scientific research on this particular topic.

Hormonal alterations in the patients present with Fibromyalgia Syndrome can be explained by chronic pain dependent primary stress activation of neurons of hypothalamic CRH (8-10). There is high occurrence of this complication in females as compared to male patients. This is just because of the disrupted sex hormones. Okifiju [11] compared the levels of sex hormones and sensibility of pain at different stages of menstrual cycle in the patients of Fibromyalgia Syndrome and participants of control group. This study also showed that the high rate of Fibromyalgia Syndrome in females was due to hormonal disruption. Schochat discovered an association between late menarche, Fibromyalgia Syndrome and reduced fertility [12].

As a complication of fertile age, impact of Fibromyalgia Syndrome on pregnancy course has not been determined because of insufficient level of research. Fibromyalgia Syndrome symptoms show an enhanced profile in the healthy females with pregnancy near their last three months of pregnancy period [13-15]. In the duration of pregnancy, there is observation of increase in the sacrococcygeal, sacroiliac and pubic joint mobility. This may generate issues regarding the changes in postural changes and particularly, may cause the pain in belly and back in later period of pregnancy [16].

In one research work conducted by Leblebici [17], an association between Fibromyalgia Syndrome & pregnancy was discovered in geriatric group. It is confirmed that the level of estrogen can have impact on the pathogenesis of the disease but no other research work showed the association between Fibromyalgia Syndrome and levels of estrogen [18]. Schafer KM assessed the experience of breastfeeding in females present with Fibromyalgia Syndrome and examined that some mother felt them their inability to provide breastfeeding. Disease control should include the definition of all sources of comorbid pain and treatments. Therefore, it is necessary to treat overall health and functioning of the patients [19]. One of the effective methods is multi-modal approach, including education programs of cognitive behavior like control of pain, stress and relaxing methods.

## CONCLUSIONS:

Fibromyalgia Syndrome is usually a common condition in the females of fertile age and it negatively impacts the QoL (Quality of Life). Wide symptom's range and findings show that it can have impacts on pregnancy course and breastfeeding. We discovered no adverse impacts of Fibromyalgia Syndrome on parity, breastfeeding duration, and gravidity in non-pregnant females. There was frequent report of depression in the patients of Group-1 as compared to their controls. There is requirement of further research works to consolidate the findings of this research work.

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