

(RESEARCH ARTICLE)



## Fibromyalgia patients features in the COVID-19 pandemic in Iraq

Ghadhfan Abdulmajeed Saeed \*, Aymen Abdulkareem Othman Alrawi and Mohammed Rashied Salih

*Abu-Graib General Hospital, Baghdad Alkarkh Health Directorate, Ministry of Health/Environment, Baghdad, Iraq.*

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### Abstract

**Background:** Early articles on the impact of the COVID-19 pandemic found persistent related aggressiveness of fibromyalgia in the general population.

**Methods:** A surveillance study about 100 patients suffering from fibromyalgia in Abu-Graib General Hospital, Baghdad during period from June 2020 to March 2021. The target population for were adults, aged 18 years and older, diagnosed with FM for at least one year and no other pain condition. Data including: age, gender, ethnicity, residence, marital status, BMI, and medical history.

**Results:** Approximately, 100 patients completed  $\geq 90\%$  of the surveys and their data were analyzed. Females were 70% whereas males constituted 30% of the sample. Above 50 years was the age of the majority of patients. The mean age was  $50.7 \pm 12.88$  years. White color patients were documented in 92%. Smoker patients were 60%. About 29% of patients were alcoholic intake. Approximately, 49% of patients were obese. Comorbidities were recorded in 62% of patients. In relation to morbidity of persons, myocardial infarction reported in 3%, 7% heart diseases, 4% stroke, 10% liver diseases, 1% renal failure, 26% hypertension, 24% diabetes mellitus, 2% chronic obstructive pulmonary diseases, 9% tuberculosis, 8% bronchial asthma, 6% rheumatoid arthritis, 4% peptic ulcer, 2% systemic lupus arthromatus, 7% migraine, 31% cancers, 2% psychological diseases, and 4% depression. Patients with fibromyalgia described different pattern of symptoms including: Anxiety (54%), depression (50%), insomnia (65%), memory loss (34%), fatigue (94%), pain (92%), and arthralgia (83%).

**Conclusion:** Persons with a fibromyalgia diagnosis had high levels of self-reported pain, non-pain symptoms, comorbidity and psychological distress. Fibromyalgia diagnosis was associated with gender, education, ethnicity, citizenship and unhealthy behaviors.

**Keywords:** COVID-19; Pandemic; Fibromyalgia; Pain; Comorbidities

### 1. Introduction

There were more than 177 million cases recorded, and 3.8 million death till May 2021 [1]. Serious cases, COVID-19 can be complicated by acute respiratory distress syndrome (ARDS), cardiac injury, septic shock, sepsis, acute infection of kidney and multi-organ failure [2]. Fibromyalgia (FM) is a chronic musculoskeletal pain condition, accompanied by fatigue, non-restorative sleep, and multiple comorbidities [3]. It is a medical diagnosis used to describe the diminished quality of life related to generalized body pains with physical and psychological symptoms that occurs in the absence of a clear pathologic cause, and psychological disorder is observed in 30% of FM sufferers [4], but 60% exhibit symptoms consistent with diagnosis [5]. Despite the prevalence, FM is still poorly researched in Iraq, compared to depression, which is indicated in 60% of patients [6]. Despite the increased base rate, and patient reports of a causal link to pain,

\* Corresponding author: Ghadhfan Abdulmajeed Saeed  
Abu-Graib General Hospital, Baghdad Alkarkh Health Directorate, Ministry of Health/Environment, Baghdad, Iraq.

international guidelines make no specific recommendations on management of FM [7]. Recent research on chronic pain patients found an increase in pain during the pandemic; a rise attributed to lockdown. These findings, however, are based on cross-sectional investigations that do not capture the high variability of chronic pain. As recommended in a recent study, repeated assessment of both is necessary to study their relationship during the pandemic [8, 9].

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## 2. Methods

### 2.1. Study design and setting

A surveillance study about 100 patients suffering from fibromyalgia in Abu-Graib General Hospital, Baghdad during period from June 2020 to March 2021.

### 2.2. Participants

To be diagnosed with fibromyalgia requires that symptomatic persons seek health care from clinicians and that those clinicians interpret the described symptoms as being fibromyalgia. A person cannot have a fibromyalgia diagnosis unless they took the effort to see a clinician who is willing to make that diagnosis. For this reason, the clinical diagnosis of fibromyalgia is necessarily confounded by health care seeking behavior and clinical selection. The target population for were adults, aged 18 years and older, diagnosed with FM for at least one year and no other pain condition. Further screening was guided by the recently published diagnostic guidelines [3]. We included physical conditions that are commonly concurrent to fibromyalgia, if these were not associated with chronic pain.

### 2.3. Including criteria

- Widespread Pain Index (WPI) [WPI is a 0–19 count of painful non-articular body regions] and Symptom Severity Scale (SSS) [SSS is a 0–12 measure of symptom severity that includes fatigue, sleep and cognitive problems] are sufficiently high (WPI > 7 and SSS > 5, or WPI is 3–6 and SSS > 9).
- The polysymptomatic distress (PSD) scale is calculated by taking the sum of WPI and SSS, and a positive case must have a PSD score of at least 12.

### 2.4. Exclusion criteria

- Participants were not recruited with COVID-19 relevant underlying health conditions.
- Participants were not recruited if taking medication as gabapentinoids or hormone replacement therapy, both of which significantly mediate either pain.

### 2.5. Screening Survey

The development of the 2011 modification for survey research [10] of the American College of Rheumatology (ACR) Preliminary Diagnostic Criteria for Fibromyalgia [11] has enabled investigators to approximate both fibromyalgia diagnosis and severity outside of the clinical setting. As it does not require a physician examination, the modified 2011 criteria, can be used to determine a “calculated prevalence” of fibromyalgia in a given population. To find eligible participants, a screening survey was launched online on Qualtrics (Qualtrics, Provo, UT). Its distribution began in May 2020 and involved circulation across various social media platforms and email newsletters of several FM charities and patient-lead support communities. The screening survey had the following sections.

### 2.6. Data collection

Including: age, gender, ethnicity, residence, marital status, BMI, and medical history. Participants were screened for possible COVID-19, based upon the cardinal symptoms, identified by the WHO [1]. Any participant reporting positively were excluded from participation.

### 2.7. Statistical methods

We implemented standard descriptive statistics and data analysis using IBM SPSS Statistics Software (version 25). All p-values < 0.05 were considered statistically significant. Data are reported as means and standard deviations or medians and percentages of patients for categorical variables.

### 3. Results

Out of 500 screened participants, 400 (80%) were excluded due to various reasons. Of those who qualified, 100 completed  $\geq 90\%$  of the surveys and their data were analyzed. Females were 70% whereas males constituted 30% of the sample. Above 50 years was the age of the majority of patients. the mean age was  $50.7 \pm 12.88$  years. White color patients was documented in 92%. Smoker patients were 60%. About 29% of patients were alcoholic intake. Approximately, 49% of patients were obese, 20% overweight, and 31% with normal weight. Comorbidities were recorded in 62% of patients. In relation to marital status, 25% married, 33% divorce, 17% widowed, and 25% single. Most of patients lived in Baghdad city. About 24% of patients were employer, 25% had no jobs, 45% were housewives, and only 6% were students. (Table 1).

**Table 1** Demographic characteristics of persons with fibromyalgia

Variables		n (%)
Gender	Male	30 (30)
	Female	70 (70)
Age (years) 50.7±12.88	18-29	4 (4)
	30-39	10 (10)
	40-49	16 (16)
	50-59	26 (26)
	60-79	24 (24)
	>70	20 (20)
Ethnicity	White	92 (92)
	Black	8 (8)
Smoking	Smoker	60 (60)
	Non-smoker	40 (40)
Alcoholism	Yes	29 (29)
	No	71 (71)
BMI (Kg/m <sup>2</sup> ) 29.7±11.39	Normal	31 (31)
	Overweight	20 (20)
	Obese	49 (49)
Comorbidity	Present	62 (62)
	Absent	38 (38)
Marital status	Married	25 (35)
	Divorce	33 (23)
	Widowed	17 (17)
	Single	25 (25)
Address	Babil	4 (4)
	Baghdad	72 (72)
	Basra	1 (1)
	Diyala	6 (6)
	Misan	1 (1)

	Musol	2 (2)
	Ramadi	4 (4)
	Tikreit	5 (5)
	Wasit	5 (5)
Occupation	Government employer	24 (24)
	Non-employer	25 (25)
	Housewife	45 (45)
	Student	6 (6)

In relation to morbidity of persons, myocardial infarction reported in 3%, 7% heart diseases, 4% stroke, 10% liver diseases, 1% renal failure, 26% hypertension, 24% DM, 2% COPD, 9% TB, 8% bronchial asthma, 6% RA, 4% peptic ulcer, 2% SLA, 7% migraine, 31% cancers, 2% psychological diseases, and 4% depression. (Table 2).

**Table 2** Comorbid medical and psychiatric illness association with fibromyalgia

Condition	<i>n</i> (%)
Myocardial infarction	3 (3)
Heart diseases	7 (7)
Stroke	4 (4)
Liver diseases	10 (10)
Renal failure	1 (1)
Hypertension	26 (26)
DM	24 (24)
COPD	2 (2)
TB	9 (9)
Bronchial Asthma	8 (8)
RA	6 (6)
Peptic ulcer	4 (4)
SLA	2 (2)
Migraine	7 (7)
Cancers	31 (31)
Psychological diseases	2 (2)
Depression	4 (4)

**Table 3** Symptoms association with Fibromyalgia

Variables	<i>n</i> (%)
Anxiety	54(54)
Depression	50(50)
Insomnia	65(65)
Memory loss	34(34)
Fatigue	94(94)
Pain	92(92)
Arthralgia	83(83)

Patients with fibromyalgia described different pattern of symptoms including: Anxiety (54%), depression (50%), insomnia (65%), memory loss (34%), fatigue (94%), pain (92%), and arthralgia (83%). (Table 3).

#### 4. Discussion

The fibromyalgia picture of positive criteria comes from these data. These data are important because they verify in a population-based unbiased source many, but not all, observations about fibromyalgia made in the clinic [12, 13].

Fibromyalgia is the name given to persons with high levels of characteristic symptoms, [14] particularly those related to pain. The dividing points between fibromyalgia and not fibromyalgia in the ACR 1990 and 2010 criteria were based on a criteria committee's evaluation of symptom severity. With a prevalence of 1.75% in the current study and 2.1% in the large German population study, [4] fibromyalgia stands at the 98th percentile of the spectrum of poly-symptomatic distress [15], with a PSD diagnostic cut point of 12–13 that yields the most accurate classification of the syndrome.

Association between morbidity and fibromyalgia is reflect a clinical tendency to preferentially attribute symptoms to other clinical disorders rather than invoking a second diagnosis of fibromyalgia. It also seems to suggest that fibromyalgia symptoms are not restricted to otherwise healthy persons but also commonly occur in the setting of concomitant medical disease, such as “fibromyalgic rheumatoid arthritis” [16]. It seems clear that differences in a clinician's interpretation of symptoms will have substantial impact on the nature of treatments offered and covered by private and governmental health care insurance plans.

Fibromyalgia is more likely to be found in middle age housewives women, although of a substantially smaller magnitude than observed in clinical cohorts. Unlike what is seen in clinically-derived cohorts, fibromyalgia was more in white skin peoples. As expected, being divorced, obese or a smoker is more likely in those with fibromyalgia. These factors reinforce the importance of social disadvantage on the risk of fibromyalgia and polysymptomatic distress [17, 18]. The finding that citizenship is associated with a 3-fold increases in the odds of fibromyalgia suggests a strong predisposing role for individuals fully acculturated into the general population, and offers support to the idea that symptoms may be understood and manifested differently by different cultures [19, 20].

On the basis of discussions, we expected, that as a health compromised group, our respondents would be most concerned with health-related issues: “*oneself contracting COVID-19*”. Instead, our findings on anxiety sources agree with recently published surveys of the general population [9, 21].

Pre-pandemic up to 46% of FM sufferers reported job loss due to health complications [22] (Al-Allaf, 2007). Redundancy during the pandemic may mean that such individuals will struggle with finding new employment due to the work restrictions imposed by FM [23]. Further, worsening of socio-economic status will likely put FM individuals in a higher risk for contracting COVID-19 [24], thus this group of patients should become focus of attention for policymakers.

The finding that the pandemic is not only conducive to heightened anxiety but that the resulting emotional distress is reflected in FM pain, has several implications. Foremost, it confirms the previously raised concerns that the “new normal” introduced by the pandemic may qualitatively differently impact vulnerable populations. Second, it highlights the relationship between mental and physical wellbeing in FM pain. Evidence based international guidelines suggest that treatments target foremost patient-reported complaints [25, 26]. Psychiatric evaluation is instead undertaken upon request. This practice is in contrast with research where presence of psychological distress has been linked to disease progression [27].

Pain, however, is only one of the cardinal FM symptoms. Sleep disturbances and fatigue are both most reported concerns for FM [3], as well as both are acutely sensitive to stressors. There has been a decline in the quality of sleep in the general population [28].

People with fibromyalgia had marked increases in major medical conditions. For example, myocardial infarction, HTN and DM occurred more than twice as commonly in those with fibromyalgia. We also noted that fibromyalgia occurs more frequently in RA and SLA. We found that fibromyalgia also may be more common in some cancers, probably relating to small sample sizes in those with cancer; and we verified increased rates of depression and other mental illnesses. Similar findings of associations have been reported in a longitudinal database [12, 17].

The ACR criteria do not exclude persons because of other illnesses, including painful illnesses. In a previous study, we wrote “We also made no exclusions for the presence of ‘another disorder that would otherwise sufficiently explain the

pain. Even so, our epidemiology studies, as with most fibromyalgia epidemiology studies, did not have sufficient data to make such exclusions [29].

Fibromyalgia is better conceptualized as a symptom continuum that is influenced by physical and psychological stressors rather than a discrete diagnosis. It is important for clinicians to acknowledge their patients' polysymptomatic distress yet take care to avoid over-attribution of those symptoms to specific medical conditions, which potentially can lead to unnecessary medical testing and over-treatment. The use of descriptive polysymptomatic distress categories, such as mild, moderate, and severe symptoms, rather than using a discreet dichotomous definition for fibromyalgia may represent a useful alternative manner in which to consider fibromyalgia symptoms [30].

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## 5. Conclusion

Persons with a fibromyalgia diagnosis had high levels of self-reported pain, non-pain symptoms, comorbidity and psychological distress. Fibromyalgia diagnosis was associated with gender, education, ethnicity, citizenship and unhealthy behaviors.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

There was no conflict of interest to be declared.

### *Statement of ethical approval*

All authors declare they have no competing interests. The study was approved by the Abu-Graib General Hospital. Taken from Abu-Graib General Hospital, Baghdad Alkarkh Health Directorate committee.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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