Effects of COVID-19 Fear and Anxiety on Symptoms Severity, Sleep Quality, and Mood in Patients with Fibromyalgia in Ismailia

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Abstract

Background: Those who have fibromyalgia may be more sensitive to pain than those who don't. Some SARS-CoV-2 virus carriers will develop serious illnesses and need medical care. Therefore, people with fibromyalgia are more likely to experience worry and anxiety when COVID-19 illness first manifests. *Aim:* To determine the effects of COVID-19 fear and anxiety on symptoms severity, sleep quality, and mood in patients with fibromyalgia in Suez Canal university and to determine the prevalence of the effects of COVID-19 fear and anxiety on symptoms severity, sleep quality, and mood in patients with fibromyalgia in Suez Canal university. *Patients and Methods:* Following clearance from the Research Ethics Committee, this cross-sectional investigation was conducted in rheumatology outpatient clinics at Suez Canal University Hospital. There were 43 fibromyalgia patients in the research. To evaluate symptom intensity, sleep quality, and mood, patients were given the revised fibromyalgia impact questionnaire (FIQR), pittsburg sleep quality index (PSQI), and hospital anxiety depression scale (HADS). Additionally, the Coronavirus Anxiety Scale (CAS) and the dread of COVID-19 Scale (FCV-19S) are used to measure the severity of COVID-19 anxiety and dread. *Results:* We found that most of our patients had no fear or anxiety towards COVID-19 to begin with. This could be attributed to the fact that about 50% of patients were living in rural areas, around 65% had low socioeconomic status, also about 65% were illiterate or had only a high school degree. *Conclusion:* In contrast to COVID-19 anxiety, which does not affect symptom intensity, sleep quality, or mood in fibromyalgia patients, COVID-19 fear has a small but substantial impact on these variables.

Keywords: Sleep Quality, Fibromyalgia Impact, Pittsburgh

Introduction

Fibromyalgia (FM) is a syndrome that causes widespread pain across the body, sleep issues, exhaustion, and frequent emotional and cognitive anguish. Others who have fibromyalgia may be more sensitive to pain than others who do not have the condition. Abnormal processing of pain perception is what this is. Although the exact etiology of fibromyalgia is not always known, it can be effectively treat-

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ed and controlled[1]. In 1992, the WHO recognized fibromyalgia as a medical condition, and it was assigned the ICD-10 code M79[2]. Two to four percent of persons have fibromyalgia, with women being affected more often than men[3]. In Egypt, the prevalence of FM was assessed in patient cohorts who also had comorbid conditions, not just by itself[4]. A high prevalence of mental and affective problems, including post-traumatic stress disorder, borderline personality disorder, anxiety, and depression, is linked to fibromyalgia. Fibromyalgia sufferers have been shown to have high self-transcendence, high self-transcendence combined with high harm avoidance as temperament and character traits[5]. Mental stress has been demonstrated to have a long-term impact on FM symptoms, and FM patients frequently describe it as one of the factors contributing to the exacerbation of their symptoms. Both FM sufferers and healthy people have a rise in muscular tone while under mental stress, and this stress-induced muscle activity is linked to an increase in pain[6]. The SARS-CoV-2 virus is the infectious illness known as coronavirus disease (COVID-19). The majority of infected people will develop a mild to severe respiratory illness and recover without the need for special care. However, a small number of people develop serious illnesses and need medical care[2]. Knowing more or having more information about the virus might increase one's anxiety, but so can their dread of the unknown. A persistent danger that is ambiguous might grow oppressive over time[7]. There is no way for a person to know if the person next to him is infected or not, which adds further uncertainty to the situation. Reports and estimates on the mortality rate are hard to conduct with any degree of accuracy because many infected persons are asymptomatic. When the unknown is fully and strongly sensed, it might cause intolerance and anxiety[8]. Anxiety appears to have as its foundational dread a fear of the unknown[9]. Concerns with COVID-19 include anxiety that comes with unexpected and uncontrollable events in addition to dread of the unknown. Therefore, regardless of the likelihood that it will occur, it is simple to learn to be afraid of this undetected threat[10]. Therefore, people with fibromyalgia are more likely to experience worry and anxiety when the COVID-19 condition starts to manifest. Furthermore, because earlier studies focused on fibromyalgia patients who also had other chronic diseases, it was crucial to rule out these related ailments to obtain a more precise connection with fibromyalgia alone and compare our results to those of others. To our knowledge, this study is the first in Egypt to examine the relationship between COVID-19-related dread and anxiety and the severity of fibromyalgia symptoms. It is also the first to examine this relationship in fibromyalgia patients without taking into account any coexisting conditions. This study aimed to determine the effects of COVID-19 fear and anxiety on symptoms severity, sleep quality, and mood in patients with fibromyalgia at Suez Canal University and to determine the prevalence of the effects of COVID-19 fear and anxiety on symptoms severity, sleep quality, and mood in patients with fibromyalgia in Suez Canal university.

Patients and Methods

This descriptive cross-sectional study was conducted on fibromyalgia patients who were recruited from rheumatology outpatient clinics at Suez Canal University Hospital, Ismailia City, Egypt, using a non-probability, practical sampling approach until the sample size was fulfilled. Based on a previous study in which r= 0.416, and

the dropout was 10 %, the sample size was 43 patients[11,12]. The study included patients with fibromyalgia [fulfilling the Fibromyalgia Diagnostic Criteria (2016)] aged 18-80 years old of both genders. Patients with any of the following were excluded; Rheumatoid arthritis and other autoimmune diseases. Chronic fatigue syndrome. History of psychiatric disorders. History of metabolic disorders (diabetes mellitus, thyroid disorder, etc). Evidence of malignancy. Concurrent infection other than COVID-19.

Data collection
This descriptive cross-sectional study was conducted on fibromyalgia patients who were recruited from rheumatology outpatient clinics at Suez Canal University Hospital, Ismailia City, Egypt, using a non-probability, practical sampling approach until the sample size was fulfilled.

Fibromyalgia screening questionnaire (FSQ)[13]
The Widespread Pain Index (WPI), Symptom Severity Score (SSS), and Must-Have Criteria for Diagnosis make up the first two of the five domains used to diagnose fibromyalgia and evaluate the primary symptoms of the condition. Consequently, the following requirements were crucial for the diagnosis: 1) Widespread pain index (WPI) and symptom severity score (SSS): WPI ≥ 7 and SSS ≥ 5 OR WPI 4-6 and SSS ≥ 9. 2) widespread Pain, affecting the left upper, right upper, left lower, right lower, and axial areas. 3) Symptoms present ≥ 3 months

A brief history
To ensure that the patient alone has fibromyalgia and no other ailment, a brief history was gathered from the patient, including demographic information and questions about any chronic illnesses or linked conditions.

Revised Fibromyalgia Impact Questionnaire (FIQR)[14]
To evaluate the severity of the symptoms. Similar to the FIQ, the FIQR contains three domains: function, overall impact, and symptoms. Modified function questions and the addition of tests for memory, tenderness, balance, and environmental sensitivity set it apart from the FIQ. There are 10 questions in the first domain, 2 in the second, and 10 in the third. Every question uses a scale from 0 to 10 to gauge how difficult or severe a symptom is. The FIQR uses significantly easier scoring than the FIQ, dividing the total scores for function (range 0 to 90) by 3, the total scores for overall impact (range 0 to 20), and the total scores for symptoms (range 0 to 100) by 2. The three adjusted domain scores add up to the overall FIQR. Patients with severe FM often score above 70; the average FM patient scores around 50.

Pittsburgh Sleep Quality Index (PSQI)[15]
It evaluates sleep disruptions and quality over one month. It has 19 questions that the respondent rates themselves and 5 questions that the bed partner or roommate (if one is present) rates. The scoring only considers self-rated questions. Seven component scores are created from the 19 self-rated items, with each value having a range of 0 to 3. A score of 0 means there is no difficulty, while a score of 3 means there is significant difficulty. The sum of the seven component scores results in a global score that ranges from 0 to 21, with 0 denoting no difficulty and 21 denoting extreme difficulty across the board. According to the authors, a score of 5 or more should be regarded as a substantial sleep disruption.

Hospital Anxiety Depression Scale (HADS)[16]

As our study primarily evaluated mood, we employed the D-subscale (depression subscale), which is frequently used to gauge how much depression a person is feeling. It consists of 7 questions, ranging from 0 to 3, with 0 indicating no attachment and 3 indicating strong affection. Cut-off scores of 8 to 10 for unsure instances and 11 for certain cases are advised. A cut-off score of 8 or above for both HADS Anxiety and HADS Depression was shown to be the ideal compromise between sensitivity and specificity.

Fear of COVID-19 Scale (FCV-19S)[17]

To evaluate the level of COVID-19 fear. It consists of 7 questions. Responses are measured on a 5-point scale, with options ranging from 1 (strongly disagree") to 5 ("strongly agree"). A total score could be calculated by adding up each item score (ranging from 7 to 35). A higher total score indicates a greater fear of COVID-19. The cutoff point is 17.5.

Coronavirus Anxiety Scale (CAS)[18]

To gauge the COVID-19 anxiety level. There are 5 questions on it. Based on experiences during the last two weeks, each CAS item is assessed on a 5-point scale, from 0 (not at all) to 4 (almost every day). The DSM-5's cross-cutting symptom measure is compatible with this scaling structure. Using an optimized cut score of 9, the CAS successfully distinguishes between individuals with and without dysfunctional anxiety (90% sensitivity and 85% specificity).

Ethical Considerations

The Research Ethics Committee's administrative permission was granted on March 26, 2022. The Ethics Committee of the Suez Canal University, Faculty of Medicine, accepted the study protocol. No vested interests. Before collecting any data or conducting any investigations, we obtained fully informed consent from each participant. No other use will be made of the participant information gathered. The consent contained a short and understandable explanation of the study's objectives for laypeople. No hazardous actions or methods were employed. All information was regarded as private and will not be shared outside of this study without the consent of the participants. The patients' or their families' contact information, including the researcher's phone number, was provided so they could get in touch with them if they wanted an explanation. The study's findings were shared with all participants. Without giving a reason or impacting the standard of medical treatment they get, every participant had the freedom to leave the research at any time. Samples and other data gathered from the records were coded to ensure data confidentiality.

Statistical Analysis

With the aid of the IBM SPSS software package version 20.0, data was input into the computer for analysis. IBM Corp., Armonk, New York Number and percentage were used to describe qualitative data. The normality of the distribution was confirmed using the Smirnov test. The range (minimum and maximum), mean, standard deviation, and median were used to characterize quantitative data. The 5% level was used to determine the significance of the obtained data. To compare results between several groups using categorical data, the Chi-square test was performed. The Mann-Whitney test was employed to compare two groups under study when quantitative data had an aberrant distribution. The correlation between two dis-

persed abnormally quantitative variables was determined using the Spearman coefficient. The Kruskal-Wallis test was employed to compare between more than two study groups when quantitative data had an irregular distribution.

Results

Most of our patients were females (95.3%) and also the prevalence of fibromyalgia in females is more than that in males (Table 1).

Table 1: Distribution of the studied cases according to demographic data (n = 43).		
	No.	**%**
Sex		
Male	2	4.7
Female	41	95.3
Age (years)		
Min. – Max.	20.0 – 60.0	
Mean ± SD.	34.26 ± 9.94	
Median (IQR)	33.0 (27.50 – 39.50)	
Residence		
Urban	21	48.8
Rural	22	51.2
Educational level		
Illiterate	10	23.3
High school degree	18	41.9
University degree	15	34.9
Socio economic status		
Low	28	65.1
Average	15	34.9

IQR: Inter quartile range, SD: Standard deviation

The mean age of patients was 34.26 ± 9.94 (± SD). Patients were nearly equally distributed between urban and rural areas. It also depicts that the majority of patients were educated to high school level (41.9%) and had low socioeconomic status (65.1%). Table 2 showed that in the fibromyalgia screening questionnaire, the majority of cases had a score of the widespread pain index (WPI) with a mean of 16.33 ± 2.88 (± SD) and a symptom severity score (SSS) with a mean of 10.37 ± 1.94 (± SD). Table 3 showed that most patients (72.1%) had an affected Revised Fibromyalgia Impact Questionnaire (FIQR), so it depicted that fibromyalgia had a negative impact on the lifestyle of the majority of patients. It also showed that the majority of patients (88.4%) had an affected sleep quality due to fibromyalgia. It was noticed here that fibromyalgia had a negative impact on the mood of the majority of patients with a risk of developing depression of about 76.7%. It was clear here that fibromyalgia had little impact on the patients' fear of covid 19 and had no effect at all on the patients' anxiety of covid 19. Table 4 demonstrated that there is a positive significant correlation between HADS-D and FIQR (P value of > 0.001), this proved that depression highly affected the quality of life of fibromyalgia patients.

On the other hand, there is no correlation between the other scores.

Table 2: Descriptive analysis of the studied cases according to FSQ.

Total score	Min. – Max.	Mean ± SD.	Median (IQR)
WPI	9.0 – 19.0	16.33 ± 2.88	17.0 (14.0 – 19.0)
SS scale score	5.0 – 12.0	10.37 ± 1.94	11.0 (9.0 – 12.0)

IQR: Inter quartile range, SD: Standard deviation, FSQ: Fibromyalgia
screening questionnaire, WPI: Widespread pain index, SS: symptom severity

Table 3: Descriptive analysis of the studied cases according to different scores.

Total score	No.	%	Mean ± SD.
Overall FIQR score			
<50	12	27.9	37.25 ± 7.97
≥50	31	72.1	72.37 ± 9.93
Total	43	100.0	62.57 ± 18.47
Global PSQI Score			
≤5	5	11.6	4.20 ± 0.84
>5	38	88.4	10.16 ± 2.47
Total	43	100.0	9.47 ± 3.03
HADS-D			
<8	10	23.3	4.40 ± 1.96
≥8	33	76.7	17.0 ± 3.18
Total	43	100.0	14.07 ± 6.13
Fear of COVID-19			
<17.5	37	86.0	7.16 ± 0.69
≥17.5	6	14.0	21.0 ± 1.79
Total	43	100.0	9.09 ± 4.93
CAS			
<9	43	100.0	0.0 ± 0.0
≥9	0	0.0	–
Total	43	100.0	0.0 ± 0.0

SD: Standard deviation, FIQR: Revised Fibromyalgia Impact Questionnaire, PSQI: Pittsburgh Sleep
Quality Index, HADS-D: Hospital Anxiety Depression Scale D- subscale, CAS: Coronavirus Anxiety Scale

Table 5 demonstrated that sex had no effect at all on any of the scores, also residence had no impact on FIQR, PSQI, and Fear of COVID-19 scale, whereas it affected HADS-D (P value = 0.010) and proved that depression was more in urban areas. Regarding the educational level effect on FIQR, PSQI, and HADS-D, it was not remarkable, while it had a noticeable effect on the Fear of COVID-19 scale (P value < 0.001) which is more prominent in the illiterate population with a mean of 12.80 ± 6.34 (± SD). On the other hand, it denied any impact of socio-economic status on FIQI, PSQI, and HADS-D, whereas it confirmed a significant impact on the Fear of COVID-19 scale (P value = 0.024), and that this impact is more prevalent in low socio-economic status population with a mean of 10.21 ± 5.84 (± SD).

Table 4:Correlation between different scores.					
		FIQR	**Global**	**HADS-D**	**Fear of COVID-19**
FIQR Score	r_s	1.000	0.267	0.653	0.281
	p		0.083	<0.001[*]	0.068
Global PSQI Score	r_s		1.000	0.243	0.085
	p			0.116	0.586
HADS-D	r_s			1.000	-0.032
	p				0.836
Fear of COVID-19	r_s				1.000
	p				

*r_s: Spearman coefficient, *: Statistically significant at p ≤ 0.05, FIQR: Revised Fibromyalgia Impact Questionnaire, PSQI: Pittsburgh Sleep Quality Index, HADS-D: Hospital Anxiety Depression Scale D-subscale, CAS: Coronavirus Anxiety Scale*

Discussion

Due to the COVID-19 pandemic's high transmission and mortality rates, social isolation brought on by the quarantine necessary to prevent rapid transmission, financial hardships, and challenges accessing medical care, people experienced psychological stress brought on by fear and anxiety[19]. Psychosocial deficits and a significant decline in quality of life are features of FMS. Patients with fibromyalgia commonly have poor sleep quality[20]. When compared to the general population, people with FM have been observed to have a 20–60% higher prevalence of major depression in particular[21]. This higher incidence may be caused by a number of elements, such as a sense of powerlessness while dealing with chronic, ongoing pain and the particular stigma associated with FM's position as a recognised medical diagnosis[22]. As far as we are aware, this is the first study to examine the impact of COVID-19 anxiety and fear on the intensity of symptoms, the quality of sleep, and the mood of pure FM patients (those with just fibromyalgia and no other diseases or ailments). The purpose of this cross-sectional study, which included 43 fibromyalgia patients who attended rheumatology outpatient clinics at Suez Canal university hospital, was to ascertain the impact of COVID-19 on the psychological state and quality of life of fibromyalgia patients. Since women made up the bulk of our participants (95%) it's possible that more women than men in our area suffer from fibromyalgia. The participants' median age was 33 as well. The participants were split equally between rural and urban areas. The majority of the patients were either college or high school graduates. Similarly, Cankurtaran and his colleagues[11] explored how COVID-19 worry and fear affected FM patients' symptom intensity, sleep quality, and mood. The majority of their patients had either completed elementary school, middle school, or high school, or had a university degree, and 90% of the participants were female. The median age of the patients was also discovered to be roughly 46 years. According to our research, the median FIQR score is 72, the PSQI score is 10, the HADS-D score is 16, the Fear of COVID-19 score is 7, and the CAS score is 0. This indicates that the majority of patients with fibromyalgia experienced unfavorable changes in lifestyle, sleep quality, and mood, with little to no change in the patients' concern of developing COVID-19. Similarly, Cankur-

taran and his colleagues[11] show that the median FIQR score is 69, the median PSQI score is 10, the median HADS-D score is 10, the median FCV-19 score is 20.9, and the median CAS score is 5.

Table 5: Relation between different total scores and demographic data.					
	No.	FIQR Score	Global PSQI Score	HADS-D	Fear of COVID-19
		Mean ± SD.	Mean ± SD.	Mean ± SD.	Mean ± SD.
Gender					
Male	2	75.33 ± 0.24	9.0 ± 0.0	15.0 ± 0.0	7.0 ± 0.0
Female	41	61.95 ± 18.70	9.49 ± 3.10	14.02 ± 6.27	9.20 ± 5.03
U (p)		U = 22.0 (p = 0.319)	U = 36.0 (p = 0.800)	U = 36.0 (p = 0.800)	U = 33.0 (p = 0.678)
Residence					
Urban	21	67.66 ± 17.42	9.86 ± 3.20	16.62 ± 4.48	9.86 ± 6.05
Rural	22	57.71 ± 18.50	9.09 ± 2.88	11.64 ± 6.58	8.36 ± 3.55
U (p)		U = 162.0 (p = 0.094)	U = 194.0 (p = 0.366)	U = 126.0* (p = 0.010*)	U = 221.0 (p = 0.720)
Educational level					
Illiterate	10	64.63 ± 23.16	10.80 ± 2.15	13.0 ± 6.96	12.80 ± 6.34
High school degree	18	67.09 ± 14.57	9.78 ± 2.78	15.0 ± 6.32	8.78 ± 5.17
University degree	15	55.77 ± 18.49	8.20 ± 3.47	13.67 ± 5.55	7.0 ± 0.0
H (p)		H = 4.750 (p = 0.093)	H = 3.846 (p = 0.146)	H = 1.344 (p = 0.511)	H = 13.196* (p = 0.001*)
Socio economic status					
Low	28	62.90 ± 19.39	9.50 ± 2.90	13.43 ± 6.75	10.21 ± 5.84
Average	15	61.94 ± 17.25	9.40 ± 3.36	15.27 ± 4.73	7.0 ± 0.0
U (p)		U = 188.0 (p = 0.575)	U = 208.0 (p = 0.959)	U = 189.0 (p = 0.590)	U = 150.0* (p = 0.024*)

*SD: Standard deviation, U: Mann Whitney test, H: H for Kruskal Wallis test, *: Statistically significant at p ≤ 0.05, FIQR: Revised Fibromyalgia Impact Questionnaire, PSQI: Pittsburgh Sleep Quality Index, HADS-D: Hospital Anxiety Depression Scale D- subscale*

This shows that fibromyalgia also had an adverse impact on the patient's way of life, level of sleep, mood, and dread of COVID-19. Although it has minimal impact on the patients' COVID-19 anxiety. The rising knowledge and declining illiteracy rate among the Turkish people may be to blame for the increased dread of covid 19 among fibromyalgia sufferers in this country. In our study, we discovered that 88.4% of patients with fibromyalgia had sleep difficulties. This finding may be related to the patient's ongoing, distressing pain. Similarly, Andrade and his colleagues[23] cite 92.9 percent as the prevalence of sleep disturbances among FM patients. In comparison to patients who did not indicate the existence of a symptom, individuals who reported the presence of a symptom linked with FM had more severe sleep disturbances on the PSQI. Also, ÇİFTÇİ & ÖKE[24] found that the higher PSQI ratings in the fibromyalgia group in their research were not unexpected. The

prevalence of sleep disruption and depression in the current research was 88.4% and 76.7%, respectively. Whereas Li and his colleagues[25] Depression and sleep disruption were shown to be more common than any other, with prevalence rates of 13.1 and 10.7%, respectively. Extreme dread, trouble falling asleep, and early morning awakenings were all important depression risk factors. According to the scale utilized, recent epidemiologic research indicates that the prevalence of depression in people with fibromyalgia ranges from 22 to 55%[26]. In Yadav et al. [27] study, 27% of patients had depression. In 62% of instances, sleep quality disruption was also discovered. The high degree of illiteracy and low socioeconomic standards in Egypt may be to blame for this gap. According to our research, there isn't much of a relationship between the PSQI and HADS-D. On the contrary, in Andrade and his colleagues' [23] study, statistically significant variations were identified when the primary impacts of moodiness on the sleep domains were analyzed. For all sleep domains, patients who reported the symptoms of moodiness had the greatest degree of symptom severity. Also, Munguia-Izquierdo and his colleagues[28] and Bigatti and his colleagues[29] reported a parallel relationship between depression symptoms and problems sleeping; however, Bigatti and his colleagues[29] showed that sleep disruption may contribute to the aggravation of FM symptoms including pain and sadness. This variation from our findings may be related to the cruel socioeconomic conditions in Egypt, which prevent our participants from taking the time to consider and appreciate their own sentiments. According to our research, there is no significant link between the FCV-19 score and the FIQR, PSQI, or HADS-D scores, however, there is (P> 0.001) a very strong significant correlation be-

tween the two. On the other hand, Cankurtaran and his colleagues[11] discovered a strong positive association between FM patients' FCV-19S and CAS findings and their FIQR and PSQI scores (p 0.05). Between the HADS-D, FCV-19S, and CAS findings, there was no discernible association (p = 0.084, p = 0.062, respectively). For all patients, there was a highly significant positive connection between FCV-19S and CAS findings (p < 0.001). In Li et al.[25] study, A substantial risk factor for depression was shown to be feeling excessively terrified of the epidemic, suggesting that the subjective impression of the pandemic is what causes greater subsequent mental anguish. Bakul & Heanoy[30] revealed that participants' loneliness and sleep quality were significantly impacted by COVID-19 anxiety. Higher COVID-19-related anxiety was strongly linked to more sleep disruption and loneliness, according to a correlation study. Continuous worry, protracted loneliness, and irregular sleeping habits may have detrimental effects on people's general wellness. Mamun and Griffiths[31] claimed that incidents of suicide have been documented in the public owing to fear of COVID-19, despite the fact that there appears to be a lessened relationship between fear and depression. Meanwhile, the participants in Sakib et al.[32] study with depressive symptoms had a significant fear of COVID-19. Tsang and his colleagues[33] revealed that the majority of participants (>80%) expressed some anxiety about contracting COVID-19 either for themselves or for members of their household. The prevalence of depression was generally modest. They discovered that COVID-19 exposure was associated with elevated COVID-19 fears and depression, and that elevated COVID-19 fears were associated with elevated depressed symptoms. Fear of COVID-19 had a role in mediating the relationship between de-

pression and COVID-19 exposure. Pak and his colleagues[34] suggested that a greater dread of COVID-19 was caused by an intolerance for uncertainty, which in turn elevated the severity of depressive symptoms. Fitzpatrick and his colleagues[35] reported that the sampled respondents' COVID-19 fear was high and that this fear's independent effect on depressed symptomatology remained substantial regardless of the variables included in subsequent regression models. Additionally, during the COVID-19 public health crisis, a significant depressive symptom stressor related to food insufficiency appeared. Early in the epidemic, hoarding and panic purchasing became the norm, especially among those who were more likely to have the extra money to acquire the items. This disparity in findings across all of the research described above may be related to the high rate of illiteracy. It can also be because of the cruel socioeconomic norms that prevent our participants from taking the time to consider and acknowledge their own emotions. Sex, domicile, and the Fear of COVID-19 scale did not influence any of the scores in our study, but they did on the HADS-D (P value 0.010), proving that depression is more prevalent in cities. While the effects of educational level on the FIQR, PSQI, and HADS-D were not particularly noteworthy, the Fear of COVID-19 scale (P value 0.001), which is more prevalent in the illiterate population with a mean of 12.80 6.34 (SD), was significantly impacted. While it verified a substantial influence on the Fear of COVID-19 scale (P value 0.024) and that this impact is more pervasive, it denied any impact of socioeconomic status on the FIQI, PSQI, and HADS-D. While it verified a substantial influence on the Fear of COVID-19 scale (P value 0.024) and that this impact is more pronounced in low socioeconomic level populations with a

mean of 10.21 5.84 (SD), it denied any impact of socioeconomic status on the FIQI, PSQI, and HADS-D. Meanwhile, in Trapp et al[36] study, according to their higher total and emotional fear scores, women expressed a greater level of dread about COVID-19 than men did. Women specifically expressed more pain while considering COVID-19, more anxiety when viewing news reports on COVID-19, and more sleep loss due to worry about catching COVID-19. Women in their research reported a stronger emotional reaction to the dread of COVID-19, but results in terms of physical symptom reactions failed to achieve significance. He and his colleagues[37] reported that COVID-19 risk and geographic location affected the occurrence of severe anxiety and depressive symptoms. (Zhang Y. et al.[38] is the first research to examine the overall strength of the link between depression and socioeconomic level. The findings revealed a notable negative association between them. This may be explained by the fact that Egyptian women are more likely to be able to handle pressure because of the duties placed on them by their community, and as a result, they are just as tough as men.

Conclusion

In contrast to COVID-19 anxiety, which does not affect at all on symptom intensity, sleep quality, or mood in fibromyalgia patients, COVID-19 fear has a small but substantial impact on these variables.

Conflict of interest
The authors affirm that they do not have any competing interests.

Authors contribution
All authors are equally contributed.

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