

*Research Article***Screening of Psychiatric Symptoms in Post-COVID Health Care Team Workers in Minia University Hospital in Egypt****Esraa Ali Mohamed, Hussein M. Said, Rasha N. Saleh, Enas Mahmoud Hassan, Salwa M. R. Taha and Rasha S. R. Saleh**

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DOI: 10.21608/mjmr.2023.225339.1483

Abstract

Background: Individuals infected with the new coronavirus (SARS-CoV-2) reported a variety of psychological symptoms during the acute phase of COVID-19 infection. While the acute phase of COVID-19 is more studied, the data regarding the long-term outcomes of the disease are still limited. **Aim:** The aim of this study was to investigate a sample of Egyptian healthcare workers who are post COVID patients regarding presence of different psychiatric symptoms with highlighting the effect of gender and occupation on both positive and negative PCR cases. **Methods:** Seventy post-COVID-19 health care workers were gathered. Psychiatric symptoms were assessed using the SCL- 90-R. **Results:** Results showed that anxiety and inter personal sensibility were the most commonly reported symptoms while depressive and somatization symptoms were the most severe symptoms. In addition, it also was noted that physicians are more affected than nurses in different psychiatric domains. **Conclusion:** after recovery from the distressing respiratory symptoms of COVID infection its psychological impact is still prominent.

Key words: post-covid, psychiatric symptoms, health workers**Introduction**

Near the end of 2019 an outbreak of pneumonia of unknown origin was reported in Wuhan, China. The scientists were able to isolate of a novel respiratory virus whose genome analysis showed it to be a novel coronavirus related to SARS-CoV-2. On 30 January 2020, WHO declared the SARS-CoV-2 to be a public health emergency of international concern, spreading from one to another by direct contact or droplet infection through coughing and sneezing from infected individual [1].

The rapid worldwide spread of SARS-CoV-2 and the thousands of deaths caused

by it led the WHO to declare COVID as a pandemic on 12 March 2020. 25 May 2020, Egypt was one of the five countries reporting the highest number of cases in Africa [2].

The possibility of COVID-19 could be considered in patient with new-onset fever and/or respiratory symptoms which include cough and dyspnea (the classic respiratory features of COVID-19), sore throat, rhinorrhea, and nasal congestion are commonly reported as the sole presenting symptoms of COVID-19. Other common clinical symptoms include smell or taste disturbances, myalgias, and diarrhea. In

conclusion COVID-19 should also be considered in patients with severe lower respiratory tract illness without another clear cause ^[3].

There are no specific clinical features that can reliably distinguish COVID-19 from other viral respiratory infections, nevertheless, some features may warrant a higher level of clinical suspicion such as loss of taste and loss of smell ^[4].

For detection of COVID-19 the patients suffering from the flu-like symptoms underwent PCR testing. The PCR is very sensitive and will detect the presence of viral RNA by targeting one or more gene fragments. When the gene fragment is detected it is "positively found" ^[5].

During the acute phase of COVID-19, apart from the typical systemic and pulmonary manifestations, neuropsychiatric symptoms may occur such as anxiety, depression, insomnia even new-onset psychosis has also been reported ^[6, 7, 8].

While the acute phase of COVID-19 became well-characterized, the data regarding the long-term outcomes of the disease are still limited ^[9]. People with COVID-19 may suffer from sustained post infection sequelae which take a variety of names, including long COVID or long-haul COVID, and listed in the ICD-10 classification as post-COVID-19 condition since September, 2020 ^[10].

The aim of this study was to investigate a sample of Egyptian healthcare workers who are post COVID patients regarding presence of different psychiatric symptoms with highlighting the effect of gender and occupation on both positive and negative PCR cases.

Subject and methods

Patients and study design

It is a randomized cross-sectional study held in Minia University hospitals in Minia governorate on medical staff members including physicians and nurses.

Study Sample

Seventy participants from Minia University Hospitals medical staff were asked to participate in this study with the following inclusion criteria: both sexes with age up to 50 years were allowed to participate if they had a history of covid infection from 6 month or more and agreed to and sign the informed consent to participate in the study. The exclusion criteria were; patient with history suggestive of psychiatric diseases or psychiatric medications, or presence of any chronic illness (renal or hepatic....etc.) which may explain the reported psychiatric symptoms.

Regarding Ethical consideration; Institutional Ethical Committee approval and written informed consent were taken from all participations.

For data protection, patient's data files are kept by the researcher in specific and secure place and only the research team members had access to the data.

Approval number: 110:10/2021

Tools of the study

Patients' basic information such as age, sex, occupation, the duration passed from COVID infection, the result of PCR investigation was taken from participants. Then patients underwent symptom check list -90 psychometric assessment.

The Symptom Checklist-90-R (SCL-90-R) ^[11] is a brief self-report psychometric tool published by the Clinical Assessment division of the Pearson Assessment & Information group. It is designed to evaluates psychological problems and symptoms of psychopathology ^[12].

The SCL-90-R is normed on individuals 13 years and older. It consists of 90 items and takes 12–15 minutes to administer, resulting in nine scores along primary symptom dimensions. The primary symptom dimensions that are assessed are somatization, obsessive-compulsive, interpersonal sensibility, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and a category of "additional

items" which helps clinicians assess other aspect of the clients' symptoms (e.g., item 19, "poor appetite"). It is one of the most widely used measures of psychological distress in clinical practice and research [12]. This tool was translated to Arabic by Professor Abd El Raqip Ahmed El Behery 1984 [13].

Statistics

Data analysis was done by the Statistical Package for Social Sciences (SPSS) IBM Inc., Chicago, Illinois, USA Version 24.0 for Windows. Descriptive statistics: Frequencies and percentages were calculated for categorical variables, while means and standard deviations were calculated for continuous variables. The level of statistical significance was established at $p \leq 0.05$.

Results

Our study was applied on 70 participants aged from 20 to 50 y with mean age (27 ± 4.2). Forty-seven participants (67.2%) were PCR positive group (A) and 23 participants (32.8%) were PCR negative group (B).

Forty-three participants (61.8%) were males (31 group A and 12 group B) while 27 (38.5%) were females (16 group A and 11 group B). Among whole participants 77.2 % ($n=54$) were nurses (33 group A and 21 group B) while 22.8% ($n=16$) were physicians (14 group A and 2 group B). By comparing between group (A) and group

(B) regarding differences in age and sex there was no statistically significant difference. While regarding occupation there is statistically significant in comparison between physicians and nurses (P value= 0.04). Table (1)

By application of SCL-90 on participants our study found that anxiety symptoms were the most commonly reported was anxiety (41,24%) followed by interpersonal sensibility symptoms (38.57%). While 34.3% ($n= 24$) had depressive symptoms and 31.5% ($n=22$) had obsessive compulsive symptoms. However, the most severe symptoms were depressive symptoms (10.8 ± 7.5) followed by somatization (8.6 ± 6) then obsessive-compulsive symptoms (8.2 ± 4.7). Table (2)

By comparing between group, A and group B regarding different domains of SCL-90-R there were no statistically significant difference between both groups. Table (3) By Comparing between sex and different domains of SCL-90 scale there was statistically significant difference regarding the phobic-anxiety symptoms in males ($P=0.05$). Table (4)

While during comparing the occupation to different domains of SCL-90 scale there was statistically significant difference regarding somatization symptoms ($P=0.04$), interpersonal sensibility ($P=0,01$), depressive symptoms ($P=0.003$) and lastly paranoid ideation ($P=0.04$) in physicians. Table (5)

Table (1): Demographic characteristics of the presented sample

		Total (70 case)	PCR positive (47 case) (67.2%)	PCR negative (23 case) (32.8%)	p value
age (mean; SD)		27±4.2	27.3 ±4.2	29.9 ± 7.5	0.2
Sex (Frequency, %)	male	43 (61.8)	31 (44.3%)	12(17,1%)	0.2
	female	27 (38.2)	16(22.9%)	11(15.7%)	
Occupation (Frequency, %)	Physician	16 (22.8)	14(20%)	2(3%)	0.04*
	Nurse	54 (77.2)	33(47%)	21(30%)	

*Statistical significance of $p \leq 0.05$.

Table (2): Frequency and Scores of psychiatric symptoms assessed by SLC-90-R in the post COVID sample

Psychiatric symptoms	No. of Affected participant No (%)	scores (mean±SD)
Anxiety symptoms	29 (41.24%)	7.9±5.8
Interpersonal sensibility symptoms	27 (38.57%)	7.9±5.6
Depressive symptoms	24 (34.28%)	10.8±7.5
Obsessive compulsive symptoms	22 (31.42%)	8.2±4.7
Anger- Hostility symptoms	20 (28.57%)	5.0±4
Paranoid ideation	18 (25.71%)	4.4±5
Phobic-anxiety symptoms	16 (22.85%)	4.4±4.8
Psychoticism symptoms	13 (18.57%)	4.5±4.5
Somatization symptoms	13 (18.57%)	8.6±6

Table (3): Comparison between PCR positive and PCR negative groups as regard different domains of SCL-90 scale

		pcr positive	pcr negative	p value
somatization symptoms	No	38	19	0.8
	Mild	8	3	
	moderate	1	1	
	severe	0	0	
Obsessive compulsive symptoms	No	31	17	0.1
	Mild	14	6	
	moderate	2	0	
	severe	0	0	
interpersonal sensibility symptoms	No	28	15	0.7
	Mild	18	7	
	moderate	1	1	
	severe	0	0	
Depressive symptoms	No	32	14	0.4
	Mild	14	7	
	moderate	1	2	
	severe	0	0	
Anxiety symptoms	No	30	11	0.4
	Mild	15	10	
	moderate	2	2	
	severe	0	0	
Anger- hostility	No	34	16	0.2
	Mild	9	6	
	moderate	3	1	

	severe	1	0	
Phobic-anxiety symptoms	No	37	17	0.5
	Mild	5	1	
	moderate	3	3	
	severe	2	2	
Paranoid ideation	No	36	16	0.1
	Mild	6	5	
	moderate	2	2	
	Severe	3	0	
Psychoticism symptoms	No	40	17	0.3
	Mild	6	6	
	moderate	1	0	
	severe	0	0	

Table (4): Comparison between sex and different domains of SCL-90 scale

	Sex		P value
	Male	Female	
Somatization symptoms (mean $\pm$ SD)	8.6 $\pm$ 6	10.2 $\pm$ 6	0.7
OCD (mean $\pm$ SD)	8 $\pm$ 5	8.4 $\pm$ 4.5	0.7
Interpersonal sensibility (mean $\pm$ SD)	7.7 $\pm$ 5.5	8.3 $\pm$ 6	0.6
Depressive symptoms (mean $\pm$ SD)	10.5 $\pm$ 7.3	11.5 $\pm$ 8	0.6
Anxiety symptoms (mean $\pm$ SD)	8 $\pm$ 5.7	7.8 $\pm$ 6.1	0.9
Anger- hostility (mean $\pm$ SD)	5 $\pm$ 4.5	4.7 $\pm$ 3.5	0.7
Phobic- anxiety (mean $\pm$ SD)	5 $\pm$ 5.5	3 $\pm$ 3	0.05*
Paranoid ideation (mean $\pm$ SD)	5 $\pm$ 5.5	4 $\pm$ 4	0.3
Psychoticism (mean $\pm$ SD)	4.4 $\pm$ 4.3	4.6 $\pm$ 4.7	0.8

*Statistical significance of $p \leq 0.05$.

Table (5): Comparison between occupation and different domains of SCL-90-R scale

	occupation	Mean	Std. Deviation	P value
Somatization symptoms	Physician	12.2	6.3	0.04*
	nurse	7.9	6.7	
Obsessive compulsive symptoms	Physician	10.3	5.1	0.3
	nurse	7.8	5.1	
Interpersonal sensibility	Physician	11.2	5.8	0.01*
	nurse	6.7	5.3	
Depressive symptoms	Physician	16.5	7.7	0.003*
	nurse	9.5	7.0	
Anxiety symptoms	Physician	10.4	4.4	0.1
	nurse	7.4	6.8	
Anger- hostility	Physician	5.6	2.9	0.4
	nurse	4.5	4.9	
Phobic- anxiety	Physician	5.6	4.7	0.2
	nurse	3.4	5.5	
Paranoid ideation	Physician	7.0	6.0	0.04*
	nurse	3.4	5.1	
Psychoticism symptoms	Physician	5.5	4.7	0.2
	nurse	3.7	4.8	

*Statistical significance of $p \leq 0.05$.

Discussion

Our study revealed that anxiety symptoms to be the most commonly presenting symptoms by 41.24%. While depressive symptoms were the most severe symptoms in our participants. These results were in agreement with Abdelghani, et al.,^[14] who interviewed 218 health care workers in Egypt and found that frequency of health anxiety to COVID-19 virus was 28%. Another study was done by Zhang et al.,^[15] who included a total of 2,182 from which there were 927 health worker and the remainder were non health workers. Medical health workers had a higher prevalence of anxiety ($p < 0.01$), depression ($p < 0.04$), somatization ($p < 0.01$), and obsessive-compulsive symptoms ($p < 0.01$).

While a study done in China^[16] during COVID showed that symptoms of depression were more commonly reported than symptoms of anxiety (50.4% & 44.6% respectively). Also, Shechter et al.,^[17] reported positive screens for psychological symptoms were 48% for depressive, and 33% for anxiety symptoms. This could be explained by difference between times of conduction of both studies, Chinese and Shechter's studies were done in the beginning of the pandemic 2020 when there was fear of death from it especially in China the origin of the virus while our study was held in 2022 after gaining more knowledge about COVID added to that depressive symptoms in our sample were the most severe symptoms which make our results incongruence with these studies.

Comparing group, A and group B regarding domains of SCL-90-R there were no statistically significant results between both groups. Up to our knowledge there were no studies that compare between positive and negative PCR patients regarding frequency of psychiatric symptoms. PCR positivity was studied regarding severity of symptoms, hospitalization rate, mortality rate even response to certain medication^[18] however not studied in its relation to psychological symptoms. According to our sample results positivity

didn't alter the participants' vulnerability to different psychiatric symptoms or diseases. Our study reported that physicians were statistically more suffering from depressive symptoms, interpersonal sensibility, somatization symptoms and lastly paranoid ideation than nurses.

This could be explained by nature of job demands which needs sustained physical or psychological skills and/or effort so individuals experience physiological or psychological costs, including burnout. Hospital staff's members, especially physicians and nurses, are particularly exposed to burnout due to the stressful nature of their work, their continuous close interaction with patients, and observing their suffering^[19].

The statistically significant difference between physicians and nurses in our study may be explained by physicians being in front line to face COVID, being a decision maker in very hard times, added to the general increase in stress level in these hard times as reported by APA 2021^[20]. Lastly a German survey reported that one-fifth of the hospital doctors reported that they thought about giving up their profession at least a 1-2 times per month^[21]. Consequently, after the COVID pandemic this percentage is probably higher.

By comparing different domains of SCL-90-R to both sexes, there was a statistically significant difference between them in phobic-anxiety which was higher in males.

These findings were not congruent with the findings of Metin, et al.,^[22] who revealed that gender has a moderate and statistically significant effect on COVID-19 related fear and anxiety in favor of females. The difference in favor of males in our study could be explained greater number of participated males (43) than females (27).

Limitations of study:

In this study the sample was small and there was no control group in addition more confirming tools to diagnose psychiatric disorders are needed.

Conclusion

Many COVID survivors including health care workers seem to still have huge negative psychiatric impact from their previous experience with covid infection. Physicians were more susceptible to psychiatric symptoms than nurses.

Funding:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest:

The authors have no conflicts of interest to declare.

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