Research Article

Depression and COVID 19

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Abstract

Background: Following recovery from COVID-19, it was found that an increasing number of individuals have reported the persistence and/or presence of new onset symptoms which collectively have been identified as post-COVID-19 syndrome by the National Institute for Health 2020. Depressive symptoms in the acute phase of COVID-19 have been well described, the frequency of depression following recovery of the acute phase remains unknown. We thought to screen for depression as an important post COVID19 presentation among nurses, who serve as front line care givers. **Method:** 88 nurses with history of COVID 19 infection were enrolled in this study by using MINIDEP screening tool for depression. **Results:** 13.6% of the patients had post COVID19 depression according to MINIDEP score. It was found that female sex, duration of COVID illness, post COVID19 sleep disturbance *(P=0.03, P=0.004, P=0.001, respectively)* were significantly correlated with depression in post COVID patients. **Conclusion:** COVID 19 infection can trigger depression.

Keywords: SARS-CoV-2, psychological impact of COVID19.

Introduction

The coronavirus disease 2019 (COVID-19) pandemic has affected more than 194 million individuals as of July 26, 2021 and continues to spread globally [1].

post-COVID-19 syndrome, which means new and/or persistent signs and symptoms more than 12 weeks following severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection [2]. Some of these symptoms are fatigue, joint pain, chest pain, palpitations, shortness of breath, cognitive impairment, and worsened quality of life [3].

Neurologic and psychiatric symptoms have also been reported. High rates of anxiety and depression have been reported in some patients [4].

Depression is a leading cause of disability globally [5]. So, depressive symptoms and clinically significant depression in post-COVID-19 syndrome may have severe implications as it affects quality of life outcomes. [1].

Recent reviews have investigated the psychological impact of COVID-19, but to our knowledge, frequency of depression not reported yet, specifically, in accordance with NICE-defined post-COVID-19 syndrome [6].

MINIDEP screening tool has only 7 questions but covers most of the DSM-5 criteria for major depressive disorder. It also includes a question on unexplained pains or aches, which often is the only symptom that patients report, but is absent in the PHQ-9 and in other screening questionnaires [7].

Rating scores for this questionnaire are:
- 0 to 3 Points: Patient is not clinically depressed. Evaluation by a mental health professional might be unnecessary.
- 4 to 9 Points: Depression is suspected. Further evaluation by a mental health professional (not necessarily a psychiatrist) is warranted.
- ≥10 points: Depression is confirmed.

Aim of the work

The aim of the present study was to report how frequent is depression among nurses, frontline care givers, with history of COVID 19 infection.

Patients and methods

Eighty-eight nurses (27 males and 43 females) working in Minya university hospitals who tested PCR positive for COVID 19 were consecutively included in the study. Patients who were diagnosed with any psychological illnesses, or on regular pain medications as tricyclic antidepressant (TCA), selective serotonin reuptake inhibitors (SSRI) and pregabalin, patients with Systemic illness as hypothyroidism, hyperparathyroidism, Cushing's syndrome were excluded. Informed consent was taken from all participants in the study. The study was approved by the ethical committee of the Faculty of Medicine, Minya university.

All patients were subjected to interview including full medical history, MINIDEP screening tool for depression diagnosis [7].

Statistical analysis

Analysis of data was done by personal computer using SPSS (Statistical program for social science) version 26. The data of all software patients were fed into an IBM personal computer. Data were expressed as mean ± SD for parametric variables and as number and percent for non-parametric variable. Comparison between groups for parametric data was done by independent samples t-test (unpaired t-test). Chi – square (X2) test was used to compare qualitative variables. The difference was expressed as probability of value (P value). The difference was considered significant if P < 0.05. Pearson and Spearman correlation coefficients (r) were calculated for detection of parametric and non-parametric correlations respectively.

Results

Eighty-eight nurses previously diagnosed with COVID 19 were included in the present study (32 (36.4%) male / 56 (63.6%) female) their age ranged between 20 and 60 years with mean ± SD (37.50 ± 9.67), duration of COVID19 illness ranged between 4-45 days with mean ± SD (22.41± 8.82). 70 (79.5%) nurses treated at home while 18 (20.5%) nurses treated at hospital. According to MINIDEP questionnaire for depression diagnosis, 12 nurses (13.6%) had depression while 76 nurses (86.4%) didn't had depression. The demographic characteristics of the studied patients are shown in Table 1.

Comparative study regarding demographic data, COVID and post COVID illness between both groups was done as shown in Table 1. and table 2. There was a statistically significant difference between both groups regarding sleep disturbance ($P<0.0001$).

The correlation of depression with different parameters was done. There were significant positive correlations of depression with female sex, duration of COVID illness and sleep disturbance (*P=0.03*, *P*=0.004, *P*=0.001, respectively). other parameters were not found to be significantly correlated with depression.

Table (1): demographic data of the studied patients (n=88)

Parameter mean ± SD (range)	Total (n=88)	Patients with depression (n=12)	Patients without Depression (n=76)	t / χ²	P value
Gender **Female** **Male**	56 (63.6%) 32(36.4%)	10(91.7%) 1(8.3%)	45(59.2%) 31(40.8%)	4.718	0.673
Duration of COVID19 illness (day) **Mean ± SD**	(5-45) 16.90 ± 7.14	(14-45) 22.41± 8.82	(5-45) 16.03±6.49	0.520	0.604
Marital status **Single** **Married**	13 (14.8%) 75 (85.2%)	2(16.7%) 10(83.3%)	11(14.5%) 65(85.5%)	0.040	0.842
Residence **Urban** **Rural**	60 (68.2%) 28 (31.8%)	7(58.3%) 5(41.7%)	53(69.7%) 23(30.3%)	0.621	0.431
Place of TTT Home Hospital	70 (79.5%) 18 (20.5%)	9(75.0%) 3(25.0%)	61(80.3%) 15(19.7%)	0.176	0.674

By independent sample t-test and Chi square test.   Significant level<0.05

Table (2): clinical data of the studied patients (n=88)

COVID symptoms No. (percent)	Patients with depression (n=12)	Patients without Depression (n=76)	χ²	P-value
Fever	4(33.3%)	46(60.5%)	0.165	0.685
Cough	11(91.7%)	58(76.3%)	1.443	0.230
Dyspnea	10(83.3%)	49(64.5)	1.668	0.196
Easy fatigability	11(91.7%)	69(90.8%)	0.010	0.922
Body aches	11(91.7%)	71(93.4%)	0.050	0.823
Nausea	3(25%)	15(19.7%)	0.176	0.674
Vomiting	3(25.0%)	14(18.4%)	0.288	0.592
Diarrhea	6(50.0%)	35(46.1%)	0.065	0.799
Loss of taste	8(66.7%)	60(78.9%)	0.890	0.345
Loss of smell	9(75%)	65(85.5%)	0.858	0.354
Post COVID symptoms				
Sleep disturbance	10(83.3%)	51(67.1%)	11.007	**<0.0001**
Difficulty thinking or concentrating	1(8.3%)	15(19.7%)	0.906	0.341
Headache	2(16.7%)	36(47.4%)	3.982	0.05
Dizziness	0(0.00%)	7(9.2%)	1.201	0.273
Chest pain	0(0.00%)	5(6.6%)	0.837	0.360
Dyspnea	0(0.00%)	4(5.3%)	0.662	0.416
Paresthesia	2(16.7%)	8(10.5%)	0.388	0.533
palpitation	0(0.00%)	3(3.9%)	0.490	0.484
Changes in taste or smell	0(0.00%)	4(5.3%)	0.662	0.416
Disturbed menstrual cycle	2(16.7%)	3(3.9%)	3.129	0.077
Arthralgia	4(33.3%)	18(23.7%)	0.515	0.473
Diarrhea	0(0.00%)	1(1.3%)	0.160	0.689

By Chi square test.   Significant level<0.05

Table (3): correlation between depression with different parameters (n=12)

	Depression (n=12)	
Parameters	*r*	*P value*
Female sex	0.323	**0.03**
Duration of COVID19 illness	0.304	**0.004**
Sleep disturbance	0.354	**0.001**

By spearman correlation test, significant P<0.05

Discussion

COVID19 pandemic has had a significant impact on front line staff. Nurses work with respiratory patients have been at the forefront of the pandemic response[8]. In our study, nurses reported increased stress during the COVID-19 outbreak, resulting in substantially higher levels of depression.

In current study, depression was detected in 13.6 % of nurses based on the MINIDEP screening tool[7] in consistent with that, Ezzelregal et al., 2021[9] study reported that depression was recorded post-COVID among HCWS by 24(23.5%) had mild depression, 16(15.7%) had moderate depression, and only 3(2.9%) participants had severe depression.
During COVID pandemic, Roberts et al., 2021[8] study reported that depression among nurses was detected with a prevalence of 17.26%.

Current study showed that there was significant correlation regarding female sex in agreement with the study done by Serrano et al., 2021 [10] which noted that female nurses were more likely to be distressed compared with male nurses during COVID pandemic. These findings were consistent with previous reports [11-12]. Luxton, Skopp, and Maguen, 2010 [13] conducted a study on depression and PTSD after combat deployment and reported that female soldiers had higher rates of depression and PTSD than male soldiers. Although the study participants weren't nurses, the results may be applicable because both groups work in high-intensity environments and crisis situations.

To the best of our knowledge, in the current study there was statistically significant positive correlation regarding duration of COVID illness, also. Zhuo et al., 2020 [14] study found that there was sa tatistically significant negative correlation regarding age which was against the current study that showed no statistically significant correlation regarding age, mostly due to different methodology and working during COVID19 pandemic not post COVID.

In conclusion, COVID 19 could trigger development of depression among nurses.

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