Anxiety, Depression and Stress Symptoms among Physicians Working with COVID 19 Patients

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ABSTRACT:

BACKGROUND:

Since the end of December 2019, the world has been fighting one of the most serious pandemics in human history due to coronavirus disease 2019 (COVID-19). A pandemic that makes health care workers susceptible of developing depressive, anxiety symptoms now or in the future.

OBJECTIVE:

To identify symptoms of depression, anxiety and stress among physicians managing COVID 19 patients in Iraq and to ascertain association with socio-demographic and clinical variables.

SUBJECTS AND METHODS:

A cross-sectional study (descriptive and analytical) was done from the 1st of September to the 1st of November 2020. Physicians working in different Iraqi health care institutions (general hospitals, primary health care centers and COVID 19 quarantine centers) were asked to submit an online survey.

RESULTS:

Out of the 656 physicians who were included in this study, 61.9% had stress symptoms, 27.0% had anxiety symptoms and 27.1% had depressive symptoms.

Stress related symptoms were more prevalent in younger age, females, single physicians, having less years of experience and lower academic degree, working in COVID 19 isolation wards, avoiding contact with the family and being infected with COVID 19. These factors were positively associated with developing stress symptoms. Anxiety symptoms were positively associated with married physicians and working in COVID 19 isolation wards. Depression was not significantly associated with any of the studied variables.

CONCLUSION:

COVID 19 pandemic negatively impacts the psychological status of physicians as depression, anxiety and stress symptoms were found in different levels.

KEYWORDS: COVID 19, physicians, anxiety, depression, stress.

INTRODUCTION:

After its first appearance in China, 2019 novel coronavirus (2019-nCoV) spread rapidly through the world. It was initially named coronavirus disease 2019 (COVID-19) then was declared as a pandemic by the World Health Organization on 11 March 2020. Epidemics and pandemics have always been part of human history, but a pandemic of such dimensions as the COVID-19 one is rare. During the past 20 years, the world faced two coronaviruses: severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) [2]. Due to its uncertain pathogenicity, being highly transmissible and having high morbidity and mortality rate, COVID-19 might affect the mental health of individuals [3]. In such times when the world has a shutdown or slowdown in daily activities and individuals are asked to reduce social interactions, health professionals usually go on opposite direction.

They are usually required to work harder and many of them develop various stress, anxiety and depression related symptoms [4].

In addition to the general stressors which healthcare professionals generally face, COVID-19 pandemic carries further stressors such as lack of control/uncertainty which is the most important contributing factor to develop distress [5]. In comparison with the outbreak of SARS, the global connectivity and extensive media coverage may also contribute to various degrees of stress [6].

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One of the many problems facing the healthcare workers during pandemics is the rapidly increasing number of infected patients [7], and in order to increase the capacity of beds for Covid-19 patients, many inpatient units have been converted to Covid-19 related wards. As a result, physicians from different specialties redeployed to areas outside their usual clinical specialty and/or expertise to work in frontline positions, ften working extra shifts and longer hours to meet the high volume patient demands. Additionally, the fear of transmitting the infection to their families may carry additional burden to them. [8]

The mental health issues do not only impact healthcare workers with regards to their attention, understanding, and decision making but also impact the overall wellbeing of medical doctors. Therefore, World Health Organization advises some coping strategies like rest during or between shifts, eating adequately healthy food, being involved in physical activities, and staying in contact with family and friends [9,10]

SUBJECTS AND METHODS:

A cross-sectional study (descriptive and analytical) was conducted in different Iraqi health institutions (general hospital, primary health care centers and COVID 19 quarantine centers), 656 physicians were asked to answer an online survey to avoid face to face interview and to facilitate their contribution during COVID 19 pandemic (convenience sample). Inclusion criteria were physicians working in Iraqi healthcare institutions. Exclusion criteria were physicians with history of any psychiatric disorder. The survey approximately took 3-5 minutes to be answered and was performed for 2 months, (From the 1st of September to the 1st of November 2020). It was shared via social network groups querying the socio demographic and clinical variables, as well as answering the self-rated Depression Anxiety Stress 21 (DASS 21) scale (Arabic version) to identify the level of depression, anxiety and stress symptoms. It is a shortened version of Lovibond and Lovibond's (1995)[11] 42-item self-report measures of depression, anxiety, and stress (DASS). The DASS-21 consists of three 7-item self-report scales taken from the full version of DASS. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/ involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale assesses difficulty relaxing, nervous arousal, and being easily upset/ agitated, irritable / over-reactive and impatient. The scores of identified items of each subscale of DASS-21 need to be summed up and multiplied by 2 and after that the range for each subscale is calculated as follows: Stress (Normal 0-10. Mild 11-18. Moderate 19-26. Severe 27-34. Very severe 35-42). Anxiety (Normal 0-6. Mild 7-9. Moderate 10- 14. Severe 15-19. Very severe 20-42). Depression (Normal 0-9. Mild 10-12. Moderate 13-20. Severe 21-27. Very severe 28-42) [12.] Statistical Package for Social Sciences (SPSS) version 26(SPSS V.26) was used to analyze data collected from Google form sheets after purification and recoding. Chi-square test was used to determine the significance of statistical associations between related categorical data. P value less than 0.05 was considered as a discriminative point of significance.

RESULTS:

In this study, the overall DASS 21 scale showed that 61.9% of the studied sample had stress symptoms, 27.0% had anxiety symptoms and 27.1% had depression symptoms.

Sixty seven percent of younger age, 68% of female gender, 68% of divorced or widowed physicians show more stress symptoms, 65% of rotator physicians (interns) and 73% of primary health physicians also have more stress symptoms than other physicians in the sample. The less working years; the more stress symptoms are. Working in primary health care centers and COVID 19 centers and directly treating infected patients expose doctors to more stress. Sixty six percent of physicians who feared from transmitting infection to their families have more stress symptoms. (P value was less than 0.05 for the previous variables). Anxiety symptoms were more in younger age , married physicians; (p value of 0.05 and 0.04 respectively), physicians who work in COVID19 isolation wards develop more anxiety symptoms than others (p value 0.024); physicians who directly treat COVID 19 patients have more anxiety symptoms; (p value 0.001), while depressive symptoms were not positively associated with

any factors. As shown in tables 1, 2, 3.

Table 1: Distribution of studied sample according to stress, anxiety and depression symptoms level.

Disease	Severity	N	%	
Stress level	Normal	250	38.1	Normal = (38.1%)
	Mild	79	12.0	(61.9%)
	Moderate	106	16.2	
	Severe	126	19.2	
	Extremely severe	95	14.5	
Anxiety level	Normal	479	72.9	Normal =(72.9%)
	Mild	75	11.5	(27.1%)
	Moderate	72	11.0	
	Severe	29	4.4	
	Extremely severe	1	0.2	
depression level	Normal	478	72.9	Normal = (72.9 %)
	Mild	96	14.6	= (27.1%)
	Moderate	81	12.3	
	Severe	1	0.2	
	Extremely severe	0	0	

Table 2 : Association between socio demographic variables and stress, anxiety and depression symptoms.

		No stress symptoms	Stress symptoms present	P-value	No anxiety symptoms	anxiety symptoms present	P-value	No depression symptoms	depression symptoms present	P-value
		Row N %	Row N %		Row N %	Row N %		Row N %	Row N %	
Age	=<30 yr	33.50%	66.50%	0	71.35%	28.65%	0.051	74.50%	25.50%	0.601
	31-40 year	39.10%	60.90%		72.33%	27.67%		71.10%	28.90%	
	>40 year	63.00%	37.00%		87.04%	12.96%		70.40%	29.60%	
Gender	Male	56.10%	43.90%	0	76.00%	24.00%	0.303	77.20%	22.80%	0.139
	Female	31.80%	68.20%		72.00%	28.00%		71.30%	28.70%	
Marital status	Single	31.60%	68.40%	0.033	78.90%	21.10%	0.044	73.25%	26.75%	0.64
	Married	41.80%	58.20%		69.80%	30.20%		70.50%	27.08%	
	Other	28.60%	71.40%		71.40%	28.60%		57.10%	42.86%	
Qualification	Senior	47.50%	52.50%	0.004	75.00%	25.00%	0.542	69.20%	30.80%	0.331
	Resident	41.00%	59.00%		74.40%	25.60%		74.40%	25.60%	
	Primary care physician	26.60%	73.40%		68.00%	32.00%		68.80%	31.30%	
	Rotator	34.80%	65.20%		73.30%	26.70%		77.00%	23.00%	
Working year	=<5 year	33.00%	67.00%	0.016	69.8	30.2	0.074	73.50%	26.50%	0.596
	6- 10 year	43.70%	56.30%		74.8	25.2		73.80%	26.20%	
	> 10 year	44.40%	55.60%		80.8	19.2		68.70%	31.30%	
Specialty	Medical	37.80%	62.20%	0.819	73.70%	26.30%	0.549	74.30%	25.70%	0.191
	Surgical	38.80%	61.20%		71.40%	28.60%		69.40%	30.60%	
Working hours/ week	<56 hour	38.40%	61.60%	0.812	71.20%	28.80%	0.162	71.90%	28.10%	0.468
	=>56 hour	37.50%	62.50%		76.30%	23.70%		74.60%	25.40%	
Work place	General hospital	41.20%	58.80%	0.029	75.64%	24.36%	0.024	74.36%	25.64%	0.304
	COVID 19 Ward	32.00%	68.00%		62.14%	37.86%		66.99%	33.01%	
	Primary Heatlth Center	28.20%	71.80%		71.76%	28.24%		71.76%	28.24%	

Table 3: Association between clinical variables and stress, anxiety and depression symptoms.

		No stress symptoms Row N %	Stress symptoms Row N %	P – value	No anxiety symptoms Row N %	anxiety symptoms Row N %	P – value	No depression symptoms Row N %	depression symptoms Row N %	P – value
Directly treating COVID19	Yes	33.10%	66.90%	0.001	61.8	38.2	0.018	72.10%	27.90%	0.565
	No	45.50%	54.50%		70	30		74.10%	25.90%	
Source of infection to family	Yes	34.1	65.9	0.001	72.90%	27.10%	0.862	72.62%	27.38%	0.559
	No	81.8	18.2		74.30%	25.70%		77.14%	22.86%	
Direct contact to family	Yes	40.50%	59.50%	0.026	74.10%	25.90%	0.245	72.90%	27.10%	0.934
	No	30.60%	69.40%		69.40%	30.60%		72.60%	27.40%	
Had COVID19 infection	Yes	29.20%	70.80%	0.02	71.50%	28.50%	0.671	73.10%	26.90%	0.952
	No	40.30%	59.70%		73.40%	26.60%		72.80%	27.20%	
Chronic diseases	Yes	40.00%	60.00%	0.72	70.70%	29.30%	0.626	74.70%	25.30%	0.709
	No	37.90%	62.10%		73.30%	26.70%		72.60%	27.40%	

DISCUSSION:

This study indicates that (406) 61.9% of the studied sample have stress related symptoms, (177) 27.0% have anxiety related symptoms and 178 (27.1) have depression related symptoms. These levels are slightly lower in comparison with another study done in West Bengal by Chatterjee, et al. [13] who showed that the prevalence of depression, anxiety and stress are 35%, 33% 39.5% respectively. The Turkish study performed by Elbay et al [14] at the early phase of pandemic indicated that the prevalence of stress, anxiety and depression is 41.2% , 51.6% and 64.6% respectively.

A study that was done in China about the impact of COVID 19 pandemic on 1257 health care workers showed that 43.9% of physicians reported depressive symptoms, 39.1% had anxiety symptoms and 62% had stress symptoms 15. These varieties in the prevalence of depression, anxiety and stress among Iraqi physicians and other physicians worldwide could be attributed to the different timing and stages of the pandemic; this study is conducted at later stages of the pandemic, the physicians may be more adaptive and familiar with management and dealing with this crisis. In addition to that, Iraqi society including physicians experienced different traumatic situations during the history including wars and violence making them more adaptive and resilient to stressful situations.

Stress symptoms:
In this study, stress symptoms were found to be statistically associated with age, gender and marital status. This means that stress symptoms are higher in younger female physicians and in those who are divorced or widowed; this could be due to the fact that younger doctors have less years of experience along with the fact that most of the young resident redeployed to care for COVID 19 patients in other departments where they may lack the appropri The gender difference could be due to the fact that female doctors may be under more pressure because of ate training and have more contact with patients.

Other responsibilities placing them in considerable dilemma between working and family care and between family care and avoidance of contact with family members. Divorced and widowed physicians may lack the support they need or they may have other social problems. These findings are in line with studies by Elbay, et al [14] and Khalaf et al. [16]. Regarding qualifications and working years, this study found that having higher academic degree and/or having more years of working experience means having fewer symptoms; in other words, primary health care physicians particularly, rotators and residents have more stress symptoms because they may lack pandemic education and sufficient experience that is needed to function

properly as well as being more exposed to infected patients. These findings agree with the study among Turkish physicians by Elbay, et al.[14] and Lai et al.[15]

Physicians who work in Primary Health Care Centers and in COVID 19 isolation wards had more stress symptoms as they are in more contact with infected patients. The results are similar to those by Elbay et al.[14], Kannampallil et al. [17] and Zhu et al. [18]. Physicians who thought they are a source of infection to the family, have more stress related symptoms. This could be explained by their knowledge of the asymptomatic infection and they usually take responsibility if something happen to their families. Moreover, physicians who avoid direct contact with their families to protect them from the asymptomatic transmission have significantly more stress symptoms. This is comparable with a study by Shechter, et al.[22] and by Cai et al.[20]. In line with the study of Zhu et al.[18]; this study also found that physicians who contracted COVID 19 infection had statistically more stress symptoms.

Anxiety and depression related symptoms:
This paper similarly investigated depression and anxiety symptoms subscale and their association with multiple factors. Anxiety symptoms were significantly associated with marital status where married physicians had more anxiety symptoms; this is not in line with Caliskan and Dost. [21] and Hasan et al. [22]

However Kalaf et al. [16] indicated that the married physicians had slightly more anxiety symptoms. This could be explained by the added pressure from responsibilities of taking care of a family and becoming a source of infection to them. Anxiety symptoms were significantly associated with the working place; i.e. physicians in the isolation wards or work directly with the infected patients have higher prevalence of anxiety symptoms and this is in agreement with Hasan et al.[22] Studies done by Amin et al [23] Elbay et al. [14], Chatterjee et al.[13] Que et al.[24] and Lai et al.[15] also found the same results. Younger age physicians had more anxiety symptoms with a p value of 0.05 which is in an agreement with Elbay et al[14]. Although there was no positive association, however anxiety symptoms were slightly higher among rotators and primary health care physicians.

This may be because of, again, their lack of sufficient experience. This is in line with a study by Fatih and Burhan [21] and Hasan et al.[22] Of note, depressive symptoms were more in older age, primary health care and senior physicians but this has no statistical significance; this could be explained by the difficult circumstances of the Iraqi doctors from the beginning of their medical career making them more prone to depression. Specialty and working hours did not seem to affect stress, anxiety, depressive symptoms among physicians during the pandemic because all physicians co work together to fight against the pandemic.

CONCLUSION:
The prevalence of stress, anxiety and depression symptoms among Iraqi physicians during COVID 19 pandemic which was 61.9% , 27.0% and 27.1 % respectively. Stress related symptoms were more prevalent in the following categories: younger female physicians, divorced or widowed, physicians with lower academic degree and fewer working years, physicians who directly care for COVID 19 patients, those who thought that they are a source of infection to their families and avoid contact with them and in physicians who had been infected. Whilst anxiety symptoms were more significantly associated in married physicians and in physicians directly in contact with COVID 19 patients. Depressive symptoms were not statistically associated with any of the studied variables.

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