



RESEARCH ARTICLE

Psychological Stress of the COVID-19 Pandemic on the Mental Health of Healthcare Workers in the Kurdistan Region

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ABSTRACT

Coronavirus disease-19 (COVID-19) pandemic can lead to terrific condition among healthcare workers (HCWs) and severe stress reactions can raise the risk of secondary trauma. The aim of this study was determine the psychological burden of the COVID-19 outbreak on HCWs. The cross-sectional quantitative survey was conducted online from September 1 to September 18, 2020. Online questionnaires employing scales including the generalized anxiety disorder (GAD-7), patient health questionnaire (PHQ-9), and perceived stress scale (PSS-10) were used to investigate anxiety, depression, and stress. This study has shown that percentage of severe anxiety, stress, and depression were (22%), (3.9%), and (11%) respectively among HCWs. There was a significant association of PHQ score with age, gender, marital status, number of children, kind of employment, and work experiences. GAD score was found to have a significant relationship ($P = 0.05$) with gender, job title, and healthcare experiences in this study. The PSS score of women who worked in hospitals was found to be considerably higher. Health-care professionals in Kurdistan experienced high anxiety and stress during the COVID-19 epidemic.

Keywords: Anxiety, coronavirus disease-19, depression, health care workers, Kurdistan

INTRODUCTION

The coronavirus disease infection (COVID-19) first appeared in China in December 2019 and quickly spread to nearly every country on the planet. The World Health Organization declared the virus a global pandemic in March 2020.^[1] The Kurdistan Region of Iraq (KRI) alone saw 10,595 illnesses and 402 fatalities on March 30, 2020, according to statements made by the Kurdistan Regional Government (KRG).^[2] To address this urgent matter, the government mandated a public holiday from February 26 to March 10, 2020, for all public and private institutions, including kindergartens. Public and private universities were likewise closed from February 29 to March 10. They will remain closed for spring break from March 10 through March 23 and reopen on March 24 if conditions improve. The KRG has also made the decision to declare a halt to all religious rituals, activities, and events until further notice. This includes Friday sermons in mosques, churches, and temples throughout the KRI. Even though the lockdown's time limit was ultimately extended, the health-care professionals continued to work to address the situation. Due to their direct and indirect interactions with COVID-19 patients as well as their susceptibility to infection,^[3] they are at risk of developing mental health difficulties.^[4] In facilities that have been trained and specialized for COVID-19. Iraq had reported approximately 319,035 cases of infection

and 8555 deaths as of September 30, 2020, with the majority of sickness and deaths coming from Western Europe and North America.^[5] COVID-19,^[6] the immediate response from departments of respiratory medicine and intensive care units (ICUs),^[7] or the stress on mental health faced by critical care practitioners were all factors that contributed to the onset of COVID-19,^[6] the immediate response from departments of respiratory medicine and intensive care units (ICUs),^[7] or the place stress on mental health faced by practitioners in critical care.^[8] Health-care professionals (HCPs) who care for COVID-19 patients were said to have a negative impact on them.

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Physical exhaustion and sleep troubles have been recorded in HCPs, as well as worry and fear of infection.^[9] As well as, the spread of the virus among relatives, as a family was hampered by severe preventative measures.^[10] Evaluation support and mental healthcare are important aspects of the response to the COVID-19 outbreak,^[11] and these mental health issues have been addressed in both international and local legislation. HCPs dealing with the COVID-19 epidemic have noticed several unusual symptoms.^[12] MERS CoV has a low overall human-to-human transmission capability; nonetheless, 38% of all confirmed illnesses are occasionally aggravated in the healthcare setting.^[13] MERS CoV infections caused by healthcare workers occur for 1–27% of all MERS CoV cases.^[14] Healthcare worker (HCWs) are said to be more insecure, and the severity of the psychological effect was found to be connected to the length of the quarantine period.^[15] It is feared that such a negative impact would persist and have long-term consequences. HCWs are the backbone of any country's health-care system, and they may suffer from a variety of mental health issues as a result of their work during the COVID-19 epidemic. As a result, the goal of this study was to determine the levels of depression, anxiety, and stress among a group of health-care employees who answered our online survey.

REVIEW OF LITERATURE

The research studies from China, India, Italy, Spain, Iran, and Kurdistan/Iraq were among those in the review. All the others have a cross-sectional layout. The increase in mental health issues has been noted in editorials, scientific words, viewpoints, and commentary in scientific literature as well as reporting in print and visual media. Experts asked for mental health support as they were concerned over the rising number of mental health issues.^[11] Another significant global public health concern during this epidemic is the rise in mental health issues in every community and age group across all countries.^[16-23]

To relieve psychological anguish and its impacts, experts have recommended appropriate and affordable solutions.^[24] This new predicament with mental health issues has received a lot of attention. However, there is still a lack of quantifiable data regarding the rise in mental health issues brought on by the pandemic. Before making the proper arrangements for tackling this issue of growing mental health difficulties, authorities need to be aware of the scope of the issue. This scoping review was carried out to estimate the number of different mental health issues brought through COVID-19.

METHODOLOGY

Design of the Study

This cross-sectional quantitative survey was done online from September 1–18, 2020, following an 8-month lockdown in the Kurdistan Region due to a coronavirus pandemic.

Administrative Arrangement

The proposal for the study was accepted by the Council of Nursing College and approved by the scientific committee of Nursing College/University of Sulaimani.

Participant

This cross-sectional design quantitative survey was done online from September 1–18, 2020, following an 8-month lockdown in the Kurdistan Region due to a coronavirus pandemic. The online poll drew the participation of 334 HCWs. After reading the study purpose, the survey was generated in Google Survey (www.google.com) and the link was provided through email with invitations to possible participants who were eligible for the written consent section in the first section of the online survey. If they agreed, they could then proceed to fill out the questionnaire.

Tools and Measurement

Age, sex, marital status, degree of education, work, year of experience, economic situation, possible direct interaction with COVID-19 patients, and disease severity were some of the sociodemographic issues mentioned. Simply checking the answer checkbox takes an average of 5 min to complete the inquiry.

The Kurdish translation of the perceived stress scale (PSS-10),^[25] patient health questionnaire (PHQ-9),^[26] and generalized anxiety disorder (GAD-7) was a significant aspect of the questionnaire for recording the degree of stress, grief, and anxiety.^[27] PSS10 scores vary from 0 to 13 (low), 14 to 26 (moderate), and 27 to 40 (high) (extreme stress perceived). The PHQ-9 scale has scores of 5–9, 10–14, 15–19, and 20–27 for mild, moderate, moderate, intense, and severe depression, respectively. The 7-item GAD scale was used to assess anxiety. The GAD-7 scale is a self-reporting scale with great reliability and validity. If the score is <5, there is no anxiety, whereas the cutoffs for moderate, mild, and severe anxiety are 5, 10, and 15 respectively. In this study, a cutoff of five on the PHQ-9 and GAD-7 was used to identify persons who had or did not have any symptoms of depression or anxiety.

Statistical Analysis

After data were automatically registered in the survey's Excel file and imported into SPSS, statistical analysis was performed using SPSS version 22. For descriptive analysis, the frequency with percentage and mean with standard deviation was used. As inferential analysis, the T-test and ANOVA were utilized to evaluate for significance.

Informed Consent

The study protocol was accepted by Sulaimani University.

RESULTS

Table 1 shows that the participants were largely from Sulaimani (79.9%), that they were mostly men (52.1%), that they were mostly married (71.3%), and that they had 1–3 children (56.6%). A responder was mostly a nurse (74.9%), worked in a critical department of a hospital (46.4%), had 1–9 years of experience (44.0%), and was employed permanently (79.9%) with monthly 100–120 h of work in hospitals (45.2%).

Table 2 illustrated that most responders had direct contact with COVID-19 infected patient, and (31.7%) was infected

Table 1: Sociodemographic and work status of the participants

Variables	Frequency	Percentage
Place of resident		
Sulaimani	267	79.9
Hawler	37	11.1
Kirkuk	13	3.9
Halabja	17	5.1
Total	334	100.0
Age groups		
20–29	118	35.3
30–39	119	35.6
40–49	67	20.1
50–59	30	9.0
Total	334	100.0
Gender		
Male	174	52.1
Female	160	47.9
Total	334	100.0
Marital status		
Single	97	28.7
Married	238	71.3
Total	334	100.0
Number of children		
No child	116	34.7
1–3 children	189	56.6
4 children and more	29	8.7
Total	334	100.0
Job title		
Nurse	250	74.9
Physician	49	14.7
Lab technicians	7	2.1
Others	25	7.5
Total	331	99.1
The hospital departments where the staff work at them		
Word	87	26.0
Critical department (ICU, emergency)	155	46.4
Lab	13	3.9
Administration	32	9.6
Health centre	47	14.1
Total	334	100.0
Health service experience		
<1 year	24	7.2
1–9 years	147	44.0
10–19 years	93	27.8
20 and more years	70	21.0
Total	334	100.0

(Contd...)

Table 1: (Continued)

Variables	Frequency	Percentage
Type of employments		
Public employee	267	79.9
Bond (temporary employment)	34	10.2
Volunteer	33	9.9
Total	334	100.0
How long do you work in the month in hospitals		
100–120	151	45.2
121–144	80	24.0
145–168	51	15.3
169–192	52	15.6
Total	334	100.0
Economic status		
Sufficient	69	20.7
Barley sufficient	239	71.6
Insufficient	26	7.8
Total	334	100.0

Table 2: COVID-19 suffers and contacts among participants

Place of resident	Frequency	Percentage
From the beginning of the COVID-19 outbreak, did you have contact with infected peoples		
Yes	243	72.8
No	91	27.2
Total	334	100.0
Due to contact, did you have infected by COVID-19		
Yes	106	31.7
No	162	48.5
I don't know	66	19.8
Total	334	100.0
If you are infected, how do you rate your symptoms?		
Severe	27	8.1
Mild	99	29.6
No Symptoms	35	10.5
No infected	173	51.8
Total	334	100.0
From the beginning of the COVID-19 outbreak, Did you have used personal protective measures?		
Yes	279	83.5
No	55	16.5
Total	334	100.0

by COVID-19 due to their work with mostly mild symptoms (29.6%). Meanwhile, nearly (84%) have used personal protective measures since the COVID-19 outbreak.

Table 3 demonstrates the psychiatric condition of health staff. This study has shown that percentages of severe anxiety, stress, and depression were (22%), (3.9%), and (11%), respectively.

Table 4 has shown the significant association of PHQ score ($P < 0.05$) with age, gender, marital status, number of children, kind of employment, and work experiences. Mean of PHQ score was significantly higher in the age group 20–29 years (10.36 ± 4.22), female (9.71 ± 4.20), single marital status (10.23 ± 4.28), not have children (9.92 ± 4.21), volunteered employed (11.91 ± 4.16), and <1 years have experienced (10.58 ± 4.31).

This study showed the significant association of GAD score ($P < 0.05$) with gender, job title, and health service experiences. The mean GAD score was significantly higher in females (7.41 ± 3.65), administrative staff (7.72 ± 4.17), and <1 year have experienced (8.08 ± 3.53). Similarly, the significant association of PSS score ($P < 0.05$) was observed with gender, kind of employment, and work hours in hospitals. The mean PSS score was significantly higher in females (18.07 ± 5.91), voluntary employment (18.76 ± 6.35), and have 121–144 h of work in the hospitals (18.44 ± 5.74).

Table 5 explained the relationship between the psychiatric health condition and experience with COVID-19 among health staff. There was a significantly high PHQ score among those who had COVID-19 contact (9.43 ± 4.16), those who were infected by COVID-19 (10.18 ± 4.18), and had severe symptoms (10.30 ± 4.54). Similarly, there was a significant high GAD score among those who were infected by COVID-19 (7.69 ± 3.70) and had severe symptoms (7.85 ± 3.91).

DISCUSSION

COVID-19 has caused some psychiatric problems in HCWs because of their sensitivity to infection or other diseases.^[19]

Table 3: The level of the psychiatric condition among health staff

Psychiatric conditions	Frequency	Percentage
Anxiety levels		
Minimal (normal)	90	26.9
Mild anxiety	170	50.9
Moderate anxiety	65	19.5
Severe anxiety	9	2.7
Total	334	100.0
Stress levels		
Low perceived stress	84	25.1
Moderate perceived stress	237	71.0
Severe perceived stress	13	3.9
Total	334	100.0
Depression levels		
Mild perceived depression	194	58.1
Moderate perceived depression	101	30.2
Moderate severe depression	34	10.2
Severe perceived depression	5	1.5
Total	334	100.0

COVID-19 anxiety and stress were found to be higher in HCWs than MERS-Cov and seasonal influenza.^[20] HCWs are concerned about infecting their family members and coworkers, therefore

Table 4: The association of sociodemographic and work experience with psychiatric health conditions

Variables	Mean ± SD		
	GAD score	PHQ score	PSS score
Place of resident			
Sulaimani	6.87±3.56	9.24±4.08	17.09±5.77
Hawler	6.84±4.27	8.97±3.73	17.49±6.32
Kirkuk	5.69±2.50	6.77±4.32	14.23±6.93
Halabja	6.71±4.54	9.88±5.45	17.06±7.28
Total	6.81±3.65	9.15±4.14	17.02±5.96
P value	0.730	0.170	0.376
Age groups			
20–29	7.21±3.73	10.36±4.22	17.63±6.26
30–39	7.00±3.55	8.56±3.92	16.86±
40–49	5.79±3.61	8.75±4.21	16.24±5.82
50–59	6.77±3.61	7.57±3.46	17.07±5.72
P value	0.072	0.000	0.483
Gender			
Male	6.26±3.58	8.63±4.03	16.06±5.87
Female	7.41±3.65	9.71±4.20	18.07±5.91
P value	0.004	0.016	0.002
Marital status			
Single	7.08±3.61	10.23±4.28	17.34±6.36
Married	6.70±3.68	8.71±4.02	16.90±5.82
Other	8.00±	11.00±	17.00±
P value	0.649	0.009	0.834
Economic status			
Sufficient	6.10±2.82	8.19±3.63	15.71±5.67
Barley sufficient	6.88±3.79	9.38±4.28	17.35±5.97
Insufficient	8.08±4.04	9.58±3.84	17.54±6.35
P value	0.054	0.095	0.119
Number of children			
No child	7.04±3.71	9.92±4.21	17.22±6.46
1–3 children	6.85±3.57	8.83±3.98	17.13±5.73
four children and more	5.66±3.88	8.14±4.56	15.59±5.33
P value	0.184	0.031	0.395
Type of employments			
Public employee	6.64±3.63	8.70±3.95	17.13±5.70
Bond (temporary employment)	7.12±4.22	10.00±4.51	14.50±6.89
Volunteer	7.85±3.12	11.91±4.16	18.76±6.35
P value	0.178	0.000	0.011
Job title			
Nurse	6.80±3.55	9.27±4.23	16.91±5.99

(Contd...)

Table 4: (Continued)

Variables	Mean±SD		
	GAD score	PHQ score	PSS score
Physician	7.04±3.74	8.86±3.62	18.00±4.69
lab technicians	2.86±3.24	6.00±3.74	12.71±9.32
Others	7.72±4.17	9.40±4.28	17.40±6.89
P value	0.019	0.207	0.163
Hospital department of work of the participant			
Word	6.99±3.42	9.70±4.10	17.05±5.85
Critical department (ICU, emergency)	7.19±3.66	9.42±4.18	17.70±5.51
Lab	4.85±4.10	8.38±4.25	16.00±7.74
Administration	5.87±3.43	7.72±3.72	15.25±5.83
Health center	6.40±3.88	8.40±4.14	16.23±6.97
P value	0.079	0.091	0.195
How long do you work in the month in hospitals			
100–120 h	6.46±3.74	8.92±4.27	17.03±5.91
121–144 h	7.58±3.34	9.44±3.79	18.44±5.74
169–192 h	7.17±4.00	9.77±4.50	15.42±6.86
P value	0.091	0.469	0.032
Health service experience			
<1 year	8.08±3.53	10.58±4.31	15.13±8.20
1–9 years	7.23±3.89	9.82±4.23	17.96±5.65
10–19 years	6.29±3.16	8.59±4.07	16.52±5.86
20 and more years	6.19±3.63	7.99±3.64	16.39±5.66
P value	0.031	0.003	0.056

GAD: Generalized anxiety disorder, PHQ: Patient health questionnaire, PSS: Perceived stress scale, ICU: Intension care unit

they wear protective clothing.^[21] Psychiatric conditions of HCWs were altered during the COVID-19 epidemic in the present study, with the percentages of severe anxiety, stress, and depression being (22%), (3.9%), and (11%) accordingly. The anxiety rate in this study was higher than that of HWs in Saudi, at 11%,^[20] and depression was also higher than that of HCWs in China, at 6.2% (mean PHQ-9: 15.1).^[22] These findings are in line with a significant amount of research that has been published^[28,29] and show that HCWs experience anxiety at this time. In the present study, there were considerably more people who reported having moderate or severe anxiety (22.5%) than there were in the general population (5%), as had been observed prior to the pandemic.^[30] Meanwhile, anxiety and depression prevalence rates among HCWs during COVID-19 were found to be lower in the present study than in the systematic review (232 and 228%, respectively).^[29] The difference in psychiatric levels is primarily due to the use of various techniques and metrics. The prevalence of moderate-to-severe psychiatric illnesses was rated in the current investigation.

The majority of study participants had direct contact with COVID-19-infected patients and worked more than 120 h each

Table 5: The association of psychiatric health conditions with COVID-19

Variables	Mean±SD		
	GAD score	PHQ score	PSS score
From the beginning of the COVID-19 outbreak, did you have contact with infected peoples			
Yes	6.99±3.66	9.43±4.16	17.01±5.88
No	6.33±3.60	8.40±4.03	17.05±6.22
P value	0.140	0.042	0.954
Due to contact, did you have infected by COVED-19			
Yes	7.69±3.70	10.18±4.18	17.42±5.71
No	6.22±3.70	8.30±0.00	16.78±5.75
I don't know	6.86±3.19	9.56±4.39	16.97±6.87
P value	0.005	0.001	0.690
If you are infected, how your symptoms are?			
Severe	7.85±3.91	10.30±4.54	17.30±5.82
Mild	7.48±4.05	10.13±4.39	17.32±6.09
No symptoms	6.49±3.15	8.86±3.40	17.51±5.57
No infected	6.33±3.40	8.46±3.95	16.71±6.02
P value	0.031	0.005	0.798
From the beginning of the COVID-19 outbreak, Did you have used personal protective measures?			
Yes	6.73±3.61	8.97±4.15	16.77±6.02
No	7.24±3.89	10.05±4.03	18.29±5.54
P value	0.346	0.075	0.085

GAD: Generalized anxiety disorder, PHQ: Patient health questionnaire, PSS: Perceived stress scale, SD: Standard deviation

month, and one-third of them was infected with COVID-19. Since the COVID-19 outbreak, roughly four-fifths had adopted personal preventive measures. According to a study, the high workload causes a shortage of medical protective supplies as well as staff behavioral issues.^[31]

In the present study, demographic status and job conditions were the most important factors of HWs' psychological problems. PHQ score was significantly higher ($P = 0.05$) in the age group 20–29 years, female, single marital status, no children, volunteers employed, and had <1 year of experience. PHQ score was shown to be considerably higher among females, most outbreaks placed, nurses, frontline job, non-volunteer employed, self-infected, or colleague infected in several Wuhan research.^[2,4] In an Indian study, however, gender had no bearing on the severity of psychiatric problems.^[32]

GAD score, $P = 0.05$ was found to have a significant relationship with female gender, administrative staff, and experience of <1 year in this study. This finding was in line with a Wuhan study that found that the critical department

of the hospital, gender, and marital status were all linked to high GAD and PHQ^[33] levels.^[4] Nurses were shown to be more anxious than other medical care professionals in earlier studies in China.^[32] The majority of the study's participants were nurses who worked in the hospital's critical care units, although a high psychiatric disorder score had no bearing on nursing professionalism. Other Italian research has found no link between PHQ and GAD scores and nursing professionalism, ICU work, or frontline work; nonetheless, nursing and frontline work had high PHQ and GAD scores.^[34] PHQ and GAD scores were shown to be considerably higher in those who had COVID-19 contact, were infected with COVID-19, and had severe symptoms in the current investigation.

The leading determinants of stress among HCWs were found to be demographics and working conditions. According to an Italian study, stress is caused by youthful age, female gender, front-line employment, and nursing professionalism.^[35] Meanwhile, there was a significant relationship between PSS score ($P = 0.05$) and female gender, voluntary employment, and having 121–144 h of work in hospitals in the present study. A Chinese study also discovered a link between PSS score and age, working years, and current job title.^[33] Younger employees are almost inexperienced, and they would be unable to handle stressful circumstances such as working on the front lines for more than 120 h. The female gender is likewise more susceptible to psychological problems. The association of COVID-19-related stress with female gender was confirmed among physicians in another study in Kurdistan, moderate/high stress was high among female physicians.^[36]

CONCLUSION

During the COVID-19 outbreak, healthcare workers in Kurdistan experienced severe anxiety and stress due to unpleasant psychiatric effects. Screening for negative psychological outcomes and establishing efficient prevention strategies might be advantageous in minimizing the negative psychological impacts of the COVID-19 pandemic among medical care professionals.

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