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The Impact of the Covid-19 Pandemic on the Mental Health of Healthcare Professionals and Paramedical Staff Working in Peshawar, KP

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ABSTRACT

Background: COVID-19 has a considerable impact on the psychological wellbeing of front-line hospital staff. Therefore, it is extremely important to identify the healthcare workers who are at increased risk of psychological stress.
Objectives: To determine mental health issues due to COVID-19 among health care workers during the pandemic.
To determine the factors behind mental health issues among healthcare workers during COVID-19
Material and Methods: A cross-sectional study, carried out at two major tertiary hospitals in Peshawar Khyber teaching hospital (KTH) and Hayatabad Medical Complex (HMC). The participants included house officers, trainees, consultants and nurses. Data was collected through questionnaires. Survey tools such as Patient Health questionnaire -9 (PHQ-9) scale for depression and Generalized anxiety disorder (GAD-7) scale for anxiety were used. Chi -square test was applied to find association between mental health issues and COVID-19.
Results: About 230 HCWs participated having equal number of males and females. Most of the participants were in age group 25-30 and were composed of trainee medical officers. We found that 61.2% of the participants screened positive for depression while 52.6% of the participants screened positive for anxiety and it was due to dissatisfaction towards facilities provided by their respective hospitals.
Conclusion: Anxiety and depression were prevalent among the health care workers especially younger and un married individuals during COVID -19. To foster supportive work environment effective strategies are needed.
Keywords: Anxiety, Covid -19, Depression, Pandemic

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INTRODUCTION

The COVID-19 is a highly contagious disease with a rapidly rising incidence globally. The first cases of Coronavirus (COVID-19) were reported in Wuhan, China in December 2019 and was declared as public health emergency of international concern by WHO.[1] COVID-19 has a considerable impact on the psychological wellbeing of front-line hospital staff, especially nurses. Health care workers are involved in performing duties and to treat patients so they are at great risk of getting infections and also affected by mental disorders.[2] Mental ill health can be found within every workplace in every country. For many nations the COVID-19 pandemic will add to the existing factors of psychological morbidity.[3] Studies conducted in Wuhan out of which 22 suggested that anxiety, despair, sleeplessness and OCD were found to be considerably higher in healthcare workers particularly dentists. This article also suggested that the risk factors for such mental health issues are related to the workload, a person's mental health status and the atmosphere of the workplace.[4]

The high workload and the vulnerability of HCWs to get the virus themselves, when added to the potentially misleading information spread by media about the pandemic generates a mentally stressed milieu for the frontline workers in the hospitals, which in some cases lead to refusal from attending to their patients and inability to provide quality healthcare.[5]

To protect HCWs from the infected people, the HCWs should have been provided with personal protective equipment (PPE), but due to the shortage of supplies in Pakistan the HCWs were forced to work without it, which led to an enormous work-related stress amongst them.[6]

As the number of HCWs infected by coronavirus were increasing alarmingly by every passing day in Pakistan,[7] therefore, it is extremely important to identify the healthcare workers who are at increased risk of psychological stress and distress due to the fear prevailing in their surroundings so as to ensure quality healthcare delivery to the patients and safety of the frontline workers.[8]

We aimed to explore the levels of anxiety, stress, and depression experienced by physicians during the Covid-19 outbreak, and to explore related

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factors in both clinical. We hoped that our research would help us better understand the mental health needs of our colleagues during this disaster and strengthen their preparedness to protect their mental health during such pandemics.

MATERIAL AND METHODS

It is a cross-sectional survey, carried out in the Khyber teaching hospital and Hayatabad medical complex, Peshawar, on medical and paramedical staff using convenient sampling technique. The duration of the study was 04 months and data was collected from 2nd June 2021 till 30th September 2021. The study included healthcare professionals, doctors, nurses, medical practitioners.

PHQ-9 scale was used. It is a screening and case finding tool for depressive disorders. Which is the 9-item depression scale.[9] Major depression is diagnosed if 5 or more of the 9 depressive symptom criteria have been present at least "more than half the days" in the past 2 weeks, and 1 of the symptoms is depressed mood or anhedonia. Other depression is diagnosed if 2, 3, or 4 depressive symptoms have been present at least "more than half the days" in the past 2 weeks, and 1 of the symptoms is depressed mood or anhedonia[9]. One of the 9 symptom criteria ("thoughts that you would be better off dead or of hurting yourself in some way") counts if present at all, regardless of duration. As a severity measure, the PHQ-9 score can range from 0 to 27, since each of the 9 items can be scored from 0 (not at all) to 3 (nearly every day). However, in order to narrow down the groups and better assess the correlations, we merged the groups with mild depression and moderate into a single group, and also merged the moderately severe depression group with the severely depressed group. This way we got overall three groups i.e. People with no depression, people with mild-moderate depression, and people with severe (or moderately severe) depression.[10]

The GAD-7 score is a valid and reliable instrument for assessing anxiety symptoms in general and clinical population[11] calculated by assigning scores of 0, 1, 2, and 3, to the response categories of 'not at all', 'several days', 'more than half the days', and 'nearly every day', respectively, and adding together the scores for the seven questions. Scores of 5, 10, and 15 are taken as the cut-off points for mild, moderate and severe anxiety, respectively. When used as a screening tool, further evaluation is recommended when the score is 10 or greater. Using the threshold score of 10, the GAD-7 has a sensitivity of 89% and a specificity of 82% for GAD. It is moderately good at screening three other common anxiety disorders panic disorder (sensitivity 74%, specificity 81%), social anxiety disorder (sensitivity 72%, specificity 80%) and post-traumatic stress disorder (sensitivity 66%, specificity 81%).

For better analysis, and to create a homogeneity with the depression scale, we created 3 categories for anxiety as well i.e. People with no anxiety, people with mild-moderate anxiety, and people with severe anxiety respectively.[10]

Confounders were controlled by pilot study and following strict data collection techniques.

Data collected was analyzed using S.P.S.S version 23 for windows. Frequency and percentages for qualitative variables and quantitative variables were analyzed using mean and standard deviation. Chi square test was used to see association between factors responsible for mental health issues arising from Covid-19 among health workers. P-value less than 0.05 was taken as significant.

RESULTS

Study participants composed of almost equal number of males and females (51%) were males and (49%) were females. Among them 106 (46.1%) of the participants were married while 124/230 (53.9%) of the participants were single. The ages of the participants were reported in 5 categories viz. 73.5% in age group 25-30, 14.3% in age group 30-35, 5.2% in age group 35-40, 4.8% in age group 40-45 and only a 2.2% in age group 50 and above. The health care workers included in the study were mostly TMOs (43.9%), followed by consultants or post graduates (21%), allied staff such as nurses (20.4%) and house officers (13.9%). The response from both the hospitals was almost equal i-e 51% from KTH and 49% from HMC. About 56% percent of the participants reported that they had acquired adequate specific training for combating COVID-19. A total of 80.9% of the HCWs reported that they were subjects to excessive workload and most of them (55.7%) reported workload to a great extent. Similarly, 40.4% of the participants said that they rarely had time for leisure activities and 52.6% reported that they sometimes had time for leisure

activities other than work at the health care institutes. Majority of the HCWs (74.8%) were not satisfied with the facilities provided to them by the hospital during the pandemic.

We derived our results from the selected scales for depression and anxiety (PHQ-9 and GAD-7 respectively). Table 01 shows associations of covid with gender and marital status and level of depression which shows a significant association. There is a significant association of workload with depression level with p value of 0.00 as shown in Table 02.

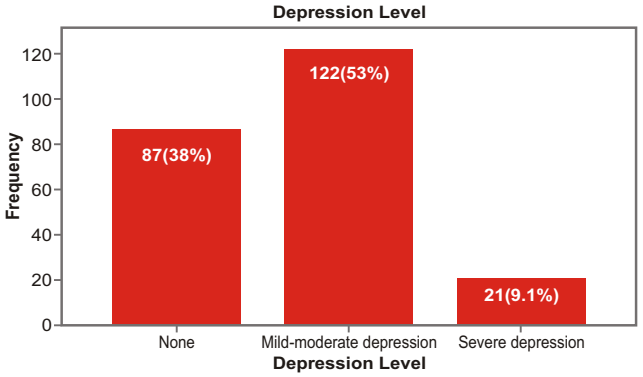


Fig 01. Frequency of depression among Health care workers

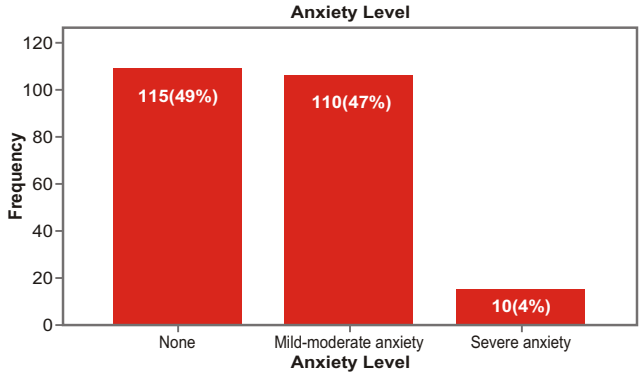


Fig 02. Frequency of anxiety among Health care workers

Table 01. Association of different factors with depression level

Gender	Covid-19 Status		Depression Level			
			None	Mild to Moderate	Severe	P-value
Female	Positive	43(38%)	26 (29.9%)	72(59%)	15 (71%)	.000
	Negative	70(62%)				
Male	Positive	64(54.7%)	61 (70 %)	50(41%)	6 (28%)	
	Negative	53(45%)				
Married	Positive	68(46%)	52 (59.8 %)	45 (36.9%)	9 (42.9%)	.005
	Negative	38(54%)				
Single	Positive	33(25%)	35(40%)	77 (63%)	12 (57%)	
	Negative	91(75%)				

Table 02. Association of different factors with depression level

Factors		Depression level			
		None	Mild to Moderate	Severe	P-value
Workload experienced	To great extent	31(35%)	79(64%)	18(85%)	.0001
	To some extent	23(26%)	33(27%)	2(9.5%)	
	Not at all	33(37%)	10(8.2%)	1(4.8%)	
Leisure time	Always	10(11%)	6(4.9%)	0%	.01
	Sometimes	53(60%)	59(48%)	9(42%)	
	Rarely	24(27%)	57(46%)	12(57%)	
Facilities at workplace	To great extent	27(31%)	26(21%)	5(23%)	.001
	To some extent	53(60%)	57(46%)	8(38%)	
	Not at all	7(8%)	39(32%)	8(38%)	

Table 03 states that p-value is .000, which means that there is a significant association of marital status with anxiety level.

Table 03. Association of different factors with anxiety level

Factors	Anxiety Level			
	None	Mild to Moderate	Severe	P-value
Married	(65)59%	(35) 33%	(6) 40%	.0001
Single	(44) 40%	(71) 67%	(9)60%	
Age 25-30)	(75)68%	(80)75%	(14)93%	.02
30-35	(16)14%	(16) 15%	(1)6.7%	
35-40	(4)3.7%	(8)7.5%	(0)0%	
40-45	(10)9%	(1).9%	(0) 0%	
50->	(4)3.7%	(1).9%	(0)0%	

Table 04 states P value of .000, which means that there is a significant association of workload with anxiety level.

Table 04. Association of different factors with anxiety level

Factors		Anxiety Level			
		None	Mild to Moderate	Severe	P-value
Workload experienced	To great extent	(36)33%	(78)73%	(14)93%	.001
	To some extent	(35)32%	(22)20%	(1)6.7%	
	Not at all	(38)34.9%	(6) 5.7%	(0) 0%	
Leisure time	Always	(10) 9.2%	(6)5.7%	(0)0%	.003
	Sometimes	(62)56.9%	(57)53.8%	(2)13.3%	
	Rarely	(37)33.9%	(43)40.6%	(13)86%	
Facilities at workplace	To great extent	(30)27%	(24) 22.6%	(4)26.7%	.001
	To some extent	(66)60%	(50)47.2%	(2)13.3%	
	Not at all	(13)11.9%	(32)30.2%	(9)60.0%	

DISCUSSION

In our study, we found the prevalence of depression as 62.1% and anxiety as 52.6% in the early period of the pandemic situation. A cross-sectional study conducted in India found the prevalence rate of anxiety as 49%[12]While another study conducted in China reported depression in the similar early stages of the pandemic as 56%.[13] However, from the detailed literature review, it was clear that the prevalence rates varied greatly in all the studies. Hence, in order to support our current study, we reviewed various systematic reviews. One of the reviews presented a range of prevalence for anxiety and depression. The range of prevalence of depression was as low as 12.2% to as great as 55.89% while range of prevalence for anxiety was as low as 24.1% and as great as 67.55%.[14] Another study which also assessed the psychological status of HCWs, found the prevalence rates of depression and anxiety as 74.2% and 77.4% respectively.[15]

Upon univariate and multivariate analysis, it was found that even though, almost equal number of males and females participated in the study, depression was found more prevalent in females.

however statistically insignificant. A survey in 2016 among health care workers in Pakistan also reported a similar female gender preponderance with respect to anxiety and depression and the finding is similar to our study.[16]

Participants who were younger than 35 years reported most of the positive cases of anxiety and depression. These results were found similar to those of another study conducted in China.[17] From univariate and multivariate analysis, It was found that depression and anxiety were more prevalent in participants who were single. Similar findings were reported in a study carried out in Turkey [18] However, some studies proposed that compared to the doctors, nurses have twice the rates of anxiety and depression which is not in accordance with our study.

Excessive workload is another significant finding in our study which is related to both anxiety and depression. As stated previously, a total of 80.9% of the participants reported excessive workload. Another study suggests that excessive workload as well as more working hours are associated with psychological symptoms.[19]

Lack of PPE was another important factor associated with the psychological symptoms experienced by the HCWs. Insufficiency of PPEs was directly related to the fear and distress related to the pandemic. Another study in UK also found a similar association of lack of PPEs and psychological distress.[14]

The present study is very informative as it highlighted the depression and anxiety level among healthcare workers. The limitations are time constraints, small sample size and financial constraints.

CONCLUSION

Psychiatric symptoms such as anxiety and depression had a prevalence rate of greater than fifty percent in health care workers at the time of COVID-19 pandemic. Both the symptoms were found significantly associated with variables like gender, age, marital status, workload and availability of PPEs. The symptoms were most prevalent in females, younger age group, unmarried individuals and those who were under excessive workload (greater number of working hours) and who reported less than sufficient PPEs in their respective hospitals.

Ethical Consideration

This study was approved by the ethical board of Khyber Teaching Hospital & Hayatabad Medical Complex, Peshawar, Pakistan.

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Conflict of Interest

Authors declare no conflict of interest

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DATA SHARING STATEMENT: The data that support the findings of this study are available on request from the corresponding author. The data is not publicly available due to privacy or ethical restrictions.

AUTHOR'S CONTRIBUTION

The following authors full fill authorship criteria as per ICMJE guidelines;

Khalid S, Zeb W:	Substantial contribution to conception and design, drafting the manuscript, final approval, agreed to be accountable for all the work.
Aliya B, Mustafa A:	Substantial contribution to conception and design, data acquisition, drafting the manuscript, final approval, agreed to be accountable for all the work.
Hidayat A, Bakhtyar N:	Analysis and interpretation of data, drafting the manuscript, final approval, agreed to be accountable for all the work.
Ayub M:	Analysis and interpretation of data, critical revision,final approval, agreed to be accountable for all the work.

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