Research Article

Mental Health Status of Health Workers during the COVID-19 Pandemic in Setting of DHQ Hospital Jhelum, Punjab, Pakistan: A Cross-sectional Study

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Abstract | COVID-19 pandemic has been shown to have significant effects on the mental health of people all across the globe, generally, and healthcare workers, particularly. This report is a cross-sectional study comprising statistical data and mental health measurements from HCW including doctors, nurses, and paramedics from DHQ Hospital Jhelum, Punjab Pakistan during the period April 24, 2020, to May 09, 2020. Healthcare professionals in hospitals equipped with flu filter clinics and COVID-19 isolation wards were eligible. After obtaining informed consent and assuring confidentiality, statistical data, and mental health measurements from 73. The instrument used for this study was focused on depression, anxiety, distress, and insomnia using the Chinese genre of authorized measurement tools. Removed reference statistical evaluation was performed by using SPSS version 2.6. The data was analyzed to assess the severity of symptoms of depression, anxiety, distress, and insomnia; and then conferred as numbers and percentages. A significant proportion of doctors, nurses, and paramedics reported symptoms of anxiety (38.3%), depression (58.9%), insomnia (45.2%), and distress (61.64%). Overall data collected showed that the ratio of symptoms was comparatively high among nurses than doctors.

Novelty Statement | During COVID-19 pandemic, mental health problems, in general, and mental health status of healthcare workers in developing countries, in particular, is not a widely studied subject. This study tries to bridge this gap in research.

Introduction

In the last twenty years, three different forms of coronavirus have caused three different epidemics, namely MERS and SARS caused by MERS-CoV and recently in 2019 SARS-CoV2 (Bonilla-Aldana *et al.*, 2020). The mortality rates of SARS and MERS were 10% and 37% respectively, while the mortality rate of COVID-19 is 2.3% (Petrosillo *et al.*, 2020).

However, on the whole, COVID-19 has caused a greater impact on the lives of humans across the globe because it soon turned into a pandemic that spanned all across the globe (Li *et al.*, 2020). Although COVID-19 is less deadly than SARS and MERS, COVID-19 has spread more widely (Petrosillo *et al.*, 2020). Doctors,

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nurses, and paramedical staff have been widely declared "frontline warriors in the fight against the COVID-19 pandemic" (Health workers are the frontline soldiers against COVID-19. Let's protect them | Africa Renewal, 2020).

According to the recommendations by WHO and CDC, healthcare workers must wear personal protective equipment and adhere to disinfection protocols at all times when coming in contact with a suspected case of COVID-19 (Coronavirus Disease 2019 (COVID-19), 2020). Such working conditions not only cause physical pressure but also high levels of psychological pressure (Santos *et al.*, 2020).

Since the first case of COVID-19 in Pakistan was detected in February 2020, the healthcare workers in Pakistan have faced additional psychological pressures due to inadequate availability of personal protection equipment, sleep disturbances, helplessness, concern regarding contagion exposure to family and friends, exhaustion due to the shortage of healthcare staff and lack of contact with family resulting in loss of social support (Rana *et al.*, 2020). These stressors may result in a wide range of mental health issues that can be severely detrimental to the performance of these healthcare workers in the clinical as well as the non-clinical setting against the ongoing pandemic (Torales *et al.*, 2020).

Additionally, an increasing number of HCWs are becoming infected with SARS-Cov2 every day: As of 24th April 2020, at least 253 healthcare workers have been infected by the virus in Pakistan so far. Resultantly, these infected medical workers need to be isolated themselves causing a further shortage of doctors and nurses and increasing the physical and psychological pressure on healthcare workers. Mental health problems that result from such psychological stressors can weaken the strategies of COVID-19 control and may result in higher morbidity and mental health problems globally (Rossi *et al.*, 2020).

Aim of study
This study was carried out to assess the presence of symptoms in HCW due to a novel coronavirus pandemic.

Materials and Methods

This report is a cross-sectional study comprising statistical data and mental health assessments from 73 HCW including doctors, nurses, and paramedics from DHQ Hospital, Jhelum, Punjab Pakistan during the period April 24, 2020, to May 09, 2020.

Confirmed cases of COVID-19 were 20,941 in Pakistan with 7,646 in Punjab province. Out of the 250 were admitted in DHQ hospital Jhelum 220 of them have been cured and discharged from the hospital, 1 patient is dead and the rest are admitted to the hospital. Approval was granted from the medical superintendent of the hospital before the commencement of this study. Written consent was provided by all the participants and allowed to amend the survey at any time, they wished. They were assured confidentiality of the information the provided.

Healthcare workers including doctors, nurses, and paramedics working in COVID-19 isolation wards were part of this survey. The sample size of respondents was calculated using formula S=(Z-score) 2p (1-p)/ (margin of error) 2 in which Z score is 1.96; p is 0.5 and the margin of error was 0.05. So for the infinity population sample size was calculated as 384.16. The population of 73 formula was adjusted as adjusted S= (S)/1+ [(S-1)/population] so the sample size was, therefore, 61.13 (Cochran).

The instrument used for this study was focused on depression, anxiety, distress, and insomnia using the Chinese genre of authenticated measurement tools (Lai *et al.*, 2020).

Statistical analysis was done using statistical package for the social sciences (SPSS) software version 2.6. The data was analyzed for the severity of symptoms of distress, depression, insomnia, and anxiety. Frequencies of risk factors including anxiety, insomnia, depression, and distress were represented by bar charts and tables.

Results and Discussion

Demographic characteristics
The occupational and demographic data were represented by the respondents themselves. A total of 73 participants including 25 doctors (34.2%), 39 nurses (53.4%), 9 paramedics (12.3%) participated in the study. Out of the 58 were female (79.5%) and 15 were male (20.5%). Participants aged between 18-25 were 18, 26-30 were 30, 31-40 were 10 and more than 40 years were 15.

Table 1 shows the frequency and the percentage of all participants according to age. There were 73 58 were females 15 were males which was the 20.5 percent of the total.

Table 1: Frequency and percentage of study population according to gender.

Gender	Frequency	Percentage
Male	15	20.5%
Female	58	79.5%
Total	73	100%

Table 2 shows the categories of health care workers

included in study to assess the mental health status during COVID-19. There were 39 nurses with the huge percentage of 53.4%. There were 9 paramedics and 25 doctors.

Table 2: History of occupation of all participants.

Occupation			
Categories		Frequency	Percentage
1.	Doctors	25	34.2%
2.	Nurses	39	53.4%
3.	Paramedics	9	12%
Total		73	100%

Figure 1 shows the distribution of participants according to the age groups, the most of the participant were between the age of 26 to 30 years of age with the highest percentage of 41 %. Participants aged between 18-25 were 18, 31-40 were 10 and more than 40 years were 15.
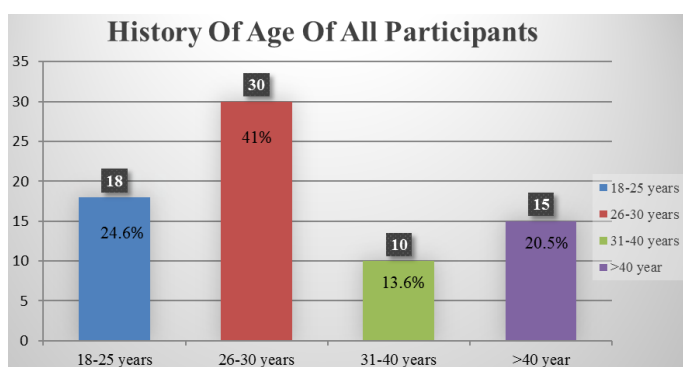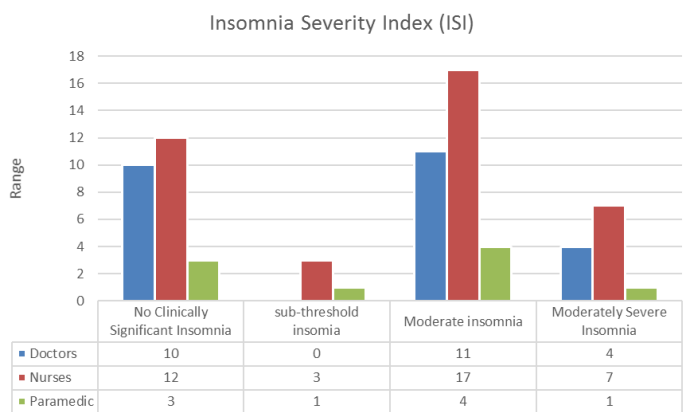

Figure 1: Age groups of the respondents.

Figure 2: Score of insomnia in participants.

Outcome and analysis

A significant proportion of doctors, nurses, and paramedics reported symptoms of anxiety (38.3%), depression (58.9%), insomnia (45.2%), and distress (61.64%). Overall data collected showed that the ratio of symptoms was comparatively high among nurses than doctors. The analysis showed that being a female and average professional title, nurses were suffering from severe symptoms of depression, anxiety, distress, and insomnia. The score of insomnia in the participants is

shown in Figure 2. Analysis scores of the participants are represented in Tables 4, 5 and 6.

Figure 2 shows the prevalence of insomnia in all the HCWs accordingly. The most vulnerable group experiencing the symptoms of Insomnia was nurses with the large number of 39 out of 73.

Table 3 shows that the study population of the study was comprised of the young age group of the individuals, the p-value was 17.24 with the significant value of .696, the degree of freedom was 21.

Table 3: Statistics of age and gender of all study population.

Age and gender			
	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	17.240[a]	21	.696
Likelihood ratio	20.039	21	.519
Linear by linear association	.497	1	.481
N of valid cases	73		

a: 41 cells (93.2%) have expected count less than 5. The minimum expected count is .21.

Table 4 shows the score of anxiety among the health care workers which show significant symptoms of anxiety. The most exposed group was the females suffering from the anxiety.

Table 4 shows the score of depression among the participants due to the exposure to covid-19 patients. It shows that the positive symptoms adhere in all the groups of health care workers included in the study population.

Table 6 shows the scores of distress in healthcare workers. The most significant group here is nurses due to the average title and burden of work with average income.

SARS CoV-2 has been announced as a global health threat by WHO. While the majority of studies are being conducted worldwide to determine the pathogenesis, epidemiology, prevention, and treatment of the disease, there's a dire need to determine the mental health aspects of the ongoing pandemic as well (COVID Publications). Sound mental health is pivotal to decreasing the overall burden of disease in the society as well as in assuring the quality of life for clinical as well as non-clinical personnel (Short *et al*., 2018). In the past few years, the importance of standardizing mental health assessment has been much debated upon (Druss, 2018). However, due to the nascent nature of the COVID-19 pandemic and the insidious onset of mental health problems, Mental health issues emerging from the pandemic have not been a top priority by researchers from all across

the globe, in general, and in developing countries like Pakistan, in particular, where mental health issues are still stigmatized and rarely mainstreamed (Sohail, 2017). Therefore, this cross-sectional study was conducted in the setting of District Head Quarter Hospital Jhelum to assess the mental health issues emerging from the Coronavirus pandemic in healthcare staff. This study showed that the highest percentage of health-care works experienced symptoms of anxiety, distress, depression, and insomnia. The nursing staff experienced more psychological stress than doctors. After nurse's symptoms were prominent in doctors than paramedics due to much more exposure to COVID-19 patients, lack of personal protective measures, less psychological support, and fear of becoming the source of exposing their family members.

This study was confined to DHQ hospital Jhelum and conducted only in one hospital. It can be conducted in different hospitals geographically and in order to get more widely applicable results both nationally and internationally. This study was unable to distinguish pre-existing mental health symptoms, that might have been present before the pandemic, from new mental health symptoms that had solely resulted from the COVID-19 pandemic.

Table 4: Scores of anxiety measurements in HCWs.

Statistics

		Name	Occupation	Gender	Age	Little intrest or peasure in doing things	Feeling down, depressed, or hopelessness	Trouble falling are staying a sleep, or sleeping too much	Feeling tired or having little energy	Poor appitite or overeating	Feeling bad about yourself or that you are a faliure or have let yourself or your famly down	Trouble concerntrating on things, such as reading the news paper or watching television	Moving or speaking so slowly that other people could have noticed or the opposite-being so figety or restless that you have been moving around a alot more than a susual	Thoughts that you would be better off dead, or of hurrting yourself
N	Valid	73	73	73	73	73	73	73	73	73	73	73	73	73
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean				1.79	32.0959	1.07	.78	.74	.96	.64	.52	.66	.52	.42
Median				2.00	28.0000	1.00	1.00	1.00	1.00	.00	.00	1.00	.00	.00
Std. Deviation				.407	9.26637	.822	.768	.764	.772	.770	.689	.749	.689	.686
Variance				.166	85.866	.676	.590	.584	.596	.594	.475	.562	.475	.470
Range				1	39.00	3	2	2	2	2	2	3	2	2
Percentiles	25			2.00	25.5000	.00	.00	.00	.00	.00	.00	.00	.00	.00
	50			2.00	28.0000	1.00	1.00	1.00	1.00	.00	.00	1.00	.00	.00
	75			2.00	40.0000	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00

Table 5: Scores of depression measurements in participants.

		Name	Occupation	Gender	Age	Little intrest or peasure in doing things	Feeling down, depressed, or hopelessness	Trouble falling are staying a sleep, or sleeping too much	Feeling tired or having little energy	Poor appitite or overeating	Feeling bad about yourself or that you are a faliure or have let yourself or your famly down	Trouble concerntrating on things, such as reading the news paper or watching television	Moving or speaking so slowly that other people could have noticed or the opposite-being so figety or restless that you have been moving around a alot more than a susual	Thoughts that you would be better off dead, or of hurrting yourself
N	Valid	73	73	73	73	73	73	73	73	73	73	73	73	73
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean				1.79	32.0959	1.07	.78	.74	.96	.64	.52	.66	.52	.42
Median				2.00	28.0000	1.00	1.00	1.00	1.00	.00	.00	1.00	.00	.00
Std. Deviation				.407	9.26637	.822	.768	.764	.772	.770	.689	.749	.689	.686
Variance				.166	85.866	.676	.590	.584	.596	.594	.475	.562	.475	.470
Range				1	39.00	3	2	2	2	2	2	3	2	2
Percentiles	25			2.00	25.5000	.00	.00	.00	.00	.00	.00	.00	.00	.00
	50			2.00	28.0000	1.00	1.00	1.00	1.00	.00	.00	1.00	.00	.00
	75			2.00	40.0000	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00

Table 6: Scores of distress in healthcare workers.

		Name	Occupation	Gender	Age	Any reminder brought back feeling about it	I had trouble staying asleep	Other things kept making me think about it	I felt irritable and angry	I avoided letting myself get upset when i thought about it are was reminded of it	I thought about it when i mean to	I felt as if it had not happened or was not real	I stayed away from reminders about it	Pictures about it popped in to my mind	I was jumpy and easily startled	I tried not to think about it	I was aware that i still had a lot of feelings about it but i didt deal with them	My feelings about it were kind of numb	I found myself acting or feeling as though as i was back at that time	I had trouble falling a sleep	I had waves of strong feeling about it
N	Valid	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean				1.79	32.0959	.68	.66	.99	.78	.70	.88	.79	*(Chart Area)*	.93	.62	1.08	.81	.62	.74	.89	.92
Median				2.00	28.0000	1.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	1.00	1.00	1.00	1.00	1.00	1.00
Std. Deviation				.407	9.26637	.743	.853	.935	.917	.701	.849	.816	.877	.962	.775	1.064	.828	.637	.764	.994	.909
Variance				.166	85.866	.552	.728	.875	.840	.491	.721	.666	.769	.926	.601	1.132	.685	.406	.584	.988	.826
Range				1	39.00	3	3	3	3	2	3	4	3	4	3	4	3	2	4	3	3
Percentiles	25			2.00	25.5000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	50			2.00	28.0000	1.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.00	1.00	1.00	1.00	1.00	1.00	1.00
	75			2.00	40.0000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00

Conclusions and Recommendations

Health care workers are suffering more from anxiety, depression, insomnia, and distress in the current situation of the COVID-19 pandemic. This study also showed somehow that the ratio of symptoms was comparatively high among nurses than doctors.

Conflict of interest

The authors have declared no conflict of interest.

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