MENTAL HEALTH STATUS OF HEALTH CARE PROVIDERS DURING COVID-19 PANDEMIC: A WEB-BASED CROSS-SECTIONAL SURVEY.

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ABSTRACT

Introduction: Pandemics are the greatest calamities in the history of mankind that have greatly shaken our society, mentally, financially as well as administratively.**Objective:** To evaluate the mental health status of health care providers working or deployed at the COVID isolation wards in different Hospitals of Hyderabad during the current pandemic**. Material and Methods:** A cross-sectional survey was conducted from May to July 2020 among the Health Care providers deployed at the COVID isolation wards at the different hospitals of Hyderabad, Sindh. A web-based survey questionnaire was used to collect the demographic information of participants. Generalized Anxiety disorder (GAD-7) and Patient health questionnaire (PHQ-9) scales were used to evaluate anxiety and depression levels of study participants. Data were analyzed using SPSS ver. 23. **Results:** A total of 150 responses were received out of 155. Most (58.7%) of the participants belonged to the age group of 23- 30 years. Out of overall study participants, there were (60.7%) doctors, (34%) nurses, and (5.3%) paramedical staff. Anxiety and depression were prevalent in about (43.10%) and (35.80%) of participants respectively. Severe anxiety was predominant in the 23-30 years' age of participants (32.1%). While males were (36.0%), unmarried (46.3%), and paramedics (46.0%) were having severe anxiety. Moreover, participants of the age group 31-38 years (43.3%), females (31.8%), married (41.7%) and nurses (41.1%) were suffering from severe depression. **Conclusion:** The majority of participants in the isolation COVID wards are suffering from Anxiety. Moreover, severe anxiety is predominant among the younger age group, unmarried, female, and paramedics. While majority of males were sufferings from severe anxiety. Severe depression is more commonly present in females, married, and nursing staff.

Keywords: Anxiety, Coronavirus disease, Depression, Mental health, Health Care Providers.

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INTRODUCTION

Pandemics are the greatest calamities in the history of mankind that have greatly shaken our society, mentally, financially as well as administratively.[1, 2]There have been thoughts about intentional instigations of biological warfare or bioterrorism, by state or non-state actors, resulting in a huge increase in research funding.[3] At the end of the year in December 2019, a new type of coronavirus appeared as a global health threat.[4] Later at the start of the year 2020, the World Health Organization (WHO) named it as SARS-COV2 (severe acute respiratory syndrome- coronavirus 2) and then COVID-19 (Corona Virus Disease of 2019). On 11th March 2020 WHO declared it as global health emergency as a Pandemic[5].

COVID-19 is caused by the novel coronavirus type 2 that is highly contiguous and transmissible from one human to another.[6] The disease is spread by droplets of an infected person that blowout during sneezing, coughing, etc. Even handshaking with an infected person and touching or sharing items by infected persons, spread the disease.[7] While the incubation period is of 14 days with significant variations among patients and can spread asymptomatically.[8]

According to the estimates of WHO, globally the number of total COVID cases has been exceeded to 2 million. While nearly 1.9 million people in the world died due to this new pandemic so far.[9]

Medical doctors care for the infected ones, their families, and have to face public inquiries. They have always worked on front lines setting heroic examples, risking their own lives despite numerous medical ethical codes.[10,11] COVID-19 has also raised a lot of public concern especially related to their health and families, resulting in a large number of psychological consequences.[2] There is already evidence of burnout and occupational stress in doctors up to (45.8%) in relation to numerous adverse outcomes due to increased risk of medical error. This exhaustion has an overlying effecton depression and anxiety.[12, 13]Literature from preceding pandemic (Severe Acute Respiratory Syndrome SARS 2003) reports 10% – 30% Post-

traumatic Stress Disorder (PTSD) symptoms while specific studies describe persistent psychiatric symptoms long after the outbreak.[10]

Singles are more affected than married and the severity of symptoms is proportionate to direct exposure (with fear of transmission to loved ones and families) either during treatment or in isolation.[1] Lack of support, communication, poor coping abilities, and no training is thought to be among other contributing factors to psychological problems in medical doctors.[14] Both the doctors and nurses show the overlapping distribution of psychological problems.[15] Religion, humor, and spirituality are found to be the main protective factors.[16] Even worse results are coming out during the current COVID-19 outbreak because of enormous workload, high-risk infection, and a continuous rise in the number of confirmed cases and deaths in both medical staff and the public.[2, 17] Being declared as medical emergency worldwide and shortage of staff sometimes duties are mandatory thus increasing stress reaction in medical doctors.[18]

COVID-19 isgreatly associated with the psychological burden in all subpopulations, directly and indirectly, and medical doctors are a highly vulnerable group. A recent study involving 1563 health staff reported depression in half (50.7%) of the participants whereas 44.7% had anxiety while 36.1% reported being suffering from sleep problems.[19]

Pakistan is one of the countries badly affected by the current pandemic of COVID-19 where the debate was already underway regarding the healthcare infrastructure of the country.[(11)] This pandemic possessesaserious impact on the lurching health care infrastructure, there is a considerable impact of the COVID-19 outbreak on the mental health of health care providers which needs to be addressed in a holistic bio-psycho-socio-spiritual perspective specially in the country like Pakistan. This study aimed to evaluate the mental health status of health care professionals working at the COVID isolation wards in different Hospitalsduring the current pandemic.

MATERIAL AND METHODS

The Cross-sectional survey was conducted from May to July 2020 among the Health Care providers (HCPs) deployed at the COVID isolation wards at the different hospitals of Hyderabad, Sindh. Ethical approval was taken from the ethical board of Isra University while consent was also taken prior to the study. A web-based survey questionnaire was used to collect information about the study participants in order to avoid the spread of COVID-19 through droplets or contact. All HCPswere invited through WhatsApp. A simple random sampling technique was applied for the selection of participants. The sample size of 145 was calculated using Online Epi. Data soft-ware. We took 10% extra participants in order to meet the calculated sample size. The final sample size was 155. To inspire the recruitment of potential participants, it was informed to all contestants in the survey that they would receive a report on their mental health after finalizing the evaluation. This web-based questionnaire was completely voluntary and non- commercial.

Anxiety and depressionlevel of the participants was measured by using the same scale which has been used by studies to evaluate anxiety among their participants during Middle Eastern Respiratory Syndrome (MERS). The anxiety scale named Generalized AnxietyDisorder scale (GAD-7) comprises of 7 relevant questions from the 4th edition of the Diagnosticand Statistical Manual of Mental Disorder and from the Anxiety Symptom Scale. Moreover, the 9-item Patient Health Questionnaire (PHQ-9) was used to evaluate depression level of study participants that have been found to be sensitive as well as specific for assessing suspected depression cases.[20, 21]

Data was entered in Statistical Package for the Social Sciences (SPSS) version 23. Qualitative and quantitative variables were analyzed by using frequencies and percentages.

RESULTS

Total of 155 questionnaires were sent via email / Whats App of which 150 responses were received back from the participants. Table 1 below is demonstrating the demographic details of respondents of the study. (Table 1)

Table 1: Demographic details of the respondents of study (n=150).

	n	(%)
Age group (in years)		
• **23-30**	88	58.7%
• **31-38**	33	22%
• **39-46**	21	14%
• **47 and above**	08	5.3%
Gender		
• **Male**	65	43.3%
• **Female**	85	56.7%
Marital Status		
• **Married**	67	44.6%
• **Unmarried**	83	55.4%
Designation / Status		
• **Doctors**	91	60.7%
• **Nurses**	51	34%
• **Paramedical Staff**	08	5.3%

The findings of Anxiety and depression among the study participants are presented in figure 1 below. The majority of the present study participants were having depression symptoms.

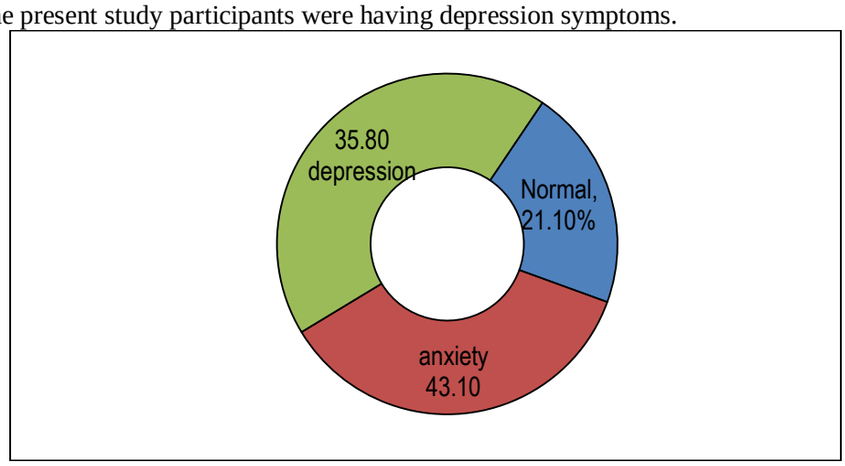

Figure 1: Proportion wise distribution of Anxiety and Depression among respondents (n=150).

Severe anxiety was observed in the age group 31-38 years. While Females were found to be suffering from severe anxiety. Moreover, the majority of single participants and Paramedics were having severe anxiety. (Table 2)

Table 2: Severity categories of Anxiety using GAD-7 scale (n=150).

	GAD-7, ANXIETY			
	Normal	Mild	Moderate	Severe
Age Groups				
23 – 30	22.3%	20.6%	25.0%	32.1%
31 – 38	23.4%	22.6%	38.0%	26.0%
39 – 46	26.5%	35.3%	21.0%	17.2%
> 46	27.8%	36.5%	20.5%	16.2%
Gender				
Female	20.6%	16.2%	29.0%	34.2%
Male	26.4%	10.8%	26.8%	36.0%
Marital Status				
Married	24.7%	22.1%	22.5%	30.7%
Unmarried	11.3%	10.0%	32.4%	46.3%
Profession				
Doctors	30.6%	11.6%	28.5%	29.3%
Nurses	22.4%	11.8%	26.8%	40.0%
Paramedics	8.1%	13.4%	33.5%	46.0%

Severe depression was observed in participants of age between 31-38 years followed by 23-30 years. The majority of female participants and unmarried participants showed severe depression levels. Furthermore, severe depression was also found in the majority of both nurses and paramedical staff. (Table 3)

Table 3: Severity categories of Depression using the PHQ-9 scale (n=150).

	PHQ-9, depression symptoms			
	Normal	Mild	Moderate	Severe
Age Groups				
23 – 30	20.4%	10.4%	27.5%	41.7%
31 – 38	19.7%	13.6%	23.4%	43.3%
39 – 46	21.6%	24.4%	16.3%	37.7%
> 46	25.4%	25.0%	17.0%	32.6%
Gender				
Female	22.6%	11.5%	34.1%	31.8%
Male	27.1%	13.1%	31.6%	28.2%
Marital Status				
Married	21.1%	10.0%	27.2%	41.7%
Unmarried	32.2%	15.9%	25.8%	26.1%
Profession				
Doctors	25.2%	15.8%	25.5%	33.5%
Nurses	13.7%	20.5%	24.7%	41.1%
Paramedics	19.0%	21.7%	23.7%	35.6%

DISCUSSION

Health care workers, especially those working in hospitals, are at a higher risk of contracting COVID-19.[22] Little was known about the causative agent in the initial period of this disease spread so the unavailability of knowledge and any effective treatment puts the health care workers at significantly higher risk of developing psychological symptoms.[23] Shortage of supplies, quarantines, and social distancing are further adding to the predicaments. During such a period of crisis and shortage of staff; there may be resentment in the health care personnel who are directly involved in patient care, especially when non-essential staff is asked to stay home.[1]

Thus, the working staff is burdened by understaffing and those who are at home may feel ineffective in playing their part when they are needed. This ongoing struggle of health care workers with limited resources has often been debated in previous research studies.[24, 25] Findings from this study are consistent with previous surveys conducted during the Severe Acute Respiratory Syndrome (SARS) epidemic and the current COVID-19 outbreak. These studies found depression and anxiety among health care professionals.[2, 6, 10, 17, 26]

It has been reported that working at high-risk situations, for example treating COVID-19 patients, increases the risk of mental health problems as compared to those in low-risk situations.[2, 19]

In the present study, a significant number of healthcare professionals from Hyderabad, Pakistan had anxiety and depression. The prevalence of depression and anxiety found in our study is in accordance with the findings of previous studies which reported the increased psychological symptoms in medical doctors during acute periods of pandemics were reported.[2,6,10,17,19,24,27] Moderate depression was observed equally by doctors and nurses. Paramedical staff and Nurses reported more severity in depression as compared to doctors which are in accordance with previous studies.[19, 24] Staff nurses spend more duty time in the wards and along with patient care they have to change the linen, all factors increasing the risks of infection which is a contributing factor to develop psychological problems. Studies from previous pandemics have affirmed this as well.[10] Perlis et al surveyed 1200 nurses and physicians in 34 hospitals in Wuhan and across mainland at China and found 14% of physicians and 16% of nurses having moderate to severe depressive symptoms which are in accordance to the present study and also to those observed in severe acute respiratory system outbreak in 2003.[10,24]

Regarding gender, distribution females were more depressed than males which are in accordance with previous studies.[20] Most of the nurses and many among the doctors were females in the current study. Also, depressive symptoms were more common than symptoms of anxiety similar to those observed in previous studies.[4,28,29]

The risk of transmission of COVID-19 to family was most stressful for the participants and more than half of them confirmed it. The second factor that caused the most worry was the lack of Personal Protection Equipment (PPE) while performing the duties. Similar psychological concerns were highlighted in recent studies from various regions of the world during the current COVID-19 outbreak.[19,25]

There are clear instructions from the health authorities that working without PPE is not only dangerous but may prove fatal as tragic deaths among medics are recorded in China, Italy, and England.[30,31] The health authorities must identify health care groups at a high risk of psychological morbidities for timely interventions. It is considered that keeping the mental health status of health care professionals contribute not only to the better efficiency of their work but also ensures more availability by the health care professionals.

LIMITATIONS OF THE STUDY

There were several limitations to the present study. First of all, this study was a cross-sectional survey and it is quite challenging to mark the pivotal implications with such a study design. Secondly, the PHQ-9 and GAD-7 were used to the exploration of the psychological or mental issues as well as physical alterations of Healthcare professionals and all the findings were self-assessed, which may create bias through the correspondent effect. Third, the small number of HCPs participated in this survey. Lastly, we didn't exclude HCPs from this survey who already suffering or having a past history of mental illness.

CONCLUSION

The study concluded that the majority of participants in the isolation COVID wards are suffering from Anxiety. Moreover, severe anxiety is predominant among the younger age group, unmarried, female, and paramedics. While males were dominantly suffering from severe anxiety. Severe depression is more commonly present in females, married, and nursing staff.

REFERENCES

1. Khan S, Huremović D. Psychology of the Pandemic. Psychiatry of Pandemics: Springer; 2019. p. 37-44.
2. Li S, Wang Y, Xue J, Zhao N, Zhu TJIjoer, health p. The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. 2020;17(6):2032.
3. MacIntyre CRJGB. Global spread of COVID-19 and pandemic potential. 2020;1(3).
4. Ackerman G, Peterson HJPo T. Terrorism and COVID-19. 2020;14(3):59-73.
5. Cao Z, Zhang Q, Lu X, Pfeiffer D, Jia Z, Song H, et al. Estimating the effective reproduction number of the 2019-nCoV in China. 2020.
6. Mehdi M, Waseem M, Rehm MH, Aziz N, Anjum S, Javid MAJB. Depression and Anxiety in Health Care Workers during COVID-19. 2020;36.

7. Galbraith N, Boyda D, McFeeters D, Hassan TJBb. The mental health of doctors during the Covid-19 pandemic. 2020:1-4.
8. Rossman H, Keshet A, Shilo S, Gavrieli A, Bauman T, Cohen O, et al. A framework for identifying regional outbreak and spread of COVID-19 from one-minute population-wide surveys. 2020;26(5):634-8.
9. Rothan HA, Byrareddy SNJJoa. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. 2020:102433.
10. Wong TW, Yau JK, Chan CL, Kwong RS, Ho SM, Lau CC, et al. The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. 2005;12(1):13-8.
11. Khalid A, Ali SJABR. COVID-19 and its Challenges for the Healthcare System in Pakistan. 2020:1-14.
12. Alderson KA. The Relationship between Burnout and Self-Care in the Social Work Profession: Aurora University; 2020.
13. Passalacqua SAJWPNAiC. Occupational burnout and the case study of physicians. 2016:111.
14. Wu KK, Chan SK, Ma TMJEid. Posttraumatic stress after SARS. 2005;11(8):1297.
15. Wu W, Zhang Y, Wang P, Zhang L, Wang G, Lei G, et al. Psychological stress of medical staffs during outbreak of COVID-19 and adjustment strategy. 2020.
16. Chan AO, Huak CYJOM. Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. 2004;54(3):190-6.
17. Xiang Y-T, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. 2020;7(3):228-9.
18. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. 2020;3(3):e203976-e.
19. Liu S, Yang L, Zhang C, Xiang Y-T, Liu Z, Hu S, et al. Online mental health services in China during the COVID-19 outbreak. 2020;7(4):e17-e8.
20. Bae J-MJE, Health. A suggestion for quality assessment in systematic reviews of observational studies in nutritional epidemiology. 2016;38.
21. Levis B, Benedetti A, Thombs BDJb. Accuracy of Patient Health Questionnaire-9 (PHQ-9) for screening to detect major depression: individual participant data meta-analysis. 2019;365.
22. Clark A, Jit M, Warren-Gash C, Guthrie B, Wang HH, Mercer SW, et al. Global, regional, and national estimates of the population at increased risk of severe COVID-19 due to underlying health conditions in 2020: a modelling study. 2020.
23. Braquehais MD, Vargas-Cáceres S, Gómez-Durán E, Nieva G, Valero S, Casas M, et al. The impact of the COVID-19 pandemic on the mental health of healthcare professionals. QJM: An International Journal of Medicine. 2020.
24. Perlis RHJJNO. Exercising heart and head in managing coronavirus disease 2019 in Wuhan. 2020;3(3):e204006-e.
25. Shanafelt T, Ripp J, Trockel MJJ. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. 2020;323(21):2133-4.
26. Liu X, Kakade M, Fuller CJ, Fan B, Fang Y, Kong J, et al. Depression after exposure to stressful events: lessons learned from the severe acute respiratory syndrome epidemic. 2012;53(1):15-23.
27. Wong E, Ho K, Wong S, Cheung A, Yeoh EJBWHOE-p. Workplace safety and coronavirus disease (COVID-19) pandemic: survey of employees. 2020;20.
28. Lu W, Wang H, Lin Y, Li LJPr. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. 2020:112936.
29. Ornell F, Halpern SC, Kessler FHP, Narvaez JCdMJCdSP. The impact of the COVID-19 pandemic on the mental health of healthcare professionals. 2020;36:e00063520.
30. Iacobucci G. Covid-19: Doctors still at “considerable risk” from lack of PPE, BMA warns. British Medical Journal Publishing Group; 2020.
31. Osama M, Zaheer F, Saeed H, Anees K, Jawed Q, Syed SH, et al. Impact of COVID-19 on surgical residency programs in Pakistan; A residents' perspective. Do programs need formal restructuring to adjust with the" new normal"? A cross-sectional survey study. 2020.