ORIGINAL ARTICLE

Depression and Anxiety in Health Care Workers during COVID-19

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ABSTRACT

***Background and Objective**: Pakistan has been sternly affected by COVID-19 (Coronavirus Disease 2019) since March, 2020. This study was intended to evaluate the mental health among health care workers throughout the epidemic and to sight see the possible influence factors.*

***Methods**: A web-based cross-sectional survey composed of n = 237 self-selected health care workers was conducted. Their demographics, COVID-19 associated knowledge, Hospital Anxiety and Depression Scale (HADS) were noted.*

***Results**: This study received n = 237 responses. A total of (59%) of the participants belonged to age group 20-30 years. Females (56.3%) were more among all of them. Regarding marital status, (44.5%) were unmarried. Out of n = 237 participants, there were (62%) doctors, (34%) nurses and (4%) paramedical staff. Depression and anxiety prevailed in about (34.6%) and (42.2%) of participants respectively. Moderate depression was reported equally by doctors and nurses. Severe anxiety was found in (25%) while borderline anxiety in (17%) of all the participants. Nurses reported more severity in depression while comparing to doctors.*

***Conclusion**: Females were slightly more depressed than males and anxiety was more common than depression especially in health workers from Sahiwal. Depression was seen more commonly in married individuals while comparing to singles. Risk of transmission of COVID-19 to family was most stressful for the participants and more than half of them affirmed it.*

KEYWORDS: Coronavirus disease 2019, Depression, Mental health, Anxiety.

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INTRODUCTION

Pandemics regarded as "The Wrath of God" and "Divine punishment for sins" are the greatest catastrophes in history of mankind and have greatly shaped our society, science, economy and politics.[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. United States alone has spent nearly 79 billion dollars on its biodefence since 2011.[3]

Interestingly World Health Organization (WHO) has a peculiar 'Disease X' category of hypothetical unknown pathogens which can cause future epidemic (current epidemic being mentioned as first Disease X).[4,5] First known documented pandemic "The Athenian Plague" occurred around 430 BC.[6] It can be said that first personal protection equipment was devised by "Charles De l'Orme in 17th century.[2]The quarantine "QurantaGiorni" in Italian, of initially 30 then 40 days, was first enacted in Regusa (Dubrovnik) in 1377.[7]It is the most affective public health measure to combat contagion to date.[8]

The 2019 coronavirus disease (COVID-19) is a global health threat and was declared as a public health emergency on 30th January, 2020 by WHO.[9] Its transmissibility is estimated to be 4.08, which means that every case of COVID-19 will create up to 4 new cases.[10] While incubation period is of 14 days with significant variations among patients and can spread asymptomaticaly.[11] The provisional fatality rate is 2% but ranges from 0.3 to 0.6%.[12] It spreads mainly through respiratory droplets and therefore close contact renders health care professionals a "High Risk Exposure" population.[13]

Chinese authorities controlled this problem very effectively by limiting the transmission (through quarantine facilities, isolating suspected and diagnosed cases and their contacts) and providing prompt treatment to severely ill (setting up emergency infection hospitals).[14] Masks, sanitizers, frequent hand washing and self-isolation are among official WHO guidelines and found to be associated with lower anxiety and depression.[15] Health professionals care for the infected ones, their families and have to face public enquiries. They have always worked on front lines setting heroic examples, risking their own lives despite numerous medical ethical codes.[16]

Likewise, COVID-19 has also raised a lot of public concern especially related to their health and families, resulting in large number of psychological consequences.[17] There is already an evidence of burnout and occupational stress in doctors up to (45.8%) in relation with numerous adverse outcomes due to increased risk of medical error. This exhaustion has overlying affect with depression and anxiety.[18]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.[19,20]

Singles are more affected than married and severity of symptoms is proportionate to direct exposure (with fear of transmission to loved ones and families) either during treatment or in isolation. Lack of support, communication, poor coping abilities and no training are thought to be among other contributing factors to psychological problems in health professionals. Both the doctors and nurses show overlapping distribution of psychological problems.[2,21] Religion, humor and spirituality are found to be main protective factors.[22,23] Even worse results are being coming out during current COVID-19 outbreak because of enormous workload, high risk infection, and continuous rise in number of confirmed cases and deaths in both medical staff and public.[14,15,24] Being declared as medical emergency worldwide and shortage of staff sometimes duties are mandatory thus increasing stress reaction in health professionals.[25]

COVID-19 is greatly associated with psychological burden in all sub populations, directly and indirectly and health professionals are 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 to be suffering from sleep problems.[26] Quarantine, suspension of facilities, lockdowns and traffic restrictions have made the health services further inaccessible which may end-up in relapses and exacerbations of health related issues of every medical discipline.[27]Clear communication from health care system about all the risks along with efforts to mitigate these risks through maximum support and security improves individual response rates.[28]

There is considerable impact of COVID-19 outbreak on mental health which should be addressed in a holistic bio-psycho-socio-spiritual perspective. This study aimed to find prevalence of depression among health care professionals working at teaching medical facility Sahiwal during current pandemic.

METHODS

This study was conducted at Sahiwal Medical College, Sahiwal after an Institutional Ethical approval. The authors used a web-based cross-sectional study created on the Whatsapp to collect data in order to avoid the spread of COVID-19 through droplets or contact. This web-based survey of the COVID-19 was shared on the Whatsapp. All Health professionals working in Sahiwal medical college using Whatsapp, participated this survey and responded the questionnaire. To inspire the recruitment of potential participants, it was informed to allcontestants 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.

STATISTICAL ANALYSIS

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

RESULTS

This study received n=237 responses. A total of 59% participants belonged to age group 20 – 30 years (Fig.1). Females were more among the participants (56.9 %; n = 135) as compared to males [43%; n = 102]. Out of n = 237 participants 44.5% (n = 106) were un-married while 55% (n = 131) were married. Among these responses there were 62% (n = 128) doctors, 34% (n = 80) nurses and 4% (n = 9) paramedical staff. Depression and anxiety prevailed in 34.6% and 42.2% of participants respectively. Moderate depression was found equally in both doctors and nurses. Severe anxiety was seen in about 25%while borderline anxiety in 17% of all the participants (Table-1). Nurses reported more severity in depression as compared to doctors. 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.

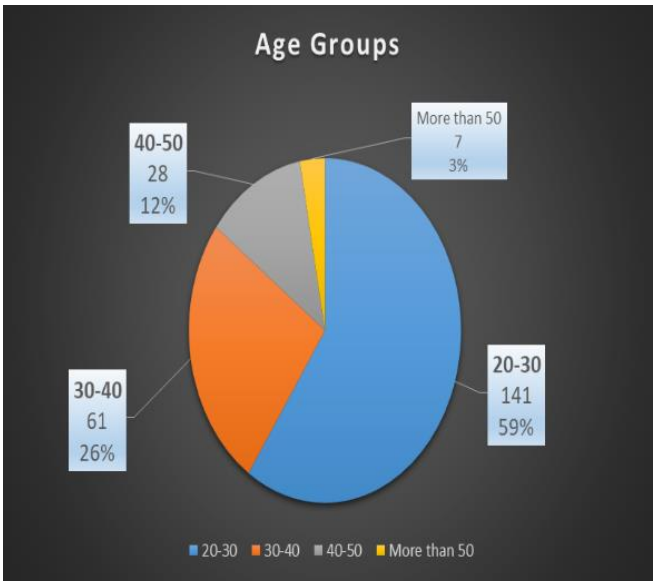

Fig.1: Age Groups of Participants.

Table-1: *Frequency of Distribution of Anxiety and Depression among Participants.*

	Anxiety			*Depression*		
	Normal	*Borderline*	*Abnormal*	*Normal*	*Borderline*	*Abnormal*
Age Groups						
20 – 30	58.4%	65.0%	57.6%	59.4%	53.5%	66.7%
30 – 40	26.3%	22.5%	27.1%	27.1%	23.3%	23.1%
40 – 50	13.1%	10.0%	10.2%	11.6%	16.3%	7.7%
More than 50	2.2%	2.5%	5.1%	1.9%	7.0%	2.6%
Gender						
Female	52.6%	50.0%	71.2%	52.9%	58.1%	71.8%
Male	47.4%	50.0%	28.8%	47.1%	41.9%	28.2%
Marital Status						
Married	54.7%	52.5%	59.3%	52.9%	55.8%	64.1%
Unmarried	45.3%	47.5%	40.7%	47.1%	44.2%	35.9%
Profession						
Doctors	60.6%	72.5%	59.3%	65.2%	53.5%	61.5%
Nurses	34.3%	25.0%	39.0%	31.0%	41.9%	35.9%
Paramedics	5.1%	2.5%	1.7%	3.9%	4.7%	2.6%

DISCUSSION

Health care workers, especially those working in hospitals, are at a higher risk of contracting COVID-19. Little was known about the causative agent in the initial period of this disease spread so the unavailability of knowledgeand any effective treatment puts the health care workers at significantly higher risk of developing psychological symptoms. 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.

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.[29,30] Findings from this study are consistent with previous surveys conducted during Severe Acute Respiratory Syndrome (SARS) epidemic and current COVID-19 outbreak. These studies found depression and anxiety among health care professionals.[14,15,18,19,20,26,29-31]

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.[15,25,26,31-2]

Depression and anxiety found in present study is in accordance to the reports of past studies in which increased psychological symptoms in health professionals during acute periods of pandemics was reported.[14,15,18,19,20,26,29-31] Moderate depression was observed equally by doctors and nurses. A total of 25% reported severe anxiety symptoms and 17% borderline anxiety of all the participants in present study which are similar to the results observed in other recent studies during COVID-19 pandemic.[29,30,32] Nurses reported more severity in depression as compared to doctors which is in accordance with previous studies.[26,29] 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.[18] Perlis et al,[29] 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 present studyand also to those observed in severe acute respiratory system outbreak in 2003.[18]

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

Risk of transmission of COVID-19 to family was most stressful for the participants and more than half of them confirmed it.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 current COVID-19 outbreak.[15,30]

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.[32] The health authorities must identify health care groups at 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.[28,33]

National Health Commission (NHC) issued a noticeto pointout the importance of providing psychological interventions and support to health care workers.[34] In a three year follow up of the 2003 SARS outbreak, 23% of health care workers reported moderate to severe depression.[19,20] Therefore it should always be remembered that there is sufficient evidence of long term psychiatric effects.

CONCLUSION

Though, the causes of anxiety may not distress everyone but they can deteriorate the self-confidence of health care workers in themselves

and the health care delivery system. Recognizing these sources help the health care leaders to develop targeted approaches to minimize these concerns. There should be an unambiguous assurance to the health care workers about the safety of themselves and their families.

LIMITATIONS OF STUDY

Due to the nature of the cross-sectional data, it is challenging to mark pivotal implications. There is still a need for further studies to validate the facts and also to determine more factors leading to anxiety and depression.

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CONFLICT OF INTEREST

None to declare.

FINANCIAL DISCLOSURE

None to disclose.

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Author's Contribution

MM: Supervision and revising it critically for important intellectual content.

MW: Final approval of the version to be published.

MHR: Analysis of data.

NA: Drafting the manuscript.

SA: Conception and design of work, results compiling.

MAJ: Analysis and interpretation of data.