ORIGINAL ARTICLE

The fear factor: A Hospital-wide cross-sectional survey to assess the severity of depression, anxiety and stress among health care workers during Covid-19 pandemic

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Abstract:
Severe acute respiratory syndrome coronavirus 2 (SARS-Cov2) has induced a pandemic of fear along with that of Corona Virus Disease 2019 (Covid-19) , with more than 93 million people infected and over 2 million deaths world-wide. This cross-sectional survey was conducted, at a tertiary care hospital, with the goal of determining the prevalence and severity of depression, anxiety and stress among health care workers (HCWs) during the Covid-19 pandemic based on depression, anxiety and stress scale (DASS-42). Additional goal was to quantify and relate distribution of specific personal, workplace, fiduciary and social concerns. We found that a quarter of the survey respondents had significant depression, anxiety, or stress. Most have been exposed to a Covid-19 patient at workplace but less than a third knew someone personally who died from Covid-19. The HCWs showed highest concern for potentially exposing family members to Covid-19, personal safety and that of colleagues. Personal history of anxiety disorder led to higher likelihood of all three negative psychological attributes, while assignment to work in wards with Covid-19 patients led to higher likelihood of anxiety and stress but not depression.

Keywords: Depression anxiety stress scale (DASS); SARS-CoV; social fear; pandemic; healthcare worker, *SARS-Cov2 Severe acute respiratory syndrome coronavirus 2 , †Covid-19 Corona Virus Disease 2019, Health care workers (HCWs), Depression, Anxiety & Stress Scale (DASS-42)

Received
date: 8th July, 2022
Accepted
date: 22nd October, 2022

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Introduction:
Severe acute respiratory syndrome coronavirus 2 (SARS-Cov2)* virus has induced a pandemic of fear along with that of Corona Virus Disease 2019 (Covid-19)†, with more than 93 million people infected and over 2 million[1] lives lost, worldwide. Being directly exposed to this potentially fatal threat during every day work, over burdens health care workers (HCWs) with remarkable stress, anxiety and depression.[2,3] This too at a time when they are engaged in treating an ever-increasing number of patients, many of whom are severely ill and require even more intensive care. Additionally, they have experienced their colleagues and families falling ill to the very illness and even at times losing lives.[5] According to an estimate by Amnesty International, more than 7,000 health care workers have died due to Covid-19 outbreak globally.[6,7] Accumulation of these stressors can conceivably intensify the psycho-traumatic potential of Covid-19 for HCWs, impacting their mental well-being and raising safety-at-work issues, potentially impairing at least a subset among them from performing optimally when it's most needed by the society. Trust issues between personnel and institutions represent another adverse effect of the pandemic. Several earlier studies, from around the world, have confirmed this trend.[8-12]

A number of empirical papers have explored various factors as potential stressors causing mental strain or fear, and possible mitigation strategies to protect and help health care work-

ers during the pandemic.[4,13-15] Among the contributing factors highlighted in these studies were concerns about insufficient personal protection, limitation of available knowledge and treatments, inadequate support services, and especially support for families. Similarly, direct exposure to the SARs-Cov2 infection personally or among patients and colleagues especially with fatal outcome is also likely to increase vulnerability to developing stress, anxiety and depression, among HCWs.

This survey was conducted with the goal of determining the prevalence and severity of depression, anxiety and stress among health care workers during Covid-19 pandemic, quantify distribution of specific personal, workplace and social concerns in relation to this and statistically correlate specific variable in relation to the outcome.

Although many earlier studies since the onset of the pandemic have explored this issue, we believe this survey is unique in several ways. Firstly, unlike the other studies, this survey included participants from just one center. This ensured that exposure to baseline institutional factors like guidelines, practices, and PPEs, was similar across participants. Additionally, this also allowed for direct face-to-face interviewing of the participants, which has been shown to have advantages over online, telephone, or mail-based formats.[16]

Moreover, this is the first survey to utilize DASS-42 for assessing the psychological states of depression, anxiety and stress. Most other studies have not utilized DASS, and even those that did used DASS-21 - a shorter version designed to cut down on administration time at the expense of clinical information.

Perhaps the most notable distinguishing feature of this survey is its specific and detailed exploration of various personal, social, and work-related concerns, including trust issues with employers, prevalent among HCW's and their association with negative psychiatric outcomes. This ground has only been covered to a comparatively limited extent by some earlier studies, both in terms of the number of factors studied and the nature and degree of analysis they were subjected to.[6,8,12] In fact, few if any of the earlier studies have utilized logistic regression for factor analyses in this specific area.

Material and Methods:

We conducted a structured cross-sectional survey of HCWs employed at SIUT, Karachi, Pakistan. Total number of HCWs employed during January and October 2020 were 2843. Using OpenEpi sample size calculator for proportions, an estimated frequency of 50 (+5)% for outcome factors, and confidence limits set at 5%, a sample size of 339 was calculated. With an estimated time-burden of 25 minutes for filling each form, all the hospital premises were divided in to 22 zones. To cover the three work shifts, 66 time slots were then allocated to designated surveyors. The surveyors interviewed 4-5 HCWs in a time slot and were instructed to include HCWs with different work-roles like physicians, nurses, porters, radiologist, laboratory personnel, and others for ensuring adequate representation across the spectrum. Each participant was verbally consented for participation, with complete assurance of confidentiality, as no identifying information was recorded in the questionnaire. The survey was conducted from October 1st to October 20th 2020.

The survey questionnaire (see Annexure 1) included 60 response items across 5 sections with fixed responses to choose from. Section A recorded demographic characteristics that may potentially contribute to the psychological disposition ofa health care worker. Similarly, in section B we explored the risk of exposure to Covid 19 outside the workplace. For example, a significant proportion of people in Pakistan, tend to live with extended families and are more likely to share smaller dwelling with more people, and lesser resources, that may potentially increase the risk of exposure. Section C documented direct personal exposure to the infected patients, colleagues, or self as specific triggers for psychological distress. Specific concerns of health care workers related to working with Covid-19

Table 1: Demographic characteristics of participants

	n(%)
Gender	
Female	194 (51.4)
Male	183 (48.6)
Current marital status	
Married	195 (51.7)
Unmarried	182 (48.3)
Number of dependents	
0-4	188 (49.9)
5-8	147 (38.9)
>8	42 (11.2)
Residence type	
Independent House	195 (51.7)
Apartment	155 (41.1)
Shared (Room/Apartment)	27 (7.2)
Number of rooms in the residence	
1-2	92 (24.4)
3 and more	285 (75.6)
Number of people sharing the residence	
1-4	118 (31.2)
5-8	235 (62.3)
>8	24 (6.5)
Personal history of anxiety	
Present	40 (10.6)
Absent	337 (89.4)
Personal history of any other psychiatric disorder	
Present	8 (2.4)
Absent	369 (97.6)

patients were addressed in Section D. The mix of concerns explored included fear of getting infected themselves, not getting adequate treatment for lack of knowledge and resources, similar concerns about their families and colleagues with the added fear of playing a vector in transmitting the disease tothem, whether they trusted their institutions for being supportive through the course, and if they felt stigmatized by society as potential spreaders of infection. The final section contained the 42 item Depression, Anxiety, Stress Scale (DASS) questionnaire. This scale was developed by the University of New South Wales in Australia. It has been validated to assess and quantify three related negative emotional states (depression, anxiety, and stress) across multitude of studies around the world, encompassing diverse settings and participants, including in Covid-19 settings.[17] Considering that over whelming majority of participants were native Urdu language speakers, we adopted the Urdu version of the questionnaire as validated by Aslam and Kamal with a Cronbach's alpha of 0.93 denoting internal consistency and a Confirmatory Factor Analysis (CFA) with indices found to be in acceptable range representing good fit of the translated version.[18,19]

Statistical analysis was performed using SPSS version 25. Frequencies and proportion of baseline demographic and workplace attributes, as well as factors related to personal exposure to Covid-19, and distribution of specific concerns among the participants were determined. The percentage prevalence of significant depression, anxiety and stress among the hospital staff based on moderate-to-severe scores on DASS scale were determined. To determine possible association of specific traits, each of these were recoded into binary determinations and a logistic regression analysis was performed.[20]

Results:

Based on voluntary participation, 377 health care workers and support staffs agreed to respond to the questionnaire.

Demographics characteristics: We explored relevant baseline characteristics of our participants, for potential social determinants of Covid-19 related distress, as shown in table-1. A personal history of anxiety or other psychiatric disorders was also recorded, in view of the likely vulnerability in such individuals. Among the participants, there were 194 females (51.3%), remainder identifying as males. Married participants marginally exceeded unmarried participants (married: n 194 [51.6%]. Slightly more than half the participants lived in independent homes as compared to apartments or shared dwelling as shown in table-1 with potentially higher exposure to community. About three quarters lived in dwelling with more than 3 rooms and two thirds shared the residence with 5-8 family members. A small proportion had prior history of anxiety (n:40, 10.6%) or any other psychiatric disorder (n:8, 2.1%).

Table 2: Health Care Worker (HCW) Subset Characterization

Characteristics	n(%)
HCW category	
Non-contact HCWs [1]	31 (8.2)
Nurse/Nurse Practitioner/Physician Assistant	131 (34.7)
Physician	199 (52.8)
Radiologist/Radiographer	16 (4.3)
Highest level of education achieved	
University/College Graduate	301 (79.8)
High School	55 (14.6)
Primary/Middle School	21 (5.6)
Specialty	
Anesthesiology	24 (6.3)
Medicine[2]	70 (18.6)
Laboratory Sciences	19 (5.0)
Non-Clinical[3]	16 (4.2)
Nursing (unassigned)	69 (18.3)
Pharmacy	7 (1.9)
Radiology	55 (14.6)
Surgery [4]	117 (31.0)
Workplace assignment	
Covid 19 Zone	195 (51.6)
Non-Covid Zone	182 (48.1)

1. Non-contact HCWs include:Clinical Researchers, Laboratory Personnel, Pharmacist, Receptionist and others
2. Medicine includes: Cardiology, Gastroenterology/Hepatology, Internal Medicine, Infectious Disease, Nephrology, Pulmonology, Intensive Care, and Oncology
3. Non-Clinical includes: Medical Education, Transport, Information Technology, Electronic Health Records, Coding, Engineering, and all others
4. Surgery includes: General, Hepatobiliary, Transplant, Urology, Vascular

Table 3: Experience with Covid-19 patients

	Yes n(%)	No n(%)
A. Have you directly interacted with Covid-19 patients	272 (72.1)	105 (27.9)
B. Have you interacted with severely ill with Covid-19 patients	173 (45.8)	204 (54.2)
C. Have you interacted with patients dying with Covid-19 patients	112 (29.7)	265 (70.3)
D. Do you personally know colleagues with Covid-19 patients	326 (86.4)	51 (13.6)
E. Do you personally know colleagues severely ill with Covid-19	169 (44.8)	208 (55.2)
F. Do you personally know colleagues dying with Covid-19	54 (14.3)	323 (85.7)

Incident exposure: Direct interaction with infected patients, especially a colleague would conceivably act as a particularly strong trigger for the level of depression, anxiety, and stress experienced by a health care worker during Covid-19 pandemic. We therefore asked the survey respondents for such incidental exposure as shown in table 3. A large majority of HCWs had directly interacted with SARSCoV2 infected patients (71.7%), with less than half exposed to severely ill patients among them (45.5%), and less than a third took care of a patient dying from it (29.4%). Similarly, most HCWs knew a colleague infected with Covid 19 (86.2%), but a much smaller subset knew a colleague with serious infection (44.7%) and a very small proportion personally knew an HCW dying from the disease (14%).

Personal, fiduciary and social concerns: The Covid-19 pandemic has disrupted health care systems due to the over whelming strain on resources, inundated by severely ill patients. This led to unprecedented shortage of personal protective equipment for even the health care workers, raising trust issues between them and their institutions. We explored these concerns among HCWs. Based on a 5-point Likert scale, these are presented in table 4. In keeping with expectations, around two-thirds or more were either concerned, very concerned or extremely concerned for personal safety (73.6%), getting infected at workplace (69.4%), getting severe Covid-19 disease (63.2%), infecting their family members (79.1%), safety of colleagues (71.4%), infecting other patients or colleagues (68.2%). They were similarly concerned for inadequate safety protocols at the workplace (67.7%), not getting adequate PPE during work (63.3%), colleagues not following safety protocol (66.1%), and inadequate support for family in case the HCW would get ill and hospitalized (62.4), implying trust issues with the institutions and even colleagues. To a lesser degree, HCWs were also concerned for not receiving adequate care if infected (58.6%), not getting intensive care due to non-availability if needed (52.7), inadequate medical knowledge and medications available for treatment (54%), and not getting salary if infected (48.1%). Interestingly despite the younger age group of most HCWs, nearly half were concerned about personal risk factors or comorbidities (48.1) and possibility of dying if infected (53.5%). Additionally, social pressures were also a significant concern in consideration of not getting adequate burial once diagnosed (57.6%), and other social stigmas associated with diagnosis (51.3%).

Table 4: Experience with Covid-19 patients

	How concerned are you about…	Not concerned 1 n (%)	Somewhat concerned 2 n (%)	Concerned 3 n (%)	Very concerned 4 n (%)	Extremely concerned 5 n (%)
1	Personal safety	22 (5.8)	77 (20.4)	104 (27.6)	79 (20.9)	95 (25.1)
2	Being assigned to Covid-19 Zone	54 (14.3)	79 (20.9)	100 (26.5)	78 (20.6)	66 (17.5)
3	Inadequate workplace safety protocols	43 (11.4)	78 (20.6)	115 (30.4)	67 (17.7)	74 (19.6)
4	Not getting adequate PPEs at workplace	69 (18.3)	73 (19.3)	94 (24.9)	69 (18.3)	76 (20.1)
5	Getting infected from patients/colleagues	37 (9.8)	77 (20.4)	102 (27.0)	80 (21.2)	80 (21.2)
6	Colleagues not following safety protocol	46 (12.2)	81 (21.4)	115 (30.4)	77 (20.4)	58 (15.3)
7	Getting severe Covid-19 disease	60 (15.9)	78 (20.6)	81 (21.4)	64 (16.9)	94 (24.9)
8	Not receiving adequate care if infected	70 (18.5)	83 (22.0)	94 (24.9)	67 (17.7)	63 (16.7)
9	Not getting intensive care due to non-availability if needed	77 (20.4)	78 (20.6)	86 (22.8)	58 (15.3)	55 (14.6)
10	Inadequate medical knowledge and medications available for treatment	79 (20.9)	94 (24.9)	91 (24.1)	58 (15.3)	55 (14.6)
11	Personal risk factors/comorbidities	103 (27.2)	92 (24.3)	81 (21.4)	51 (13.5)	50 (13.2)
12	Possibility of dying if infected	78 (20.6)	97 (25.7)	88 (23.3)	59 (15.6)	55 (14.6)
13	People not getting adequate burial once diagnosed	73 (19.3)	86 (22.8)	90 (23.8)	61 (16.1)	67 (17.7)
14	Infecting other patients/colleagues	36 (9.5)	83 (22.0)	92 (24.3)	76 (20.1)	90 (23.8)
15	Safety of colleagues	27 (7.1)	80 (21.2)	101 (26.7)	68 (18.0)	101 (26.7)
16	Infecting family member	34 (9.0)	55 (14.6)	81 (21.4)	54 (14.3)	164 (43.4)
17	Not adequate support for family if you get ill and hospitalized	69 (18.3)	72 (19.0)	81 (21.4)	61 (16.1)	94 (24.9)
18	Not getting salary /pay during illness	125 (33.1)	70 (18.5)	68 (18)	47 (12.4)	67 (17.7)
19	Social stigma associated with diagnosis	107 (28.3)	76 (20.1)	68 (18.0)	56 (14.8)	70 (18.5)

Prevalence of Depression, Anxiety and Stress(DASS): All participants responded to the DASS questionnaire (42 items). Based on the responses, mean depression score was 8.46 (+9.05) corresponding with mild depression, mean anxiety score was 6.5 (+ 8.57) categorized as mild anxiety and similarly the mean stress was 10.4 (+10.59), again representing mild stress, among all the participants of the survey.

We then calculated the prevalence of significant depression, anxiety, and stress, by analyzing subset of participants reporting moderate or severe scores in each category. Based on these, around a quarter of the participants reported either significant depression (25.4%), anxiety (26.5%) or stress (22.2%).

Statistical correlation: In order to determine any specific attributes and concerns that may predict a higher propensity for developing these psychological states in a health care worker, we calculated likelihood ratios for significant concern associated with either significant depression, anxiety, or stress. These are presented in table 5. Personal history of anxiety among HCWs was significant for a higher likelihood of depression, anxiety and stress. Assignment to Covid19 zone was also associated with higher likelihood of anxiety and stress, but not depression. HCWs with concerns regarding personal co-morbidities and fear of infecting others had a higher likelihood for significant depression. Fear of infecting family members, and not getting paid during illness, was predictive of significant anxiety among them. Similarly, concern for inadequate workplace safety protocols, fear of getting infected by a patient, and receiving inadequate care if infected due to constrained resources, led to significant likelihood of higher stress score among HCWs.

We also performed binary logistic regression analysis to establish association of specific demographic and exposure factors as well as HCWs concerns with the prevalence of significant depression, anxiety and stress. None of the factors assessed showed significant association,

Table 5: Likelihood Ratio Tests1

	Depression		Anxiety		Stress	
Effect	**Chi-Square[2]**	**Sig.**	**Chi-Square[2]**	**Sig.**	**Chi-Square[2]**	**Sig.**
Concerns about personal safety:						
Inadequate workplace safety protocols	.005	.941	.273	.601	4.646	.031
Inadequate PPE availability	.165	.684	2.446	.118	.606	.436
Getting infected by patient	.001	.970	4.801	.028	7.887	.005
Colleagues not following protocols	.457	.499	.877	.349	.180	.671
Experiencing severe Covid19	.884	.347	.219	.640	.129	.719
Receiving inadequate care if infected	2.946	.086	1.494	.222	4.561	.033
ICU non-availability when needed	.234	.628	.000	.992	1.033	.309
Inadequate medical knowledge about Covid 19	1.975	.160	.217	.641	2.373	.123
Personal co-existing medical conditions	4.397	.036	.040	.841	.677	.411
Not getting salary/pay during illness	2.870	.090	4.569	.033	.350	.554
Dying of Covid19	2.684	.101	1.583	.208	.016	.901
Getting inappropriate burial	3.149	.076	.325	.569	3.282	.070
Other concerns:						
Safety of colleagues	1.658	.198	1.360	.244	.010	.922
Infecting others as asymptomatic carrier	8.188	.004	.447	.504	1.190	.275
Infecting family members	2.631	.105	7.343	.007	.241	.623
Support for family if personally Ill with Covid19	.005	.941	.721	.396	.000	.987
Social stigma associated with the disease	.072	.788	.276	.599	.005	.945
In relation to other attributes						
Sex	.157	.692	.430	.512	.005	.943
Workplace assignment	.412	.521	14.119	.000	5.298	.021
Marital status	1.288	.525	.061	.970	.386	.825
Dependents	3.718	.156	2.318	.314	1.657	.437
Personal history of anxiety disorder	16.920	.000	10.193	.006	17.062	.000
Prior history of any other psychiatric disorder	.720	.698	.320	.852	1.028	.598

1. Goodness of Fit: Chi Square 303.74 Sig. 0.121

2. The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

except previous history of anxiety disorder.

Discussion:

Prealence of depression, anxiety and stress (DASS): Being directly exposed to Covid-19, as a potentially fatal threat during everyday work, is expected to over burden health care workers with extraordinary mental strain, rendering them vulnerable to developing stress, anxiety, and depression. It is remarkable to note that despite the adversity, moderate-to-severe depression, anxiety and stress affected less than a quarter of HCWs in this study. Comparing this to the prevalence noted in other similar studies, based on DASS scores, these numbers represent mid of the spectrum. Ranging from the highest noted at 90.1% stress, 85.7% anxiety and 72.3% depression in one series[12] to the lowest noted at 8.9% anxiety, 6.6% depression, and 7.7% stress among Singapore's cohort,[10] the differences are explainable based on the differences in specific study designs. For e.g., the study with highest prevalence recruited only HCWs posted in Covid19 isolation and intensive care units for their survey. On the other hand, a very low overall country prevalence and limited personal exposure to Covid19 likely explains the low prevalence for the series from Singapore. A meta-analysis of 13-studies by Pappa et al,[3] with a combined total of 33,062 participants estimated pooled preva-

lence of anxiety at 23•2% and depression at 22•8%, among HCWs, mostly from China. This was revalidated in another meta-analysis that focused on just the Chinese cohort.[21] Other country-specific surveys also demonstrated similar prevalence data.[8,9,11,22] Although many of these studies did not utilize DASS for assessment, but irrespective of the tool used, results are in keeping with our findings. In general, most health care workers experienced no or low degree of these symptoms during the pandemic.

Specific personal, workplace and social concerns: By exploring personal and social concerns, we wanted to elaborate the human side of this suffering. We therefore asked health care workers about the specific concerns that percolated their minds and intensified their fear of this pandemic, as detailed in the methods section. Additionally, we intended to explore issues of trust that HCWs may be experiencing, related to institutional support during the pandemic. Unfortunately, a remarkably high proportion of these HCWs expressed significant personal, workplace, and social concerns in our survey. For most categories, this ranged from half to two-thirds of the surveyed HCWs. Infecting a family member was a concern, for example, of nearly 80% of the respondents; about two-thirds were concerned about not getting adequate PPE(63%) at the workplace, while social stigmas bothered half of the respondents significantly (51%). A direct comparison to most other studies is not possible in this regard, as these did not look for similar factors for potential contribution to the fear among HCWs. However, formal discussions with HCWs in multiple institutions in the United States, to tease out specific work-related concerns, were published in a viewpoint paper by Shanafelt, et al,[13] which identified multiple sources of "anxiety" among HCWs. These included access to adequate PPEs, personal exposure to COVID-19 at work and taking it home to their families, concerns about available testing if they needed it and fear of propagating the infection to other HCWs, lack of certainty around the institution supporting them and their families in case of personal infection, managing childcare with school closures amidst increased work-hours during the pandemic, and lack of knowledge and resources to treat the patients with Covid-19. These are in keeping with the concerns we assessed and found to be highly prevalent. It is interesting to note that, notwithstanding these concerns, we did not find statistical evidence of association of these concerns with the prevalence or severity of[11] depression, anxiety, and stress among HCWs in our institution.

Impact of demographics and exposure to outcome: We explored whether exposure to Covid-19 patients, experiencing infection themselves, or specific demographic traits independently led to statistically significant association with prevalence and severity of depression, anxiety, and stress among health care workers. We relied on logistic regression to determine this association and ensured that any potential confounders were controlled. Interestingly, our analysis did not demonstrate such an association with any of these factors, except prior history of anxiety, for all the outcomes. Other studies have also looked for similar associations, although few if any utilized logistic regression, in our review. Most studies relied on odds ratio to determine direction and magnitude of effect, while others applied tests of significance with cross-tabulation. More commonly, studies demonstrated that female gender (OR, 1.80),[23] nurses as opposed to physicians (OR: 2.33),[11] front-line work-role (OR: 1.5),[24] and prior history of anxiety or other psychiatric illness (OR: 3.4),[11] were associated with anxiety and depression among HCWs during the pandemic. There is no clear hypothesis explaining the differences in association found in other studies as regards to, for example, gender distribution. Closer scrutiny shows an approximately equal numbers of male and female participants in our study, as opposed to female preponderance in most other studies. Also, multiple logistic regression, as opposed to univariate analysis, may theoretically remove the effect when other modifiers are controlled. Another possibility is that as this study was performed more than 6 months after the world was exposed to the pandemic, when, among other dynamics of the disease, it became evident that

women in general had less severe disease compared to men, the related anxiety among female HCWs may have receded as a result.

Limitations of the study: The study has inherent limitations related to survey design and single institutional experience with relatively smaller number of participants. Single institution study does have a potential advantage of neutralizing certain predisposing exposures that may become confounders if not controlled. For logistic regression analysis, we required recoding of Likert scale to binary variable, namely, significant and not significant for potential independent exposures. Similarly the outcome variables of depression, anxiety and stress, although assessed on DASS scale had to be simplified to binary outcome of significant or not significant. These may have contributed to not finding a significant association between exposure and outcome variable on regression analysis.

Conclusion:
Among the health care workers in our hospital, a quarter of the survey respondents had significant depression, anxiety or stress. Most have been exposed to a Covid-19 patient at workplace but less than a third knew someone personally who died from Covid-19. The HCWs showed highest concern for potentially exposing family members to Covid-19, personal safety and that of colleagues. Personal history of anxiety disorder led to higher likelihood of all three negative psychological attributes, while assignment to work in wards with Covid-19 patients led to higher likelihood of anxiety and stress but not depression.

Conflict of interest: None

Funding source: None

Role and contribution of authors:
Muhammad Arsalan Khan, conceptualization, methodology, formal analysis, writing – original draft.

Shah Muhammad, data Curation, supervision.

Saalim Mirza, methodology, validation, writing – review; editing.

Fizzah Arif, investigation.

Syed Arslan Shehzad Shah, investigation

Syed Haider Mehdi, investigation.

Asma Naseem, investigation.

Abdaal Waseem Khan, project administration.

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Survey Questionnaire:

A. Demographic Characteristics

a. Sex ◯ Male ◯ Female

b. Age _____ years

c. HCW category ◯ Physician ◯ Surgeon ◯ Nurse ◯ Nurse Aid ◯ Physician Assistant ◯ Specialty Technicians ◯ Dieticians ◯ Lab Personnel ◯ Medical Social Workers ◯ Porters ◯ Environmental Cleaning Staff ◯ Clinical Researcher ◯ Receptionists

d. Level of education ◯ No formal Education ◯ Primary school education ◯ Secondary school education ◯ College education or more

e. Workplace Assignment ◯CoVid 19 Zone ◯ Non-CoVid 19 Zone

B. Personal / Family Characteristics

a. Marital Status ◯ Married ◯ Unmarried ◯ Widowed ◯ Divorced

b. Dependents ◯ 2-4 ◯ 5-8 ◯ 9 or more

c. Dwelling Number of Rooms ◯ 1-2 ◯ 3 or more
Type ◯ Apartment ◯ House ◯ Shared room
Number of people sharing the accommodation _____ people

d. Number of people above 60 of years sharing accommodation _____ people

e. Prior history of anxiety disorder ◯ Present ◯ Absent

f. Prior history of any other psychiatric illness ◯ Present ◯ Absent

C. Factors related to experience with CoVid 19 patients:

a. Have you directly interacted with CoVid 19 patients ◯ Yes ◯ No

b. Have you interacted with severely ill CoVid 19 patients ◯ Yes ◯ No

c. Have you interacted with patients dying with Covid 19 ◯ Yes ◯ No

d. Do you personally know colleagues with CoVid 19 ◯ Yes ◯ No

e. Do you personally know colleagues severely ill with CoVid 19 ◯ Yes ◯ No

f. Do you personally know colleagues dying with CoVid 19 ◯ Yes ◯ No

D. Concern Related to Specific Factors (Likert Grading) **E. DASS-42 Questionnaire in Urdu language**

Table: Experience with Covid-19 patients

	How concerned are you about…	Not concerned	Somewhat concerned	Concerned	Severely concerned	Extremely concerned
1	Personal safety	1	2	3	4	5
2	Being assigned to CoVid 19 Zone	1	2	3	4	5
3	Inadequate workplace safety protocols	1	2	3	4	5
4	Not getting adequate PPEs during work	1	2	3	4	5
5	Getting infected from patients/colleagues	1	2	3	4	5
6	Colleagues not following safety protocol and infecting others	1	2	3	4	5
7	Getting severe CoVid 19 disease	1	2	3	4	5
8	Not receiving adequate care if infected	1	2	3	4	5
9	Not getting intensive care due to non-availability if needed	1	2	3	4	5
10	Inadequate medical knowledge and medications available for treatment	1	2	3	4	5
11	Personal risk factors/comorbidities	1	2	3	4	5
12	Possibility of dying if infected	1	2	3	4	5
13	People not getting adequate burial once diagnosed	1	2	3	4	5
14	Infecting other patients/colleagues	1	2	3	4	5
15	Safety of colleagues	1	2	3	4	5
16	Infecting family member	1	2	3	4	5
17	Not adequate support for family if you get ill and hospitalized	1	2	3	4	5
18	Social stigma associated with diagnosis	1	2	3	4	5

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