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CLINICAL & BASIC RESEARCH

Psychosocial Impact of COVID-19 on Healthcare Workers

A cross-sectional survey from Pakistan

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abstract: ***Objectives:*** This study aimed to assess the anxiety and depression symptoms in healthcare professionals in Pakistan as a result of the coronavirus pandemic. ***Methods:*** This cross-sectional study was conducted from May to June 2020 and included six different hospitals in Pakistan. An English-language demographics questionnaire, a validated COVID-19 fear scale, depression scale PHQ-9 and anxiety scale GAD-7 were sent to doctors, nurses and paramedical staff via WhatsApp. Data were analysed using descriptive statistics, Chi-square test and Student's t-test. ***Results:*** A total of 400 participants were included in this study (response rate: 80.0%); 263 (65.8%) were doctors and 137 (34.3%) were nurses and paramedical staff. Of the participants, 57.0% were less than 40 years old and 18.3% were aged above 50. Most of the participants (n = 262; 65.5 %) experienced moderate levels of fear and 16.5% (n = 66) experienced a high level of fear. Moreover, 19.5% feared death and 56.5% reported social media to be responsible for increasing their fears. On the depression PHQ-9 and anxiety GAD-7 scales, 21.8% (n = 87) reported moderate to severe depression and anxiety symptoms. A significant relationship was demonstrated between the depression level and age, education and profession (P <0.001 each). Similarly, anxiety and depression scores were strongly related to the availability of personal protective equipment (P <0.001). ***Conclusion:*** It was found that 21.8% of healthcare professionals are suffering from moderate to severe depression symptoms, 15.5% had moderate to severe anxiety, whereas 65.5% had moderate symptoms of fear. The predictors are age, education level and co-morbidities. These moderate to high levels of fear and anxiety and depression raise concerns about the psychological well-being of healthcare staff and should be addressed through different programmes.

Keywords: COVID-19; Healthcare workers; Fear; Anxiety; Depression; Patient Health Questionnaire; Pakistan.

Advances in Knowledge

- This cross-sectional study examined the harmful effects of COVID-19 on healthcare workers' psychological well-being in a resourcelimited country (Pakistan).

- This study's results offer an insight into the gravity of the effects of the COVID-19 pandemic and recommend ways to deal with such problems by offering proper strategies.

- The better understanding of the relationship between anxiety and depression and associated factors such as non-availability of personal protective equipment (PPE), age and co-morbidities will help in dealing with mental health issues.

Application to Patient Care

- There is a relationship between healthcare workers' mental health and the possibility of an increased chance of medical errors.

- A healthcare worker who suffers from anxiety and depression cannot give their full input, remains tired and exhibits an inefficient thought process.

- This study highlights the importance of formulating strategies, such as decreasing working hours and provision of PPE among others, to minimise the occurrence of mental health issues among doctors, thereby improving the quality of patient care.

The 2019 novel coronavirus (COVID-19) resulted in the first pandemic in over a century, which has impacted the world.[1,2] This contagious disease has led to concerns, distress and apprehension among individuals across the globe. Infections account for a significant proportion of the fear, as the transmission of this virus is rapid and invisible, and results in considerable health deterioration and even death. The appearance of new and resistant strains of the virus continues to put the media and society alike "in awe".[3]

The current COVID-19 pandemic is occurring during a time in which social media has a rapid and wide reach, and has therefore led to stigmatisation in some cases.[4] A global pandemic caused by an unknown agent, severe acute respiratory syndrome(SARS)-CoV-2, and relatively inefficient medical authorities, lacking in readiness, have led to the spread of misinformation and created confusion and anxiety among the public.

However, the effect on medical professionals, both physically and psychologically, is much higher

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than the general public, as the former group is more exposed to the virus due to their involvement in the management and care of COVID-infected patients and lack of proper personal protective equipment (PPE). "Health workers have always been, unfortunately, the mine's canary in epidemic response, particularly in areas that don't have strong surveillance systems".[5] The increasing number of infected cases, overwhelming workload, inappropriate media coverage, non-availability of particular drugs and inadequate support have contributed to their psychological burden. The situation is worse in low- and middle-income countries such as Pakistan compared to developed nations. Pakistan reported a COVID-19 outbreak in February 2020, with more than 255,769 cases and 5,386 deaths as of July 15, 2020.[6] Healthcare systems were overburdened and collapsed due to violations of lockdown regulations and standard operating procedures. Similarly, weak infrastructure, poor governance, scarcity of basic health needs, increased turnover of positive cases and inconsistent behaviour of the public contributed to the worsening situation. Lockdowns, unemployment, financial instability, prohibition of religious and social gatherings, fear of getting the infection and family safety also affected the mental health of the general population.[7]

During an outbreak of SARS in 2003, healthcare workers (HCWs) had a fear of infections, which resulted in a lack of interest in work and some experienced anxiety, stress and depression, causing long-term psychological issues.[8] Similarly, HCWs who react strongly to the current COVID-19 pandemic are likely to be older with a chronic disease and a pre-existing mental health disease. Others are affected by social distancing, isolation and, ultimately, depression. Common symptoms of anxiety and stress include numbness, disbelief, anxiety or fear, changes in appetite, lethargy, difficulty in concentrating, insomnia, headaches, fear about one's health and the well-being of loved ones, worsening of chronic health problems, anger or being short-tempered, etc.[9,10]

Although worldwide focus regarding COVID-19 has been mainly on infection control, an appropriate vaccine and effective treatment, the psychological aspect has not received much attention and these implications can be devastating in the long term.[11] This study aimed to assess the psychosocial impact of COVID-19 on HCWs by evaluating the signs and symptoms of fear, anxiety and depression among a group of individuals who are educated and dealing directly with COVID-19 patients. Few previous studies have also shown psychological implications of this viral pandemic on HCWs.[9,10]

Methods

This cross-sectional study included HCWs (doctors, nurses and paramedical staff) working in six different hospitals in Pakistan from May to June, 2020. A convenient sampling technique was used.

An English-language questionnaire was created on Google Forms (Google LLC, Mountain View, CA, USA) and distributed among the sample via WhatsApp (Meta Platforms, Inc., Menlo Park, California, USA). The contact details of the respondents were acquired from the hospital directory and there were therefore no face-to-face interactions. Participants who were found to be depressed and anxious were sent to a psychiatrist for further management.

The data collection form was divided into the following three sections: (a) demographics and validated scales evaluated the participants' level of symptoms of fear, depression and anxiety; (b) a generalised anxiety disorder GAD-7 scale and depression PHQ-9 questionnaire;[9] (c) the Fear of COVID-19 Scale.[10] The depression scale PHQ-9 used a 4-point Likert scale, ranging from 0 (not at all) to 3 (nearly every day). These scores were added together to obtain a total score ranging from 0 (minimal) to 27(maximal). Scores for minimal depression ranged from 1–4, mild depression from 5–9, moderate depression from 10–14, moderately severe depression from 15–19 and severe depression from 20–27.

The generalised anxiety scale GAD-7 also used a 4-point Likert scale, ranging from 0 (not at all) to 3 (nearly every day). Scores for mild ranged from 5–9, moderate 10–14 and severe more than 15. We used a cut-off of 10 with a sensitivity of 89% and specificity of 82% for GAD-7. For the Fear of COVID-19 Scale, a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used. These scores were added together to obtain a total fear score; total scores ranged from 7 (minimum) to 35 (maximum). The range of scores for low fear is 7–16, moderate fear is 17–26 and high fear is 27–35.

The anxiety GAD-7 and depression PHQ-9 tools have been successfully used in a previous similar study conducted in China, where HCWs were assessed for symptoms of anxiety and depression.[9] These tools can also be used to assess the symptoms of mental health disorders. The Fear of COVID-19 Scale was validated in an Irani population.[10]

All data were analysed using Statistical Package for the Social Sciences (SPSS), Version 19 (IBM Corp., Armonk, New York, USA). Mean scores and standard deviation were attained for continuous variables such as total fear scores and depression

scores, while frequency and percentages were used for categorical variables such as characteristics of the participant. Associations between the variables such as fear level, depression level and characteristics of the participant were examined using the Chi-square test. The Student's t-test evaluated continuous variables. Statistical significance was set at $P < 0.05$.

A short consent form, attached to the survey form, was sent to the participants, informing them that by completing the survey they are agreeing to participate in the study. Their names and personal details and the names of the employee's hospital were not asked to keep their identities anonymous. Permission was obtained from each healthcare centre before proceeding with the study. This study's proposal was approved by the Ethical Review Committee of Aga Khan University (ERC #2020-4733-10959).

The data will be kept safe and password-protected and will only be accessible to the investigators and the department head. The data will be disposed of seven years post-study completion as per the institutional policy.

Results

A total of 400 individuals were included in this study (response rate: 80.0%). Of these, 263 (65.8%) were doctors and 137 (34.3%) were nurses and paramedical staff. Moreover, 57.0% were less than 40 years old, whereas 18.3% were more than 50 years of age. The majority of the participants (59.3%) had attained a post-graduate education and 32.3% were graduates. In addition, it was found that 51.5% of the respondents reported fearing the disease and its consequences; only 19.5% feared death. In terms of co-morbidities, 10.0% of the participants were asthmatic and another 10.0% were hypertensive; 72.8% had no co-morbidities. Approximately 36.0% of participants were working in the COVID-19 area and 59.3% had always received proper PPE at the workplace [Table 1].

The majority of the participants (n = 262; 65.5%) experienced a moderate level of fear while 16.5% (n = 66) reported a high level of fear and 18.0% (n = 72) scored low on the fear scale. The majority (56.5%) reported that social media was responsible for increasing their fear; 17.0% reported not being able to sleep due to being worried about contracting COVID-19. The mean fear score was 20.8 ± 5.6 [Table 2].

Approximately 26.5 % of the participants (n = 106) experienced a mild level of depression and 47% (n = 188) had mild anxiety, whereas 21.8% (n = 87) showed moderate to severe symptoms of depression and 15.5% (n = 62) showed moderate to severe anxiety. The mean depression score was 10.4 ± 9.8 [Table 3].

Table 1: Characteristics of participants from six different hospitals in Pakistan (N = 400)

Characteristic	n (%)
Age group in years	
20–30	88 (22.0)
30–40	140 (35.0)
40–50	99 (24.8)
50–60	73 (18.3)
Profession	
Doctor	263 (65.8)
Nurse	62 (15.5)
Paramedical	41 (10.3)
Technician	34 (8.5)
Education level	
Middle	20 (5.0)
Higher	14 (3.5)
Graduate	129 (32.3)
Postgraduate	237 (59.3)
Type of fear	
Isolation	116 (29.0)
Disease	206 (51.5)
Death	78 (19.5)
Co-morbidity	
Asthma	40 (10.0)
Diabetes	29 (7.3)
Hypertension	40 (10.0)
None	291 (72.8)
Are you provided proper PPE in your workplace?	
Yes	237 (59.3)
No	83 (20.8)
Sometimes	80 (20.0)
Are you working in a COVID-19 isolation area?	
Yes	144 (36.0)
No	256 (64.0)

PPE = personal protective equipment.

While assessing factors that cause fear, results showed that comorbidities such as diabetes, hypertension, asthma and not getting proper PPE in the workplace were not significantly related to participants' fear levels. However, a significant relationship was found between the fear level and age ($P = 0.022$), profession ($P < 0.001$), education level ($P = 0.004$), type

Table 2: Distribution of responses to The Fear of COVID-19 Scale (N = 400)

Item	n (%)
I am most afraid of Coronavirus-19.	
Strongly disagree	21 (5.3)
Disagree	33 (8.3)
Neutral	116 (29.0)
Agree	178 (44.5)
Strongly agree	52 (13.0)
It makes me uncomfortable to think about Coronavirus-19.	
Strongly disagree	22 (5.5)
Disagree	36 (9.0)
Neutral	77 (19.3)
Agree	211 (52.8)
Strongly agree	54 (13.5)
My hands become clammy when I think about Coronavirus-19.	
Strongly disagree	87 (21.8)
Disagree	146 (36.5)
Neutral	79 (19.8)
Agree	81 (20.3)
Strongly agree	7 (1.8)
I am afraid of losing my life because of Coronavirus-19.	
Strongly disagree	47 (11.8)
Disagree	86 (21.5)
Neutral	97 (24.3)
Agree	123 (30.8)
Strongly agree	47 (11.8)
When watching news and stories about Coronavirus-19 on social media, I become nervous or scale.	
Strongly disagree	40 (10.0)
Disagree	51 (12.8)
Neutral	83 (20.8)
Agree	147 (36.8)
Strongly agree	79 (19.8)
I cannot sleep because I'm worried about getting Coronavirus-19.	
Strongly disagree	101 (25.3)
Disagree	153 (38.3)
Neutral	78 (19.5)
Agree	54 (13.5)
Strongly agree	14 (3.5)
My heart races or palpitates when I think about getting Coronavirus-19.	
Strongly disagree	98 (24.5)
Disagree	142 (35.5)
Neutral	82 (20.5)
Agree	69 (17.3)
Strongly agree	9 (2.3)
Total score on fear scale	
Low	72 (18.0)
Moderate	262 (65.5)
High	66 (16.5)

of fear (P <0.001) and working in the COVID-19 area (P < 0.001) [Table 4].

A significant relationship was demonstrated between the depression level and all variables, most notably age, profession and education (P <0.001 each). Similarly, anxiety and depression scores were strongly related to the availability of PPE (P <0.001) [Table 5].

Discussion

Low- and middle-income countries such as Pakistan can be characterised by large and highly populated urban regions, inadequate health systems and infrastructure, compromised resources such as HCWs and medicines, an unstable economy and scarce availability of COVID-19-testing kits. Consequently, there are high rates of COVID-19 infection, affecting millions, including HCWs and their families.

This study demonstrated that 21.8% of HCWs suffered from moderate to severe depression and 15.5% anxiety symptoms and required treatment. A meta-analysis of 12 studies from China and another report from Singapore also showed that the prevalence of depression, insomnia and anxiety among HCWs during COVID-19 was 22.8%, 23.2% and 38.9%, respectively.[12] These findings, along with those from the current study, confirm the massive impact of the COVID-19 pandemic on HCWs' mental and psychosocial health. A significantly high anxiety level has also been found, indicating a prevalent state of tension that could lead to psychological distress symptoms.

The susceptibility of frontline HCWs to anxiety and stress during a pandemic has been attributed to an overburdened healthcare system and the risk of contracting the infection.[13] Outbreaks of SARS-CoV-1, H1N1 influenza, Ebola and others, have had a significant psychosocial impact on HCWs.[14] Similar results were found in the current study where 51.5%

Table 3: Distribution of anxiety GAD-7 and depression PHQ-9 scale responses among healthcare workers during the COVID-19 pandemic (N = 400)

Anxiety and depression scales	n (%)
GAD-7 anxiety scale	
Feeling nervous, anxious, or on edge	
Not at all	181 (45.3)
Several days	125 (31.3)
More than half the days	34 (8.5)
Nearly every day	60 (15.0)
Not being able to stop or control worrying	
Not at all	221 (55.3)
Several days	103 (25.8)
More than half the days	41 (10.3)
Nearly every day	35 (8.8)
Worrying too much about different things	
Not at all	170 (42.5)
Several days	150 (37.5)
More than half the days	33 (8.3)
Nearly every day	47 (11.8)
Trouble relaxing	
Not at all	213 (53.3)
Several days	109 (27.3)
More than half the days	42 (10.5)
Nearly every day	36 (9.0)
Being so restless that it's hard to sit still.	
Not at all	297 (74.3)
Several days	54 (13.5)
More than half the days	23 (5.8)
Nearly every day	26 (6.5)
Becoming easily annoyed or irritable.	
Not at all	244 (61.0)
Several days	74 (18.5)
More than half the days	47 (11.8)
Nearly every day	35 (8.8)
Feeling afraid as if something awful might happen.	
Not at all	171 (42.8)
Several days	116 (29.0)
More than half the days	43 (10.8)
Nearly every day	70 (17.5)
Total anxiety score	
None <5	150 (37.5)
Mild (5–9)	188 (47.0)
Moderate (10–14)	52 (13)
Severe (>15)	10 (2.5)
PHQ-9 depression scale	
Little interest or pleasure in doing things.	
Not at all	198 (49.5)
Several days	118 (29.5)
More than half the days	33 (8.3)
Nearly every day	51 (12.8)
Feeling down, depressed, or hopeless.	
Not at all	248 (62.0)
Several days	101 (25.3)
More than half the days	26 (6.5)
Nearly every day	25 (6.3)
Trouble falling or staying asleep, or sleeping too much.	
Not at all	258 (64.5)
Several days	77 (19.3)
More than half the days	38 (9.5)
Nearly every day	27 (6.8)
Feeling tired or having little energy.	
Not at all	230 (57.5)
Several days	105 (26.3)
More than half the days	26 (6.5)
Nearly every day	39 (9.8)
Poor appetite or overeating.	
Not at all	286 (71.5)
Several days	80 (20.0)
More than half the days	16 (4.0)
Nearly every day	18 (4.5)
Feeling bad about yourself - or that you are a failure or have let yourself or your family down.	
Not at all	274 (68.5)
Several days	67 (16.8)
More than half the days	25 (6.3)
Nearly every day	34 (8.5)
Trouble concentrating on things, such as reading the newspaper or watching television.	
Not at all	252 (63.0)
Several days	87 (21.8)
More than half the days	22 (5.5)
Nearly every day	39 (9.8)
Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.	
Not at all	311 (77.8)
Several days	55 (13.8)
More than half the days	18 (4.5)
Nearly every day	16 (4.0)
Thoughts that you would be better off dead, or of hurting yourself.	
Not at all	325 (81.3)
Several days	50 (12.5)
More than half the days	12 (3.0)
Nearly every day	13 (3.3)
Total score on the depression PHQ-9 scale	
None	51(12.8)
Minimal depression (1–4)	156 (39.0)
Mild depression (5–9)	106 (26.5)
Moderate depression (10–14)	60 (15.0)
Moderately severe depression (15–19)	16 (4.0)
Severe depression (20–27)	11 (2.8)

Table 4: Comparison between fear of COVID-19 level and studied variables (N = 400)

Characteristic	Total	Level of fear of COVID-19, n (%)			*P* value
		Low	Moderate	High	
Age group in years					0.022
20–30	88	13 (14.8)	60 (68.2)	15 (17.0)	
30–40	140	23 (16.4)	83 (59.3)	34 (24.3)	
40–50	99	17 (17.2)	72 (72.7)	10 (10.1)	
50–60	73	19 (26.0)	47 (64.4)	7 (9.6)	
Profession					<0.001
Doctor	263	57 (21.7)	179 (68.1)	27 (10.3)	
Nurse	62	8 (12.9)	34 (54.8)	20 (32.3)	
Paramedical	41	3 (7.3)	28 (68.3)	10 (24.4)	
Technician	34	4 (11.8)	21 (61.8)	9 (26.5)	
Education					0.004
Middle	20	0 (0.0)	12 (60.0)	8 (40.0)	
Higher	14	2 (14.3)	10 (71.4)	2 (14.3)	
Graduate	129	17 (13.2)	85 (65.9)	27 (20.9)	
Postgraduate	237	53 (22.4)	155 (65.4)	29 (12.2)	
Type of fear					<0.001
Isolation	116	33 (28.4)	62 (53.4)	21 (18.1)	
Disease	206	28 (13.6)	154 (74.8)	24 (11.7)	
Death	78	11 (14.1)	46 (59.0)	21 (26.9)	
Co-morbidity					0.560
Asthma	40	6 (15.0)	28 (70.0)	6 (15.0)	
Diabetes	29	3 (10.3)	21 (72.4)	5 (17.2)	
Hypertension	40	11 (27.5)	21 (52.5)	8 (20.0)	
None	291	52 (17.9)	192 (66.0)	47 (16.2)	
Are you getting proper PPE in your workplace?					0.970
Yes	237	44 (18.6)	154 (65.0)	39 (16.5)	
No	83	13 (15.7)	57 (68.7)	13 (15.7)	
Sometimes	80	15 (18.8)	51 (63.8)	14 (17.5)	
Are you working in the COVID-19 isolation area?					<0.001
Yes	144	40 (27.8)	91 (63.2)	13 (9.0)	
No	256	32 (12.5)	171 (66.8)	53 (20.7)	

PPE = personal protective equipment.

of the respondents were afraid of contracting the virus and suffering from its symptoms, whereas 19.5% feared death. These findings are similar to those of a study conducted in China where 53.8% rated the psychological impact of the outbreak as moderate or severe.[15] Among those having past experiences of being infected, quarantined or even hospitalised, it was found that quarantined individuals feel more depressed, anxious, isolated, frustrated and helpless than the general population.[16] The findings of the current study are also comparable to another study from Pakistan, where a significant number of Pakistanis experienced anxiety, stress and depression due to COVID-19; approximately 89% of HCWs were scared for their families and 80% were fearful that they might contract COVID-19.[17]

The media's intense coverage of the current pandemic exacerbates the fear, anxiety, stress and panic of the public and HCWs. The majority of HCWs included in the current study (56.5%) reported social media and watching the news to be responsible for increasing their fear. In a recent study in Karachi, Pakistan, Balkhi *et al.* reported that a high proportion of participants (82.8%) found that fake news and un-authenticated information related to COVID-19, which was surfacing via social media, was a source of panic.[18]

According to the current study, 21.8% of the participants had moderate to severe depression and 15.5% had moderate to severe anxiety levels. In contrast, another study from Pakistan reported that 72.3% of the participants working in the COVID-19

Table 5: Correlation of depression of healthcare workers with the studied variable during the COVID-19 pandemic (N = 400)

Characteristic	Total	Depression level, n (%)						*P* value
		None	Minimal	Mild	Moderate	Moderately severe	Severe	
Age group in years								<0.001
20–30	88	11 (12.5)	32 (36.4)	23 (26.1)	16 (18.2)	0 (0.0)	6 (6.8)	
30–40	140	6 (4.3)	56 (40.0)	36 (25.7)	27 (19.3)	10 (7.1)	5 (3.6)	
40–50	99	13 (13.1)	36 (36.4)	34 (34.3)	14 (14.1)	2 (2.0)	0 (0.0)	
50–60	73	21 (28.8)	32 (43.8)	13 (17.8)	3 (4.1)	4 (5.5)	0 (0.0)	
Profession								<0.001
Doctor	263	41 (15.6)	112 (42.6)	81 (30.8)	23 (8.7)	6 (2.3)	0 (0.0)	
Nurse	62	4 (6.5)	21 (33.9)	10 (16.1)	20 (32.3)	3 (4.8)	4 (6.5)	
Paramedical	41	0 (0.0)	16 (39.0)	11 (26.8)	9 (22.0)	5 (12.2)	0 (0.0)	
Technician	34	6 (17.6)	7 (20.6)	4 (11.8)	8 (23.5)	2 (5.9)	7 (20.6)	
Education								<0.001
Middle	20	0 (0.0)	6 (30.0)	3 (15.0)	11 (55.0)	0 (0.0)	0 (0.0)	
Higher	14	4 (28.6)	2 (14.3)	6 (42.9)	2 (14.3)	0 (0.0)	0 (0.0)	
Graduate	129	20 (15.5)	44 (34.1)	37 (28.7)	17 (13.2)	7 (5.4)	4 (3.1)	
Postgraduate	237	27 (11.4)	104 (43.9)	60 (25.3)	30 (12.7)	9 (3.8)	7 (3.0)	
Type of fear								<0.001
Isolation	116	29 (25.0)	38 (32.8)	16 (13.8)	26 (22.4)	5 (4.3)	2 (1.7)	
Disease	206	14 (6.8)	94 (45.6)	69 (33.5)	19 (9.2)	5 (2.4)	5 (2.4)	
Death	78	8 (10.3)	24 (30.8)	21 (26.9)	15 (19.2)	6 (7.7)	4 (5.1)	
Co-morbidity								<0.001
Asthma	40	3 (7.5)	21 (52.5)	12 (30.0)	3 (7.5)	1 (2.5)	0 (0.0)	
Diabetes	29	1 (3.4)	10 (34.5)	13 (44.8)	0 (0.0)	2 (6.9)	3 (10.3)	
Hypertension	40	13 (32.5)	10 (25.0)	10 (25.0)	7 (17.5)	0 (0.0)	0 (0.0)	
None	291	34 (11.7)	115 (39.5)	71 (24.4)	50 (17.2)	13 (4.5)	8 (2.7)	
Are you getting proper PPE in your workplace?								<0.001
Yes	237	26 (11.0)	93 (39.2)	65 (27.4)	42 (17.7)	4 (1.7)	7 (3.0)	
No	83	22 (26.5)	35 (42.2)	17 (20.5)	4 (4.8)	5 (6.0)	0 (0.0)	
Sometimes	80	3 (3.8)	28 (35.0)	24 (30.0)	14 (17.5)	7 (8.8)	4 (5.0)	
Are you working in the COVID-19 isolation area?								0.002
Yes	144	21 (14.6)	69 (47.9)	36 (25.0)	17 (11.8)	1 (0.7)	0 (0.0)	
No	256	30 (11.7)	87 (34.0)	70 (27.3)	43 (16.8)	15 (5.9)	11 (4.3)	

PPE = personal protective equipment.

isolation ward suffered from moderate to extremely severe depression and 85.7% suffered from moderate to extremely severe anxiety.[17] This difference could be due to the inclusion of general HCWs in the current study versus those specifically working in COVID-19 isolation areas. Approximately 36.0% of the participants in the present study were working in COVID-19 areas.

The findings of the current study were similar to an extensive Chinese study that reported psychological distress in almost 35% of the respondents.[19] On the other hand, a recent survey from Malaysia reported 72.1% experienced moderate to severe anxiety levels, whereas in a study from Egypt, 18% reported minimal anxiety, 34% reported mild anxiety and 48% reported moderate anxiety symptoms.[20,21] The difference in psychological well-being observed among different countries could be due to differences in healthcare infrastructures. The HCWs are at the frontline of dealing with unprecedented traumatic issues resulting from an overwhelming load of cases, exceptionally long work hours as a result of limited resources and an uncertain primary facility. All these factors most likely led to severe anxiety and depression among HCWs, affecting their decision-making abilities and causing long-term detrimental effects on their overall well-being. Furthermore, this study found that anxiety and depression scores are strongly related to the non-availability of PPE (*P* <0.001). Similarly, a strong association of depression and anxiety was found with

education, age, profession and co-morbidities (P <0.001), which have not been reported in any previous study from Pakistan.

One of the limitations to this study is lack of generalisability, as only the urban population was included; the study sample size was small and, as such, might not have provided sufficient data to be representative of the country as a whole. However, the results can help policymakers monitor the mental health status of HCWs during this unusual crisis. Adequate planning such as work-hour regulations, programmes for provision of psychological support, training of individual and group skills as well as cognitive behaviour therapy can reduce the number of these mental health issues.[22] While there may be some overlap between the concepts of anxiety and fear, the individual scales of anxiety and fear used were validated in previous studies. This minimises the probability of overlap. In addition, the anxiety scale is a general scale, whereas the fear scale is related particularly and specifically to the fear of coronavirus.

One of the prime implications caused by prolonged stress and anxiety is burnout syndrome, or emotional fatigue, which leads to energy loss, fatigue, dissociation and depersonalisation. Clinical signs are social isolation, anxiety, fear, depression, anger, addictions, personality changes, guiltiness and self-immolation, changes in eating habits, substantial gain or weight loss, loss of memory disorganisation, problems with concentration and sleep disorders. Such healthcare worker is a risk for patients and needs immediate treatment. Burnout for HCPs working during the COVID-19 pandemic is associated with factors such as feeling pushed beyond training (high workload), making life-or-death prioritising decisions (high job stress), work impacting the ability to perform household activities (high time pressure) and lack of adequate PPE (limited organisational support).[23]

Finally, this study recommends that utmost protection of HCWs' well-being be provided before the ongoing pandemic creates complete chaos in the healthcare system. A mental health assistance hotline can be set-up to provide psychosocial assistance to HCWs. Moreover, adequate provision of PPE to staff must be offered to HCWs to protect them from contracting the infection.[7]

Conclusion

This study reports that 21.8% of the HCWs suffered from moderate to severe levels of depression, 15.5% had moderate to severe anxiety whereas 65.5% had a moderate level of fear. The predictors for anxiety and depression due to the effects of COVID-19 are age, education level and co-morbidities, all of which raises concerns for professionals' psychological well-being. This should be addressed through different strategies and programmes to allow for better control of the effects of the COVID-19 pandemic. Online medical advice and strategies for risk reduction of viral transmission between patients and medical workers will help reduce the pressure on HCWs.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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AUTHORS' CONTRIBUTION

SMA conceived the study design and executed the study. Both authors drafted the manuscript. SN collected the data and edited the manuscript. Both authors approved the final version of the manuscript.

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