

# Psychological impact of COVID- 19 outbreak on health care professionals working at the Pakistan institute of medical sciences, Islamabad

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## ABSTRACT

**Objective:** To assess anxiety and depression in healthcare professionals who are at high risk of exposure during the corona virus outbreak.

**Methodology:** A cross-sectional descriptive study was performed from April 21, 2020 to June 21, 2020 at Pakistan Institute of Medical Sciences Islamabad. The number of healthcare professionals was selected using a simple random sampling technique from medicine and allied and surgical and allied. Standard SOPs were followed by both researchers and participants as per WHO and MOH guidelines.

Self administered questionnaire in which anxious thoughts regarding Covid 19 were assessed. Reliable and validated research tools were used which included: a) Hospital Anxiety and Depression Scale (HAD-S), for evaluating level of anxiety and depression, b) Bradford Somatic Inventory (BSI), this assesses the somatic symptoms associated with anxiety and depression.

**Results:** The study results on the Hospital Anxiety and Depression Scale indicate that overall, 76.47 % of the respondents showed the positive symptoms of anxiety. Among them 25.73% were males and 50.73% were females. Overall, 4.65 % of respondents were facing depression, in which 2.69% were females whereas 1.96 % were males. Scores on Bradford Somatic Inventory reveal that Out of 119 females 97 were found to have somatic symptoms, while out of 289 males 103 had somatic complaints. A total of 200 participants were found positive for somatic symptoms.

**Conclusion:** It is concluded that there is a need for developing guidelines for healthcare professionals about effectively dealing in a health emergency situation like outbreak of this pandemic.

**Keywords:** Psychological Impacts, COVID-19 outbreak, anxiety, depression, somatic symptoms, Healthcare professionals.

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## Introduction

Covid19 pandemic is a health emergency worldwide which endangered human life as this left many ailing and deceased. This pandemic overloaded the resources and the population's safety and normal functioning. Epidemic

leads to anxiety, fear, denial, stigmatization and loss in the individuals.<sup>1</sup>

Healthcare workers and professionals' who work in highly stressful environments are vulnerable to emotional and behavioral responses in the face of extreme (unpredictable and uncertain) stress.<sup>2</sup>

Addressing the mental health issues in medical workers is thus important for the better prevention and control of the pandemic.

Stress in medical health-care workers can trigger psychological issues of anxiety, fear, panic attacks, posttraumatic stress symptoms, psychological distress, stigma and avoidance of contact, depressive tendencies, sleep disturbances, helplessness, interpersonal social isolation from family social support, and concern regarding contagion exposure to their friends and family.<sup>3</sup> The sudden role reversal from a healthcare provider to the COVID-19 confirmed or suspected patient potentially lead to a sense of frustration, helplessness, and adjustment challenges in healthcare professionals.<sup>4</sup>

Not much of the data available so far from low-and middle-income countries (LMICs) regarding changes in the prevalence of depression during the pandemic. Nevertheless, a study conducted recently in India found 32.6% of HCWs having depression during COVID-19 pandemic, which is much higher than the 10% prevalence for common mental disorders reported in its general population.<sup>5</sup>

Healthcare workers are exposed to highly infectious Pathogens by attending the patients, in the patient's setting and by biological samples. Such factors are of prime concern for them that they can be the source of transmitting the infection to family members.<sup>6,7</sup> These thoughts may produce stress and can have negative impacts.

There was limited accessibility of personal protective equipment and guidelines or treatment was not entrenched in the beginning of the outbreak of Covid 19.<sup>1</sup> There was confusion among health professionals as they were not prepared for treating the novel virus which infected the patients.<sup>8</sup> This resulted in feelings of uncertainty, helplessness, alienation, isolation, and difficulties in managing the workload. Moreover, workers had to face loneliness, perception of stigma and rigid expectations, which can lead to several emotional and psychological outcomes as anger, anxiety, insomnia, and stress related to the uncertainty of the epidemic.<sup>9</sup> Above mentioned issues can bring on the onset of burnout.<sup>10</sup>

The main objective of our study is to assess anxiety and depression in HCWs who are at high risk of exposure during the corona virus outbreak.

## Methodology

A cross-sectional descriptive study was performed during April-July 2020. Basic demographic information was taken, including gender, age, position, and duration of service, working or not working with corona patients. A total of 408 participants were involved in this study.

The sample was collected from Pakistan Institute of Medical Sciences, Islamabad and the ethical approval was obtained from the ethics committee, Zulfiqar Ali Bhutto Medical University, Islamabad.

Inclusion criteria was to involve all those healthcare professionals (doctors and nurses) who were either directly dealing with COVID-19 patients and those who are not dealing with corona cases but performing their duties in various health specialties. Both male and female genders were recruited and there was no restriction of age limit.

Basic demographic information was taken, including gender, age, position, and duration of service, working or not working with corona patients. The second part consisted of self administered questionnaire in which anxious thoughts regarding Covid 19 were assessed. Reliable and validated research tools were used which included: a) Hospital Anxiety and Depression Scale (HAD-S)<sup>11</sup>, for evaluating the level of anxiety and depression, b) Bradford Somatic Inventory (BSI)<sup>12</sup>, this assesses the somatic symptoms associated with anxiety and depression. Bradford Somatic Inventory (BSI-44). BSI is a 44-item inventory for psychosomatically expressed psychological distress. It has cross-cultural validity as shown by studies carried out in Great Britain, Pakistan, India, Nepal, and Russia.<sup>13</sup> The BSI asks the subject about a wide range of somatic symptoms during the previous month, and whether or not the subject has experienced a particular symptom, on more or fewer than 15 days during the month (scoring 1 or 2, respectively). A score >40 was considered to be high range; 26–40, middle range; and 0–25, low range. The data analyses were computed through frequencies and percentages.

## Results

Results show s that 70.83% of the respondents were male and 29.16% were females. The majority of the respondents were between age 23 -32. There 144 nurses, 171 postgraduate trainees (PGs) and 93 respondents are House Officers (HOs). 62.5% of respondents have job experience between one to four years.

The basic demographic characteristics of 408 respondents include gender, age, position, duration of the job, and either treated or treating corona patients as first line healthcare providers. Gender composition is as 70.83 percent of the respondents were male and 29.16 percent were females. 14 respondents are having age 18 to 22 years, whereas the major portion is covered by 312 respondents age 23-32. Positions show that 144 nurses, 171 postgraduate trainees (PGs) and 93 respondents are House Officers (HOs). Duration of the job shows that 62.5 percent of respondents have job experience between one to four years.

**Table 1: Basic demographic characteristics of Participants**

Variables	Number of participants (n=408)
<b>Gender</b>	
Male	289 (70.83)
Female	119 (29.16)
<b>Age (years)</b>	
18-22	14 (3.43)
23-27	159 (38.97)
28-32	162 (39.70)
33-37	47 (11.51)
38 & above	26 (6.37)
<b>Positions</b>	
House officers	93 (22.79)
Postgraduates	171 (41.91)
Nurses	144 (35.29)
<b>Duration of Job</b>	
Less than a year	18 (4.41)
Between 1 – 4 years	255 (62.5)
Between 5 – 10 years	78 (19.11)
Above 10 years	57 (13.97)
<b>Treating/treated corona patients as first line healthcare provider</b>	
Yes	38 (9.31)
Females	21 (5.14)
Male	17 (4.16)

Table II shows HAD-Scales results. There were some indicators of anxiety asked through the questionnaire. HAD-S score of less than 8 means there is no anxiety present in the respondent. Here in the above table, 76.47 percent of the respondents show positive symptoms. Among 76.47, 25.73 percent are males and 50.73 percent are females. Table II part (b) shows the negative symptoms of anxiety. Among 23.53, 20.09 percent of males have no symptoms of anxiety, whereas 3.43 percent are females.

The above table shows 4.65 percent of respondents are facing depression. 2.69 percent are females whereas 1.96 percent are males. 9.34 percent of respondents are not

facing any kind of depression. There are negative symptoms in 68.87 males whereas 26.47 females are with no depression.

**Table II: Prevalence of Anxiety and Depression in Health Care Professionals on Hospital Anxiety & Depression Scale (n = 408)**

HADS-subcales	N (%)
<b>Anxiety</b>	
<b>a) Positive for anxiety symptoms (scores &gt; 8)</b>	
Male	105 (25.73)
Female	207 (50.73)
Total	312 (76.47)
<b>b) Negative for anxiety symptoms (scores &lt; 8)</b>	
Male	82 (20.09)
Female	14 (3.43)
Total	96 (23.52)
<b>Depression</b>	
<b>a) Positive for depression symptoms (scores &gt; 8)</b>	
Male	08 (1.96)
Female	11 (2.69)
Total	19 (4.65)
<b>b) Negative for depression symptoms (scores &lt; 8)</b>	
Male	281 (68.87)
Female	108 (26.47)
Total	389 (95.34)

The scores of the BSI were categorized as 40 and above as high, 26–40 as middle, and 0–25 as low range. Out of 119 females, 97 were found to have somatic symptoms, while out of 289 males 103 had somatic complaints. Overall 200 participants were found positive for somatic symptoms. (Table III)

**Table III: Prevalence of somatic symptoms on Bradford Somatic Inventory (BSI) among Healthcare professionals**

Variable	n (%)
<b>Bradford Somatic Inventory Scale:</b>	
<b>Positive for BSI</b>	
Male	103 (25.24)
Female	97 (23.77)
Total	200 (49.01)
<b>Negative for BSI</b>	
Male	186 (45.58)
Female	22 (5.39)
Total	208 (50.98)

## Discussion

Overall, 76.47 % of the respondents show the positive symptoms of anxiety while 4.65 of respondents are facing depression. It was noteworthy that the majority of females (50.73%) had anxiety and depression (2.69 %), Table II.

Out of 119 (29.16%) females 23.77% were found to have somatic symptoms, while out of 289(70.83%) males (25.24%) had somatic complaints. Overall, 49.01% participants were found positive for somatic symptoms.

Our results are similar to past studies that describe that in outbreaks, the HCWs experience significant stress. A Chinese study concluded that HCWs reported extreme somatization, depression, anxiety, and obsession-compulsion during outbreak of Ebola.<sup>14</sup>

A study conducted in MERS outbreak showed that nearly two-third of HCWs feared the risk of getting infected with MERS CoV and was feeling unsafe at work.<sup>15</sup>

In our study, the majority of females shown symptoms of anxiety, depression, and somatization which can be due to their gender characteristics being more sensitive, emotionally vulnerable. Results from a past study conclude that in healthcare professionals, burnout is associated with increased risks of both physical and psychological long-term detrimental consequences.<sup>16</sup>

Our study is in line with a recent study conducted on Psychological Impact of the COVID-19 Outbreak on Health Professionals proved that prevalence of clinical levels of depression, anxiety; stress was higher than 25% in our sample.<sup>17</sup>

Results of our study correlates with meta analysis on 12 studies carried out in China and one study from Singapore found that anxiety, depression, and insomnia prevalence among health professionals was 23.2, 22.8, and 38.9%, respectively during the COVID-19 outbreak.<sup>18</sup> Results of this study substantiate that there is an immense impact of this novel corona virus on the health professionals' mental health. These health professionals showed an emotional state consisting of feelings of apprehension, nervousness, and physiological symptoms such as an increased heart rate or respiration. Risk factors for psychological health include social disturbance in routine life, emotionally vulnerable, overwhelming and uncertain situations, at risk of getting infected, fear of passing on the virus to families etc. These symptoms imply the occurrence of a persistent state of anxiety or depression that can lead to severe levels of psychopathology.

In a recent study reports that proper prevention and control measures is vital during the infectious disease outbreak, to ensure healthcare professional's safety, to lowering the possibility of getting an infection or

transmitting the infection to others, and as a result to improve their psychological stress and anxiety.<sup>19</sup>

Wiederhold et al proposed that in time detection of this problem helps in implementing plentiful prevention or rehabilitation strategies. Authors of study also suggested that it is necessary to promote monitoring of the health status, including mental health, of health workers during these moments of crisis.<sup>20</sup>

Living in a constant anxiety mode affects our immune system, lowers antibodies, and increases the risk of developing diseases as then virus attacks easily. Anxiety also affects our work performance and cognitive skills. Whether the chronic stress endured by front-line health care workers might impair their effectiveness in a future pandemic is of concern.

Crux of the study reveals that COVID-19 pandemic has a psychological impact on healthcare professionals and they are at a high risk of developing anxiety, depression, and psychosomatic symptoms.

Keeping in view the outcome of our study it is concluded that there is a need for developing guidelines for healthcare professionals about effectively dealing in a health emergency like the outbreak of this pandemic. The protocols in guidelines should cover the balanced duty hours which include rest periods, flexibility in staffing sources, trainings on stress management, dealing with difficult people in pandemics or health emergencies, communication skills, and epidemic preparation. This specifies that stress management for front-line health care workers is vital to a protocol for outbreak preparedness. Such practices will save healthcare professionals from developing psychological issues and will improve infection-control procedures and patient care in future epidemic.

Limitation of our study includes smaller and heterogeneous (including postgraduate doctors, house officers and nursing staff), sample size from a single health institute. Also, in our study, we only assessed the participants through psychological questionnaire based scales while clinical interviews were not conducted that may support for the complete assessment.

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Limited literature is available both locally and internationally on impact of the COVID-19 outbreak on mental health of healthcare workers. Prevalence of anxiety, depression and somatic symptoms in our study sample can be due to lack of knowledge regarding management and treatment of this novel virus.

## Conclusion

Our data suggest that COVID-19 pandemic have psychological impact on healthcare professionals and they are at a high risk of developing anxiety, depression and psychosomatic symptoms.

Keeping in view the outcome of our study it is concluded that there is a need for developing guidelines for healthcare professionals about effectively dealing in a health emergency situation like outbreak of this pandemic. This specifies that stress management for front-line health care workers is vital to a protocol for outbreak preparedness. Such practices will save healthcare professionals from developing psychological issues and will improve infection-control procedures and patient care in future epidemic.

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