# Psychological Impact of COVID Pandemic among the Armed Forces Healthcare Workers

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## Abstract

*Introduction:* The 2019 novel corona virus (COVID-19) pandemic is an international public health emergency unprecedented in modern history. Hospitals had to rapidly reconfigure clinical spaces and restructure clinical teams to address the surge of patients with COVID-19. The unique situation might have psychological impact such as stress, anxiety, depressive symptoms, insomnia, denial and fear among the military health care workers.

*Objective:* To assess the psychological impact of COVID-19 on army healthcare workers at the designated COVID Hospital in Sylhet cantonment.

*Methods:* A total of 160 participants were selected using convenience sampling from 01 May 2020 to 31 August 2020. The psychological impact was assessed by Impact of Event Scale-Revised (IES-R) adopted from Horowitz 1979. The 22-item scale comprised of 3 subscales representative of the major symptom clusters of post-traumatic stress: intrusion, avoidance and hyper-arousal. Stress for job, financial issue, home and feeling horrified or helpless due to the COVID-19 were also assessed.

*Results:* Majority (46.3%) of the participants were revealed with mild psychological impact. Moderate and severe impact was found among 18.8% and 7.5% respondents respectively. Mean stress (0-88) was observed as 27.79±6.94. Mean intrusion (27.21±10.924) and Hyper-arousal (19.57±8.130) depicted mild to moderate but Avoidance (34.53±11.072) revealed relatively high level of stress. Majority were not at all stressed for financial issue (49.4%) or for their job (46.3%). But stress for family (20%), feeling horrified (31.9%) and helpless (31.9%) was moderate.

*Conclusion:* The study observed mild to moderate psychological impact among the respondents. A considerable proportion was found to have severe psychological impact which demands appropriate intervention.

## Introduction

The 2019 novel corona virus (COVID-19) pandemic is an international public health emergency unprecedented in modern history[1]. Hospitals have had to rapidly reconfigure clinical spaces and restructure clinical teams to address the surge of patients with COVID-19. Many healthcare workers have therefore been redeployed to areas outside their usual clinical specialty. Healthcare workers were facing unusual amounts of COVID-19 related psychological stress[2]. Health care workers, such as nurses, nursing technicians and medical doctors who are in direct contact with patients and their body fluids, were most vulnerable to infection. In the epidemic process, healthcare workers were afraid of infecting their family, friends, and colleagues. Their anxiety was increasing due to the uncertainty they experienced and they were stigmatized due to the possibility of carrying the virus[3].

The COVID-19 pandemic was confirmed to have spread to Bangladesh on March 2020 and the first three known cases were reported on 07 March 2020[4]. The spread of fear, anxiety or panic influences not only emotional responses to current circumstances, but also may lead to a worsening of pre-existing psychiatric disorders. Affective and anxiety disorders, as well as obsessive-compulsive disorder might be reinforced[5].

The spread of the global pandemic has also affected the Sylhet and Jalalabad Cantonment. First case in this area was diagnosed on 17 May 2020. Afterwards there was an upsurge of COVID cases which lasted till the end of July. A designated Hospital was established in Sylhet Cantonment to diagnose, isolate and treat the COVID-19 cases. The unique situation might have psychological impact such as stress, anxiety, depressive symptoms, insomnia, denial, anger and fear among the military healthcare providers. In such novel pandemic situation, it was felt necessary to assess the psychological impact of the pandemic on military healthcare workers.

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## Materials and Methods

This cross-sectional study was carried out from 01 May 2020 to 31 August 2020 with the aim to assess the psychological impact of COVID-19 among army health-care providers working at designated COVID Hospital in Sylhet cantonment. A total of 160 participants were selected using convenience sampling. The psychological impact was assessed by Impact of Event Scale-Revised (IES-R) adopted from Horowitz 1979. The 22-item scale ranging from 0 (not at all) to 4 (extremely) which comprised of 3 subscales representative of the major symptom clusters of post-traumatic stress: Intrusion, avoidance and hyper-arousal. The intrusion subscale included 8 items related to intrusive thoughts, nightmares, intrusive feelings and imagery associated with the traumatic event. The avoidance subscale included 8 items related to avoidance of feelings, situations and ideas. The hyper-arousal subscale included 6 items related to difficulty in concentrating, anger and irritability, psycho-physiological arousal upon exposure to reminders and hyper-vigilance[6,7]. The negative mental health impacts like stress for job, financial issue, home and feeling horrified or helpless due to the COVID-19 were also assessed with five-point scale.

Impact of Event Scale-Revised (IES-R) had good internal consistency, with a Cronbach alpha coefficient of 0.937 as well as each subscale (intrusion=0.917, avoidance=0.823, hyper-arousal=0.887) were acceptable. The 3 subscales aimed to measure the mean avoidance, intrusion and hyper arousal. Total score therefore ranges from 0 to 88, with higher scores representing higher psychological impact[8,9]. A total score of 0-23 is interpreted as normal, 24-32 as mild, 33-36 as moderate and ≥37 as severe psychological impact[10]. Data obtained was entered into SPSS-23 version and analysis was carried out using both descriptive and inferential statistics.
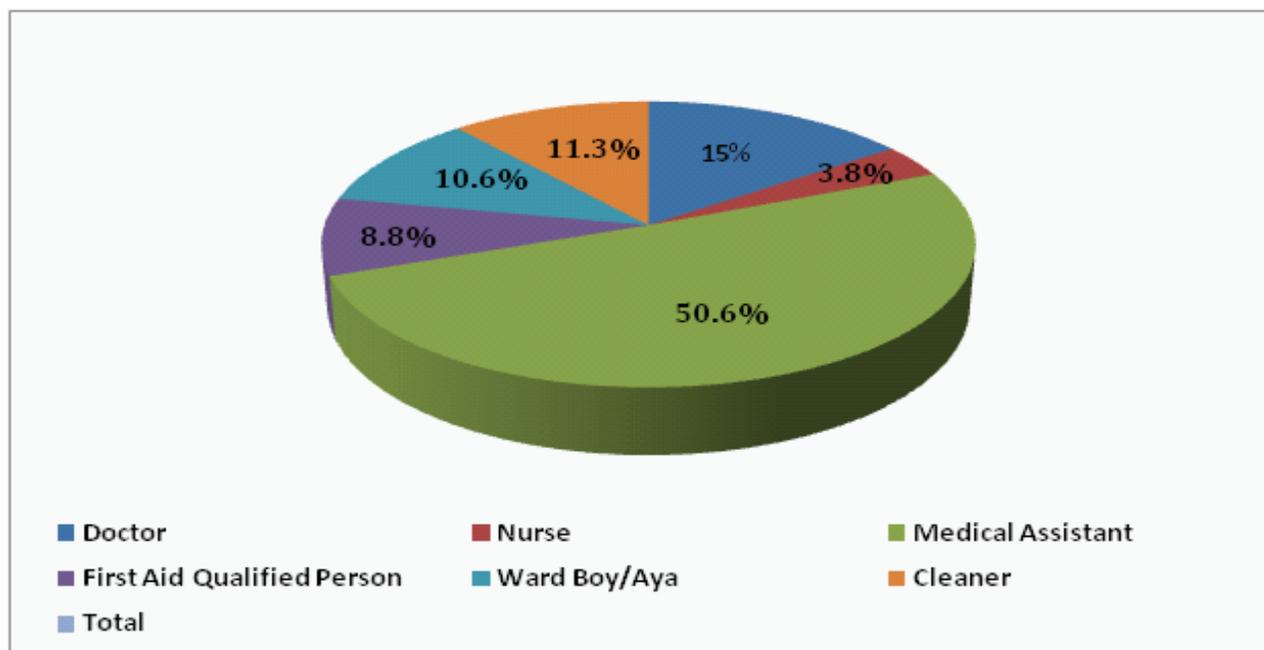


**Figure-1:** Distribution of respondents by category (n=160)

Figure-1 shows the distribution of categories of respondents; among them majority were Medical Assistants 50.6% (81), followed by Doctors 15% (24), Cleaners 11.3% (18), Ward Boy/Aya 10.6% (17), First Aid Qualified Person 8.8%% (14) and Nurses 3.8% (6) respectively.

**Table-I:** Distribution of respondents by duration of service in COVID hospital (n=160)

| Category | Duration of Service in COVID-19 Hospital | | | Total |
| --- | --- | --- | --- | --- |
| | Less than two months | Two to four months | More than four months | |
| Doctor | 01(4.2%) | 01(4.2%) | 22(91.7%) | 24(100%) |
| Nurse | 02(33.3%) | 04(66.7%) | 00(0%) | 06(100%) |
| Medical Assistant | 17(21%) | 37(45.7%) | 27(33.3%) | 81(100%) |
| First Aid Qualified Person | 10(71.4%) | 04(21.6%) | 00(0%) | 14(100%) |
| Ward Boy/Aya | 12(70.6%) | 04(23.5%) | 01(5.9%) | 17(100%) |
| Cleaner | 08(44.4%) | 08(44.4%) | 02(11.1%) | 18(100%) |
| Total | 50(31.3%) | 58(36.3%) | 52(32.5%) | 160(100%) |

Table-I shows most of the health care providers served the hospital for two to four months 36.3% (58), followed by more than four months 32.5% (52) and less than two months 31.3% (50).

**Table-II:** Distribution of respondents by psychological impact measured with IES-R (n=160)

| Category | Psychological Impact (Range 0-88) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Normal (0-23) | Mild (24-32) | Moderate (33-36) | Severe (≥37) | Total | Mean ± SD | |
| Doctor | 7 | 8 | 3 | 6 | 24 | 30.42 | |
| | 29.2% | 33.3% | 12.5% | 25.0% | 100.0% | ± 7.96 | |
| Nurse | 1 | 5 | 0 | 0 | 6 | 25.83 | |
| | 16.7% | 83.3% | 0.0% | 0.0% | 100.0% | ± 3.87 | |
| Medical Assistant | 16 | 42 | 19 | 4 | 81 | 28.46 | F=2.517 df=3 p=.032 |
| | 19.8% | 51.9% | 23.5% | 4.9% | 100.0% | ± 6.24 | |
| First Aid Qualified Person | 4 | 6 | 4 | 0 | 14 | 27.64 | |
| | 28.6% | 42.9% | 28.6% | 0.0% | 100.0% | ± 7.26 | |
| Ward Boy/Aya | 8 | 6 | 2 | 1 | 17 | 24.53 | |
| | 47.1% | 35.3% | 11.8% | 5.9% | 100.0% | ± 7.54 | |
| Cleaner | 8 | 7 | 2 | 1 | 18 | 25.11 | |
| | 44.4% | 38.9% | 11.1% | 5.6% | 100.0% | ± 7.26 | |
| Total | 44 | 74 | 30 | 12 | 160 | 27.79 | |
| | 27.5% | 46.3% | 18.8% | 7.5% | 100.0% | ± 6.94 | |

Table-II provides information about the distribution of psychological impact measured by IES-R. Mean impact was highest among the doctors (30.42±7.96), followed by Medical assistants (28.46±6.24), First aid qualified persons (27.64±7.26), Nurses (25.83±3.87), Cleaners (25.11±7.26) and Ward boy/Aya (24.53±7.54). Overall mean impact was 27.79±6.94. Majority of the respondents displayed some level of psychological impact like mild, moderate and severe 46.3%, 18.8%, 7.5% respectively.

**Table-III:** Distribution of Intrusion, avoidance and hyper-arousal (IES-R Subscales) among the respondents  (n=160)

| IES-R Sub Scale (Range 0 - 88) | Not at all | Mild | Moderate | High | Severe | Mean ± SD |
|---|---|---|---|---|---|---|
| Intrusion | 05 | 56 | 95 | 04 | 05 | 27.21 |
| | 3.1% | 35.0% | 59.4% | 2.5% | 3.1% | ± 10.924 |
| Avoidance | 00 | 145 | 15 | 00 | 00 | 34.53 |
| | 0% | 90.6% | 9.4% | 0% | 0% | ± 11.072 |
| Hyperarousal | 00 | 111 | 49 | 00 | 00 | 19.57 |
| | 0% | 69.4% | 30.6% | 0% | 0% | ± 8.130 |

Table-III reveals that intrusion was moderate (59.4%) among most the respondents and avoidance and hyper arousal is mild (90.6%) (69.4%) to moderate (9.4%) (30.6%) respectively. Though mean intrusion (27.21±10.924) and hyper-arousal (19.57±8.130) depicted mild to moderate but Avoidance (34.53±11.072) revealed relatively level of stress factor.

**Table-IV:** Distribution of respondents by negative mental health impacts (n=160)

| Negative Mental Health Impacts | Not at all | A little bit | Moderate | High | Extreme | Total |
|---|---|---|---|---|---|---|
| Increased stress for job | 74 | 33 | 44 | 7 | 2 | 160 |
| | 46.3 | 20.6% | 27.5% | 4.4% | 1.3% | 100.0% |
| Increased financial stress | 79 | 36 | 24 | 16 | 5 | 160 |
| | 49.4% | 22.5% | 15% | 10% | 3.1% | 100.0% |
| Increased stress for home | 74 | 21 | 33 | 21 | 11 | 160 |
| | 46.3% | 13.1% | 20.6% | 13.1% | 6.9% | 100.0% |
| Feel horrified due to COVID-19 | 47 | 38 | 51 | 16 | 8 | 160 |
| | 29.4% | 23.8% | 31.9% | 10% | 5% | 100.0% |
| Feel helpless due to COVID-19 | 47 | 38 | 51 | 16 | 8 | 160 |
| | 29.4% | 23.8% | 31.9% | 10% | 5% | 100.0% |

Table-IV shows negative impacts on mental health among the participants. Majority were not at all stressed for financial issue (49.4%) or for their job (46.3%). Stress for home and family were moderate (20%) to high (13.1%). Feeling horrified and helpless due to COVID-19 was moderate to high 31.9% and 10% respectively.

## Discussion

Majority (46.3%) of the participants were revealed with mild psychological impact. Moderate to severe impact was found among 18.8% and 7.5% respondents respectively. Normal psychological state was seen in only 27.5% of the respondents. Bahar A, Kocak HS et al found in a study on healthcare employees (doctors and nurses) treating COVID-19 patients in China that the mental health symptoms were quite high. In general, 50.4% of all participants reported symptoms of depression, 44.6% anxiety, 34.0% insomnia and 71.5% psychological distress[3].

The findings of Arnout and Kresimir indicated that the increased prevalence of COVID-19 around the globe presents a serious threat on the mental health of individuals, as the level of psychological problems were increased[11,12]. Hossain and few other studies suggested that people affected by COVID-19 may have a high burden of mental health problems, including depression, anxiety disorders, stress, panic attack, irrational anger, impulsivity, somatization disorder, sleep disorders, emotional disturbance and post-traumatic stress symptoms[13-15]. Patients with mental health conditions, such as depression and anxiety have been reporting relapses in their mental state, such as fear-triggered panic attacks or resurface of psychosomatic symptoms[9].

In the present study, the psychological impact measured by IES-R among the respondents were mild (46.3%) to moderate (18.8%). Mean impact was highest among the doctors (30.42±7.96), followed by Medical assistants (28.46±6.24), First aid qualified persons (27.64±7.26), Nurses (25.83±3.87), Cleaners (25.11±7.26) and Ward boy/aya (24.53±7.54). Intrusion was moderate (59.4%) among most the respondents and avoidance and hyper-arousal was mild (90.6%) (69.4%) to moderate (9.4%) (30.6%) respectively. Though Mean Intrusion (27.21± 10.924) and Hyper-arousal (19.57±8.130) depicted mild to moderate but Avoidance (34.53± 11.072) revealed relatively high level of stress. The overall mean IES score in participants of a study conducted in Liaoning Province, China was 13.6±7.7, reflecting a mild stressful impact. Overall, only 7.6% of participants had an IES score≥26. The overall mean scores for the intrusion and avoidance scales in participants were 12.7±2.6 and 13.4±2.9, respectively[9]. One study on healthcare professionals of Kashmir the mean total IES-R score was 45.07±25.53. Severe psychological impact was seen in 60.9% of the respondents[16].

Negative impacts on mental health in the current study were also assessed among the participants. Majority were not at all stressed for financial issue (49.4%) or for their job (46.3%). Stress for home and family were moderate (20%) to high (13.1%). On the other hand, feeling horrified and helpless due to COVID-19 was moderate to high 31.9% and 10% respectively. Zhang and Ma depicted that following the onset of the pandemic in China, more than half of the participants (69.2%) reported no increased stress from work. Again, 76.8% mentioned that they did not experience increased financial stress arising from the pandemic. A total of 74.5% of respondents reported that they did not experience increased stress from home. On the other hand, 52.1% of participants reported that they felt horrified and apprehensive due to the COVID-19 pandemic. However, the majority of participants (53.3%) did not feel helpless due to the pandemic[9]. But according to Banna et al, a majority (77.2%) in Bangladesh believed that the pandemic would negatively impact their job, income, or education. Over half (55%) also worried that the pandemic would negatively affect their mental health due to an existing physical health condition[17].

## Conclusion

This study observed mild to moderate psychological impact among the healthcare providers of the COVID hospital. A considerable proportion was found to have severe psychological impact which demands appropriate intervention. Early psychological interventions targeting this vulnerable group may be of help. It is essential to protect and promote the psychological health of the frontline professionals in such disastrous situation. The lessons learnt from the COVID-19 pandemic should help decision-makers in promoting readiness to protect mental health of the healthcare workers in future public health crises.

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