

Psychological Impact of Covid-19 Pandemic on Health Care Workers of a Field Hospital in UN Peacekeeping Mission

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ABSTRACT

Background: The Covid-19 pandemic has significantly affected the healthcare system worldwide as well as the psychological state of all. The objective of the current study was to assess the psychological conditions of the healthcare workers in Enhanced Level 1+ Hospital, Bouar, Central African Republic (CAR) as a part of UN (United Nations) peacekeeping mission. This assessment can help in the guideline development and implication psychological interventions which in turn can improve the quality of life, working environment and decision-making capabilities of health care workers during widespread pandemic.

Methods: This descriptive cross-sectional study was conducted on 40 medical personnel working in Enhanced Level 1+ Hospital, Bouar, Central African Republic. The study was performed from June 2022 to August 2022. Assessment of psychological status of military healthcare providers was done by analyzing the results derived from the Mental health survey, Perceived Stress Scale (PSS-10), Generalized Anxiety Disorder scale (GAD-7) and Patient Health Questionnaire (PHQ-9). Hospital records were analyzed to assess the changes in workload.

Results: The working hour increased significantly from Pre Covid to Post Covid period (1920±34.1 hours/week to 2120±67.3 hours/week) although the number of weekly patients in OPD and Emergency decreased slightly from 51.9 to 40.6. Elevated mental stress was observed during outbreak (average PSS-10 score in June 22 was 20.4 which reduced to 9.7 in August). The same pattern was observed in case of GAD-7 score (15.6 to 10.8) and PHQ-9 score (12.4 to 6.1). The percentage of concerns regarding Covid19 was high during the outbreak, 37/40 (92.5%), which decreased after wards to 18/40 (45%).

Conclusion: The UN field hospitals are inadequate to support mass outbreak like COVID 19 in the context of both staff and medical supplies. During Covid 19 outbreak, sharp rise of workload and difficulties in restocking of essential medical items played a vital role in the mental state of the medical professionals. The field hospitals in UN peacekeeping missions require intensive effort especially on disaster and epidemic management during pre-deployment training. Moreover, reconsidering distribution of human resources in field hospitals is also required.

Keywords: UN, Health Care workers (HCWs), Mental stress, Perceived Stress Scale (PSS)-10, Generalized Anxiety Disorder (GAD)-7, Patient Health Questionnaire (PHQ)-9

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INTRODUCTION

COVID-19 is one of the highly infectious respiratory diseases resulting from severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) infection.¹ In December 2019, it was first identified in Wuhan City, Hubei Province, China and declared as a global pandemic by WHO in March 2020.² As of 18 November 2022, over 642 million cases were confirmed and 6.62 million deaths were reported globally.³

Almost two years ago the pandemic was started, still the prevalence of psychological problems in general population and health care workers (HCWs) are increasing day by day with the progression of the pandemic. It has caused an unprecedented dispute and burden for healthcare systems. In general, pandemics need immediate and effective response of the healthcare workers (HCWs), either in form of direct involvement such as doctors, nurses and paramedics or indirect exposure such as laboratory technicians and radiographers or administrative personnel to provide care, to fight in frontline and to address the challenges efficiently that threaten healthcare systems.⁴

Previous studies have shown that HCWs had experienced dynamic stress during outbreaks. During the Ebola outbreak in China, HCWs has experienced extreme anxiety, depression, somatization and obsessive-compulsive disorders.⁵ In another study in Saudi Arabia, it was found that 60.5% of HCWs were shaken about contracting MERS-CoV (Middle East Respiratory Syndrome Coronavirus) and 87.5% had unsafe feelings while working in the outbreak.⁶

Concerning the security situation, humanitarian and human rights conditions moreover the political crisis in Central African Republic, the UN Security Council authorized deployment of a Multidimensional United Nations Peacekeeping

operation- MINUSCA in 2014. The UN healthcare system is organized into several strata to facilitate patient care from battlefield to rehabilitation center for UN personnel and also for maintaining their physical and mental health.⁷⁻⁸ It was in that context, that the Enhanced Level 1+ hospital was deployed as part of Bangladesh Battalion (BANBAT) in 2015 in the Sector West of Central African Republic to provide emergency medical and surgical care as the only referral hospital of that sector. During the tour of its duty with BANBAT 8 from December 2021 to December 2022, the hospital has faced 2 episodes of Covid 19 outbreak in the battalion as well as in the sector. The total number of confirmed cases were 59 while suspected cases were many more which couldn't be confirmed due to lack of diagnostic facilities including RT PCR at sector level. However, contrasting to other established medical installations, these field hospitals of UN are characterized by medical staff rotation in annual basis, limited access to medical supplies, and extreme lack of trained manpower as well as proper infrastructure. Tackling outbreak like COVID-19, in such conditions therefore can result in a high occupational risk for the healthcare providers.

Several studies have recognized that peacekeeping operations and military lifestyle could contribute to increased mental stress moreover anti-epidemic clinical and social practice might influence this condition.⁹⁻¹¹ Working as the frontline workers during COVID 19 pandemic in UN peacekeeping missions, healthcare workers in field hospitals might be negatively influenced by these number of stressors which may have resulted in increased mental stress. But very few studies have recognized this special group of health care workers. The current study is designed to describe the impact of the COVID-19 pandemic on the overall workload and the mental status of

frontline healthcare providers (HCWs) in an enhanced level 1+ hospital of UN peacekeeping mission.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted among 40 medical personnel working in Enhanced Level 1+ Hospital, Bouar, Central African Republic during the period of June 2022 to August 2022. The military peacekeepers were deployed at Bouar, Central African Republic, in December 2021 for 1 year; after the rotation of seventh unit. Among military peacekeepers, forty-eight personnel constituted the medical facility. Among these 48 persons, 40 were selected purposively for the study; those who came in direct or indirect contact of patient care. The personnel for administrative purposes who were not involved with patient care were excluded. By informed written consent, 40 medical staff, including 10 doctors, 22 nurses and 8 technicians/pharmacists were included in the study. The first case of COVID-19 presented to the hospital in January 2022 and the epidemic lasted for about one and half month followed by second episode in June 2022 which also lasted for almost one month.

The records were analyzed to determine the patient load of outdoor and indoor department. Shift schedules of the medical duties were assessed to calculate the weekly working hours of the medical staff. The period during COVID-19 outbreak and pre COVID-19 were then compared.

Mental health survey (which was performed in the last week of June 2022, then in last week of August 2022) was done during and after the second wave of the outbreak. Mental health survey included the following; Perceived Stress Scale (PSS-10) were assessed by Likert scale categorized as 0-never, 1-almost never,

2-sometimes, 3-fairly often, 4-very often, Generalized Anxiety Disorder (GAD-7) and Patient Health Questionnaire (PHQ-9) were assessed by Likert scale which was categorized as not at all, several days, more than half the days, nearly every day. Results during and after outbreak were compared to understand the potential impact. An extra anonymous survey was performed to gather information on the main concerns of the team members. Psychological counselling was provided to those experiencing severe stress by the medical specialist.

The raw data from the study were analyzed using a special Microsoft excel spreadsheet. Descriptive statistics for nominal variables were expressed as number and percentage (%), whereas quantitative variables were expressed as mean±standard deviation. For interpretation, p value ≤0.05 was considered significant and student t test was done for the test of statistical significance. Written informed consent was obtained from all study subjects and approval from the Ethical & Research Committee was obtained.

RESULTS

This descriptive cross-sectional study was carried out among 40 medical personnel working in Enhanced Level 1+ Hospital, Bouar, CAR during the period of June 2022 to August 2022.

Table-I: Demographic characteristics of health care providers (n=40)

Variables	n(%)	
Sex	Male	28(70)
	Female	12(30)
Occupation	Physician	10(25)
	Nurse/Paramedics	22(55)
	Technicians/Pharmacist	08(20)
Department	Outpatient (OPD)	10(25)
	Inpatient (IPD)	11(27.5)
	Emergency	09(22.5)
	Laboratory/Radiology/Pharmacy	10(25)

Table-I shows that among the health care providers maximum (70%) were male, nurses/paramedics were highest (55%) in number and maximum were (25%) from Laboratory/Radiology/Pharmacy departments.

Workload

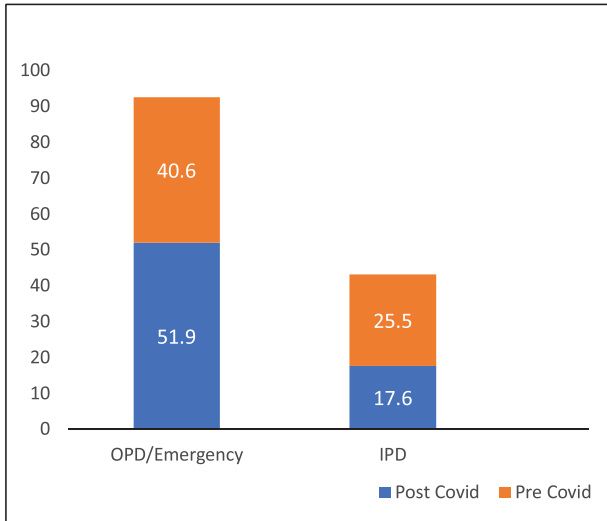


Fig-1: Total number of patients/weeks in OPD/Emergency & IPD during and before Covid 19 outbreak

Fig-1 denotes the mean number of patients in a week during and before Covid 19 outbreak. The number of weekly patients in OPD/Emergency was slightly decreased from 51.9 to 40.6 since the outbreak but number of patients admitted was increased from 17.6 to 25.5 per week.

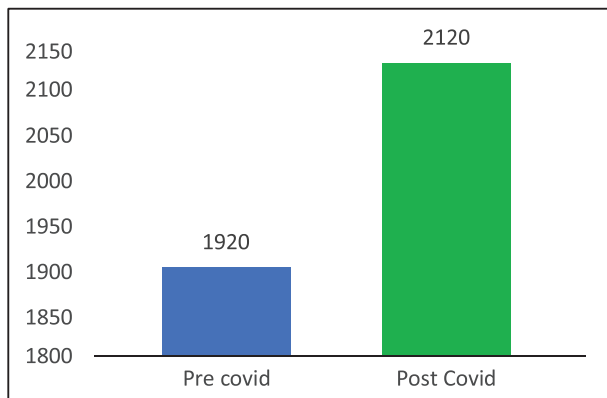


Fig-2: Total working hours/week during and before outbreak

Fig-2 shows that the weekly total working hour increased significantly from Pre Covid to Post Covid period (1920±34.1 hours/week to 2120±67.3 hours/week).

Mental Health

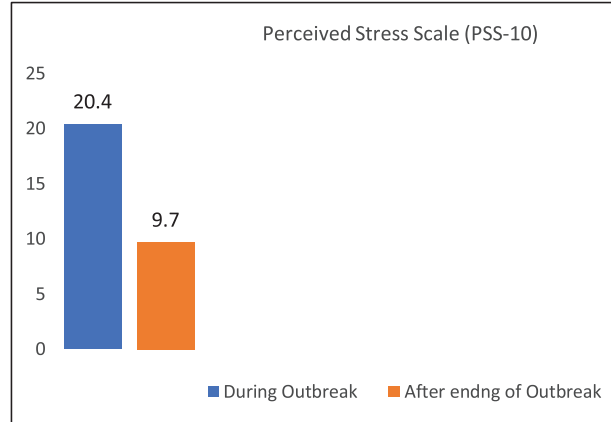


Fig-3(A): Perceived Stress Scale (PSS-10)

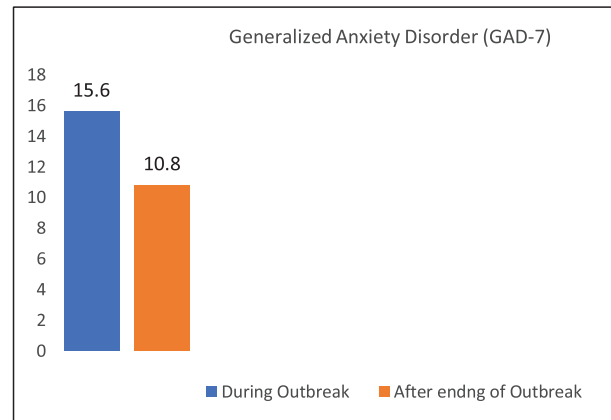


Fig-3(B): Generalized Anxiety Disorder (GAD-7)

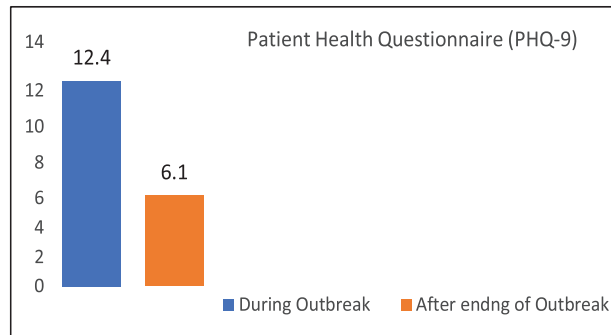


Fig-3(C): Patient Health Questionnaire (PHQ-9)

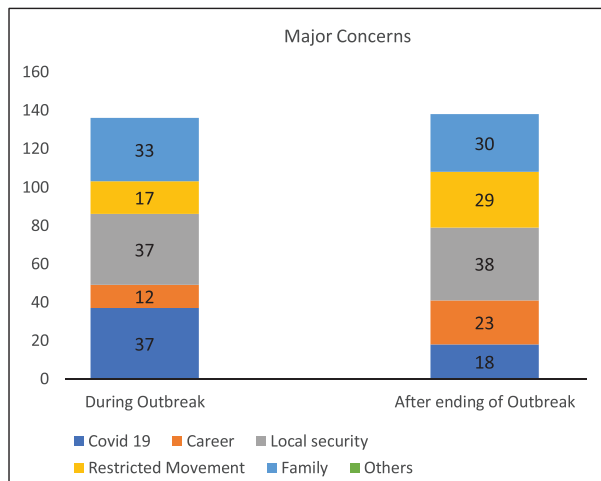


Fig-3(D): Major Concerns

Fig-3 shows quantitative mental stress analysis. There was a significant increase in mental stress during the period of outbreak (Fig-3A, 3B, 3C & 3D). The mean±SD PSS-10 score in June was 20.4±2.4 which reduced to 9.7±1.9 ($p<0.001$) in August. The same pattern was observed in case of GAD-7 score (15.6±1.6 to 10.8±1.2 with $p<0.001$) and PHQ-9 score (12.4±1.7 to 6.1±1.3 with $p<0.001$). Concerns regarding Covid-19 was high during the outbreak, 37/40(92.5%), which decreased afterwards to 18/40(45%). Among other stressors, family related, and local security concerns were present significantly in both periods (82.5% & 75% and 92.5% & 95%).

DISCUSSION

The COVID-19 pandemic has challenged the capacity and capability of the hospitals and intensive care units (ICUs) throughout the world. Health-care workers are providing care for the patients despite enormous difficulties and constrain of resources. Moreover, they have encountered number of additional sources of stress and anxiety, along with prolonged shifting duties and unprecedented restrictions including personal isolation, which had negative impact on individuals' ability to cope.¹²

The management of Covid 19 as well as control of its spread largely depends on the available resources.^{13,14} If medical resources and facilities are sufficient enough, a comprehensive and appropriate precaution strategy could be applied, which includes a proper isolation ward, full personal protective equipment (PPE) and enhanced/advanced training of the medical personnel.¹⁵ The shortage of PPE or other protective items and difficulties in resupply, imposed a remarkable strain in the service of the field hospital. Shortage of human resources also resulted in adapting modified strategy for the patient service. Although the number of OPD patients were reduced during the weeks of Covid outbreak, but the number of indoor patients were increased which in turn resulted in more working hours for the HCWs. However, a sharp rise in non-medical workload was observed due to the increased antiepidemic/hygiene works as intensive disinfection procedures were implemented to minimize the risk of transmission. Long isolation of the affected members of the battalion also had an impact on the nonmedical workload for the HCWs, like sentry duties, petrol duties etc. So, the overall workload of the medical staffs became heavier like other studies in Korea and Iran.^{16,17}

Throughout the world it has been observed that, Covid 19 infection and death rates are significantly more in HCWs.^{18,19} Normally, health-care personnel are known to be at high risk for the impact of anxiety, depression, burnout, insomnia, moral distress and post-traumatic stress disorder.^{20,21} Different studies suggested that during outbreaks, HCWs had increased rate of post-traumatic stress symptoms (11-73.4%), depressive symptoms (27.5-50.7%), insomnia (34-36.1%), severe anxiety symptoms (45%), general psychiatric symptoms (17.3-75.3%), and high levels of work-related stress (18.1-80.1%) as there is

increased chance of being infected, the significant lack of protective equipment, inadequate rest and staying away from family.^{4,11} Effects in terms of burnout can be long-lasting although stress and worries seem to be limited to the period of exposure to the outbreak.⁴ Besides, the peacekeeping mission itself is a recognized risk factor for unstable mental health, resulting from long term separation from family, confusing operational activities, relatively powerlessness, danger of the local security situation and boredom.²² The incidence rate of post-traumatic stress disorder (PTSD) in the peacekeeping operations by Americans and Canadians is 7% to 15% which is almost similar to Vietnam War veterans.²² Although all our staffs were vaccinated against Covid 19 and had experience of infection and/or patient management, current study also demonstrated elevated level of stress, depression and anxiety during the outbreak in the mission as the stressors related to peacekeeping mission environment and the epidemic acted synergistically.

The Covid 19 pandemic is one of the rarest unforeseen public health disasters experienced by the world. Like the other health care facilities, the field hospitals of UN were not properly prepared to deal with it. Moreover, the 40 medical personnel of the Enhanced Level 1+ hospital had to perform the hygiene and anti-epidemic duties while maintaining their routine medical and nonmedical duties which resulted in significant increase in workload. The field hospitals of UN should be enhanced with trained HCWs, PPE and other equipment in line with the local epidemics and pandemics. Disaster management teaching should be incorporated in pre-deployment training which may help the HCWs to cope up with these kinds of situations.

Apart from its observational and non-randomized nature, some limitations are

there in this study. Only one hospital comprising of 40 medical personnel was included which may affect the overall preciseness of the results. A large scale, multicenter analysis will be very effective to conclude the evidence in more robust way.

CONCLUSION

The UN field hospitals are inadequate to support mass outbreaks like COVID 19 in the context of both staff and medical supplies. During Covid 19 outbreak, sharp rise of workload and difficulties in restocking of essential medical items played a vital role in the mental state of the medical professionals. The field hospitals in UN peacekeeping missions require intensive effort especially on disaster and epidemic management during pre-deployment training. Moreover, reconsidering distribution of human resources in field hospitals is also required.

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