

CHALLENGES FACED BY CORONA WARRIORS DURING COVID-19 PANDEMIC: A REVIEW

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Article Info: Received 20 July 2021; Accepted 06 September 2021

DOI: <https://doi.org/10.32553/ijmbs.v5i9.2204>

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Conflict of interest: No conflict of interest.

Abstract

Background: The Corona Virus Disease-19 (COVID-19) pandemic is indubitably one of the deadliest events recorded in the 21st century. By the beginning of the year, 2020 the COVID-19 virus has taken the world by surprise and posed a huge challenge to one and all. This pandemic has revealed the existing state of our health care system along with the condition of health care workers (HCWs) with respect to preparedness for such crisis time. During this pandemic, healthcare workers are playing a crucial role in the early detection of cases, contact tracing, and treatment of patients.

Methods and Material: Literature search was done regarding challenges faced by healthcare institutions and health care workers during COVID-19 pandemic from multiple databases. The studies published between June 2020 to January 2021 were considered. The articles were selected according to inclusion and exclusion criteria.

Results: COVID-19 pandemic as uncovered our preparations to handle pandemic. Health care workers have gone through a difficult time including experiencing stigma, physical and psychological burden. The healthcare institutions had faced shortages of personal protective equipment (PPEs), trained human resource and basic facilities.

Conclusion: This review underlines the current discussion about the challenges faced by HCW during the COVID-19 pandemic and their coping strategies. An effective, coordinated, and sincere effort towards helping HCWs by developing congenial environment, provision of regular training, psychological support is pivotal to motivate them to work during such crisis.

Keywords: COVID-19; Health Care Workers; Stigma; Pandemic; PPEs

Introduction

By the beginning of the year, 2020 the COVID-19 virus has taken the world by surprise and posed a huge challenge for health care workers and institutions. The COVID-19 is known to be highly contagious as its transmission occurs by contact with an infected person, droplets, fomites etc. The patients who comes positive shows early symptoms of respiratory distress, cough with or without fever, diarrhea, weakness.^{1,2}The World health organization on 11th January 2020 announced that a novel corona virus was the root cause for a respiratory illness in a cluster of people in Wuhan city, China, and declared COVID-19 a pandemic on 11th March 2020. A student who returned from Wuhan was believed to be the first case of COVID-19 virus in India on 30th January 2020 in Thrissur, Kerala.³

Impact of COVID-19 pandemic on the global health care system

Over 200 countries worldwide are affected by the novel corona virus and their healthcare systems are crumbling to deploy the maximum possible resources to mitigate the spread of COVID-19 infection and reduce morbidity and mortality. We are witnessing a century's crisis where the whole world is under threat of rapidly spreading new COVID-19 infections having the most devastating effect globally.¹

With more than 3 million innocent lives lost and the counts on the surge, the pandemic has strained and tested not only the health care system, our knowledge of determinants of this disease causation and containment but also realms outside healthcare like the economy, the political system of any

country.^{4, 5}The overall global impact of this new pandemic is yet uncertain.

More than 30 million reported cases of COVID-19 infection and more than 4laksdeathsIndia reported highest number of confirmed cases of COVID-19 in Asia and ranking the second-highest number of confirmed cases in the world after the United States. The per-day cases peaked mid-September 2020 in India with over 90,000 cases reported per day and since have come down to below 40,000 in December 2020.^{3,6}

The present article is focusing challenges faced by health care workers and institutions during COVID-19 pandemic and reiterate the lessons learned from this pandemic and, challenges that will work as template for preparedness for future pandemics.

Method and Material

This article discusses the on challenges and coping strategies during the current situation affecting health care workers who are fighting and responding to the war against the COVID-19 pandemic. An open-access literature search was conducted from June 2020 to January 2021, using multiple databases/search engine including Medline, Pub Med, and Google Scholar. The following keywords- Pandemic, Health care worker, COVID-19, challenges, psychological health, stress, fear were searched. The first search section involves difficulty to health care workers including common stressors like the uncertainty of ultimate magnitude, duration, and the effects of the crisis during a pandemic, psychological impact of COVID-19 on HCWs, working environment, regular supply of personal protective gears (PPE). The second search type involves coping strategies, mentorship, and facilities for health care workers, incidences of violence against health care workers. Additionally, a gray literature search was also conducted to find epidemiological and COVID-19 management-related evidence.

Inclusion criteria:

- Research studies exploring challenges faced by health care workers during the COVID-19 pandemic.
- Studies published in the English language
- Primary research studies, review articles, letter to editors focusing on health care workers, COVID patients 'difficulties in the COVID-19 era.

Exclusion criteria:

- Studies that do not mention data collection and analysis or source of data

- Non-peer-reviewed journal articles, letters
- Research studies with no direct view, opinion, or quotes from Health care workers

Ethical Consideration:

The review has included sources references and their information's. As intervention objective is not included in this paper, no permission was sought from Ethical committee for the review.

Results

The details on the literature search and processes of screening are illustrated in Fig number 1. After removing duplicate search screening of titles, abstracts and characteristics 38 relevant studies were considered. The remaining did not meet our inclusion criteria and were removed. Finally, 10 full-text studies were discussed(detailed mentioned in table-1)and other studies were taken during the stage of evidence synthesis.

The common challenges for HCW's identified during the literature search

- Risk of getting an infection during patients care
- The difficult psychological dilemma in adjusting the thoughts about whether to help patients or to protect self.
- Availability of personal protective equipment
- Aggressive and violent behavior of people for COVID warriors
- Appropriate information about pandemic

A study conducted in Madrid, Spain by Clinical Microbiology Department and Occupational Health and Safety Service reported that out of a total of 6800 staff of the hospital, 2085 (30.6 %) were screened for COVID-19 and 791 HCWs were found COVID-19 positive representing more than one third (38%) of those tested and an 11.6 % of all workers.⁷

Another large sample size survey study done at tertiary health care in New Delhi, India revealed that out of 3667 study participating health care workers, 1113 (30.3%) had flu-like symptoms. Where out of 1113 tested for COVID-19 infection 20 health care workers were found positive. This study also revealed the risk of getting infection was higher in health care workers posted in high-risk zones (triage, isolation, and intensive care units) than those in a low-risk area like wards.⁸

Table 1:

Source of Paper	Population	Aim	Data collection approach
(Zhejiang province 2020) China	62 Patients	To assess characteristics of COVID-19 infection	Retrospective Medical records
(Madrid, 2020) Spain	Health Care workers	Epidemiological and clinical characteristics of COVID-19) among HCWs	Retrospectively
(Saket Max Hospital, 2020) New Delhi	Health Care Workers n- 4403	To determine Prevalence and risk factor among HCWs Working in COVID pandemic	Survey Method
(C-Y Lin et al 2020) China	Health Care Workers n-92	Influence of SARS on the psychological status of HCW	Interview Methods
5.Mostafa A. Abolfotouh et al survey design 2017 (Saudi Arabia)	Health Care Worker 1031	To assess concerns of HCWs Regarding MERS	A cross-sectional survey design
(Monia vegni et al 2020) Italy	Health Care Workers n-210	To assess the coping strategies activated by healthcare during COVID-19 emergency	Cross Sectional Convenient Method
(Chauhan V et al 2020) India	987 HCWs	Impact on anxiety of Covid-19	Cross Section Survey design
(Alexis Tabah 2020) Italy	Health Care worker	To describe practices of HCWs regarding use of PPE's	Survey study design
(Shubh Mohan singh et al 2020) Chandigarh, India	Health Care worker	to assess social and emotional disturbance experience of HCWs during COVID-19	convenient sampling technique
(Xiaobo Yang et al 2020) China	Patients n-52	Clinical outcome of COVID -19 patients	Retrospective, observational

Identifying Literature Search

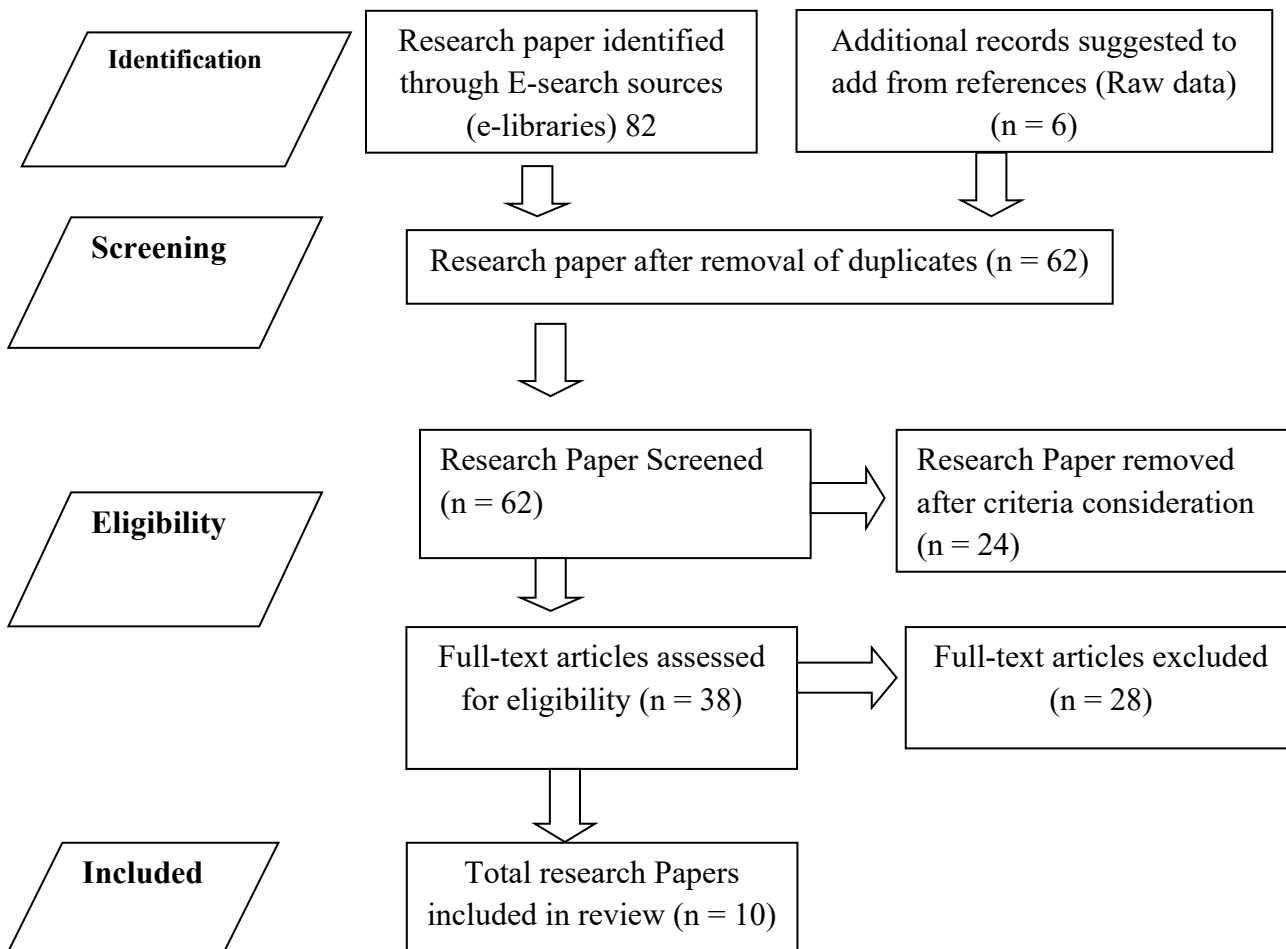


Figure 1: PRISMA search strategy and article selection process.

Discussion

HCWs are the vulnerable population than the general community for developing the COVID-19 infection due to the frequent contact with the known positive cases. Although there is no exact statistical data of total HCWs reported COVID-19 positive during the pandemic in the country but as per the Indian Medical Association (IMA), over 700 doctors till May 2021 have made supreme sacrifice of their lives while treating COVID-19 cases. However, the exact number could be much higher.⁹

In the pandemic crisis, when the world is facing a shortage of trained health care workers and the current health care system is already under pressure, the death of the HCWs is further reducing our struggling capability against COVID-19.

Challenges beyond the Risk of Infection

Infectious diseases have a great risk of psychological responses, but not everyone has gone through the same experience and a similar degree of emotional impact. The highly contagious behavior of the COVID-19 virus is tending health care workers to go through a variety of emotional and psychological problems.¹⁰⁻¹¹

The Center for Disease Control and Prevention, China reported over three thousand HCWs got infected with the COVID-19 virus. Several studies across the world are being conducted to safeguard health care workers and to curb the further risk of spreading the virus. This is crucial to inquire more information about risk to healthcare workers from the COVID-19 pandemic and the coping strategies being used by them.¹¹⁻¹²

A study was carried out in China at their Tongji Hospital to identify a high rate of severe COVID-19 infection among their medical staff wherein 54 team members were found to be infected by the virus. The majority of health care professionals were from the emergency area of that hospital. Out of 54 COVID-19 positive health care team members, 11 were found to have common grade infection, the other 40 were severe grade, and three were having critical grade infection. The study also suggests advanced induction training for all hospital staff to minimize the risk of infection and raise the need to educate the departments that are not having a direct flow of COVID-19 infected patients in their area.¹³

Previous Pandemic Experiences

The COVID-19 pandemic is not the first pandemic that has tested the structure, strength, and resilience of our health care system. The past century has witnessed major pandemics viz Spanish flu in 1918 caused by influenza A (H1N1) killed around 20-50 million people, others in 1957 and 1968 relatively milder but still killed nearly one million.¹⁴

During the Middle East Respiratory Syndrome (MERS) outbreak in the year 2015 in Korea, health-related worries and safety concerns of the health care workers were one of

the most primary stressors among those who were assigned to perform MERS-related patient care. These health care workers showed higher rates of stress, avoidance, and sleep disturbance problems.¹⁵

Another cross-sectional study conducted at hospitals of the Ministry of National Guard during the MERS outbreak in Saudi Arabia depicted that out of 1031 study participants, about two-third of study participants showed the risk of MERS CoV infection, perceived insecurity, and stress during providing patient care.¹⁶

Ebola outbreak episode during 2014-2015 was considered one of the deadliest, resulting in over 10 thousand deaths. A study from China during the Ebola outbreak to assess the prevalence of psychological symptoms and impact of the Ebola epidemic among Ebola survivors and healthcare workers reported a higher rate of depression, anxiety, and stress in health care workers. The study also suggested developing an emergency response plan for health care institutions.¹⁵

Maunder RG et al study findings are significant with the SARS outbreak study where health care worker reported much higher levels of panic and perceived risk of getting self and family members infected, moral disturbance, and stigmatization.¹⁷

Finding reported by Dr. Mian-Yoon Chong's study on the SARS outbreak in Taiwan depicted two-thirds of health care workers experienced psychiatric morbidity due to fear and anxiety of disease.¹⁸

Learning from the experiences of the COVID-19 pandemic as well as from previous pandemics, impetus is there to develop or improve the existing preparedness and response plan in a manner that enables the organizations to continue providing routine healthcare services along with managing the pandemics.

The Psychological Impact of COVID-19 on HCWs

Fear of pandemics is the breeding ground for anxiety with limited shreds of evidence of specific medical treatment support in absence of vaccine availability. The visible and hidden impact of working in the COVID-19 area is reported in multiple studies as an immediate threat to self-safety and family health concerns, anxiety and fear, sleep disturbances, intrusive thoughts, and depression.¹⁹ Studies reported how the COVID-19 pandemic was emotionally distressing to health care workers as they were more worried about getting infected and then transferring the same to their families. It raised concern for their safety.²⁰

Health care workers who are posted in the direct care of COVID-19 infected patients are also facing stigma in society and sometimes even in their own families. The troublesome characteristics of COVID-19 is high infectivity rate, no specific treatment in a strain of virus initiate fear and behavior of avoidance within healthcare worker.²¹ The COVID-19 vaccination drive has started with intention to give priority to health care and frontline COVID warriors.

Many million people have received COVID Vaccine and the government is putting all efforts in COVID vaccination program that may break the chain of infection.²²

Several incidences were reported soon after the pandemic spread, wherein landlords forced their tenants to vacate or shift their accommodation as they were health care workers providing care to suffering patients. The role of rumors and misinformation cannot be denied behind such behavior. Although many countries have strict laws and legislations for violence against health care workers still the same are being reported and published as heading in newspaper.²²

Health care workers have and are providing round the clock services (in shifts duties) to ensure continuity of treatment in hospitals with the cost of the high risk of infection. Risk factors affecting mental health include the stressful, high demanding working environment, availability of ample PPE and risk of the family getting infected.²⁴ Sudden changes in working conditions, staying far from family during the quarantine period, and the extension of working shifts resulting in serious mental and physical stress.²⁴

Violence against Healthcare Workers

World Health Organization (WHO) defined workplace violence as Incidents where the staff is abused, threatened, or assaulted in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being, or health. Another observation found during the COVID-19 pandemic that the incidence of violence against health care workers was believed to be at four times higher risk than other professionals worldwide.²⁵⁻²⁶

Violence against health professionals is an age-old problem. However, during the COVID pandemic, on one hand the world is clapping for health care workers as savior and warriors, but on the other, increasing incidence of assault and violence are narrating a different story.²⁷

Personal Protective Equipment availability

Shortage of PPE was reported worldwide due to a rise in demand, panic-buying, and irrational use.¹³ In the initial phase of the pandemic, there was a scarcity of proper PPE kits due to which the HCWs had no choice but to treat the patients with whatever PPE was available, and while treating like this they even had direct contact with the patients. This contributed to an increase in fear and risk to HCWs, as they were expected to work in the environment where aerosol-generating procedures were carried out and also unknowingly direct contact with a patient lead to exposures.⁷

During the initial COVID-19 pandemic, one of the worst affected region in the world, northern Italy experience indicated more than 25000 COVID-19 warriors have been infected with this infection and the death of over one hundred fifty physicians.²⁸

A study conducted in China showed frontline HCWs working in COVID-19 affected areas faced a shortage of

personal protective equipment, fear of transferring the infection to their home and family members. About one-third of study participants (34.0%) had experienced sleep disturbance, fear, and 44.6% reported anxiety whereas half of the participants (50.4%) had a risk of depression where 71.5% participants reported stress.²⁹

Provision of vaccination and diagnostic kit, and the announcement of best possible compensation. The uninterrupted supply of adequate safety measures is important to ensure the safety of human resources.³⁰

Misinformation about pandemic

COVID-19 is also being called the first truly modern pandemic in the present century on social media and there is quite a free flow of unconfirmed information and misinformation about the Pandemic. The uncontrolled flow of information on social media and news media is creating the pandemic into an infodemic.

Unconfirmed information about any disease can result in difficult consequences and confusion about the mode of spread and the incubation period of the disease. Constantly receiving misleading information on infection extends rumors of mass mortality can create a worrying environment.^{31, 32}

The trusted and coordinated information can help to stop further spread of disease, whereas false information can further add to the next wave of the pandemic and may cause great loss of life.

Coping Strategies to Combat the Challenges

COVID-19 pandemic has dangerously exposed health workers and their families to extraordinary levels of infection risk, add insult to their psychological health and fear fighting spirit.^{21, 22} The world health organization (WHO) is taking many initiatives for keeping health care workers safe. It's the responsibility of health organizations also to keep their employees healthy and fit. Institutions are required to form an Infection Prevention and Control committee to identify health care workers' needs.

Mentorship and support

- Expressing feelings and emotions rather than bottling them up can keep healthcare workers feel light-hearted. In this context, friends and family are a strong source of psychological support with whom HCWs can share feelings and emotions openly.
- Discussion with colleagues who are going through similar experiences can give more insight into their coping mechanism.
- Being positive is sometimes the only choice. This COVID pandemic battle is going to be long and it may take time to control the impact of the pandemic, but it is expected that its effect will decrease and then it can be treated as any other endemic disease.

Physical health care

- Physical activities are essential to keep a person well, active and helps to maintain immunity, sound sleep, and hunger regulation.
- Promote physical activities like regular exercise, yoga, meditation, and indoor sports (if possible).
- Recreational activities like listening to music, painting, and reading book etc. can be motivated. Excessive use of coffee, smoking, or alcoholic drinks is to be avoided and maintenance of hydration may mitigate stress.

Tele-health initiative

COVID-19 pandemic has suddenly raised the need for contactless real-time experience for patients to care, training, and mass communication as isolation and social distancing is requirement of this new disease.

- Tele conferencing minimizes the risk of personal contact and risk of exposure. It facilitates in providing virtual training of health care workers thereby preventing potential transmission of COVID -19 viruses to others.³³
- As the COVID-19 pandemic scales exponentially across the world, it calls for the expanded use of telehealth as innovative solutions, clearly highlight unmet needs in the global healthcare system.

Rotational duty hours of COVID posting

- A systematic rotation plan of duty of staff minimizes repetition and can provide maximum rest in between two shifts. Many studies reported the benefits of a short night shift or nap in between for better work output and alertness, that can result in increased performance and improvement in physiologic alertness as compared to the no nap or rest condition.³⁴

Other Important factors to preserve motivation level of HCWs

- Ensure uninterrupted supplies of PPEs, hand sanitizers, and other consumables. Provision of antiviral medications, vaccines etc.
- Development of standard guidelines regarding the handling of suspected and confirmed COVID patients, transferring of patients to another specialty area, doffing & donning of protective gears.
- Screening for all staff during and after COVID-19 posting including routine health assessment and policy for timely treatment, reimbursement/compensation if any for staff who develops COVID-19 infection.

Conclusion

Health care workers are the most important resource for any nation and to safeguard them with sufficient provision of protective equipment and support is a priority. COVID-19 pandemic may also be considered as opportunity to improve

health care access, quality, and safety of health care and promotion of healthy lifestyles in days to come.

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