

## NARRATIVE REVIEW

## CORONA EXPERIENCE

# Coping by the healthcare workers during COVID-19 pandemic in developing countries - A review.

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## Abstract

In December 2019, an outbreak of the novel coronavirus (COVID-19) occurred in Wuhan, China. To date, this has spread across the globe, raising a number of significant challenges for healthcare workers (HCW). They are at the front line of the outbreak response and as such are exposed to hazards including the high risk of contracting the infection. Long and irregular duty hours in very constrained environment can contribute to increased levels of stress and ultimately precipitate burnout. The witnessed physical suffering and death of the patients with imminent threat to one's own safety can induce anxiety, hyper-arousal, sleep disturbance, intrusive recollections and thoughts, depression, and grief among HCWs. In the coming weeks and months, they will face numerous additional stressors. It is important that proactive efforts are made to reduce the impact of the pandemic. Psychological support, optimism and communication are the essential factors to prepare for a pandemic or any other public health disaster. Developing countries allocate limited financial and technical resources towards pandemic preparedness. They also face some unique and difficult issues, which make preparing for a pandemic more challenging. This article highlights the challenges faced by HCWs during pandemic like Covid-19 in developing countries including the measures needed to protect occupational safety and psychological well-being.

**Key words:** Healthcare Worker; Pandemic; COVID-19; Stress; Developing countries

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## 1. Introduction

Towards the end of 2019, a novel organism called severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) was reported, which caused Corona Viral Disease-2019 (COVID-19). The outbreak originated from Wuhan of Hubei province in China before spreading throughout the country and thereafter the rest of the globe.<sup>1,2</sup> COVID-19 is highly contagious and primarily involves respiratory system having symptoms matching those of formerly called SARS

epidemic in 2003.<sup>3</sup> At the time of writing globally 41 lakh confirmed cases and 2.8 lakh deaths have been reported.

Health-care workers (HCWs) are at the forefront of the COVID-19 outbreak response and as such are exposed to the hazards that put them in danger of infection. Hazards include exposure to patients with high viral load, long working hours, psychological distress and dilemma, burnout from fatigue, stigma, and physical violence.<sup>4</sup>

All those working in hospitals or clinics, are at variable risk of getting infected. HCWs involved in first contact with patient and casualty staff; respiratory and communicable disease teams, anesthesiologists and critical care teams are at higher risk than non-acute specialties. Nursing staff that tends to have more contact-time with patients and those carry out procedures which generate aerosols, e.g., airway manipulation, mask-bag ventilation, open airway suctioning etc. are at increased risk. Similarly ward boys, cleaning staff, and hospital-kitchen team members can also get infected and should not be ignored in this regard.<sup>5</sup> This article highlights the challenges faced by HCW during pandemic like COVID-19 in developing countries.

## 2. Literature Search

A literature search was done up to April 2020, using databases/search engines - Medline, PubMed and Google Scholar. The articles were manually searched by the authors for cross-referencing. All the articles published in English were searched. We used the following keywords- healthcare workers, mental health, COVID-19, pandemic.

## 3. The challenges to HCWs in a developing country

Apart from the pandemic-related stressors as everyone else have, HCWs have some added challenges like;<sup>6,7</sup>

- Uncertainty about the ultimate magnitude, duration and the effects of the crisis
- Concerns about level of preparedness within individual healthcare organizations and the public sector; an inadequate supply of personal protective equipment (PPE) and other resources needed to minimize the risk of infection. Confusion about the indication of its use. Quality assurance of such products
- Inadequate testing kits to test every potential carrier who comes across. Doubts about accuracy of the test kits.
- The perpetual fear of an enhanced exposure to infection

- Ever changing recommendations and guidelines by medical and public health experts and organizations
- Long working hours and extra duties as their colleagues become infected and/or are quarantined
- Psychological dilemma in balancing the commitment to help patients, and a deep desire to protect themselves and their family members from infection which they may carry home.
- Increased incidents of aggressive behavior by the attendants of the patients towards healthcare professionals.
- Lack of a definitive effective treatment for affected patients

When HCWs experience high levels of anxiety coupled with prolonged uncertainty, and a reduced ability to exercise control over the situation, they are at-risk for the development of persistent stress syndromes and professional burn-out.<sup>4</sup> Making HCWs mentally and emotionally strong particularly those assigned to the frontlines of the crisis, must be the highest priority during the pandemic.

Generally speaking, the developing nations have limited capital and technical means to mitigate pandemic or ensure preparedness. There are also some unique and challenging aspects which make preparations for a pandemic more difficult. Lack of infrastructure and capacity for healthcare delivery, social factors like poverty, illiteracy, poor housing conditions and high population density, and host factors like nutritional status and co-existing diseases are the various factors. Another potential factor likely to influence mortality is the high prevalence of infectious diseases, e.g., AIDS, tuberculosis and other infectious diseases in some developing countries. In influenza season, number of deaths due to pneumonia or influenza is more in HIV-positive patients as compared to others.<sup>8</sup> One study has suggested that 96% of the estimated 62 million deaths in a future pandemic would occur in the developing countries.<sup>9</sup>

## 4. Impact of COVID-19 pandemic on medical workforce

The combination of witnessing physical suffering and death along with the immediate threat to one's own safety can induce anxiety, hyper-arousal, hyper-vigilance, sleep disturbances, intrusive recollections and thoughts, depression, and grief.<sup>10</sup> Post-Traumatic Stress Disorder (PTSD) is the most well-studied condition following disasters and has been found to occur at high rates (10-20%) in first-responders following the World Trade Center operation,<sup>11</sup> and the 2004 Southeast Asian tsunami (up to 25%).<sup>12,13</sup>

Decision building under circumstances of doubt can create significant stress. The decisions that HCWs will face are divided into four categories. (1) Allocation of Resources. (2) Aligning patients need with family. (3) Care for severely unwell patients. (4) Balancing physical and mental health needs of workers.<sup>14</sup> Conditions when beds in Intensive Care Units, ventilators or other equipment or the number of healthcare professionals prove inadequate to meet demand; some HCWs will have to make immensely painful and difficult ethical decisions to choose which patients to get life-support care.

The Chinese study by Chen Q. et al.<sup>6</sup> reported that for healthcare workers getting infected was not an issue; although they were more concerned about their families worries about them, and were much worried about transporting the infection home to their loved ones. They found difficulty in dealing with patient who were not willing to be quarantined or did not co-operated in the hospital because of lack of understanding about the disease.

A cross-sectional study of 1257 frontline HCWs in COVID-19 affected sections of China<sup>7</sup> was focused on problems faced by healthcare personnel which chiefly included shortage of protective gears, fear of spreading disease to family members. Insomnia (34.0%) anxiety (44.6%) and depression (50.4%) were common among these HCWs. Majority of participants (71.5%) had some or the other symptoms pertaining to psychological stress.

The psychological distress, depression, anxiety and stress experienced by HCWs in Singapore in the midst

of the outbreak of corona were compared between medically and non-medically trained hospital personnel. The prevalence of anxiety was higher among nonmedical healthcare workers than medical personnel. It could be because of no accessibility to psychological support, lack of definite information on the outbreak, less intensive training on personal protective equipment and infection control measures. Thus, early psychological interventions targeting this vulnerable group may be beneficial.<sup>15</sup>

With an intention to evaluate understanding of pandemic and behavioral response during that period among HCWs, Holly Seale et al. conducted a study in 24 hospitals in Beijing, between January 16 and 29, 2009.<sup>16</sup> Their survey found that only few HCWs were able to correctly define pandemic, although most of them realized it to be serious. Majority of responding (74%) accepted the danger of getting infected as a part of their profession and 71% also felt that they had the necessary skills to provide patientcare during it. They also came up with issues which could seriously affect pandemic preparedness like less uncertainty about antiviral treatment and inappropriate working behaviors of staff.

Tam et al.<sup>17</sup> after the 2003 severe acute respiratory syndrome (SARS) outbreak in Hong Kong found that HCWs of younger age, female gender, nursing professionals, and those with poor physical condition were more psychologically labile and developed more stress as compared to other staff during outbreak. Compromise in health and safety of the HCWs were the most prevailing stressors.

After a 2015 outbreak of Middle East Respiratory Syndrome (MERS) in Korea, HCWs who performed MERS-related patientcare tasks displayed higher rates of psychological distress than their counterparts not involved in MERS-related tasks.<sup>18</sup> Specifically, these HCWs showed increased rates of hyper-arousal, avoidance, "numbness", and sleep problems.<sup>19</sup>

A cross-sectional study was done in two urban hospitals in Georgia to study behavior of HCWs towards highly infectious influenza pandemic. The study showed a significant 23% of staff truancy, which was chiefly among women and nurses. As women and nurses have very low wages, the lost income may have least impact on total income of family; moreover, they have more responsibilities toward their children and elderly, therefore during period of epidemic they are

less likely to treat patients than their male counterpart.<sup>20</sup>

With the aim to understand local public health workers' insights toward pandemic influenza response, Balicer et al.<sup>21</sup> surveyed 308 employees at three health departments in Maryland, USA, in 2005. They studied factors that may influence their ability and willingness to work during a pandemic. They found that nearly half of the HCWs were not likely to come to hospital during a pandemic and concluded that most of these workers felt, that they would work under significant personal risk of getting infected, and had lack of confidence that their employer would provide sufficient protective gears, psychological support and adequate timely information during such a scenario.

A study was conducted in Japan by Mitani et al.<sup>22</sup> in 2008 to shed light on willingness to report on duty in the event of pandemic. They were queried about their understanding toward pandemics, including whether or not they would come to the hospital to work, treat patients, and what sorts of conditions they required to work. They found that about 44.5% of workers would come to hospital and treat affected patients, but with certain essential conditions like availability of PPE, provision of pre-pandemic vaccination, provision of anti-virus medication, and provision of workmen's compensation. The study found 10.6% of worker absenteeism, and 26.1% would come to hospitals but not treat infected patients whereas 18.8% would perform their duties unconditionally. They concluded that during a pandemic, all types of health professionals would be disinterested, and not only the physicians and nurses. The supply of adequate safety and compensation measures is essential to ensure sufficient medical human resources.

In Hubei Province, at the heart of the COVID-19 pandemic, Chen and colleagues developed a psychological intervention plan for medical staff, educating them on common psychological problems, providing a psychological assistance, and offering stress relief efforts.<sup>6,7</sup> However, staff showed a marked reluctance to participate, as well as refusal by some staff to accept help despite showing irritability, unwillingness to rest, and other signs of psychological distress. Medical staff tended to focus on appreciable challenges, including lack of PPE and lack of sleep, and did not acknowledge psychological stress as a factor in their wellbeing.<sup>19</sup>

The consequences of burnout are substantial with long-ranging implications for workplace morale, patient safety, quality of care, and healthcare costs, including costs related to clinician turnover.<sup>23</sup> Tragically, burnout is also linked to physician suicide across multiple specialties.<sup>19</sup>

## 5. Moral injury

Moral injury, a term that originated basically in the war situation, and defined as an injury to an individual's moral conscience and causes psychological distress that results from actions, or the lack of them, which violate one's own moral beliefs, values or ethical codes of conduct.<sup>24</sup>

Moral injury is dissimilar to other mental health conditions such as depression or post-traumatic stress disorder in being it's not a mental illness, but those who develop it may experience persistent self-criticism, long lasting anger, negative thoughts about themselves or others as well as intense feelings of shame, guilt or disgust. In severe cases moral injury can lead to development of psychiatric disorders which include depression, PTSD or even suicidal thoughts.<sup>25</sup>

One of the classical examples of moral injury is among medical professionals when they feel difficulty to work in emergency care departments.<sup>26</sup> Medical students are exposed to such ethical dilemmas when they feel that they are unprepared for it and this leads to moral injury. Moral injury may appear as a big challenge towards HCWs in current situation of pandemic.

## 6. Psychological dilemma

Pandemic or bioterrorist attack like emergency situation involves high risk and subjects HCWs to psychological dilemma regarding their duties towards patients, their families, desire to protect themselves from getting infected, duty towards society and duty towards co-workers, whose workload will be shared if they gets infected. In such conditions it's really difficult to decide about the reasonable degree of risk which can be accepted. Specialist associations like General Medical Council (GMC) suggest a balance should be struck, so that neither the patient is at unnecessary risk nor doctor and their family. They advise that even if a medical condition puts doctors at risk, they must not refuse to treat, taking into attention

that risk should be minimized as far as possible.<sup>27, 28</sup> Similarly another professional organization - American Medical Association (AMA), in its code of ethics suggest that: 'Physicians should balance immediate benefits to individual patients with ability to treat patients in future.'<sup>29</sup>

## 7. Violence against healthcare professionals

At one end world is pressing HCWs as corona worriers, on other end incidence of aggression and violence is increasing. Such incidences are more in developing countries. India alone has come across a dozen of incidence which include assaults, using abusive words, evicting from homes. According to the Armed Conflict Location & Event Data (ACLED) report from 19<sup>th</sup> February till 4<sup>th</sup> April 2020, in these 45 days amongst a total incidence of violence around the world, 68% happened in India. ACLED could be a highest quality and most generally used real-time data and analysis source on political violence and protest round the world.<sup>30</sup>

## 8. Interventions

Demoralizing effect of today's situation can be mitigated by several potential measures. Properly prepared staff for the anticipated challenges and moral dilemmas during the COVID-19 pandemic, will reduce the risk of mental health problems.<sup>31</sup>

### 8.1. To decrease stress at work place

- Primary care: Counselling staff and preparing them for their job and related challenges; educate them by giving clear picture of what they might face and avoid giving fake reassurances. Discuss emotional and social challenges in depth.
- A systematic rotation of workers who are posted in places with heavy burden, ensuring periods of adequate rest in between.
- Provision of electronic gateway to provide medical advice to both the public and medical workers in the hospital.
- Capacity building for managing psychological problems in patients; training

security staff to manage patients who are aggressive or uncooperative. Mock drills will be helpful in building up their reflexes.

- Provision of essential motivational conditions for the HCWs, e.g. adequate supply of PPEs, hand sanitizers etc., announcement of workmen's compensation, access to anti-virus medication and pre-pandemic vaccination. Guidelines regarding the use of protective gears should be explained and simplified. Standard operating procedures (SOP) should be in line with a national body for wider circulation.
- Decrease unnecessary administrative work, and other routine follow-ups.
- Mock drills to build up confidence among HCWs.

### 8.2. To assist prosperity of medical staff:

- Facility for temporary isolation should be made available to staff to reduce concerns about transmitting disease.
- To promote relaxation when not at work, facilities for leisure activities should be there.
- Encourage sharing and discussion of emotional stressors.
- **Rehabilitation:** Early intervention and monitoring of staff who become diseased or unwell.

### 8.3. Dedicated psychological support facilities:

- Specialized facilities for medical staff experiencing psychological distress; these facilities should be primarily run by volunteers from within or outside the hospital staff, who have received training from mental health professionals.
- Common mental health programs by offering online virtual courses and peer support programs.



## 9. Role of optimism and psychological support

Optimism is an attitude to look the world as a positive, favorable place, and feeling that the future will be good and accepting difficulties as just challenges instead of impenetrable obstruction. HCWs, having optimistic belief have better therapeutic results and patient satisfaction. When staff members are optimistic at workplace they are happy and their hopeful approach gives better results in problem solving and daily tasks. They are less stressful, use fewer escaping approaches and have more trust in the employer. Optimism has an ability to enhance performance of both an individual and the organization as a whole; this is also proven by research.<sup>32</sup>

A well-informed person when in dilemma and difficulty, will utilize all the relevant information available to him to reach a decision. Lack of information forces the person to make emotional responses stored in the memory. An optimistic attitude in such condition improves outcome. It is well known that positive attitude promotes many phenomena documented in cognitive psychology, while adverse attitude inhibits them.<sup>33</sup>

Knowing such potential benefit of optimism, the WHO included recommendations to provide social and psychological support to HCWs, patients and the societies.<sup>34</sup> Also Center for Disease Control and Prevention (CDC) have drawn attention towards importance of strengthening psychological resources such as coping ability mastery, and self-esteem, hope and positive attitude in planning for emergency situation.<sup>35</sup>

## 10. Communication

Effective, coordinated communication is an essential part of pandemic or any other healthcare disaster preparedness. Apart from clear communication between government, and healthcare agencies, information must reach at community level. Trusted and coordinated information increases likelihood of people following. On one hand timely communication may create wonders, but on the other false information may cause great loss. Accurate scientific information

will reduce spread of disease and decrease confusion amongst the community.<sup>36</sup>

## 11. Suggestions<sup>37</sup>

These suggestions have been put forth by the experts for the frontline HCWs fighting the corona disease.

- Get enough, sound sleep. Deprivation and deficiency of sleep hampers healing.
- A well-balanced diet will provide energy and boost immunity and help to fight disease.
- Remain in touch with your co-workers. Share decisions with your colleagues. Care for each other.
- COVID-19 is a novel disease so it's important to continuously update your knowledge about it. Developing a platform to share knowledge and information with colleagues is also helpful.
- Audio or video calls frequently with the family members help to relieve their anxiety and also supports HCWs.
- Recreational activities like listening ones favorite music, painting, reading a book, workout or other hobbies help in refreshing.
- Listening to recitation of Holy Quran or other religious sermons will also be soothing and helpful.
- Sharing feelings and emotions is always better than bottling them up. Sharing and expressing difficulties and the problems at work place allays tension and worries.
- Any HCW when in depression should never hesitate to seek help from mental health professionals.

## 12. Conclusion

With day after day increase in the number of COVID-19 cases, more and more of the HCWs will be affected. Safe-guarding them with adequate provision of protective gears and psychological support is a priority, because if a significant number of HCWs gets effected by the viral disease, our healthcare system will fall.

It's high time that governments in developing countries address the health issues strongly in the annual budgets by allocating adequate funds. Health departments must establish a proper patient referral system from primary to the secondary and then tertiary level. There is also a need to have a reserved budget to deal with such natural (or man-made) health disasters and to provide compensation to the affected healthcare worker and the frontline workers. A well-drafted SOP should be kept ready in place to be implemented immediately and a team be designated to be activated immediately to deal with such issues.

### 13. Conflict of interest

None declared by the authors

### 14. Authors contribution

CA: Concept, Manuscript editing

VH: Literature search, Manuscript preparation

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