

Short Communication

Combating the pandemic of COVID-19 in India: health care worker perspective

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Received: 30 April 2020

Revised: 03 June 2020

Accepted: 04 June 2020

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ABSTRACT

As the pandemic of COVID-19 intensifies there is a huge burden on the health care system of each country. As predicted by epidemic model, India with 1.3 billion population and only 0.76 doctors per thousand people will have 1 million people affected by COVID-19 needing ventilatory support. This situation focusses on the substantial thrust on health care workers in India while dealing with the pandemic and protection of the health care workers from COVID-19 infection is significant as they are the key-groups in health system to procure win-battle status against COVID-19. Henceforth, after meticulously comparing various countries' strategies to protect their HCWs this brief study is being prepared and few recommendations has been suggested which may enable the protection of HCWs in India. Un-interrupted supply of appropriate PPE, phenomenon of presenteeism among HCWs, burn-outs among HCWs, front-line department protocol for protection of HCWs, need of constant psycho-analysis among HCWs, stigma in society for HCWs, prophylaxis for HCWs against COVID-19 and HCWs' family concerns are some of the issues which are being highlighted in this paper.

Keywords: Health care workers, COVID-19, India, Health care system

INTRODUCTION

Around 3,221,029 people of the world population is infected by novel coronavirus (COVID-19) which has resulted into almost 228,252 deaths resulting into the complete shut-down of the major countries of the world.¹ Billions of people around world are at a lock down phase but the health care workers are completely invested in finding the suspected, treating the infected and protecting the healthy by initiating and following a strategic protocol. Nevertheless, the health care workers are subjected to high risk of contracting COVID-19. In many of the developed countries the front-line workers are impacted by COVID-19 infections. Many of the health care workers have lost their lives while treating COVID-19 cases.

Nonetheless, Singapore which was among the 1st countries in the world to have COVID-19 positive cases after China, has meticulously protected their HCWs from getting infected from COVID-19.² Ever since, the 1st cases of COVID-19 had emerged in Singapore, health dept. informed staff to defer leave and travel plans. Meanwhile, hospitals swiftly split their workforces into teams to ensure there were enough workers if the outbreak worsened, and to ensure, workers got enough rest.² Hence proper strategies on appropriate time can be helpful.

India has 1.3 billion people and by following the epidemic model around 1 million people will have serious manifestation of COVID-19 and may require ventilatory support and constant vigilance of healthcare workers

(HCWs).³ Currently 490k people are infected by COVID-19 and 15301 deaths has occurred.¹ India has 0.76 doctors per 1000 people and only 0.7 beds for admission per 1000 people focussing to heavy burden on health care worker in India while dealing with the pandemic. Hence, protection of the health care workers from COVID-19 infection is significant as they are the key-groups in health system to procure win-battle status against COVID-19.^{4,5}

This paper shows the health care worker affected by COVID-19 in various countries of the world and the rising trend of infection among the Indian HCWs. This observational study sets some practical recommendation which are essential for protecting the HCWs.

METHODS

This is an observational study which is conducted by collecting data from various newspaper, social media information and other electronic media documents which were published from January 2020 till May 2020. The data was collected regarding the total number of health care worker infected by COVID-19 in different parts of the world and in India. This research article also analysed the challenges faced by the HCWs in India while dealing

with pandemic of COVID-19. Recommendations are framed based on the assessment of the early vigilant strategies which few countries of the world and states in India has implemented and have been successful in protecting maximum of their HCWs from COVID-19 infection. The study was conducted over a span of 5 months. The documents and articles which are available on-line on public domain were accessed.

Data analysis

The secondary data was analysed with help of Microsoft-excel version 16.37. The categorical variables are presented as frequency and percentages. Appropriate graphical representation is done wherever required.

RESULTS

Statistics of infection among the health care workers (HCWs) from various countries is shown in the Table 1. The maximum involvement of HCWs is seen in Spain. However, maximum deaths among HCWs was found in Italy.

Table 1: COVID-19 in HCW across the globe.

S. no.	Countries	Infected HCWs	Death of HCWs	Statistics source
1.	China	3300 (till early March)	22 (end of February)	China's National Health Commission ⁶
2.	Italy	9000 (out of them 4000 are nurses)	61 (March 30)	Italian medical associations ⁷
3.	Spain	35,295 (April 1)	37 (April 1)	Health Ministry of Spain. ⁸ Spanish Medical College Organization ⁸ Emergency coordination center ⁹
4.	USA	9,282 (April 9)	27 (April 14)	Center of Disease Control and Prevention ¹⁰

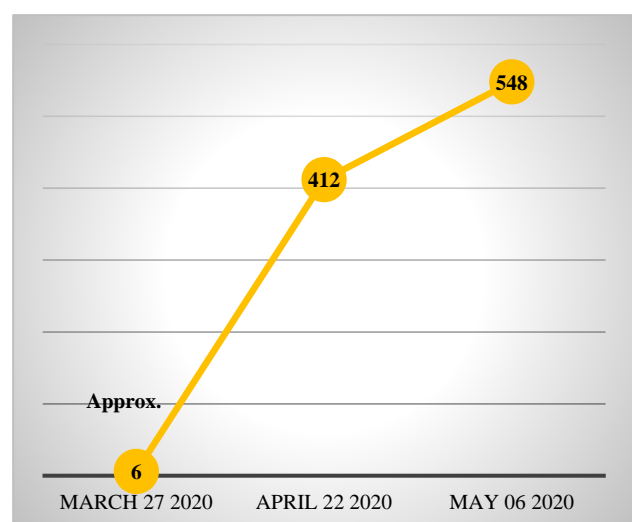


Figure 1: HCWs infected with COVID-19 in India.

Figure 1 shows the steep rise in the involvement of HCWs infected by COVID-19 in Indian health care centres. According to few articles published in notable Indian newspapers, only 6 HCWs (available data till March) were infected by COVID-19 which included: 2 nurses from Kerala, 1 resident doctor from Bihar, 1 doctor from Bangalore, 1 doctor infected in Rajasthan and 1 in Mumbai.^{11,12} Nevertheless, an article published in popular Hindu newspaper showed 156 nurses, 96 doctors, 145 medical workers, 11 hospital staff and 4 Technicians getting infected of COVID-19 till April 22.¹³ Another article published in Hindustan Times newspaper showed that 548 doctors, nurses, paramedics got infected with COVID-19 across India. This trend shows huge rise in COVID-19 infection among the HCWs in span of 2 months, which is a worrisome picture.¹⁴ Till 30 May 2020, 31 doctors and 3 nurses have lost their lives due to COVID-19 infection in India (published in Deccan Chronicles).¹⁵

After going through the articles published in various newspaper and reports we came across the following challenges which Indian HCWs are facing during combating fight against COVID-19 in India.

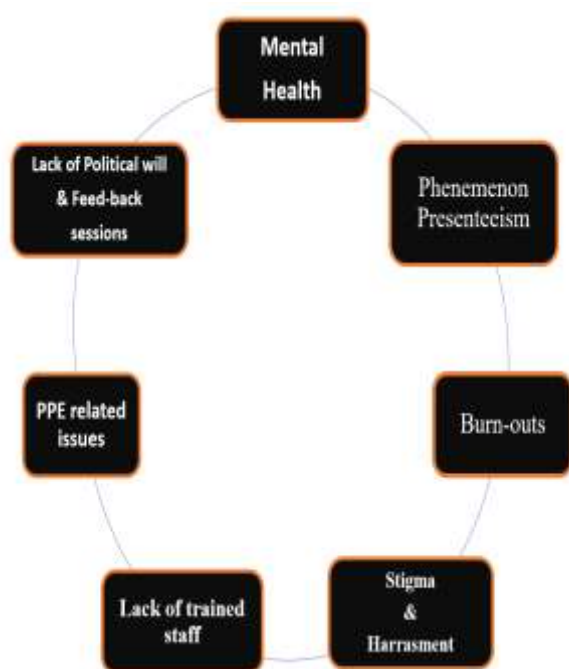


Figure 2: Challenges faced by HCWs in India while dealing with COVID-19.

DISCUSSION

The infection rate of COVID-19 among HCWs is very high among the most developed countries and many deaths due to the same infection has been established by published material across the globe. India, has a very sharp rise in cases and deaths among the HCWs. Hence, it is very important to frame preventive strategies for protecting our HCWs. In the discussion part of this observational research we have found out the challenges faced by HCWs while fighting with COVID-19 which makes them more prone to get diseased and based on these observations we have framed recommendations for protecting our HCWs.

The US Centres for Disease Control and Prevention guidelines suggest health care workers working with suspected and positive patients should wear gowns, gloves, and either N95 respirators with face shields or goggles, or powered air-purifying respirators and these PPE (personal protective equipment) are the best equipment for protection.¹⁶ However, considering the trend of transmission of COVID-19 in India, in the approaching future the spread of infection will further intensify and there may be an acute shortage in the supply of these PPE. Hence, sensible and appropriate use of these equipment and also finding out alternative measures which may serve the purpose, is the need of the hour. Some of the health set-up has implemented the use the

OHP (over-head protector) sheet and it is serving the purpose of face shield. In state of Kerala where very less infection of COVID-19 is seen among the HCWs unique strategies has been followed by the Govt. The government prepared ahead to ensure adequate Personal Protective Equipment (PPE), and also has focused on safe waste disposal as well as providing counselling and proper trainings to the health workers. Assistance from local plastic product manufacturers, textile production units, footwear makers and women self-help groups were taken for PPE productions. More raw materials from Tirupur and Erode in neighbouring Tamil Nadu were made available. Also, the design of PPE was made more complaint for HCWs and strict quality control measures were taken. Kerala Social Security Mission executive director had given statement that Kerala started to purchase PPE from various sources including China from the month of January itself. These steps proved to be very helpful in controlling infection and reducing the scarcity of PPE.¹⁷ Hence, enhanced production of masks and gowns with un-interrupted supply of raw material has to be maintained which is possible by political will and integration of private, public and voluntary organisation. Yet again, some Indian states has started COVID-19 testing booth where the HCWs can take throat swab by just wearing a protective gloves and presence of glass shield protects the HCW from any exposure to virus.

Interesting, HCWs who are involved in treating the infected patients are also potential source of disease transmission hence they act as a double-edged sword during a pandemic. Consequently, protecting doctors and other health care workers against COVID-19 will diminish the chain of transmission of infection to patients. In India, health care worker infecting patients has been well-established by many incidences for instance a private hospital of Bhilwara, Rajasthan where the treating doctor after testing COVID-19 positive has followed other 17 cases with positive report and resulted in isolation of 6440 people fearing community transmission of the virus.¹⁸ Another case reported in Delhi where 900 people had to be quarantined after Delhi community clinic doctor tests COVID positive after treating a patient with COVID positive symptoms.¹⁹ Another dreaded phenomenon called “presenteeism” among health care workers i.e. the tendency of health care professionals to work through illness, is a serious threat to both patient safety, other health care workers health and ultimately the overall public’s health.²⁰ Taking into consideration of the R0 (reproductive number) of COVID-19 i.e. between 2.06-2.52, extra-ordinary measures like regular salary, adjustment of sick or quarantine leaves, provision of essential requirement e.g. food etc. during quarantine or isolation period are required to ensure sick health care workers remain isolated or quarantined and working staffers remain healthy correspondingly which will warrant appropriate number of staffs to deal with the pandemic situation.²¹ Yet again, extensive work hours while managing the pandemic with in-adequate time to rest and improper timings of consuming food makes the

HCWs exhausted and increases the risk of burn-out among HCWs. In order to handle these issues, some recent models have been applied in few health institutes across the world where working schedule has been arranged in various strategic manner (e.g. 14 days working for health worker dealing with COVID-19 patients followed by 14 days (also the I.P for COVID-19) of rest period for these HCWs), which ensure avoidance of burn-out among the HCWs and in the same time specify any appearance of symptoms in these HCWs thus reducing the transmission risk of infection.

Out-patient Department like cough cold fever (CCF) or Triage OPD and emergency departments are on the front-line for dealing with the patients of COVID-19 and crowding is big concern in such OPDs. Hence, the patients who come with respiratory complaints can be provided with facemask on arrival, supplying tissues to cover while coughing and sneezing, promoting cough etiquette, provision for hand washing and surface decontamination after consultation to reduce the transmission to HCWs. Additionally, in India, with a population of 1.3 billion, only about 20,000 doctors are trained in key areas such as critical care, emergency medicine and pulmonology.²² Hence, the health department of most the states are involving other departments along with medical interns, nursing students and dental students to treat the patients of COVID-19. Many recent studies, have established the fact that inappropriate training and improper guidelines for management of COVID-19 patients may increase the risk of transmission of COVID-19 to the HCWs, hence necessary training protocol needs to be established and hands-on practice is essential.⁶ Furthermore, the medical staff suffer from tremendous stress and anxiety due to difficult triage decisions, pain of losing patients, anxiety of colleagues contracting infection, torment of staying away from family members which, for a long time may lead to mental health issues. Hence, routine psychoanalysis and emboldening sessions for health care workers via trained psychologist is indispensable. Yet again, instances of stigma in India, where the All India Institute of Medical Sciences has appealed to the government for help after health workers were forced out of their homes by panicked landlords and housing societies.²² "Many doctors are stranded on the roads with all their luggage, nowhere to go, across the country," the institute said in a letter.²² Hence, necessary steps and strict legal provisions against such behaviour against HCWs must be taken by Govt. of India to safeguard the HCWs.

Recently few studies have come up with promising result of hydroxychloroquine (HCQ) therapy as prophylaxis against COVID-19.^{23,24} Hence, HCQ can be made accessible to all the HCWs. But HCQ has been known for its adverse effects targeting cardio-vascular system, G.I system etc. and instances of sudden death due to non-regulated and unprecedented use of HCQ among the HCW have been quoted in India.²⁵ Hence, few measures

e.g. routine ECG among susceptible HCWs, enlisting the contra-indications of HCQ before consumption would be beneficial. Besides the concerns of personal safety, health-care workers are anxious and stressed about transmitting the infection to their families. Joint family and three generation family are common family types in India hence health care workers are radically anxious about transmitting infection to the elderlies and majority of the elderlies in India are suffering from underlying co-morbidities (e.g. diabetes, cardiovascular diseases etc.). Addressing this concern, by providing the family members priority access to testing, prophylaxis and treatment facility may ameliorate stress-level among the health care workers.¹⁶

Additionally, measured communication, transparency of all procedures and data and regular feed-back sessions by the chief authority of health-care institute and the government, will help the HCWs to maintain their desirable role and stay focussed. HCWs cannot be manufactured urgently unlike health care systems like ventilators or wards which can run more than maximum capacity for months. Hence, fundamentally the government should acknowledge the importance of HCWs and provision of safety, essential needs, psychological support should be mandated. Multidisciplinary approach was widely used to control Ebola outbreak hence this approach can be recreated and implemented by employing more social scientists, building community trust, engagement of competent workforce for new surveillance, strengthening laboratory capacities for tests, pertaining new technologies (involvement of bio-medical industries) and encouraging trails on vaccine and medicine. This will strengthen the health-care system of a country concurrently helping HCWs. Presently, health-care workers are every country's most valuable resource.

CONCLUSION

This research article depicts that the Indian HCWs are at a tremendous stress while dealing with COVID-19 situation. In order to maintain their zeal at work and constantly motivate them their challenges needs to handle with priority. Proper maintenance of PPE, taking care of the HCWs physical and mental health, curtailing all kinds of harassment against HCWs and provision of proper trainings to the HCWs is the need of the hour. Political will and strengthening of health care facilities of India is an important step to control this pandemic situation.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Pathak BG, Manapurath RM. Combating the pandemic of COVID-19 in India: health care worker perspective. *Int J Community Med Public Health* 2020;7:2797-802.