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The Repercussions of COVID-19 Pandemic on Healthcare Workers in India

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Abstract

Healthcare Workers (HCWs) are the backbone of India and have shown indomitable valour as the entire world battled the catastrophic novel Coronavirus. They have not just tended to endless streams of patients but have also saved humankind as it stared at an existential crisis. This paper seeks to explore the various repercussions of the COVID-19 pandemic on the healthcare workers in India through a detailed PESTELE (Political, Economic, Social, Technological, Environmental, Legal and Ethical) analysis. The authors have highlighted the problems and challenges faced by HCWs as they heroically performed their duties whilst grappling with social ostracism, violence, lack of infrastructure and inadequate resources. The paper critically reviews the various policies and acts concerning the HCWs that have been established in the country since before the pandemic. Further, the study examines and establishes the psychological and physical ramifications of the healthcare crisis on the Corona warriors using quantitative data. Conclusively, the paper presents a list of recommendations to combat the same.

Keywords: *healthcare workers, Covid-19 pandemic , frontline warriors, stigma, mental health, infrastructure*

1.0 Introduction

The outbreak of the 2019 novel coronavirus disease (COVID-19) was declared as a public health emergency of international concern on 30th January 2020 by the World Health Organization (WHO). As the number of cases increased, the number of healthcare providers involved in managing COVID-19 crisis had to be increased accordingly *(Singh & Subedi, 2020)*. India, which is still supposed to be a developing country with a population of more than 1.34 billion—the second largest population in the world- faced great difficulty in controlling the transmission of Severe Acute Respiratory Syndrome Coronavirus 2 among its population (Kumar et al., 2020). As of 12 September 2021, India recorded 33,236,921 and 442,688 deaths related to Covid-19. Whereas, 32,409,345 people recovered from the disease caused by SARS COV-2 (*India: WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data*, 2021).

A study based on National Sample Survey Office (2011–2012) data estimated the density of 20.9 workers per 10000 population in India. After adjusting for the right qualifications, the density of the health workforce reduced to 9.1 workers per 10,000 population (Nair, 2019). Karan et al (2019) in their broad estimate of health workers including allied health professionals and support staff showed the density of doctors, nurses and midwives per 10,000 population as 20.6 according to the NSSO data and 26.7 based on the registry data (Shahrawat et al., 2016). All these estimates showed that the country falls short of WHO's recommendation of the minimum threshold of 22.8 skilled health professionals per 10,000 population. WHO has revised the minimum need as 44.5 health professionals per 10,000 population *(Shahrawat et al., 2016)*. Healthcare Workers include physicians, nurses, emergency medical personnel, dental professionals and students, medical and nursing students, laboratory technicians, pharmacists, hospital volunteers and administrative staff. They are recognised as "*the most valuable resource for health*" by the WHO (Joseph & Joseph, 2016). Despite facing physical and psychological challenges, such as exhaustion due to heavy workloads, lack of personal protective equipments (PPEs), the fear of becoming infected and infecting others and feeling powerless to handle patients' conditions, healthcare providers have continued to show amazing resilience *(Liu et al., 2020)*.

Healthcare workers are the saviours of the nation and have continued to show invincible courage in these trying times. However, the impact of this pandemic on these Corona-warriors has been deplorable and shocking. The objective of our research is to sensitise the higher authorities and citizens about the increasing hostility and ostracism that the healthcare workers in India are experiencing so that necessary amendments are made in order to safeguard the healthcare community. This research paper analyses the various impacts of the Covid-19 pandemic on healthcare workers in India. The researchers also try to review the existing literature in context to the above mentioned issue.

2.0 Research Methodology

We have extensively examined secondary sources of data such as Indian and international research papers, journals, articles, surveys conducted by National Sample

Survey Office (NSSO), World Health Organisation (WHO), World Bank etc. Through this research paper, we intend to bring light upon the main factors that have impacted healthcare workers during the pandemic using a PESTELE Analysis. We have also tried to identify the psychological factors that have influenced the physical and mental well being of the workforce.

3.0 Literature Review

During the outbreak of COVID-19 pandemic in India, healthcare workers experienced many challenges as they toiled day and night without availability of resources and lack of information. Hence, it was imperative to investigate the causes and consequences of the same. This review critically analyses the existing literature and further examines psychological and physical ramifications of the healthcare crisis. The existing literature states that not only the infected but even the suspected (due to the high risk of being infected) became the potential recipients of stigmatization (Bhanot, 2021b). Through this research paper we looked at real life instances collected from secondary data like news articles and interviews available on the internet to probe the same.

A research by Indian Journal of Psychiatry showed the various mental health issues including insomnia, depression, anger etc., encountered by healthcare workers in quarantine or on-duty in COVID-19 wards (*State of Mental Health Services in Various Training Centres in India during the Lockdown and COVID-19 Pandemic*, 2020). The authors have tried to infer from the statistical data, the potential causes behind the same. The data from Ministry of Statistics and Programme Implementation, India, pointed at the wide healthcare gap that exists in the country (Rao, 2019). As a result, the existing healthcare personnel were overburdened. The authors looked over at the ethical impact on healthcare workers such a divide had during the pandemic. Working in poorly designed hospitals which caught fire due to overrunning, working beyond stipulated hours of duty are among the few ethical impacts that the authors found after examining the accounts of medical professionals mentioned in electronic and print media.

In addition, a study '*Environmental Effects of COVID-19 Pandemic and Potential Strategies of Sustainability*, 2020' brought out environmental problems as a result of increased medical waste. During the process of research, we found that the casualties during the pandemic impacted the environment negatively as large numbers of dead bodies were found immersed in water bodies (ultimately causing water pollution) as crematoriums ran short of space. In order to delve deeper into the problems that particularly women HCWs faced, the authors have shed light on the plight of women healthcare personnel who had to work in PPE Kits even during menstruation (Nezami, 2020).

4.0 PESTELE Analysis

4.1 Politicisation of the Healthcare Crisis

4.1.1 Centre-State Rivalry

While the entire country battled the healthcare crisis during the second wave, the friction between central government and state governments became evident. Allegations made by certain ministers in Maharashtra and Delhi about the unfair treatment meted out to certain states on vaccine distribution, oxygen supply, availability of life-saving medicines and extra favouring of certain states did not bode well for the health of the citizens as well the institutional health of the republic. The conduct of the opposition leaders in states where the ruling party in the centre found itself in opposition gave credence to such allegations. Their conduct pointed towards a base tendency of attempts to destabilise the state governments using the conditions of crisis. The centre invoked the Epidemic Diseases Act and the Disaster Management Act, centralising the powers to deal with the pandemic. However, the consistent accusing refrain of the statements made by the union ministers was to either blame the state governments (particularly those led by the opposition parties) for the rapid rise in cases or remind them of their responsibilities.

This was a curious notion of cooperative federalism where states were effectively left powerless— regarding vaccination, supply of medicines, availability of oxygen, etc— and were expected to fulfil their responsibilities effectively. In fact, on account of it being the sole central agency to regulate the production and distribution of the vaccine and oxygen, it was the exclusive responsibility of the centre to ensure adequate and judicious distribution of the

vaccine to the states, irrespective of their party background. Moreover, the vaccination policy, in the garb of relaxing controls, sought to pass the burden on to the states as it made the states responsible to procure vaccines directly from the producers and allowed for differential price-setting.

This would not only have added to the financial burdens of the states that were already squeezed but also gave rise to conflicts between different states. In fact, such conflicts were already visible in the case of oxygen supply, in the absence of decisive mediation from the centre. Those who faced the brunt of this fractionalised relationship were not just the citizens but also the healthcare workers who juggled between performing their duties and finding beds and cylinders for the patients. The framework of cooperative federalism, thus, is driven by what could be termed as the symbiotic relationship, which would allow both the centre and the states to achieve all-round development of the nation without ignoring the development of the states. For such an egalitarian approach, the centre was expected to adopt a more judicious intervention in the process of solving the problems faced by the states. In the recent scenario where some of the states were facing acute shortage of life-saving medicines and oxygen supply, the centre was accused of not acting promptly to meet the demands made by the needy states.

The decision to distribute vaccine, oxygen or life-saving medicines should not to be subjected either to procedural delay or to the deliberate discrimination occurring from the political partisan calculations. The intuitive understanding of the menace requires the central government to act on priority without waiting for others to take initiative. It is supposed to invest enough time in pursuing, supervising and monitoring closely the resources it has distributed among the states. But this does not seem to be happening in the mentioned case. (*Economic & Political Weekly ,COVID-19 Crisis and the Centre–State Relations, 2021)*. The lack of efficiency of the central government to provide adequate healthcare equipment and oxygen cylinders to states led to helplessness amongst doctors and HCWs who struggled to save lives amid political antagonism. As citizens, we vote for a party to protect us, take necessary actions for our welfare and maintain peace and order. But, this rivalry within our own territory where everyone should have come together to fight these tough times not only

defeated the idea of Federalism but people also lost trust from their governing bodies.

4.1.2 Representation of Healthcare Workers in Media

It was observed that media platforms like news channels and even social media often acknowledged and published the work of frontline health workers in a positive light, terming the HCWs as 'heroes' of the pandemic (Vani, 2021). However, the media also provided a platform to those who aided the misinfodemic.The misinformation spreaded would have been an added stress for the HCWs. This, in a way, disrespected the medical professionals as their opinions were overpowered by influential people.

The voices from the medical fraternity were ignored in order to telecast news that was potentially mendacious. As evidence of the same, it was noted that Patanjali, an Indian consumer packaged goods company and its founder - Baba Ramdev, claimed to have prepared a wonder medicine to fight coronavirus called Coronil and Swasari. Remarkably, such claims were aired by news channels like India TV without the medicine's approval by the Indian Drug Association or research backed by scientists. His interviews involving the marketing of 'Coronil' were aired even before the effectiveness of the drug was proved, especially when both the AYUSH ministry and the ICMR distanced themselves from this (Meghnad, 2020). Media plays an important role in framing a society. If such statements, which lack accountability, are telecasted on national television during a pandemic, the consequences may be disastrous.

4.2 Economic Impact

4.2.1 Lack of Healthcare Infrastructure

Experts pointed out that even in big metropolitan cities, well-equipped hospitals, isolation and testing centres were overwhelmed as infections rose exponentially as people and hospitals grappled with shortages of oxygen. Such facilities were missing in rural areas which are usually served by small, primary health centres that are ill-equipped to deal with the surge in infections (Pasricha, 2021). The very idea of not being able to access quality healthcare facilities just because someone resides in a particular area of the country where the government isn't taking proper actions is extremely concerning.

A. Lack of Hospital Beds

In India, there has been a huge shortage in the availability of beds in COVID-19 assigned hospitals. According to the Raghuram Rajan Commission (2020), states wise, Bihar had 0.12 beds per thousand people. It was the state with the least number of beds per person. Odisha which is the poorest state of India had 0.38 beds per thousand people. In the North-eastern states of India, Manipur and Assam had 0.48 and 0.32 beds per 1000 people, respectively, which is way below the national average of 1.13 beds per thousand people (Raj, 2020). Critical care beds were scarce; of the estimated hospital beds in the country, just about 5% were placed in the intensive care units. Just about half of the ICU beds were attached to ventilators. The health ministry estimated that there were about 35,700 ICU beds in the government hospitals of which 17,850 were ventilator beds (Edwin, 2021).

That translates to about 25.87 ICU beds per one million people in the government sector. That's woefully short given that ICU beds in the private sector are beyond the means of a sizable proportion of the population. The CDDEP (Centre For Disease Dynamics, Economics & Policy)- Princeton University estimated the number of ICU beds in the private sector is at about 59,260 in India. Thus, the private and the public sector together have about 68.8 ICU beds per one million people in India . The uneven spread of hospitals and beds is another problem that people have to deal with. Though a larger proportion of government hospitals are in rural areas, urban areas have a larger share of beds. The government hospitals in rural areas are small and have 12.4 beds on average compared to 102.6 beds in the hospitals in urban areas (Edwin, 2021).

B. Lack of PPE supplies

Healthcare Workers in India risked their lives at the forefront during the COVID-19 pandemic as a shortage of supply of various PPEs like masks, gloves, goggles and face shields, persisted. A delay in policymaking by the administration and slow procurement of resources led to this imminent shortage of equipment for medical professionals thereby risking their lives. PPEs are mandatory for all healthcare workers while they are screening, testing or treating people for the COVID-19 virus. Many doctors, as well as manufacturers, underlined the issue of plummeting PPE supplies during the first wave of the pandemic in

the country (Raj, 2020). It was even more difficult to get PPE as common people started to stock PPE in fear of infectious disease contamination without following guidelines, which further crippled the health system. During a pandemic, whether it is striking in developing or developed countries, an increase in the supply of PPE in response to this new demand requires a large increase in the production and distribution of those equipment. However, most of the time it was not possible to produce bulk PPE as it requires time, infrastructure, and other resources. Moreover, rapid coordination of such resources at the state or national level could have been useful so that spare equipment can be mobilized with other institutions experiencing scarcity. Such approaches may foster collaborative efforts against COVID-19 ensuring efficient use of resources at the systems level Bhattacharya et al).

C. Lack of Ventilators

Ventilator is a mechanical breathing medical equipment that can blow oxygen and air into the lungs. Ventilators are essential for the care of people with lung infections. Lack of ventilators in hospitals was one of the biggest obstacles faced by patients with severe COVID-19 infection. The number of ventilators available in the country as on June 10, 2020 was about 57,000. Professionals across the industry including doctors, engineers and even entrepreneurs tried to solve the ventilator issue (Raj,2020). Across states, around February 2021, health infrastructure created during the first wave of Covid was disassembled because of the deluded perception that the pandemic was ending. Makeshift hospitals were dismantled, contractual healthcare laid off and negligible effort was made to ramp up critical equipment, such as ventilators. Such untimely actions left most states ill-prepared for the second wave. In April, the Jharkhand High Court had to intervene to get the Ranchi-based Rajendra Institute of Medical Sciences, the biggest government hospital in Jharkhand, to procure a high-resolution CT scan machine. In Bihar, during the first wave, district administrations had sought that government facilities be equipped with at least 10 ventilators each. Only 10 of the state's 38 districts had just five ventilators (Deka, 2021).

D. Acute Shortage of Oxygen Cylinders and Essential Drugs

The second wave of pandemic in India, revealed a very sorry state of affairs as

thousands of seriously ill patients, their lungs blotted out by a virulent invasive SARS-CoV2 strain, poured into hospitals across some of the most severely affected states. The demand for medical oxygen registered a 10-fold spike— from 700 metric tonnes per day (MTD) to over 6,000 MTD by late April, 2021. Medical oxygen makes up only a small fraction of the 7,500 tonnes of industrial oxygen India produces each day (Unnithan, 2021). Apart from this, there was also a severe shortage of medical drugs like Remdesivir. Reduction in production due to less demand after the first wave of coronavirus and lack of vigil on the part of the government to ensure stockpiling led to the Remdesivir crisis (Jayakumar, 2021). Additionally, a scenario of black marketing and hoarding of drugs was observed during the second wave. This led to a severe shortage as offenders sold life threatening drugs at exorbitant prices to the kith and kin of those battling the disease. As a consequence, the burden of care and providing essential services shifted from the government to the citizens amidst a crisis. The citizens and healthcare workers were abandoned as they struggled in despair to find resources for their families and patients respectively.

4.2.2 Lack of Human Resources in the Healthcare Sector

India fell quite short of the prescribed strength of doctors and nurses. This was purely a reflection of a wider healthcare gap. As of 2020, India had one doctor for every 1,445 citizens —below the WHO's prescribed norm of one doctor for a batch of 1,000 people. And it had only 1.7 nurses per 1,000 people which is almost 43% less than the prescribed minimum of three as per WHO norms. This includes ANM (Auxiliary Nurse Midwife) nurses, GNM (General Nurses and Midwifery) nurses and women health visitors. India had 3.07 million registered nursing personnel in 2020 which is not sufficient to meet the rising demand in the country (Raj, 2020).

Table 1: State-wise density of qualified health workers from the 68th round of the National Sample Survey, 2011–2012. (* indicates inadequate sample size)

State/ Union Territory	**Allopathic Doctors(Density per 10,000)**	**Nurses & Midwives (Density per 10,000)**	**All health Workers(Density per 10,000)**
Bihar	0.3	0.4	1.5
Himachal Pradesh	0.1	1.1	2.2
Assam	*	2	2.2
Jharkhand	0.7	1.6	2.3
Orissa	1.3	1	3.1
Rajasthan	0.4	2.6	3.4
Tripura	3.7	0.3	4
Arunachal Pradesh	2	2.4	4.9
Madhya Pradesh	0.3	1.7	5.1
West Bengal	3.5	0.8	5.1
Meghalaya	2.1	2.7	5.4
Goa	5.8	0.5	6.9
Uttar Pradesh	6.2	4.2	7.6
Manipur	1	1.9	7.8
Andhra Pradesh	2.3	4.5	7.8
Sikkim	*	1.8	8.3
Jammu & Kashmir	2.3	1.3	8.3

Karnataka	5.2	2.3	9.1
Chattisgarh	3.6	1.3	9.2
Nagaland	1.9	4.9	9.8
Lakshadweep	6.2	6.3	10.5
Tamil Nadu	1.6	6.8	11.1
Punjab	2.2	10.6	12.6
Mizoram	0.5	4.7	14.8
Uttarakhand	6.8	11.8	15.2
Andaman & Nicobar Islands	*	13.1	16.5
Gujarat	1.4	4.2	16.6
Maharashtra	8.7	5.1	16.8
Haryana	3.3	1.4	17.1
Delhi	7.5	18.5	17.9
Kerala	3.2	3.2	31.6
Whole of India	3.4	3.2	9.1

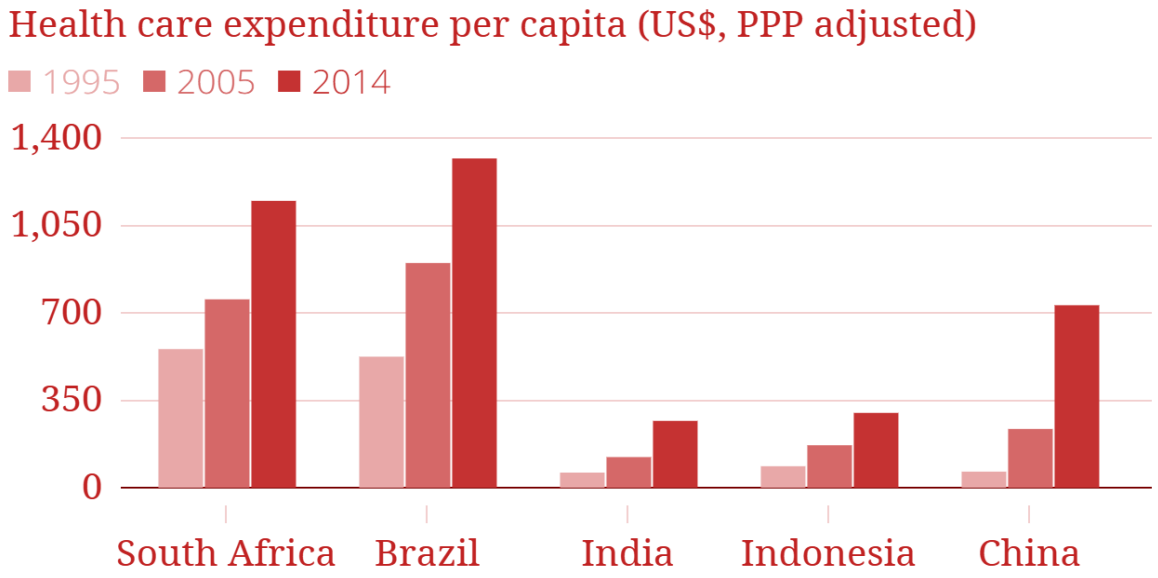
Source: WHO South East Asia Journal of Public Health, 2016

Lack of training and skill development is one of the major reasons why India struggles with lack of human resources in the healthcare sector, despite having a large population. Hence, it is imperative that adequate colleges and institutes are set up to promote medical education and research in the country.

4.2.3 Low Government Spending

In Oxfam's *"Commitment to Reducing Inequality Report 2020*", India ranked 154th in health spending, fifth from the bottom. In the 2021-22 Union Budget, the Ministry of Health and Family Welfare (MoHFW) was allocated a total of Rs 76,901 crore, a decline of 9.8 per

cent from Rs 85,250 crore from the Revised Estimates of 2020-21, thus explaining the lower rank. Oxfam India findings show that higher public health allocations have a positive effect on health outcomes in a pandemic. State governments with higher expenditure on health had lower confirmed cases of Covid-19. States such as Odisha and Goa, with higher expenditure on health, also had higher recovery rate from Covid-19. The report also finds that the limited scope and coverage of insurance schemes instituted by state and Union governments cannot address the all-encompassing requirements of UHC (*Reduced Health Budget Allocations Affecting Marginalised Groups: Oxfam India*, 2021). Data obtained through Right to Information (RTI) showed that only 19 people got Covid-19 treatment under the Union government's Ayushman Bharat in Bihar, one of the worst affected states during the second wave, said the report (Sandhu, 2021). India's comparison with other developing countries shows that India spends way less on health than countries like South Africa and Brazil , despite being a growing economy.



Source: World Health Organisation , Scroll, 2017

4.2.4. Mismanagement of Crisis during Second Wave

While the government claimed increased government spending while presenting the 2021-22 Budget in February, 2021, these claims were contradicted by its lack of accountability and responsiveness during the second wave in India.

India also lags behind in the targets with respect to Sustainable Development Goal 3 which aims to ensure healthy lives and promote well-being for all ages. The COVID-19 pandemic has exposed the weaknesses in the public healthcare system and has highlighted the need for increased public spending on health so as to be better prepared for the future (*Pavitra K M,2021)*

4.3 Societal Influences

4.3.1 Discrimination by Society: The Hidden Cost of Altruism

Stigmatization is a social process set to exclude those who are perceived to be a potential source of disease and may pose threat to the effective social living in the society (Bhanot, 2021). Several incidents of stigmatization of healthcare workers, COVID-19 patients and survivors came up during this pandemic across the world. The fear among the people was so intense that it led them to blame the scapegoats— especially the poor, labourers, daily wagers, the migrants and of course the doctors who were not spared from being titled as the "carriers" of coronavirus (M. Singh, 2020). Therefore, not only the infected but even the suspected (due to the high risk of being infected) became the potential recipients of stigmatization (Bhanot, 2021b). For instance, in India, media reports revealed that doctors and medical staff dealing with COVID-19 patients faced substantial social ostracism; they were asked to vacate the rented homes, and were even attacked while carrying out their duties (S. Bagcchi, 2020). "COVID-19 pandemic has created an unprecedented panic in the minds of people in India and several other countries", said Diptendra Kumar Sarkar, a professor of surgery and Covid-19 strategist affiliated to the Institute of Post Graduate Medical Education Research (Kolkata, India). According to him, healthcare workers in India had become a natural target in the society, which is why they suffered mental stress. Many of them faced social isolation, because of their job, and some had even faced near lynching situations. "Such a situation of social isolation may be linked to the high infectivity of the virus", he suggested (S. Bagcchi, 2020). This was evident from the complaint by Resident Doctors' Association (RDA) of the All India Institute of Medical Sciences (AIIMS) to Home Minister Amit Shah about their forceful eviction by their landlords during the first wave of the COVID-19 Pandemic (Sharma, 2020).

The fear and uncertainty of COVID-19 pandemic and the misinformed suspicion of doctors being vectors of transmission were the root cause for these catastrophes (Sakthivel, 2020). As a measure to escape infection, people indulged in malpractices involving untouchability and indifferent behaviour towards frontline workers. A video that surfaced online showed a mob throwing stones at two female doctors wearing personal protective equipment in the central city of Indore due to the prevalent stigma (Pandey, 2020). There has also been record of community health workers in India facing sexual assault, including rape, while doing contact tracing in the field (Franklin, 2020). This was very appalling as on one hand healthcare workers are regarded as godly figures for saving lives and on the other hand they had been treated inhumanely by the citizens.

4.3.2 Violence against HCWs by Patients and their Families

Dissatisfied patients and their agitated friends and relatives, impaired the doctor–patient relationship (Sakthivel, 2020). Violence grew as a result of increasing stigma about healthcare workers facilitating the spread of infection by performing their duties. Several condemnable incidents have been recorded of violence against Doctors and HCWs during this pandemic time in India. Though the exact numbers of such cases could not be determined, we have tried to bring in a few glaring examples: In June 2021, a video of a young doctor being brutally attacked in Assam, as a result of his patient succumbing to Covid-19, sent shockwaves around the country and angered the medical professionals who went on strike demanding stringent laws to be enacted *(*Aditya, 2021*)*. In another shocking incident, a senior doctor was assaulted and stabbed by the relatives of COVID-19 patient in Maharashtra's Latur *(Shocking! COVID-19 patient's relatives stab doctor in Maharashtra's Latur, 2020*). These are just a few of the many incidents of contempt that took place. However, there has been no proper documentation of the same. A study concluded that the prevalence of violence among health-care workers is quite high, but the reporting rate is significantly low. The low rate of reporting is because of lack of awareness about the reporting mechanism of workplace violence (Garg et al., 2019). It is truly distressing how HCWs who work tirelessly for the nation, face violent consequences of hostility and uncertainty from the families of COVID-19 patients. These events put the medical

community in a state of fear and regret for choosing an unrewarding career when society does not support them. A majority of doctors are now unwilling to motivate their children to pursue this profession, once revered by the society not too long ago (Sakthivel, 2020).

4.3.3 Inadequate Communication and Lack of Information

The ongoing pandemic was unprecedented and hence, lack of information wasn't uncommon. Very little information was available about the origin of the virus, proper treatment, testing, vaccination and medication. This led to the spread of fake news and rumours through social media platforms about unverified medication, possible treatments and remedies. Lack of proper communication from the higher authorities to the front-line HCWs and rapidly changing guidelines regarding infection control measures led to uncertainty, apprehension, lack of knowledge and a sense of uncontrollability over the situation. Misinformation/rumour (often labelled as 'misinfodemic') prevalent during the pandemic, if not adequately clarified by the administration, can aggravate the problems of HCWs and can also prove to be life threatening for the citizens (*Pandemic and Mental Health of the Front-Line Healthcare Workers: A Review and Implications in the Indian Context amidst COVID-19*, 2020).

4.4 Role of Technology in Crisis Management

The COVID-19 pandemic has underlined the urgent need to build a better and more resilient national healthcare system. The CoWin portal, mandatory for registration regarding vaccines, has become a stumbling block for many, especially with vaccine supply being affected across India. It has also prompted activists, volunteer groups and even start-ups to pitch in and help register citizens, many of whom might not be digitally literate. There are also concerns that the portal is not exactly friendly for those who are visually challenged given the way it has been designed, thus adding to the set of exclusions (Dhapola, 2021).

However, on the bright side, Prime Minister Narendra Modi launched the National Digital Health Mission on Aug. 15, 2020 wherein every Indian citizen will be eligible to voluntarily sign up for a Health ID, which shall serve as a unified interface for all the healthcare records of an individual. Kiran Mazumdar Shaw, chairperson of Biocon to The

Siasat Daily said "The digital health ID initiative can help India develop a universal healthcare system based on electronic health records and e-Health Centres. Digital technology can provide innovative and effective solutions to help maintain good health in patients of chronic disease after the diagnosis is made or surgery is done. Availability of longitudinal EHRs will make it easier for doctors and healthcare workers to get a good and customized view of each individual's journey. Investing in building a robust digital architecture will support healthcare platforms and networks across the country"(*My Big Idea for Change: Transforming Healthcare through Technology*, 2021).

4.5 Environmental Impact

There hasn't been a direct environmental impact of the pandemic on the HCWs although increased use of PPE (e.g., face mask, hand gloves etc.), their haphazard disposal, and generation of a huge amount of hospital waste has negative impacts on the environment (*Environmental Effects of COVID-19 Pandemic and Potential Strategies of Sustainability*, 2020). The country produced biomedical waste to the tune of 2,03,000 kg per day as the coronavirus infection reached its peak and swamped hospitals, a report has revealed. Biomedical waste includes cultures, stocks of infectious agents, associated biologicals, human blood and blood products, contaminated sharps, amputated body parts and isolation waste. It needs special handling due to its highly toxic contents that can pose a severe threat to human health, the report said (Livemint, 2021) . Large number of dead bodies were found immersed in water bodies (ultimately causing water pollution) as crematoriums were running short of space. HCWs (ambulance drivers) could not resort to any other method of disposal as there was a huge influx of dead bodies during the second wave of the pandemic.

4.6 The Lack of Implementation of Legal Reforms

Healthcare workers in India are protected from assault and discrimination through certain laws and sections. However, it is the lack of proper enforcement of these legal measures that results in HCWs being subjected to egregious violence by miscreants. According to The World Medical Association, all healthcare workers have the right to work in a safe and secure workplace, one which is free of violence. Contrarily , in India, 75 percent

of the doctors experience certain types of abuse, with 68 percent of the incidents involving assault by patients' families. The Protection of Medicare Service Persons and Medicare Service Institutions (Prevention to Violence and Damage to Property) Act 2008 has been enacted by approximately 23 states in India, it has still not been successfully amalgamated into the administrative machinery and has neither yielded in any positive results *Bhattacharya, 2021*).

The President of India, through the power granted to him under Article 123 of the Indian Constitution, implemented an ordinance to amend the *Epidemic Diseases Act, 1897, o*n April 22, 2020. The amendment came as a response to the numerous events of vehemence against healthcare workers during the COVID-19 pandemic, which led to doctors seeking more protection (Rai & Arora, 2020). Fundamental improvements at the core, and not just mere enactment of laws to ensure protection, are required to protect the doctors. In the background of a debilitated healthcare system, the doctors continue to show unwavering strength as they are saving innumerable lives every single day (*Bhattacharya, 2021*).

4.7 Ethical Impact

HCWs have been stretching themselves beyond their stipulated hours of duty. This shows astounding work ethics on their part. This however, has surely taken a toll on their physical and mental health. A major part of the ethical impact that this workforce has to bear, is working without allowing their emotions to come in the way of their duty. Denying admissions to seriously ill COVID-19 patients due to lack of beds, dealing with grief , delivering dead bodies to the families of COVID patients is an emotionally exhausting part of their duty. Any human would get carried away by it. But HCWs have to constantly remind themselves of their work ethics and make sure they do away with constant emotional outbursts. This, however, may not be possible and would thus impact them a great deal (The Hindu, 2021). Many hospitals caught fire amid the pandemic because of overrunning. It was undoubtedly complicated to retrofit poorly designed hospitals for high safety standards, especially when it had to be executed on the go, and every bed was precious in the pandemic. This constantly posed a threat on the lives of HCWs and Patients (The Hindu, 2021). Apart from this several HCWs are underpaid and are not paid fairly in accordance with the several

hours of hard work they had been putting in daily to save innumerable lives. This is highly unprincipled as working in the healthcare sector is a means of livelihood for a significant chunk of the population.

5.0 Health of HCWs

Health, according to the World Health Organization, is "a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity." Burnout is defined as a state of physical, emotional, and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding, it is a multidimensional syndrome comprising emotional exhaustion, depersonalization, and reduced sense of personal accomplishment (*Burnout among Healthcare Workers during COVID-19 Pandemic in India: Results of a Questionnaire-Based Survey*, 2020). HCWs reaching the state of Burnout is a matter of concern and immediate actions should be taken to aid the life-savers of the nation.

5.1 Impact on Mental Health

5.1.1 Dealing with Adversity induced due to Grief and Suffering

During the second wave of Pandemic in India, the number of people admitted to the hospital grew exponentially. "*The only medical specialty that saw more patients was respiratory medicine, with a significant increase of 314.04 per cent, in admissions because of Covid-19*", said Dr Anupam Sibal, Group Medical Director, Apollo Hospitals Group (Mordani, 2021). There was suffering and despair all around the country. Families of patients begged for ICU beds and oxygen cylinders but the HCWs could not do anything. "*We are standing helpless as people are dying in front of us... their relatives are crying and begging us to do something. It's really distressing… it keeps haunting me*," said Sanjay, a resident doctor, at the Government Medical College in Nagpur (James, 2021). This brings out the adverse effect on the mental health of not only patients but also doctors. Doctors have studied for years, taken oath to help those in need. But these tough times left them completely powerless and feeble. "We feel so helpless; we wonder what the point of our education was. Because they are dying of preventable causes - a lot of these deaths could have been prevented if we had the resources (enough resources)" the Dr. Sanjay laments (James, 2021). The

government's incompetence to provide adequate resources on time left HCWs feeling incapable and despondent.

Ever since the second wave of the pandemic started, the healthcare system in India was teetering on the brink, with many hospitals unable to handle the relentless inflow of patients whilst also running short of beds, oxygen cylinders and other essentials (James, 2021). Hospital authorities had to unwillingly deny admission to patients due to shortage of beds. Ambulance drivers received around 50 calls each day during peak days of second wave in Northern India seeking help but there was nothing they could do. HCWs were exhausted and were stretching themselves beyond their limits. They did not even have the luxury to think about their own well-being when they were trying to find light on the other side of the tunnel (Nazmi, 2021). Panic became pervasive in every household. Anger against the government's way of handling a situation like this pandemic grew all around.

It was not only pain that inflicted stress among the HCWs but largely, lack of infrastructure. A woman whose family runs a hospital in Delhi said, "I can't sleep at night thinking that those people who died because of a lack of oxygen could have been saved. Many of them have families, some have small children. How will we ever explain to them what happens when they grow up and ask questions?" (Pandey, 2021). Oxygen being a basic necessity of life was not a matter of concern for the Government as patients struggled to breathe in hospital rooms. It is dumbfounding that in the 21st century when the world has advanced, oxygen cylinders were unavailable to save dying patients. This put our HCWs in a tough spot as they felt incapacitated to perform their ethical duties.

Medical students and professionals resorted to social media to plead for help from those in power. Out of many such videos that surfaced online, one was by Dr Gautam Singh, who runs the Shri Ram Singh hospital. He broke down when the hospital had only two hours of oxygen to sustain the admitted COVID-19 patients (Pandey, 2021). Many other doctors came online to spread awareness among people and sensitised them about the on ground reality.

Lack of oxygen cylinders also distracted doctors and other HCWs from performing their duties efficiently. "I should be concentrating on treating my patients, and not running

around to get oxygen," Dr Gautam added. Ambulances drivers constituted a large part of the population among HCWs who were suffering during the second wave. They had to take patients to other states in search of ICU beds and oxygen. Transporting invariably large numbers of dead bodies every day to crematoriums (running out of space) added to their pain and grief. "There are no stops, no meal breaks. You have to ensure there is enough oxygen support in the ambulance. We can only eat once the patient has reached the destination."- these were the words of Premchand, who works with a private ambulance service. He further added that his family is stressed and scared if he will ever return home. They were in constant fear of transmitting the deadly virus to their loved ones.

HCWs experience emotional exhaustion, which may lead to medical errors, lack of empathy in treating patients, lower productivity and higher turnover rates (Liang et al., 2020). These professionals might also get frustrated at times and behave differently with patients and their fellow workers. However, HCWs played a heroic role during these times. It was no less than a war field. The virus was devastating for the nation but these warriors stood strong as they worked tirelessly 24/7 in an emotionally exhausting environment.

5.1.2 Dealing with Loneliness due to Quarantine away from Families

The most common concern among the health-care providers was the risk for cross-infection and contamination of novel coronavirus from the health-care settings. Among the health-care workers, it was found that their main concern was not infecting themselves but affecting their family members and close ones (*Emerging Mental Health Issues during the COVID-19 Pandemic: An Indian Perspective*, 2020). Many of them thus decided to stay in the hospital itself, hotels nearby and some even took shelter in their cars to protect their family members (Patel, 2021). Being with their families during strenuous situations was a privilege that most HCWs did not have. This brought in a sense of loneliness and longing. Constant fear of getting infected and dying without bidding adieu to their loved ones prevailed amongst the doctors on duty. "No doctor ever wants to be in this scenario," said Dr A. Fathahudeen, who headed the critical care department at Ernakulam Medical College in southern India (Pandey, 2020b). While there was so much that these healthcare professionals were going through, they decided not to give up and chose their duty above everything else.

5.1.3 Increased Cases of Anxiety, Insomnia & Depression amongst HCWs: Quantitative Analysis

Witnessing co-workers becoming ill, facing social ostracism, making tough allocation decisions about scarce, lifesaving resources such as mechanical ventilators were some noteworthy issues faced by them which led to high levels of stress, anxiety and depression. These symptoms can have long-term psychological implications as suggested by studies (D. Sharma et al., 2020). Approximately one-third of the HCWs studied in a research reported anxiety and depressive symptoms. The risk factors for anxiety symptoms were female gender, younger age and job profile (nurse) and for depressive symptoms were younger age and working at a primary care hospital (*Survey of Prevalence of Anxiety and Depressive Symptoms among 1124 Healthcare Workers during the Coronavirus Disease 2019 Pandemic across India*, 2021). Another study was conducted regarding the prevalence of mental health issues that correlates among HCWs in Karnataka State, India. HCWs who attended a workshop to improve mental health well-being during COVID-19 completed an anonymous online questionnaire. Of the 3083 HCWs who completed the survey (response rate- 51.4 %), anxiety disorder and depression were highest among those with frontline COVID-19 responsibilities:

Ailment	Percentage of Respondents
Anxiety Disorder	26.6 %
Depression	23.8 %

Table- 2

Source- Asian Journal of Psychiatry

Prevalence was significantly higher among those with clinical responsibilities compared to those with supportive responsibilities:

Ailment	People with Clinical Responsibilities	People with Supportive Responsibilities
Anxiety Disorder	23.9 %	15.5 %
Depression	20.00%	14.20%

Table- 3

Source- Asian Journal of Psychiatry

Along with other outcomes, one major aspect of this survey was the high prevalence of insomnia, anxiety and depression in people in quarantine and HCWs. The mental health problems encountered in different group of people, it was seen that the predominant problems encountered were categorized as anxiety, and this was followed by insomnia, depression, boredom and stigma in people in quarantine and among the HCWs in quarantine or on duty in the COVID-19 wards (*State of Mental Health Services in Various Training Centres in India during the Lockdown and COVID-19 Pandemic*, 2020).

Variables	**Frequency (%)**		
	Non-HCWs in quarantine	**HCWs in quarantine**	**HCWs on COVID-19 duty**
Not applicable	22 (20.2)	24 (22.0)	36 (33.0)
Anxiety	84 (77.1)	71 (65.1)	59 (54.1)
Depression	59 (54.1)	40 (36.7)	41 (37.6)
Anger	41 (37.6)	32 (29.4)	32 (29.4)
Irritability	63 (57.8)	46 (42.2)	42 (38.5)
Insomnia	71 (65.1)	55 (50.5)	43 (39.4)
Fatigue	23 (21.1)	32 (29.4)	28 (25.7)
Guilt	15 (13.8)	14 (12.8)	19 (17.4)
Perception of stigma and discrimination	51 (46.8)	34 (31.2)	37 (33.9)
Boredom	63 (57.8)	42 (38.5)	23 (21.1)
Fear of death	48 (44.0)	32 (29.4)	39 (35.8)

Substance withdrawal and craving	31 (28.4)	9 (8.3)	11 (10.1)
Worries related to family members	63 (57.8)	49 (45.0)	47 (43.1)
Dissatisfaction with the services	33 (30.3)	27 (24.8)	23 (21.1)
Other (please specify)	4 (3.7)	7 (6.4)	8 (7.3)

Table 4- Mental Health Problems Encountered in People in Quarantine and among Health-Care Workers

Source- Indian Journal of Psychiatry

5.2 Impact on Physical Health

Mental health and Physical health are interrelated. Significant physical burnout prevailed among the HCWs specially nurses and doctors (Chew *et al*.) investigated the relationship between psychological outcomes and physical symptoms among 906 health-care workers in five major COVID-19 hospitals of India and Singapore. The age range was 25–35 years and about 50.2% were single (Banerjee et al., 2020). The subjects reported common physical symptoms such as headache (31.9%), throat pain (33.6%), anxiety (26.7%), lethargy (26.6%) and insomnia (21.0%). A small proportion (5.3%) had moderate-to-severe depression, 8.7% had moderate-to-extremely severe anxiety, 2.2% had moderate-to-extremely severe stress, while 3.8% had moderate-to-severe levels of psychological distress. Older subjects had more correlation between physical symptoms in the preceding month and depressive symptoms as well as post-traumatic stress. In the first Indian survey of HCWs during the COVID-19 pandemic, a high level of pandemic-related burnout among HCWs was found. The female respondents had higher chances of getting personal and work-related burnout, and this may be related to the dual role the females play in running the house, apart

from working in the healthcare sector (Khasne et al., 2020).

Wearing PPE kits for several hours was surely not an easy task for the frontline workers- especially during hot and humid days. HCWs, time and again, shared before and after duty photographs where they were drenched in sweat. The plight of female nursing staff was unimaginable during their menstrual cycles (Nezami, 2020). With the shortage of PPE kits during the second wave, changing their protective gears was a huge hurdle. While in PPE Kits, doctors couldn't eat or use the washroom. They had to wait for their duty hours to end to have their meals. This caused fatigue, weakness, dehydration and eventually frustration. But, these heroes still never gave up.

6.0 Recommendations

1. Hostile acts by the society brings down the spirits of our HCWs and taking actions after the incident of violence has taken place are unlikely to uplift the flagging morale of the medical workforce or represent sustainable solutions. The change must come from 'within'—within the people, in their perception towards doctors. Hence, the central authorities must work in tandem with the public; to abate their fears, to make them realise the criminal nature of vandalism and violence in a hospital, and the disgraceful nature of ostracism. Also, for doctors to work fearlessly with devotion and dedication during COVID, there is a desperate need to rekindle the trust that patients and the society place in their doctors. People should realise that hospitals are centres of healing and recuperation, and that doctors are integral to the health and well-being of the society (Sakthivel, 2020b).
2. The citizens must act in a responsible manner before relying upon messages containing fake news and misinformation circulating on social media. They must use their discretion to question and verify any information that is spread with malafide intent. Acting in haste can cause a menace when it comes to matters pertaining to health especially during a Pandemic.
3. Governments have a responsibility for the health of their citizens which can be fulfilled only by the provision of adequate health and social measures (WHO). In a democratic country like India, it is important on the part of the government to keep its

people informed especially during a life threatening crisis. It is the Health Ministry's obligation to enlighten HCWs who are on the forefront as the taskforce to combat the SARS-2 virus, about the actions to be taken, correct procedure to go about treatment and medication etc.

4. The best long-term solution for relieving the load on both doctors and patients is to substantially restructure and strengthen the public health system by raising the country's healthcare budget and by investing in the education sector which will help in increasing the human capital in the healthcare sector. Increased spending would result in a higher doctor-to-patient ratio, improved facilities and an efficient healthcare system.
5. Currently in the absence of definitive legislation, a few measures can be taken by medical workers and hospitals themselves to reduce the attacks on them. For starters, all health professionals should be acquainted with the STAMP abbreviation, which can be used to identify early signs of a possible assault. STAMP—which stands for Staring and eye contact, Tone and volume of voice, Anxiety, Mumbling and Pacing—can allow them to diffuse the issue before it becomes too serious or violent. The majority of public and private hospitals in India lack a consistent procedure for dealing with aggression. Code Purple is a possible procedure that can be implemented which basically alerts healthcare workers when there is a risk of violence. This could include things like broadcasting the precise location of the assault over the hospital's address system so that the security agents can arrive and help the victim right away. The WHO Regulations, which require hospitals to maintain appropriate systems for reporting incidences of violence involving medical professionals, should also be implemented in India (*Bhattacharya, 2021).*
6. Laws like The Epidemic Diseases Act 2020 were made to protect HCWs from violence especially during an epidemic. However, merely establishing laws and not enforcing them will defeat the very purpose of these legislations. Bureaucrats must ensure that all those who infringe these laws are befittingly punished so that HCWs are safeguarded against offenders.
7. Sensitisation Campaigns can be initiated by NGOs or the government in all the

health-care organizations for different categories of staff to increase their level of awareness regarding reporting mechanisms and to know their rights and laws regarding the safeguard of health-care providers (Garg et al., 2019).

8. HCWs are in an urgent need to have access to mental health services. Mental health resources should be made available to these people who have been overlooked since during the pandemic. It might include webinars, telephonic call/online consultation with counsellors, workshops pertaining to mental health issues and frequent visits to mental care workers.
9. There can be provisions to schedule rosters for healthcare workers that can ensure a balanced workload and rest periods for health workers (Garg et al., 2019). This will improve the efficiency of the HCWs and maintain a sound physical and mental wellbeing.

7.0 Conclusion

Healthcare workers are the pillars of the country and have continued to show unrivalled determination and resilience in their fight against COVID-19. Through this paper, we have successfully established that HCWs are indeed the victims of social ostracism and stigmatisation. They've been immensely impacted by the apathy of the concerned authorities in solving life threatening issues. Even after battling several mental health issues like anxiety, depression and insomnia, they continue to perform their duties with utmost dedication and astonishing work ethics. The healthcare system is overburdened due to the scarcity of resources and lack of human capital as a consequence of which, HCWs are overworked and underpaid. Politicisation of the crisis and lack of implementation of legal reforms have only added to the menace. Hence, there is an urgent need for systemic change in the healthcare scenario in the country through policies, schemes and funding. Through this study, we intend to advocate that HCWs must be safeguarded and supported at all costs as they are the guardians who have protected us since the history of evolution.

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