



## Healthcare workers novel coronavirus (nCOVID 19) life-threatening situation during the pandemic

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### ABSTRACT

Healthcare workers (HCWs) are the professional workers directly acquired infection during this coronavirus outbreak. Coronavirus potentially severe acute respiratory infection caused by nCOVID-19 has been declared by pandemic on 11<sup>th</sup> March 2020 by World health organisation (WHO). The previous study has reported high susceptibility of respiratory infection in the HCWs. The HCWs are at increased risk for severe respiratory syndrome coronavirus infection. The spread of coronavirus became global public health event, threatening physical and Mental Health of HCWs. This study reviews the possible risk factors for being infected HCWs and avoid transmission of infection at the workplace. Spreading the coronavirus day by day is the life-threatening condition for Health care workers during a pandemic. The community should understand the HCW's increased responsibility during this public health emergency and must provide the necessary social support as well. There should be enough protective and preventive measures for avoiding transmission in HCWs. Apart from heavy duties HCWs while using PPEs they also have physical and mental exhaustion along with the fear produced out of risk-specific exposures.

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### INTRODUCTION

Health care workers (HCWs) are professional workers designated as the person serving in the health care system who have exposed directly and indirectly through the patients as well as infected material. It has been observed that they are at high risk for getting infected with this novel coronavirus, and many researchers have reported that the prevalence of nCOVID-19 infection is too high in HCWs as compared to the general population (Covid, 2020). (COVID, TC, 2020). The novel coronavirus infection is associated with the severe acute respiratory syndrome (SARS) and despite all protective measures it has spread across the world within very short amount of time (Nisargandha and DadaraoParwe,

2020). There is a tremendous burden on the healthcare system and HCWs due to its high transmission rate, unpredictable outcome and life-threatening situations, particularly on those who are working in intensive care areas ([Vital Surveillances, 2020](#)).

The novel coronavirus disease (nCOVID -19) originated in the city of Wuhan, China, where the first case identified by Dr Li Wen – Liang, an ophthalmologist in Wuhan city, sadly who himself died of the coronavirus after contracted infections from the patients ([Petersen et al., 2020](#)). It was the first case of HCW succumbed to covid-19 ([Wu and Mcgoogan, 2020](#)).

From the previous experiences of 2002 of severe acute respiratory syndrome (SARS) outbreak, this time more emphasis is placed on the health workers ([Varia et al., 2003](#)). It has been observed that the Covid-19 has affected the HCWs more as compared to SARS because of the high virulence, high rate of asymptomatic carriers, high transmission rate and thus more incidents of direct and unprotected communication with the patients. Hence it is observed that during this pandemic the healthcare workers are comparatively at higher risk, approximately 1725 of front-line healthcare workers were infected by SARS ([Hsin and Macer, 2004](#)) but in recent prospective study it has been noted that in spite of using all protective measure the prevalence of Covid-19 was 2747 cases per 100000 cases in US and UK only whereas this can be even worst in Asian countries like India where PPEs are noted to be inadequate ([Nguyen et al., 2020](#)).

The previous study suggests that the number of laboratories confirmed the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Cases increased sharply at the beginning of mid-march 2014 in KSA and UAE and was related to the healthcare-associated outbreak ([Reusken et al., 2013](#)). The cases of infection due to MERS- CoV, including 58 deaths, totals of 7 pediatric and other restricted to adults. The majority of these cases occur in patients with the comorbid condition. The virus subsequently reported as a case of pneumonia ([Al-Tawfiq et al., 2013](#)).

The nCOVID -19 pandemic infection affected the entire staff of Medical and paramedical; there was evidence in Wuhan city initial fifteen healthcare workers involved ([Ran et al., 2020](#)). The risk of viral transmission to the healthcare workers increased day by day as the number of patients increased in India. The aim of this study possible risk factors for being infected workplace and avoid the transmission of infection, and pane strategies for protecting the Healthcare workers so their family and friends

not infected. These HCWs would-be front-line soldiers if there infected then the whole healthcare system will collapse. We have to take more precaution and fewer burdens on them.

## MATERIALS AND METHODS

The retrospective observational study was performed on the healthcare workers (HCWs) of Maharashtra India from 24 March 2020 to 1<sup>st</sup> September 2020. All the service Medical and Paramedical working in the Maharashtra state in India posted in novel coronavirus ward and Hospital. The reports published by Indian Government during COVID-19. The data were observed from Google scholar, PubMed, Lancet, Elsevier peer and non – peer-review journals. Other information literature search and cross-references from different papers. A total of 2452 article found in search out of which 32 were selected by initial screening and 20 items were included in the final review.

## OBSERVATIONS AND RESULT

Recently observe the publish data analysis of reported from novel coronavirus among HCWs affected. Death of doctors due to COVID -19 various state including Andhra Pradesh and Delhi (12 each), Bihar (19), Karnataka (15), Maharashtra and Gujrat (23 each), Tamil Nadu (43) and others 49 ([Sahajanperappadan, 2020](#)). IMA represent 3.5 lakh doctors spread across the country, said that doctors themselves and their family members are not getting bed admission in the same hospitals where they themselves are serving.

### Possible risk factors for exposure

Coronavirus can spread via seizing, cough or respiratory droplets, contact with body fluid and contamination through the contaminated surfaces ([Russell et al., 2020](#)). Previous studies reported that the common problems face by the healthcare workers during handling of the patients and related equipment's, continuous wearing of gloves, eczema is quite common ([Skoet et al., 2004](#); [Lan et al., 2020](#)). During the pandemic condition, continuous use of N95 mask, Goggles, face shield, double layer gloves and PPE kit healthcare workers were suffering from skin damages and skin infection ([Hamnerius et al., 2018](#)).

### Direct infection through patients

Novel coronavirus possesses powerful pathogenicity and transmissibility; transmission occurs human to human, especially within the family cluster ([Parwe et al., 2020](#)). The Lancet recommends to doctors not to ignore nCOVID -19 transmissions via

ocular surface as infected droplets a body fluid can easily contaminate. Subsequently, asymptomatic patients found in Indian and transmitted coronavirus can spread the virus with high efficiency (Han and Yang, 2020).

### Medical and Paramedical Staff exposure

Healthcare workers face a high risk of exposure to infectious diseases, including novel coronavirus. Doctors and Nursing staff are directly coming in contact with the patients hence maximum chances to get infected. It has been reported by the Indian Medical Association (IMA) more than 200 doctors sacrificed their lives in India, which continued till today. Previous study state 40.54% of Nurses and 24.32 Physician were infected with coronavirus. In another study it has been reported that one-third of cases where a physician and two third of Nursing staff were infected (Liu et al., 2020).

### Healthcare workers and their mental Health

The previous study evaluated the mental study and sleep quality of paediatric healthcare workers 38% of the stuffing from sleep disturbances (Wang et al., 2020). There are certain psychological issues which have been noticed in few countries like India during the pandemic situation like care of the family members, social stigma of the infection, insults and bullying by the anti-social elements to the HCWs. This is one unaddressed area of Medical staff those who are working in COVID ward or ICUs for more than eight hours. A large number of healthcare workers remained asymptomatic even after COVID -19 infection which has caused ignorance of the infection resulting into transmission to the family members causing severe illness to them. It is another observation of recent studies of coronavirus (Chou et al., 2020).

### Preventive measure

Policies and guideline should also mention the World Health organisation (WHO) to implementation of the respiratory protection program for respirator use. There are many non-pharmaceutical measures which are recommended to reduce the spread of infection, which includes hygiene and disinfection, isolation quarantine, use of personal and protective equipment (PPE) and social distancing (Chughtai et al., 2020). There is a need of urgent research to incorporate different methods of reducing risk in healthcare workers.

### CONCLUSION

Summing up, in the severe issues for the prevention and protection policies of healthcare workers

during this pandemic condition, the standard precautionary protocol must be used. There should be uniform policies around the use of personal protective equipment to avoid confusion among medical and paramedical staff for their health and safety. The burden of Covid-19 infection can be reduced drastically among health workers by providing them with the standard protective equipments. There are challenges to decrease the infection risk in crowded developing countries like India, where HCWs are overworked, and health care facilities are already overburdened, which itself is associated with an increased risk.

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### Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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