



The spread of novel coronavirus has created an alarming situation worldwide



In the past 18 years, the world has witnessed three deadly outbreaks of emerging coronaviruses, which are known to cause respiratory and intestinal complications in humans. Firstly, the severe acute respiratory syndrome outbreak caused by SARS-CoV during 2002 in Guangdong, China which affected 8098 people in 37 countries [1]. Later on, another outbreak of Middle East respiratory syndrome caused by MERS-CoV occurred in the Middle East during 2012. While, recently, the deadliest member of yet known coronaviruses emerged in Wuhan, China [2], which spread rapidly across China and transferred to several other countries. During the first 40 days of its outbreak, novel coronavirus (SARS-CoV-2) has caused the death of more than 1800 individuals, and infected over 75,000 individuals. Moreover, more than 7000 individuals have been found suspected in Wuhan, who are currently under strict clinical observation. SARS-CoV has been reported transmitted into humans from wild animals selling market, similar to that SARS-CoV which originated from market civets. Until now, the zoonotic source of its transmission is not confirmed, however, some reports suggested bat [3] and snake [4] to be the source of origin and transmission. Nevertheless, it is believed that all human infecting coronaviruses originated from animals before their transmission into humans.

The COVID-19 epidemic became a serious challenge for the healthcare authorities, scientific community, and the infections controlling agencies across China, in terms of spread, treatment, and prevention. Pneumonia appears to be the most frequent manifestation of infection, characterized primarily by fever, cough, dyspnea, and bilateral infiltrates on chest imaging [5]. The overall case fatality rate is uncertain but appears to be around 3 percent. Most of the fatal cases have occurred in patients with underlying medical comorbidities. Nonetheless, the COVID-19 outbreak is harming not only the physical health but also mental health, however, the healthcare authorities are mainly focusing on physical health. Thus, it is necessary to identify and properly address mental health abnormalities in individuals who are at higher risk. In the current scenario of the outbreak in Wuhan, healthcare workers are at the highest risk of contracting an infection. According to Danmeng and Jia (2020), the total number of health workers infected are twice (more than 3000) as reported by the Chinese Government. This indicates that a large number of medical staffs is suspected to have contracted the infection and their confirmation may create an alarming situation for healthcare authorities. According to the report of the Organization for Economic Cooperation and Development, there are 1.8 practicing doctors for 1000 citi-

zens in China which is too low. Therefore, the increasing numbers of infected and suspected doctors and nurses are creating an additional significant shortage of working medical staff, thus, increasing an additional working and mental pressure on the normal health workers [6]. In such circumstances, the working efficiency of medical staff may critically decrease, that may increase the risk of viral spread and further increase the fatality rate among the infected individuals.

Overall, the medical staff at the front line, and infected doctors and nurses are going through critical stages of mental and psychological health. Psychological stress and anxiety might be one of the risk factors for higher COVID-19 mediated morbidity among medical staff and clinical workers. In addition, the possible reasons of infectiousness among the medical staff are close contacts with infected patients, shortage of protection gowns and clothing for staff, dealing infected individuals with limited clinical supplies, and providing quick assistance to mitigate the burden [6]. Till now, the death of six health workers/1700 infected due to COVID-19 has been reported compared to the death of five health workers/343 infected due to SARS in 2002 [7]. There is an urgent need to develop a strategy considering all these factors especially working load for long hours, protective clothes, rest, exercise, and psychological counseling to avoid infection. In the health care setting, the World Health Organization (WHO) and United States Centers for Disease Control and Prevention (CDC) recommendations for infection control for suspected or confirmed infections differ slightly. The WHO recommends standard, contact, and droplet precautions, with eye or face protection. The addition of airborne precautions is warranted during aerosol-generating procedures, such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy.

Thousands of international students and workers have been residing in Wuhan during the first days of outbreak and a large number of them have already left the city. Therefore, apparently, we can expect a larger outbreak in some other countries if these peoples who have traveled from China, and to whom they contacted are not identified and placed in quarantine. This task is a very challenging in current scenario of the outbreak therefore, susceptible countries must design a strategy for future in case of any new outbreak. China has undoubtedly responded effectively, as the whole country was exposed to either full or partial lockdown. However, more actions are needed such as the returning

of the students and workers to universities and other organizations, from different countries and cities should be screened on larger scale. Strict screening at the airports and entry sites is necessary to avoid the spread. Furthermore, Individuals with suspected infection in the community should be advised to wear a medical mask to contain their respiratory secretions and seek medical attention.

Considering the human to human transfer of the virus, its risks could be mitigated by taking safety measures and timely hospitalization. One of the most important measure in current situation should be the quarantine, as the virus may cause fatality without causing the appearance of signs and symptoms. Despite considering the importance of these measures, some of the underdeveloped nationals are moving out from China without following the required preventive measures. These underdeveloped or developing countries do not provide proper services to place their nationals in quarantine after entering their homelands [2]. Moreover, these countries don't have enough facilities to provide treatment and isolation to the infected individuals. These practices have been observed recently as the students and working individuals moved to their respective countries from several countries. For instance, recently a suspected case of coronavirus erupted in Karachi the biggest city of Pakistan. The medical staff resisted to provide treatment services to the suspected individual, fearing the possible transmission of the infection. Leaving the suspected or confirmed individuals untreated by medical staff may increase the risk of unstoppable viral spread in their respective country. Moreover, the National Institute of Health, Pakistan has started training nurses and doctors to cope with the expected spread of infection. However, these measures may not be helping to prevent or control the spread without providing specific centers for the isolation and observations of all those individuals who have recently moved from China.

Without taking effective measures, the situation will go out of control and lead to the massive worldwide pandemic. The responsible authorities in these countries should not only educate the public but implement strictly that everyone moved from China must be placed in quarantine. Beside this, hospitals in developing or underdeveloped countries should be equipped on urgent basis for providing effective services to the individuals infected by novel coronavirus. The doctors and medical services providers should come forward with effective strategies to protect the individuals and spread of virus further rather than resisting the treatment. In addition to these measures, media should be restricted from unnecessarily approaches to foreign people inside the epicenter, portraying the negative image of healthcare authorities through forged news and planted interviews. Overall the following measures must be taken to ensure the safety of frontline healthcare workers:

- Duty of care including to inform, protect, and support healthcare workers.
- Easy availability and accessibility of standard personal protection equipment (PPE).
- Train, remind, and insist the healthcare workers on the use of PPE.
- The fear of being infected can be overcome by proper training.
- Providing psychosocial support both by the mental health workers and social workers using different platforms.
- Family, friends, and co-workers support.
- Supportive and updated supervision and networking with co-workers.
- Installing physical barriers, standard infection-control measures related to PPE, environmental engineering, and social distancing from patients and co-workers could minimize the risk of infection.

- Provision of risk allowance to motivate healthcare workers.

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Competing interests

None declared.

Ethical approval

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