



Current burden on healthcare systems in low- and middle-income countries: recommendations for emergency care of COVID-19

Husnain Hamid¹ · Zubia Abid¹ · Attiya Amir¹ · Touseef Ur Rehman¹ · Waqas Akram¹ · Tooba Mehboob¹

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Background

The coronavirus disease 2019 (COVID-19) pandemic has spread dramatically, thereby increasing the risk of becoming infected. The mortality and morbidity rates of COVID-19 continue to climb each day, putting healthcare systems and healthcare professionals/providers (HCPs) at risk. Currently, the healthcare systems of low- and middle-income countries (LMICs) are unable to cope with these extremely difficult circumstances [1].

Maintaining the safety of HCPs is a key component of every well-operated healthcare system. The COVID-19 pandemic has created a huge workload burden for HCPs, which may lead to exhaustion and mental distress because of factors such as sleep disturbance, increased and lengthy working hours, debilitating fatigue, and the fear of becoming infected and exposing their family members to this potentially lethal infection [2].

HCPs, currently the most treasured national resource in the fight against COVID-19, should be well-protected against this infection [3]. This commentary highlights the COVID-19 burden and current status of healthcare systems and HCPs in LMICs and proposes possible preventive measures to care for HCPs.

COVID-19-related morbidity/mortality in healthcare providers

HCPs are at greater risk of becoming infected than other individuals because of their direct professional interactions with patients with COVID-19. Significant COVID-19-related morbidity and mortality rates have been observed in

HCPs. According to 8 May 2020 data, a scoping review stated that, of 3,912,156 patients with COVID-19, 152,888 (3.9%) were HCPs [4]. In addition, 1413 (0.5%) of 270,426 COVID-19-related deaths were in HCPs. These data suggest that, for every 100 HCPs infected, one died [4].

Current healthcare facilities in low- and middle-income countries

It is generally stated that individuals in LMICs are deprived of sufficient levels of healthcare and cannot access medical facilities in a timely manner [5]. Naz et al. [6] found that, on average, physicians at district hospitals in many LMICs spend 54 s per patient, and rural dispensaries take 37 s to dispense medicine to a patient. Competent physicians are encouraged to emphasize their duties in private clinics, whereas government-employed physicians have dual responsibilities in public hospitals and private clinics [6]. According to the World Health Organization (WHO), there is a global lack of \approx 4.3 million HCPs, primarily in South Asia and Africa. These regions also have the highest burden of illness, exacerbated by a smaller healthcare workforce [7]. Generally, the need to reinforce healthcare services, to improve the ability to meet the range of healthcare requirements of communities, has become a top priority, especially, but not entirely, in LMICs. Nevertheless, the systemic investigations into the interaction between healthcare received and healthcare required that would inform policy makers is lacking [8].

Burden on healthcare systems during COVID-19

Developed countries have considerably more expertise in the management and analysis of patients with COVID-19 than do LMICs. LMICs will probably be overburdened by

✉ Husnain Hamid
Husnainhamid9@gmail.com

¹ Faculty of Pharmacy, University of Central Punjab, Lahore 54000, Pakistan

COVID-19 because of the lack of public awareness about preventive measures, expertise, infrastructure, and human resources as well as the poor financial status of the country. Hence, LMICs must give priority to science-based precautionary measures in the pre-disaster phase and science-based counseling and treatment during and after the pandemic [1].

Healthcare resources in LMICs will be overloaded by patients with COVID-19. They have already been overwhelmed by patients with HIV/AIDS, pneumonia, malaria, and tuberculosis and patients who require surgery [9]. As the COVID-19 pandemic spreads in LMICs, difficult decisions must be made regarding the allocation of available healthcare supplies—ranging from hospital beds and HCPs to personal protective equipment (PPE), diagnostic capacity, and critical care services—between COVID-19-specific requirements and other health facilities [10]. Considering that most HCPs are not able to work in remote areas, programs that include early COVID-19 testing of asymptomatic and/or vanguard HCPs is essential. Elevated healthcare costs, such as the price of some antiviral drugs, the scarcity of PPE such as N95 face masks, and the lack of ventilators and intensive care unit beds have revealed deficiencies in the provision of patient care [11].

Public and private healthcare structures differ with regard to patient load. Secondary and primary healthcare facilities, particularly those in rural and peri-urban locations, may have a relatively poor reputation, because of the lack of HCPs, general equipment, and medicines. Such unprofessional and non- or malfunctioning primary and secondary healthcare offices can have a ripple effect, as they can lead many patients to attend tertiary healthcare institutes, most of which are in major cities. These factors increase the burden on and limit the facilities of tertiary care centers and add to the frustrations and costs of patients and their families [12].

Recommendations

- Prior to the COVID-19 pandemic, healthcare structures in LMICs faced significant challenges in the provision of affordable, universal, and high-quality care. These health organizations had restricted financial assets and were lacking HCPs and accessible medications [13]. The COVID-19 crisis resulted in considerable changes in healthcare structures globally, with LMICs experiencing important consequences [14]. In view of such circumstances, the governments of LMICs should increase spending on healthcare and ensure an adequate supply of PPE to HCPs to guarantee their protection and health [15].
- The availability of masks, ventilators, testing services, drugs used in the treatment of COVID-19, and hospital beds should also be increased.

- The salaries of all HCPs might also be increased to motivate HCPs as they are working tirelessly. This will encourage positive HCP attitudes toward patient care.
- Ensuring that hospitals have facilities to treat patients and increased numbers of HCPs will ultimately decrease the burden on individual HCPs and increase the level of patient care.
- More HCPs should be recruited and their duties allocated in ways that allow them time to rest, especially if they start showing symptoms associated with COVID-19.
- Worldwide health programs, such as foreign aid and non-government organizations, should emphasize the provision of physical goods (equipment, medicine, and clinics) and physicians to work in “underserved” areas.
- Governments should also educate the public about COVID-19, its preventive measures and symptoms, and general supportive treatments that can be provided at home. This will prevent hospitals from being overburdened with mild cases of the disease and would reduce the workload and burnout faced by HCPs in the hospital setting.

Take-home messages

- Emphasize the need for HCPs to remain safe during healthcare crises such as the COVID-19 pandemic.
- Promote collaboration between international organizations, governments of LMICs, and HCPs to ensure needs are met and preventive and safety measures are established.
- Encourage the community to take preventive measures to minimize the transmission of COVID-19 and, eventually, reduce the workload of HCPs.

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Declarations

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