Review Article

Challenges posed by COVID-19 and neurosurgical nursing strategies in developing countries

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ABSTRACT

Background: Neurosurgical patients with stroke, trauma, and brain tumors can be among the victims of the COVID-19 pandemic in developing countries, which need to be managed efficiently.

Methods: This is an overview of neurosurgical nurses' challenges and strategies in the current COVID-19 pandemic environment in developing countries.

Results: Here, we reviewed the unique challenges of providing neurosurgical nursing services during the COVID-19 pandemic in developing countries. We address specific issues such as transferring neurosurgical patients, allocating medical supplies, prioritizing neurosurgical services, COVID-19 testing protocols, and patient triage (emergent vs. urgent vs. delayed surgery). Teleconsultation, telenursing services for outpatient treatment, follow-up and virtual teaching strategies associated with neurosurgical nursing are discussed.

Conclusion: Neurosurgical nursing during the COVID-19 pandemic in developing countries requires transparent planning, implementation, and careful consideration of various telemedicine strategies.

Keywords: COVID-19, Health care worker, Neurosurgery, Nursing care, Strategies, Telehealth

INTRODUCTION

COVID-19 has now spread to almost all countries, affecting over 57 million people with a fatality rate of 3–4% (as of November 22, 2020).[3,7,9] India has been among the top two globally, with more than 133,227 deaths.[9]

Neurosurgical nursing services have been adversely affected in many countries. The importance of neurosurgical nursing services among patients with stroke, trauma, and brain tumors need no special emphasis in developing countries.[1,2] A significant challenge has been the scarcity of personal protective equipment (PPE).[8] Here, we reviewed the challenges posed by the COVID-19 pandemic to India's neurosurgical nursing services and some strategies to overcome.

EARLY TO PEAK PHASES OF PANDEMIC

COVID-19 pandemic's impact on neurosurgical nursing care

During the lockdown of the COVID-19 pandemic, there were challenges in transportation neurosurgery patients to appropriate hospitals. By suspending all elective neurosurgical services,

various tertiary care facilities could focus their resources on the needs/management of emergent/urgent neurosurgical cases.

Medical supplies were the first to be negatively impacted during the pandemic (especially masks, protective gear, and ventilators). Notably, in developing countries, medical supplies are not stocked for more than a few weeks at a time. Further, PPE must be reallocated to support the frontline health workers (facilitated by suspending all elective surgery).

During the acute phase of the pandemic, health care workers are the most vulnerable. Physical distancing among the health care workers, wearing of masks, and hand hygiene should be strictly enforced. Risk stratification is essential to identify the most vulnerable neurosurgical staff, such as the middle/late adulthood and those with other illnesses. Neurosurgical nurses in COVID units require additional support.[5]

Adequate counseling, virtual gatherings, and ventilation of feelings can improve the mental hygiene of the HCWs. HCW managing patients with COVID-19 or those coming in contact with another positive colleague must be quarantined for not less than 14 days; this should be followed by repeat testing before returning to work.

Prioritizing neurosurgical nursing services

The triaging of neurosurgical patients is very important during pandemics to decongest and optimize neurosurgical and nursing services. Small hospitals in low- and middle-income countries tend to turn away neurosurgical cases. Further, overcrowding can contribute to a vicious cycle of the spread of the pandemic in hospitals and lead to greater consumption of masks and PPEs.

Triaging emergent/urgent versus elective neurosurgery

There must be a neurosurgical nursing protocol for categorizing patients as emergent, urgent, elective, or nonsurgical, also to some extent, facilitated with teleconsultation. The "elective nonpriority" cases should wait until the peak of the pandemic is over. We can thus decongest emergency departments and facilitate better neurosurgical nursing/other services.

COVID testing and protocols

All patients admitted for neurosurgical care should undergo COVID testing to isolate those with positive tests, contact tracing, and quarantine, thus, reducing the potential transmission of COVID-19 to hospital personnel.[7]

On identifying any positive case, either among patients or staff, all the HCWs should be made to wear full PPEs until the patient is promptly shifted to the isolation unit. All patient movements should ensure no cross-contamination; those who are confirmed COVID-negative with dual "RTPCR"

testing should be kept in separate areas away from COVID positive cases.

Caregivers' movements within the hospital should be restricted. Only one attendant should be allowed with each patient, and visitors must be strictly restricted. Everyone must undergo thermal screening, wear masks, and do hand sanitization before entering the hospital building.

Emergency department

Health professions manning the emergency should be fully equipped with PPE, including N95 masks,[10] and face shields. "Immediate emergencies" can either be tackled as suspect cases of COVID with full PPE precautions or undergo rapid testing before surgical intervention. Nurses and HCWs working in the emergency department must take utmost precautions due to their patients and caregivers from different regions with unknown COVID status.[10]

Elective priority cases

Elective priority cases with double negative RTPCR testing can undergo surgery with health care workers wearing FFP1 masks for non aerosol-generating procedures and N95 masks for aerosol-generating procedures.[10]

Teleconsultation and follow-up care

Teleconsultation can play a key role in diminishing the need for physical proximity for outpatient evaluation, screening, as well as neuropsychological rehabilitation and follow-up care.[4,6,11] Only patients within "delayed emergency," "elective priority," or those with complications requiring in-hospital care can be asked to come to the hospital for admission. Telenursing services are provided to patients who are under home care.

Appropriate and effective communication and cooperation between the team members and collaboration with other departments or health-care settings are the key to overcome this pandemic while ensuring the best possible care to the patients admitted in neurosurgery. The neurosurgical teaching for residents, nurses, and all other HCWs can be continued through virtual classrooms using any free online tools. Adopting virtual training would maintain the teaching-learning activities of the HCWs and the students in the department, which is essential for continuous care delivery, evidence-based practices, and boosting the morale of the HCWs.[5]

POSTPEAK PHASE OF PANDEMIC

Following the pandemic's peak, neurosurgical services can gradually be opened up, depending on the availability of

resources and workforce. Phased appointments of a limited number of patients can be started along with all physical distancing precautions. Glass barriers may be utilized to minimize the contact between patients and health-care staff.

POSTPANDEMIC

Once the pandemic is over, a long-term strategy needs to be charted to allocate adequate finances for health care, boosting the manufacture of emergency medical supplies, masks, and PPEs at the local level, achieving self-sufficiency rather than depending on imports.

CONCLUSION

Methodological planning and implementation of various strategies are warranted so that neurosurgical nurses can deliver the care/screening/treatment needed during the COVID-19 pandemic.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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