

Consensus Statement on Neurorehabilitation during COVID-19 Times: Expert Group on Behalf of the Indian Federation of Neurorehabilitation (IFNR)

Rajinder K. Dhamija, Abhishek Srivastava¹, Sonal Chauhan², Urvashi Shah³, Taral Nagda⁴, Deepak Palande⁵, Sonal Chitnis⁶, P. S. Dantala⁷, John M. Solomon⁸, S. Murali Krishnan⁹, Hitav Someshwar¹⁰, Nirmal Surya¹¹

Department of Neurology, Lady Hardinge Medical College and SSK Hospital, New Delhi, ¹Centre for Physical Medicine and Rehabilitation, Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute, Mumbai, Maharashtra, ²Department of Physical Medicine and Rehabilitation, Lady Hardinge Medical College and SSK Hospital, New Delhi, ³Center for Neuropsychology Studies, Department of Neurology, KEM Hospital, Mumbai, Maharashtra, ⁴Department of Pediatric Orthopaedics, NH SRCC Children's Hospital, Mumbai, Maharashtra, ⁵Department of Neurosurgery, Sir J J Hospital and Grant Government Medical College, Mumbai, Maharashtra, ⁶School of Audiology Speech and Language Pathology, Bharati Vidyapeeth (DU) Medical College, Pune, Maharashtra, ⁷Department of Orthotics, Dhyana Health Care, Mumbai, Maharashtra, ⁸Department of Physiotherapy, Manipal College of Health Professions, Manipal Academy of Higher Education, Karnataka, ⁹Faculty of Occupational Therapy, Meenakshi Academy of Higher Education and Research, Chennai, Tamil Nadu, ¹⁰Department of Neurophysiotherapy, KJ Somaiya College of Physiotherapy, Mumbai, Maharashtra, ¹¹Indian Federation of Neurorehabilitation, Surya Neuro Centre, Mumbai, Maharashtra, India

Abstract

The COVID-19 pandemic in India is causing significant morbidity and disruptions of healthcare delivery. The rapidly escalating contagion is straining our public health system, which is already under pressure due to a shortage of infrastructure and inadequate workforce. Neuro rehabilitation services that are still in its infancy in our country have been significantly interrupted in the last six months. An expert group from Indian Federation of Neurorehabilitation (IFNR) have formulated the guidelines and consensus recommendations for Neurologists, Physiatrists, and Therapists managing neurological disabilities during COVID 19. The aim of this consensus paper is to sensitize the clinicians and therapists about maintaining the continuum of care and rehabilitation needs of Covid patients as well as non Covid patients with neurological disorders during the ongoing COVID 19 pandemic

Keywords: COVID-19, Neurorehabilitation, Interventions, Disability

HIGHLIGHTS

Neurorehabilitation services which are still in its infancy in our country have been significantly interrupted in the last 6 months. Maintaining the continuum of care and rehabilitation needs of COVID patients as well as non-COVID patients with neurological disorders during the ongoing COVID-19 pandemic is of utmost importance.

COVID-19 patients should be referred to the appropriate neurorehabilitation services at the right time and should receive comprehensive assessment and interventions by the multidisciplinary professionals.

Neurorehabilitation professionals are at risk of acquiring infection and must adhere to the universal infection control measures as per protocols.

Fear of exposure can result in avoidance, poor communication, and mistrust affecting delivery of rehabilitation care to our patients.

The rehabilitation settings should ensure availability of adequate number of professionals and therapists.

It may be difficult to provide rehabilitation services to large numbers in public hospitals in the era of social distancing.

There is a need to change to newer and alternate mode of delivering the neurorehabilitation services like Teleneurorehabilitation (TNR).

INTRODUCTION

COVID-19 pandemic has swamped the entire world affecting more than 200 countries with more than 289 million confirmed cases and 922,000 deaths worldwide. It is still evolving aggressively with a staggering impact across the globe.^[1] Lockdown and restriction of movements have affected the sub-acute care as well as rehabilitation needs of non-COVID

Address for correspondence: Dr. Nirmal Surya,
Indian Federation of Neurorehabilitation, 310, Lotus House 33/A New Marine
Lines, Mumbai, Maharashtra - 400 020, India.
E-mail: nirmal_surya@yahoo.com

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patients with acute neurological diseases who are unable to visit rehabilitation facilities because of fear of acquiring SARS-CoV-2 infection in the hospitals. The pandemic has also affected the healthcare and neurorehabilitation professionals who are at risk of acquiring infection and have to adhere to the universal infection control measures. Since most hospitals are rendering services to both COVID and non-COVID cases in the same facility, professionals have to follow strict protocols, including wearing personal protective equipments (PPEs) to prevent exposure and infections among themselves and the patients. Neurorehabilitation services require close contact of therapist with their patients. This invariably leads to fear of exposure resulting in avoidance, poor communication, and mistrust affecting delivery of care. It is difficult to provide rehabilitation services to large numbers in public hospitals in the era of social distancing. Therefore, there is need to change to newer and alternate mode of delivering the neurorehabilitation services like teleneurorehabilitation (TNR).^[2] The “new normal” has necessitated that practitioners and therapists quickly adapt to the changing needs of delivering rehabilitation care to patients.

Indian Federation of Neurorehabilitation (IFNR), a professional society, representing clinicians and professionals from different domains of rehabilitation practices has taken cognizance of the impact of COVID-19 pandemic on the rehabilitation management of patients as well as issues faced by the treating rehabilitation professionals in delivering these services during these difficult times.

CONSENSUS STATEMENT

Core professionals involved in neurorehabilitation such as Neurologists, Psychiatrists, Neurosurgeons, Orthopedic Surgeons, Neuropsychologists, Speech and Language Therapists (SLP), Occupational Therapists (OT), Physiotherapists (PT), Orthotist and Prosthetics constituted an expert committee to deliberate and formulate guidelines and consensus statement.

In each discipline, sub-committees were formed and were asked to review the literature for best practices, standard operating protocols (SOP's), and board-certified position statements. These sub-committees then presented the broad guidelines in the expert group to frame a position statement for the Indian perspective. The expert group had weekly meetings and deliberated on these issues with additional inputs from other colleagues working in the various sub specialties of neurorehabilitation. All statements were then collated to create a combined consensus statement for current times, on skills required in neurorehabilitation across the life span and across various neurological disorders continua.

The consensus, domain-specific guidelines, and recommendations were drafted and finally approved by all the experts representing the various disciplines.

COVID-19 AND NEUROLOGICAL DISORDERS

There is evidence that COVID-19 patients can present with neurological manifestations acutely or may develop neurological complications during the course of the disease.^[3] There is a need to provide rehabilitation to these patients with neurological complications during the acute phase of illness, in the post-COVID phase and for long-term rehabilitation. Many of these COVID-19 survivors also require neuropsychological and cognitive rehabilitation in the post-COVID phase of the illness. However, lockdowns and financial problems can be the major barrier for neurological rehabilitation followed by lack of awareness, family negligence, and transportation problem.^[4] Strokes are common in patients with severe COVID-19 either at the time of presentation or as a thromboembolic complication.^[5] Since routine care of acute stroke may be compromised because of acute services being diverted to COVID-19 patients, as well as non-availability of rehabilitation services, this could lead to worsening of post-stroke disability in these patients. It is of paramount importance to maintain continuum of stroke care including early rehabilitation in both COVID-19 and non-COVID strokes to prevent disability in stroke survivors.^[6-8] Similarly, patients with multiple sclerosis and other demyelinating disorders on immunomodulatory therapies are prone to relapse as well as are at risk of developing infections including COVID-19.^[9] It is crucial for these patients to continue with rehabilitation to minimize the impact of the disease and maintain functional mobility. Patients with Parkinson's Disease who are often elderly are prone to deterioration because of lack of physical exercises, and immobilization leading to worsening of symptoms.^[10] It is imperative for these patients to have continued access to rehabilitation services either in person or through virtual modes. The latter includes TNR via smart phones and telemedicine services like e-Sanjivani. Park, in Shape study has shown that home-based exercise programme can be equally effective in improving OFF state motor symptoms of Parkinson's disease.^[11] There are many other ongoing trials like TELE PARK to assess feasibility and effectiveness of TNR in Parkinson's disease patients during covid times. These trials will also assess the anxiety and stress reduction as well as quality of life improvement with telerehabilitation.

COVID-19 patients may also experience a headache similar to Migraine. Chronic migraine patients can also acquire COVID-19 infection that may trigger migraine episodes. There may be an additional risk of developing COVID-related complications of possible increased thrombotic events in these patients. It is imperative that management of chronic migraine and its disability be continued either in person consultation with universal precautions for clinicians as well as patients. Virtual consults by telemedicine and TNR can be easy and effective alternatives.

Neurodegenerative diseases especially dementia may be an additional risk factor for mortality in COVID-19 infection.

It has been seen that there could be worsening of symptoms especially neuropsychiatric manifestations if these patients contract COVID-19 viral infection or it may unmask latent symptoms in mild dementia patients. Neuropsychological rehabilitation may be challenging in these patients and may need additional resources and extended visits.

The COVID-19 patients who develop neurological complications like acute inflammatory demyelinating polyneuropathy should be given early rehabilitation similar to non-COVID patients adhering to full public health measures to prevent cross-infections among healthcare providers as well as patients.

NEUROREHABILITATION ASSESSMENT AND GOAL PLANNING

Patients with neurological disabilities who are hospitalized because of COVID-19 should have their rehabilitation needs and goals assessed. Assessment should be holistic and include consideration of risk, co-morbidities, prognosis, and what is currently known about COVID-19.^[12] Short- and medium-term goals should be developed and documented by the multidisciplinary team (MDT) and the patient. Decision on when to start rehabilitation should be undertaken in discussion with the MDT taking into account the patient's medical status. During rehabilitation, the patient's clinical presentation (e.g., respiratory and hemodynamic function) may require continuous medical monitoring. Timing, intensity, and frequency of rehabilitation should be individualized.^[13] The personalized rehabilitation plan for patients who are hospitalized due to COVID-19 should be communicated effectively to the patient, caregivers, and teams responsible for the ongoing care at every transfer point along the care pathway. Patients should receive ongoing rehabilitation delivered by the most appropriate team and regular assessments should ensure that patients are referred to the most appropriate services at the right time.

RECOMMENDATIONS FOR HEALTHCARE PROFESSIONALS

When providing face-to-face rehabilitation for persons with COVID-19, the professionals should have access to, and be provided with the correct and appropriate level of PPE. The clinicians and therapists should liaise with local infection control policies, in conjunction with national guidance on PPE and receive adequate training to ensure confidence in the application and removal of PPE prior to and after rehabilitation sessions.

NEUROINTERVENTIONS AND REHABILITATION

Neuro interventions and procedures cannot be carried out without coming in close contact with the patients, hence it is necessary to follow strict protocol during COVID-19 Pandemic to prevent accidental transmission of the virus to the surgical team, healthcare workers, and other patients in the hospital. It

is quite possible that patients may be harboring the COVID-19 virus in the naso pharynx and may not be aware of it as he is asymptomatic. Hence it is necessary to thoroughly screen all the patients before admission. Since many of the interventions would be aerosol generating, careful management and strict adherence to protocol can go a long way in minimizing the risk of viral transmission to the treating team and the healthcare workers and other patients.

Neuro physiotherapists have a role in the management of patients admitted to hospital with confirmed and/or suspected COVID-19. Physiotherapists who practice in the ICU environment may also provide airway clearance techniques for ventilated patients who show signs of inadequate airway clearance and assist in positioning patients with severe respiratory failure associated with COVID-19, including the use of prone position to optimize oxygenation.^[14,15] Physiotherapists have a role in providing exercise, mobilization, and rehabilitation interventions to survivors of critical illness associated with COVID-19 in order to enable a functional return to home. It is crucial that use of equipment shared across patients should be completely avoided and only personal items should be used for training. Therapists treating COVID patients should not be providing services to non-COVID patients. The rehabilitation settings should ensure availability of adequate number of professionals to meet this need. Therapists should also be trained for specific sets of skills that may be acquired through online programs as well as internal training.

Occupational Therapist's role in neurological rehabilitation is to support the rehabilitation process by helping the affected person and their families to adjust to the new version of normal. This involves improving their physical skill, cognitive function, and problem solving skills. This also includes removing the physical barriers and designing an environment and house in a barrier free way, providing and training them in assistive devices to improve their performance in functional independence. Occupational therapists usually help patients develop strategies to facilitate continued access to their occupations. These include, individual, family, community, social, and environmental adaptations. Use of assistive technology and tele-health interventions has been found to be very useful in delivering care to the patients.^[16] The Occupational therapists should be actively involved in the ongoing management and optimize return to functional normality in patients activity of daily living.

In current COVID-19 pandemic, speech, cognitive communication, and safe swallowing assessment and rehabilitation in neurological disorders is compromised as it involves many aerosol generating procedures like oromotor exercises and lengthy evaluations. As a result, many patients are deprived of neurorehabilitation services. Telerehabilitation/tele-speech language pathology is gaining momentum. SLP should utilize tele-practice, online modules to assess and intervene for persons with disabilities related to speech, swallowing, language, and cognitive communication

functions.^[17] There is a need to develop cross-culturally valid protocols for our bilingual, heterogeneous diverse population. With the rise in COVID, SLPs are involved in assessment and intervention in safe swallowing post-intubation. They must adhere to best practices with all safety and precautions such as wearing PPE, using sterile material, limiting time of testing, and intervention in high aerosol generating procedures. Use of tele-practice is recommended if direct, “in person” assessment and intervention is not feasible or in cases of patients with poor immunity, high risk populations.

The challenges in India for neuropsychological rehabilitation in normal times are the paucity of trained professionals and few specialized centers in the mega cities. Hence, in India, the model of “home-based and family centered” neuropsychological rehabilitation with a holistic approach has been explored.^[18,19] However, in the current COVID pandemic, the role of the psychologist in neurorehabilitation has expanded to include management of COVID-related neurological cognitive/emotional sequelae. In addition, neuropsychological interventions are needed to address mood disturbances not only in patients, but also families, and professionals related to the stressful experience of an unprecedented disaster and lockdown. There has also been an exaggeration of symptoms because of increased emotional distress after the lockdown (increased confusion in dementia, seizures in epilepsy) that needs to be addressed. Due to restrictions in travel and social distancing, remote virtual rehabilitation, teleevaluation, and counseling should be encouraged.^[20] For patients in the post-COVID phase neuropsychological rehabilitation is the critical component that ensures “return to life and living” as a participative and productive member of society. In the current stressful times, the role of the psychologist has become even more important for ensuring the emotional, mental, cognitive wellbeing of all.

CONCLUSIONS

Neurorehabilitation plays an important part in the continuum of care of patients with neurological disorders. Neurorehabilitation professionals have to play an important role in providing care to COVID patients with neurological and psychological disabilities and also non-COVID patients who need neurorehabilitation services. It is imperative to adhere to the universal precautions and maintain social distancing norms for the practitioner’s own protection as well as for the safety of their patients. TNR is emerging as a very important but underutilized modality, that is feasible, efficacious, and cost-effective and allows for sustained rehabilitation in these challenging times.

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Conflicts of interest

There are no conflicts of interest.

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