

# NEUROREHABILITATION IN PAKISTAN: NEEDS, CHALLENGES AND OPPORTUNITIES

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The prevalence of disability is substantially higher in the low-income countries as compared to the high-income countries.<sup>1</sup> An estimated 80% of the people with disabilities live in the low-income countries, which is more than one billion people with disabilities according to the world report on disability.<sup>2</sup> Among these persons with disabilities (PWD), 110-190 million have significant disabilities including difficulty in mobility, self-care, communication and participation in education or employment. Neurological disorders like stroke, spinal cord injuries, traumatic and non-traumatic brain diseases and neurodegenerative diseases are an important cause of disability worldwide. Most of them result in long-term disabilities and residual weaknesses, which adversely affects the mobility and quality of the life of the patients. In addition, long-term management of these often-permanent disabilities is “a huge unmeasured economic burden and psychological stress on families who take care of their functionally dependent relatives.”<sup>3</sup>

Neurologic rehabilitation or neurorehabilitation is a dynamic process which helps the patients with neurological disabilities to optimize their physical, cognitive, emotional, and social functions for maximum independence and social reintegration.<sup>4,5</sup> Unlike other medical specialties where physician is the sole decision maker, neurorehabilitation is a multi-disciplinary team work. The important members of a neurorehabilitation team include physiatrists (Rehabilitation

Medicine physicians), neurologists, physical therapists, occupational therapists, neuropsychologists, speech therapists, nutritionists, and nurses, along with the patient’s caregivers.<sup>4</sup> The conditions that are likely to benefit from a multi-disciplinary neurorehabilitation team include, but are not limited to, stroke, traumatic brain injury, spinal cord injury, multiple sclerosis, Parkinson’s disease, cerebral palsy, motor neuron disease, Guillain Barre syndrome and post-polio syndrome.

Pakistan like many other developing countries is facing the problem of a huge population with an inadequate number of skilled and trained neurorehabilitation specialist.<sup>6</sup> Rehabilitation is still confused with physiotherapy instead of being a concept of a multidisciplinary team approach.<sup>7</sup> This is further complicated by a sudden and explosive increase in the number of physiotherapy Institutes in the recent years, which are producing a large number of physiotherapists. Majority of the trained rehabilitation medicine physicians are working in the Pakistan Armed forces, and thus are inaccessible to most of the PWDs in Pakistan.<sup>8</sup> There are less than 20 departments of rehabilitation medicine in the country with 190 million people.<sup>8</sup> There is only a single 4 years fellowship program in Rehabilitation medicine being offered by the College of Physicians and Surgeons of Pakistan. There is no accredited neurorehabilitation fellowship or sub-specialty training available inside Pakistan.

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Despite these limitations, neurorehabilitation is gradually developing in Pakistan. There is an increased awareness of the need for rehabilitation medicine in both the public and physicians. The interaction and cooperation between neurologists and rehabilitation medicine physicians in Pakistan is improving. Recently Pakistan Journal of Neurological Sciences dedicated a section to neurorehabilitation with a rehabilitation specialist as the sub-editor of the section. Rehabilitation medicine physicians in the conferences on neurology are delivering topics on neurological rehabilitation. Pakistan Society of Neurorehabilitation and Allied health care professionals has been established with neurologists, rehabilitation physicians, physical therapists and speech therapists as the executive board members.<sup>9</sup> Two conferences on neurorehabilitation were held in Islamabad and Karachi in 2014 and 2016 respectively.

There is a need to build on this momentum and enhance cooperation among different stakeholders to develop neurorehabilitation in Pakistan. We recommend the following

1. The residency training programs in neurology must include a mandatory rotation in rehabilitation medicine for 4-8 weeks so that the neurologists of future can understand the components and values of rehabilitation in different neurological disorders.
2. The current scarcity of qualified rehabilitation physicians in the country (54 total) and the induction of mere 2-3 trainees per year cannot possibly cater for the increasing burden of disability. There should be incentive offered to doctors opting for

training in rehabilitation medicine as career specialty. There is a need to introduce more training programs in the country including memberships program (MCPS) and MD programs in Rehabilitation Medicine.

3. Current guidelines for the management and rehabilitation of common neurological disabilities like stroke, spinal cord injury and cerebral palsy are written and published by the authors based in the developed world. Many of them have little relevance to the unique health care structure and limited resources available here. There is a need to develop local guidelines for common neurological disabilities considering the resources and expertise available here.
4. Many professional and patient care societies for different neurological diseases are already working in Pakistan e.g. Pakistan stroke society, Muscular dystrophy association of Pakistan, Pakistan Parkinson's society,

the Pakistan Society for the Rehabilitation of the Disabled, Society for Multiple Sclerosis Patients in Pakistan. There is a need of closer coordination and collaboration between these societies.

5. There is a need to counter the negative stigma related to disability in Pakistan. There is also a need to increase the awareness regarding the value of improved mobility and enhanced community re-integration despite the presence of disability in PWDs having a neurological disorder.
6. Systematic data collection and establishment of national registry on stroke, spinal injuries, cerebral palsy and multiple sclerosis will help in estimating the true burden of disability and making a strategy accordingly.

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