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# The loose end: Neurology without Rehabilitation

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In recent years, successive therapies for previously untreatable neurological conditions have been introduced in clinical practice and these advance interventions have remarkably changed the landscape of neurosciences<sup>1,2</sup>. But, rehabilitation of the functional impairments caused by neurological diseases is often overlooked or sometimes even neglected. In other words, the role of a comprehensive and early multidisciplinary rehabilitation in neurological disease is unrecognized and poorly understood even among neurologists and neurosurgeons. Usually, lifesaving neurosurgical management or solving a diagnostic riddle in neurology is attributed to successful patient management; however in reality, this is the first step in establishing a care plan for improving quality of life of these patients. The outcomes of neurological disorders are often related with disability, psychological dysfunction and social incapacitations<sup>3</sup>. Comprehensive rehabilitation completes the management of patients with neurological disorders as it focuses on minimizing disability, maximizing functional independence, improving quality of life and decreasing the complications of prolonged immobility<sup>4</sup>. Unfortunately, the understanding of rehabilitation is usually limited to provision of physical therapy in many parts of the world<sup>5</sup>.

This editorial intends to increase awareness about Physical medicine and rehabilitation (PMR) among experts in the field of neurological sciences in underdeveloped health systems particularly Pakistan. The lack of understanding among neurologists and neurosurgeons about scope of rehabilitation may deprive their patients of valuable rehabilitation services which can improve their functional outcomes and quality of life significantly. The following points can identify the causes of lack of awareness about the scope of neurorehabilitation in medical field especially in underdeveloped health systems.

## Gaps in medical education:

During MD or MBBS education, much focus revolves around pathology, diagnosis, laboratory testing, and surgical or medical management of neurological impairments. Quality of life issues are not emphasized upon. Hence, the biopsychosocial aspect of any neurological impairment is a least studied aspect. In reality, the disability and mobility impairment arising from neurological disease is the most important aspect for patients and their families, which is the core concept of rehabilitation. Disability management is still not a core subject in undergraduate education; even though the incidence and prevalence of disability is significant in various parts of the world particularly the developing world<sup>6</sup>.

## Text books of medicine:

The standard text books of medicine or conventional text and chapters on neurological diseases usually discuss in detail about the pathophysiology, genetics, radiology, syndromes, and impairments related to different neurological disorders. However, when it comes to the management and rehabilitation of these impairments, there is scanty information. Post stroke complications are a favorite question in neurology rounds or board examinations but their treatment is least discussed. These post stroke impairments include aphasia, apraxia, dysphagia, pseudo bulbar affect, neurogenic bladder and bowel, post stroke spasticity, hemiplegic shoulder pain, complex regional pain syndrome, post stroke depression, behavior and mood disorders, apathy, fatigue, sleep apnea and central pain syndromes, to name a few<sup>7</sup>. These ailments adversely affect the outcomes and quality of life of patients<sup>8</sup>. Treatment of these impairments is usually offered by multidisciplinary rehabilitation team. Unfortunately, "referral to physical therapy" is not sufficient.

## Lack of Post graduate or undergraduate rotations in rehabilitation medicine

Not many physicians are aware of the existence of the specialty of rehabilitation medicine or Neurorehabilitation.

It is largely attributed to the fact that it is not included in undergraduate education and is not a part of post graduate rotations in neurology or neurosurgery in many training programs globally. This problem was documented more than 30 years ago<sup>9</sup> and still is an issue which needs attention<sup>10</sup>.

### **Mental Health in neurological disability**

Mental health in neurological illness is an area of advance expertise especially in patients with new onset disability. It is a challenge to do psychological assessments on patients with aphasia, cognitive impairments, and patients with disinhibition or poor attention span. A neuropsychologist experienced in dealing with patients with neurological disabilities can devise an effective holistic management plan for patient and their families. Neuropsychology is an area of dire need and one of the most challenging aspect in disability care which may be beyond the scope of general psychologist.

### **Lack of rehabilitation services in health care facilities**

This probably is the single most important factor affecting the disability of patients with neurological disorders. Rehabilitation services are either non-existent in many parts of the world or they are poorly developed and consist only of physical therapy.<sup>5,11</sup> There is a dire need of manpower, training institutes, equipment and facilities, infrastructure and departmental services in various fields of rehabilitation. Above all, legislation about community based rehabilitation and its implementation is lacking in developing health systems. It is unfortunate that either the rehabilitation services are private or limited to tertiary care centers only, in many parts of the world. e.g. in Pakistan as of June 2017, there are only 58 qualified PMR physicians for a population of 200 million. Most of them are working in the military. All of them are based in the major cities only with no PMR physician in the public sector in Baluchistan and Khyber Pakhtunkhwa.

### **The cultural taboo and social aspects of patients with neurological disabilities**

Conventionally, in the developing countries, there is trend for patients with stroke, traumatic brain injury or spinal cord injury to become dependent on families and caregivers, even though they have the potential of being independent.<sup>5</sup> This is largely multifactorial; however, quite common for patients in elderly age group, as families tend to look after their seniors out of respect, not realizing that the patient may have the potential to improve. Hence these patients habitually confine their activities to bed, consequently decondition overtime and develop complications of prolonged immobility. The stigma of disability stays with them and have horrendous psychosocial affects. Many families seek traditional or spiritual therapies, being largely unaware of rehabilitation options<sup>5</sup>.

### **The way forward:**

Evidence for efficacy of the rehabilitation for different neurological disorders has been accumulating over the last 3 decades.<sup>12,13,14</sup> There is a global need to increase the awareness and to develop multidisciplinary rehabilitation services to serve the estimated one billion person with disability, most of whom live in the developing world. This requires a coordinated effort by different stake holders involved in the management of persons with disability. These would include the patients, care givers/family members, physicians (neurologists, neurosurgeons and rehabilitation medicine physicians), nurses, other rehabilitation professionals (physical therapist, occupational therapists, orthotist, speech and language pathologist, clinical psychologist, vocational counsellor etc.), professional societies, Non-governmental organizations and the government. Under graduate medical school curriculum needs to be revised to include disability management as a mandatory module. Where available, these modules should be taught by a PMR physician having expertise in the management of disability. Residents in neurology, neurosurgery, orthopedics and pediatrics should have rotation in rehabilitation medicine as part of their training to understand the value of early rehabilitation in the management of neurological, musculoskeletal and pediatric disabilities. Multidisciplinary rehabilitation team should be developed instead of the focus on physiotherapy alone and the referral system for rehabilitation consult should be improved. Government should ensure implementation of legislation for the persons with disability. Above all patient and their care giver should demand access to "comprehensive rehabilitation" by a physician lead multidisciplinary team instead of "physiotherapy" alone.

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