

ORIGINAL RESEARCH

Assessment of Profile of patient's receiving neurological rehabilitation treatments at a tertiary care hospital

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INTRODUCTION

Neurological illnesses are acknowledged as conditions affecting the nerve system and brain. These conditions can have a variety of causes, such as traumatic, immunologic, vascular, metabolic, or toxic problems.¹ A specific category of movement disorders was created by the 2011 census, suggesting a significant risk of mortality, long-term impairment, and neurological condition recurrence. One of the biggest challenges to public health is neurological illnesses. People's health is influenced by a wide range of circumstances, including their social and economic background, where they reside, how much money they make, how educated they are, and their social networks. Epidemiological studies show significant socioeconomic and psychological effects on the patient and his family in addition to mortality and morbidity. Increased understanding of the social determinants of health can improve the standard of treatment and quality of life for impoverished or marginalized individuals residing in developing nations. By thinking about these, we can create long-term treatment plans, develop effective policy responses, and identify advocacy gaps. Therefore, these difficulties are the focus of the current study.

An essential component of treating neurological problems is rehabilitation. An in-patient rehabilitation center offers extensive, multidisciplinary programs enhanced to meet the highest standards of quality. This specialty goes above and above in rehabilitating a disabled individual to regain lost functions. Psychiatrists must engage in meaningful interactions with peers in many specialties, such as urology,

neurology, orthopaedics, general medicine, and so forth.

Orthopedic issues can arise from a variety of neurological illnesses, including fractures caused by traumas related to epilepsy or neuromuscular scoliosis (NMS) in people with cerebral palsy (CP).^{2,3} Furthermore, a lot of neurological disorders are mistaken for orthopedic illnesses. For instance, cervical spondylotic myelopathy (CSM) can be mistakenly identified as the clinical signs and symptoms of HTLV-associated myelopathy/tropical spastic paraparesis (HAM/TSP) or amyotrophic lateral sclerosis (ALS).⁴ Orthopedic surgical treatment may be necessary for neurological problems such as carpal tunnel syndrome (CTS) or neurological cavus foot in patients with Charcot-Marie-Tooth (CMT) illness.^{5,6} Neurological complications from orthopedic procedures can also result in foot drop (from damage to the peroneal nerve in knee surgeries) or low-output ischemic stroke (from major orthopedic surgeries like hip or multi-level spine surgery).^{7,8,9} Emergency rooms in general hospitals or rehabilitation facilities are frequently the sites of epidemiological research of neurological patients in tertiary units. Headaches are the primary reason for referrals to general tertiary hospitals.¹⁰ The most common reasons that patients are referred to rehabilitation facilities for neurological therapy are traumatic brain injuries sustained in falls and auto accidents.¹¹ Rarely are studies of the neurological profiles of diagnosis conducted in tertiary hospitals by medical subspecialists.

METHODOLOGY

Apart from this a semi structured intake proforma was also used to study clinical variables such as age, gender, socio- economic status, occupational status, marital status and social support with details related to the source of social support available and accessible in times of need to seek medical care. This is a cross sectional exploratory hospital based study.

For the current study 224 patients were assessed. The treating team comprises of Physiatrist, Psychiatric social workers, clinical Psychologist, Physiotherapist, and Occupational therapist Neuro Nursing etc. These patients were referred from Neurology and Neuro-Surgery units and sometimes people approach directly to Neuro- Rehabilitation OPD. The duration of hospitalization will be 2-3 months depending upon the need. The Neuro-Rehabilitation OPD run every day of the week in the Ground floor of Rehabilitation Department, here fresh referrals as well as follow up

patients will be reviewed the patients from all parts of India and abroad are coming for availing Neuro Rehabilitation services. The neurological rehabilitation ward is a 22- bed facility with 12 male and 10 female. The diagnosis were made by the Residents and confirmed by the qualified physiatrist's consultant, specialized in physical medicine and rehabilitation.

RESULTS

Table 1 explains the diagnostic detail of the patients. Majority of the patients had spinal cord injury (39.2%) followed by guillian barre syndrome (25%) and stroke (10.7). The other diagnosis were spinal cord infections (3.5%), traumatic brain injury (3.5%), neuromyelitis optica (2.6%), transverse myelitis (3.5%), post-surgical conditions (1.7%) myelopathy (2.2%), other conditions (10.2%).

Table 1: Illness details of the Patients

Diagnosis	Frequency	Percentage
Guillian-Barre Syndrome	56	25%
Spinal Cord Injury	82	36.6%
Stroke/Cerebral Vascular Attack	24	10.7%
Spinal Cord Infections	8	3.5%
Traumatic Brain Injury	8	3.5%
Neuro Myelitis Optica	6	2.6%
Transverse Myelitis	8	3.5%
Post-Surgical conditions	4	1.7%
Myelopathy	5	2.2%
Others	23	10.2%
Total	224	

Table 2 shows that (56.2%) of our patients are hailing from Karnataka followed by other states, (25%). It highlights that treatment services are availed by patients throughout India.

Table 2: Domiciliary status of the patients

Variable	Frequency	Percentage
Karnataka	126	56.2%
Andhra Pradesh	27	12%
Tamil Nadu	15	6.6%
Other states	56	25%
Total	224	100%

Table 3 highlights the common disorders in Neurological Rehabilitation Ward. Majority of patients are suffering from spinal cord injury and they all belong to < 40 age group (30.76%), (44.9%) are male, and (46.15%) are from Hindu Religion, (28.20%) are from Nuclear family.

Table 3: Common disorders in Neurological Rehabilitation patient ward

Particulars	GBS	SCI	Stroke	Total
Age				
40>	22(12.5%)	35(19.8%)	15(8.5%)	176
40<	40(22.7%)	51(28.9%)	13(7.8%)	
Gender				
Male	33(18.7%)	73(41.4%)	23(13.6%)	176
Female	29(16.4%)	13(7.3%)	5(2.8%)	
Religion				
Hindu	55(31.2%)	75(42.6%)	23(13%)	176
Muslim	7(3.9%)	11 (6.2%)	5(2.8%)	
Christian	-	-	-	

Family				
Joint	23(13%)	36(20.4%)	14(7.9%)	176
Nuclear	36(20.4%)	47(26.7%)	14(7.9%)	
Extended	2(1.1%)	4(2.2%)	-	

Table 4 shows that (15.9%) of spinal cord injury are illiterate whereas (1.1%) of patients with GBS are post graduates. Among stroke the majority of patients (4.5%) are having primary education. Majority of the spinal cord injury patients (30.6%)

are unemployed subsequent to their disability of whom (3.9%) are from salaried job. Unskilled labourers are more from GBS (6.2%), whereas (4.5%) of spinal cord injury patients had perused skilled occupations.

Table 4: Socio-Demographic details

Particulars	GBS	SCI	Stroke	Total
Education				
Illiterate	30(17%)	28(15.9%)	6(3.4%)	
Primary	14(7.9%)	19(10.7%)	8(4.5%)	
High school	12(6.8%)	11(6.2%)	6(3.4%)	
+2/ Pre degree	-	11(6.2%)	4(2.2%)	
Graduation	2(1.1%)	14(7.9%)	2(1.1%)	176
Post Graduation	4(2.2%)	3(1.7%)	2(1.1%)	
Occupation				
Unemployed	41(23.2%)	54(30.6%)	11	
Unskilled	12(6.8%)	8(4.5%)	(6.2%)	176
Labourer			5(2.8%)	
Skilled	4(2.2%)	10(5.6%)	7(3.9%)	
Salaried job	3(1.7%)	7(3.9%)	2(1.1%)	
Others	-	10(5.6%)	2(1.1%)	

Table 5 shows that majority (35.2%) of spinal cord injury patients were married and (14.7%) were unmarried this was followed by GBS where (12.5%) were unmarried, majority of the patients

(35.2%) were below poverty line, only (16.4%) were above poverty line, both GBS and SCI had good social support. Whereas (10.7%) of stroke patients had poor social support.

Table 5: Marital and socio-economic details

Particulars	GBS	SCI	Stroke	Total
Marital Status				176
Married	40(22.7%)	62(35.2%)		
Unmarried	22(12.5%)	26(14.7%)	26(14.7%)	
Socio Economic Status				176
BPL	54(30.6%)	58(32.9%)	16(9%)	
APL	7(3.9%)	29(16.4%)	12(6.8%)	
Social Support				176
Poor	39(22.1%)	40(22.7%)	19	
Average	16(9%)	41(23.2%)	(10.7%)	
Good	6(3.4%)	6(3.4%)	15(8.5%)	
			4(2.2%)	

Table 6 shows that overall occupational status of the patients, 64.7% had to lose their jobs due to disability, 35.2% were still holding jobs but they were not fit enough to go for work.

Table 6: Occupational status of the patients following disability

Variable	Frequency	Percentage
Unemployed/lost job	145	64.7%
Employed but unable to go for work	79	35.2%
Total	224	100%

DISCUSSION

Once upon a time, GBS was almost as common as polio as the leading cause of paralysis. In accordance with our study, the prevalence rate of GBS is estimated to be between 0.6 and 2.4 per 100,000 people annually, with men typically affected 1.5

times more frequently than women worldwide. The goal of the current study was to evaluate the sociodemographic traits of 204 patients who were admitted to the Neuro Rehabilitation unit. 54 individuals (26.5%) had GBS, according to our findings.

Another most frequent condition treated in neuro rehabilitation is spinal cord damage (39.2%). This could be the result of car crashes, height falls, trees, etc. The current study supports the findings of Mathur and colleagues' (2015) report that falls from heights (53%), automobile accidents (23%), falls with heavy objects over head and back (10.7%), falls with heavy objects over head (3.0%), and falls after electric shock (4.0%) are the main causes of spinal cord injuries. It is also evident that there are more men than women, and that occupational dangers related to their jobs cause a higher number of accidents. Mathur and colleagues (2015) at Sawai Man Singh Medical College and Hospital in Jaipur, India, have observed similar findings. In the last eight years, 2716 cases of SCI have been found, of which 1400 were cervical and 1316 thoracolumbar. Additionally, they revealed a male to female ratio of 4.2:1, which supports the current findings.¹² In addition to having a significant negative influence on independence and way of life, these injuries are linked to loss of motor and sensory disorders and their concomitant issues, including chronic pain, bowel and bladder problems, sexual dysfunction, rehospitalization risk, mental health issues, marital and relationship problems, and limited employment opportunities.¹³ Since most of the patients were the family's primary wage earners, their lower socioeconomic position and younger age group had a significant financial, social, and psychological impact. For this reason, early intervention is highly recommended to lower the prevalence of spinal cord injury.

The majority of our patients—5.88%—are over 40 years old. This is consistent with recent research that suggests male family history and age over 40 are risk factors for stroke.¹⁴ Upon first contact, our patients are examined by general practitioners and family doctors who are largely ignorant of neurological illnesses. The majority of the sample was illiterate, which is consistent with findings from earlier research.¹⁴

Majority of them belong to low socio economic group. Most of the beneficiaries of the government hospitals being from the low socio economic status, as they are not able to afford the treatment cost in the private hospitals. The Government of India and state government do have a mandate that they should be given treatment without any discrimination in terms of caste/class/geography.

The inability to assess the neurological care given in the intensive care unit (ICU) is one of the study's shortcomings. Furthermore, rather than as a result of patients' impulsive demands, neurological referrals were given out on demand by hospital specialists, primarily orthopedists. This fact might have influenced the outcomes, as it does not accurately reflect the total prevalence of neurological diseases at the institution. In conclusion, both medical specialties' professional development can be enhanced

by understanding the profile of neurological illnesses in a tertiary center. Thus, interdisciplinary care can also minimize misdiagnosis, needless treatments, and disability while optimizing healthcare resources. We suggest conducting additional research on the characteristics of neurology referrals from tertiary hospitals that are directed toward other specializations in order to investigate the most common and uncommon disorders in a range of clinical practice contexts.

CONCLUSIONS

We discovered that the majority of our patients in the productive age range are men. They lost their work or are unemployed. Therefore, community integration and vocational rehabilitation must be implemented for the populace. In order to improve the mental health of caregivers, more research should be done on social support, financial stress, the burden of care, ways for the spouse to generate income through work, and vocational rehabilitation screening for both physical and mental health.

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