

RETROSPECTIVE STUDY OF LOCOMOTOR DISABILITY PROFILE OF PATIENTS ATTENDING DISABILITY BOARD OF A MEDICAL COLLEGE HOSPITAL IN EASTERN INDIA

Dan Sudip¹, Mura Satyajit², Manna Ananta³, Sinha Nirmalya⁴

Received : 09/12/2023
Received in revised form : 09/02/2024
Accepted : 25/02/2024

Keywords: locomotor Disability, pattern

Corresponding Author:
Dr. Sudip Dan,
Email: dr.sudipdan.10@gmail.com

DOI: 10.47009/jamp.2024.6.1.414

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (1); 2087-2090



¹Assistant Professor, Department of PMR, Midnapore Medical College & Hospital, West Bengal, India

²Assistant Professor, Department of Orthopedics, Midnapore Medical College & Hospital, West Bengal, India

³RMO Cum Clinical Tutor, Department of Psychiatry, Midnapore Medical College & Hospital, West Bengal, India

⁴Professor & HOD, Department of Community Medicine, Deben Mahata Govt. Medical College & Hospital, Purulia, west bengal, India

Abstract

Background: The most common form of disability in India is locomotor. The main estimate for disabled persons in West Bengal has been the census and NSSO survey data. This survey, though it gave the overall prevalence by type of disability it lacks socio demographic and etiological variables. Hence the present study was carried out to know the prevalence and pattern of locomotor disability to bring more public health benefit to the disabled population. The aim and objective is to evaluate the socio demographic pattern and etiological variables of locomotor disability patients. **Materials and Methods:** These hospital based retrospective records review study was done in the dept. of PMR and disability section of Midnapore Medical College & Hospital. All locomotor disability certificates issued between Aug,2018-2022 were reviewed for socio demographic pattern and etiological variables. **Result:** Disability certification records of 500 patients fulfilling the criteria were reviewed for socio demographic pattern and etiological variables. The mean age of the study participants were 35.09±18.57 with a male predominance of 64%, maximum disabled patients were unemployed 30.4% and illiterate 22%. Most common cause of locomotor disability condition was congenital conditions 26.3% and are of not likely to improve category 61.6%, most commonly affected body parts was single lower limb 37.4%. **Conclusion:** The result found in this study were comparable to national figures. An important finding is the absence of disability in the younger age group due to leprosy and polio reflecting the impact of the respective programmes of eradication. However there was increasing the prevalence of cerebral vascular disorder, disabling arthritis, sequel of non communicable disease specially diabetes and accidents specially among young.

INTRODUCTION

Locomotor disability has been recognised as an important public health problem in India¹. According to 2011 census, locomotor disability accounts for 20.3% in India^{2,6}. Locomotor disability means a persons inability to execute distinctive activities associated with movement of self and objects resulting from affliction of musculoskeletal or nervous system or both⁴. Locomotor disability certification is being given according to guideline published by the Ministry of Social Justice and Empowerment in the gazette of India:- extra ordinary part2- sec3 Page no:- 67-88 included under the Rights of Persons with Disabilities Act,2016⁵. According to

the guideline the minimum degree of disability should be 40% for an individual to be eligible for any concession or benefit. For operational purpose in national sample survey² as well as for proper interpretation of result a period of 12 month or more of locomotor disability has been taken into account .If the disability is of recent origin but the nature of disability is such that it will last for a long term more than 12 month the person will be entitled for disability certification.

According to NSSO survey for disability, 2018² operational guidelines for identification of locomotor disability includes- disability due to various causes like post infective, spinal cord disorder, brain injury, cerebral vascular disorder, congenital conditions ,

inflammatory and degenerative arthropathy ,post traumatic/post operative disorder, muscular dystrophy, leprosy , dwarfism, cerebral palsy and acid attack victims.

The main estimate for disabled person in West Bengal has been by the NSSO and census2,6. This survey, though it gave the overall prevalence of disabilities and by type did not capture the socio demographic profile of the people with locomotor disabilities. Hence the present study was carried out to know the socio demographic profile and pattern of locomotor disabilities and the extent to which their health needs are met so that public health benefits are brought to this population .

Aims and Objectives

- 1) To evaluate the socio demographic pattern of disabled patient(age, gender, education, residence, occupation)
- 2) To evaluate the pattern of disability(type, percentage ,nature of disability and etiological factors etc) of disabled patient.
- 3) To establish any association among the various factors.

MATERIALS AND METHODS

These hospital based retrospective records review study was done in the dept. of PMR and disability section of Midnapore Medical College & Hospital. All locomotor disability certificates issued between Aug,2018-2022 were reviewed for socio

demographic pattern and etiological variables.Data extraction was done from the copies of issued certificates kept in a confidential folder in the disability section of the medical college after obtaining permission from appropriate authority. The data was collected as per a predetermined proforma for assessment of profile of disability.It contains various parameters like age, gender, educational status, activity status, type of disability, percentage of disability etc.

Name, address, phone number and hospital record number which may leave to a potential breach in confidentiality were not collected. Data collection was done after getting approval from institutional ethical committee.

RESULTS

This study was conducted in the department of PMR & disability section of Midnapore Medical College & Hospital. The disability certification records(certified between Aug,2018 to Aug,2022) of 500 patients fulfilling selection criteria were reviewed retrospectively for socio demographic pattern & etiological variables.

The mean age of study participants were 35.09±18.57(mean±SD). Maximum disability seen in 19-60 yrs age group. The total number of disable male was 320(64%) and female was 180(36%). 57% of disable person were from rural areas and 43% were from urban locality.

Table 1: Socio-demographic characteristics of the Study Participants (n=500)

Selected Socio-Demographic Characteristics		Number	Percentages (%)
Age Group (in Years)	0-6 Years	13	2.6
	7-12 Years	67	13.4
	13-18 Years	45	9.0
	19-60 Years	336	67.2
	> 60 Years	39	7.8
Gender	Male	320	64.0
	Female	180	36.0
Area of Residence	Rural	285	57.0
	Urban	215	43.0
Total		500	100.0

Table 2: Selected Socio-economic characteristics of the Study Participants (n=500)

Selected Socio-Demographic Characteristics		Number	Percentages (%)
Educational Status	Illiterate	152	30.4
	up to primary (1-4 class)	110	22.0
	Primary to up to Secondary (Class 5-10)	58	11.6
	Secondary to up to Higher Secondary (Class 11-12)	99	19.8
	Graduate	47	9.4
	Post-graduate and above	34	6.8
Occupation	Unemployed	208	41.6
	Household Work	62	12.4
	Student	60	12.0
	Farmer	23	4.6
	Unskilled manual labour	67	13.4
	Service and Business	80	16.0
Total		500	100.0

Among the record reviewed 30.4% of disable patients were illiterate and 41.6% were unemployed.

Table 3: Prevalence of different disabilities among the study participants (n=500)

Different Disabilities	Number	Percentages (%)
1 Locomotor Disability	369	73.9
2 Muscular Dystrophy	03	0.6
3 Leprosy Cured Patients	14	2.8
4 Dwarfism	10	2.0
5 Cerebral Palsy	97	19.4
6 Acid Attack Victim	04	0.8
7 Others	02	0.4
Total	500	100.0

73.9% of disable patients were from locomotor disability category followed in frequency by muscular dystrophy 0.6%, leprosy cured 2.8%, dwarfism 2%, cerebral palsy 19.4%, acid attack victim 0.8% and others 0.4%.

Table 4: Distribution of causes of loco motor disability (n=369)

Different Disabilities	Number	Percentages (%)
1. Disability due to Infection	83	22.5
2. Spinal Cord Disorder	27	7.3
3. Traumatic Brain Injury	04	1.1
4. Cerebral Vascular Disorder	43	11.7
5. Amputation	31	8.4
6. Congenital Disorders	97	26.3
7. Inflammatory/Degenerative Arthropathy	20	5.4
8. Post traumatic/Post operative disorder	60	16.2
9. Others	04	1.1
Total	369	100.0

Among the total locomotor disability patients most common were due to different congenital conditions 26.3% and least common was other disorders like hemophilic arthropathy 1.1%.

Table 5: Nature, Extent and Duration of disability among the study participants (n=500)

Different aspects of Disability	Number	Percentages (%)	
Nature of Disability	Not likely to improve	308	61.6
	Likely to improve	192	38.4
Extent of Disability	(40-50)%	301	60.2
	(51-60)%	88	17.6
	(61-70)%	32	6.4
	(71-80)%	57	11.4
	≥ 81%	22	4.4
Duration of Disability	Since Birth	213	42.6
	1-6 Years	218	43.6
	7-12 Years	51	10.2
	13-18 Years	10	2.0
	19-60 Years	08	1.6
	> 60 years	00	0.0
Total	500	100.0	

61.6% of disable person were from not likely to improve category and 38.4% were from likely to improve category. Maximum disable person were seen to have 40-50% disability range(60.2%) and minimum frequency seen in the disability range of more than 81% as 4.4%.Maximum disable person were seen to have detected as disabled in the age group of 1-6yrs(43.6%) and no patient was detected as disabled after the age of 60yrs.

Table No.6: Affected body parts of study participants(n=500)

Affected body part	Number	Percentage (%)
1.Single Lower Limb	187	37.4
2. Single Upper Limb	88	17.6
3. One upper & lower limb	81	16.2
4. All 4 Limbs	122	24.4
5.Spine	22	4.4
Total	500	100

Most commonly affected body part was single lower limb 37.4% and least was spine 4.4%.

DISCUSSION

There have been very few studies regarding pattern of locomotor disability in India, specially in the states of West Bengal^{2,6}. They provide information

related to prevalence of locomotor disability and help the health planners to put strategies to decrease the prevalence. Obtaining a locomotor disability certificate is a part of rehabilitation of a locomotor disabled person. It helps the person to obtain various benefits related to travelling ,service, educational

purpose and various social security benefits. Locomotor disability was the most common disability in the present study (73.9%). The prevalence of locomotor disability was higher among males in the present study(64%) than females(36%),the mean age of disabled patients were 35.09±18.57 with maximum disability seen in the age group of 19-60yrs, most of the disabled patients were from rural areas(57%), most commonly affected body parts was single lower limb these data corroborating with NSSO 20182 and 2011 census data6. Similar findings were found in study by Srivastava et al3 in Uttar Pradesh, and N Kar et al7,10 from West Bengal. It was evident from our study that the number of males attending the disability board to obtain the disability certificate was significantly higher than females. Also young patients were in a significant majority compare to the elderly people7,8. The present study found higher prevalence of disability among the illiterate (30.4%). The educational status varied with type of disability, two main reason for this variation probably were lack of special schools in the local areas and drop outs with the onset of disability. Similar results were found in NSSO 2018, in a study from Uttar Pradesh3 and Karnataka9 .

Of all disabled individual 41.6% of patients were unemployed, 13.4% were unskilled manual labour, 12.4% were household work and 12% belongs to student category which was consistent with the data found in NSSO 2018, which observe 70% of the locomotor disabled individual in the rural areas are with out any source of income and the remaining are mostly employed in low profile jobs and 16% of them are regular employes, the being either casual worker or attending domestic chores.

The leading cause of locomotor disability in this study was congenital (26.3%),followed by post-infective residual paralysis, in NSSO the leading cause of locomotor disability was residual paralysis due to Polio in both rural(29.5%) and urban(27%) areas followed by injuries other than burns (26%). A study conducted in Burdwan10, West Bengal found the causes of locomotor disability were residual paralysis (55.1%)and congenital stiffness (22.7%). This implies lack of reconstructive surgeries and its awareness among people in the rural areas of Burdwan. Early intervention on certain occasions can prevent these disastrous conditions. In the present study congenital disorders were most common cause of locomotor disability, contradicting the result of previous studies2,3,9,10 and no residual paralysis due to polio was found in younger age groups

highlighting the impact of the Polio eradication programme .

CONCLUSION

The result found in this study were comparable to national figures as seen in census and NSSO survey. This study showed locomotor disability was significantly associated with unemployment ,illiteracy and male gender of rural locality. An important finding was the absence of disabilities in the younger age groups due to leprosy and polio reflecting the impact of the respective programmes of eradication. However there was increases in the prevalence of cerebral vascular disorder, disabling arthritis, sequel of non communicable disease specially diabetes and accidents specially among young.

Limitation of the Study: One limitation of this study was that it was dependent on the quality of information recorded and could not be verified. Another limitation was that information regarding use of caregiver/NGO/Govt. support, vocational /other training could not be evaluated.

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