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PREVALENCE AND PATTERN OF LOCOMOTOR DISABILITY IN RURAL PUDUCHERRY

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ABSTRACT

Introduction: In India 18.5 million (1.8%) of the people are disabled. The main estimate for disabled persons in Puducherry has been by the National Sample Survey Organization (NSSO). This survey, though it gave the overall prevalence of disabilities and by type, did not capture the socio demographic profile of the people with disabilities. Further, a decade has passed since the survey. Have there been any changes in the prevalence of disabilities? Hence the present study was carried out to know the prevalence and pattern of locomotor disability and to bring more public health benefit to the disabled population.

Aims and Objectives: 1. To study the prevalence of locomotor disability in rural Puducherry 2. To study the Pattern of locomotor disability.

Subjects and Methods: The study was designed as a cross sectional survey of the selected population using a questionnaire developed for the purpose. The sampled population was enumerated by a house to house survey from March 2012 to February 2013. Disabilities were classified according to the WHO International Classification of Impairments, Disabilities, and Handicaps (1980) and information regarding pattern and causes of locomotor disability were obtained.

Results: Totally 70 were found to be disabled giving an overall prevalence rate of 17 per 1000 population. Locomotor disabilities were the most common with a prevalence of 9.1 per 1000 followed by visual and hearing disabilities (2.9 per 1000). Locomotor disability was significantly more among males when compared to females (p value < 0.5). The prevalence of locomotor disability was higher among illiterates (15.9 per 1000). The leading cause of locomotor disability was congenital (18.9%) and residual palsy (18.9%).

Conclusion: The rates found in this study were comparable to national figures. An important finding is the absence of disabilities in the younger age groups due to leprosy and polio reflecting on the impact of the respective programmes of elimination. However there is increase in the prevalence of stroke especially among the young, disabling arthritis, and road traffic accidents leading to disabilities.

Key Words: Disability, Locomotor, Prevalence

INTRODUCTION

Disability means a range of conditions such as activity limitations, participation restriction and impairments. World Health Organization (WHO) defines impairment “as a problem in body function or structure; activity limitation as a difficulty encountered by an individual in executing a task or action and participation restriction as a problem experienced by an individual in involvement in life situations”. According to WHO¹ “disability is just not a health problem but a complex phenomenon of interactions between an individual’s physical characteristics and the society in which he or she lives” The trend in the recent past is an inclination from medical understanding towards social understanding.

Disability affects vulnerable people like women, older people, poor and highly prevalent among low income countries. Disability patterns are influenced by existing trends in health and environmental factors like road traffic accidents, diet, substance abuse and disasters.¹

Around 15% of population in the world is living with disability and 110 million (2.2%) people have very significant difficulties in functioning according to World Health Survey¹ According to the Global Burden of Disease 975 million (19.4%) persons live with disability and around 190 million (3.8%) have severe forms of disability namely blindness, quadriplegia, and severe depression. 95 million (5.1%) children (0–14 years) have disabilities according to

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the Global Burden of Disease and 13 million (0.7%) of them has “severe disability”.¹ prevalence of disability in South-east Asia ranges from 1.5 – 21.3% of the total population. ²

In India 18.5 million (1.8%) of the people were disabled. 10.63 %of them have more than one type of disability according to National Sample Survey(NSS) 58th round on the disabled persons which included mental disability also. The data available indicates that people with disability are subject to multiple deprivations. The disabled people suffer from poverty, low literacy and unemployment more than the general population. Social marginalization and inaccessibility to medical services are prominent and they get exaggerated with the difference in rural /urban, gender and caste.³

The main estimate for disabled persons in Pondicherry has been by the NSSO. This survey, though it gave the overall prevalence of disabilities and by type, did not capture the socio demographic profile of the people with disabilities. Further, a decade has passed since the survey. Have there been any changes in the prevalence of disabilities? Hence the present study was carried out to know the current prevalence and pattern of disability and the extent to which their health needs are met so that public health benefits are brought to the disabled population.

AIMS AND OBJECTIVES

1. To study the prevalence of locomotor disability in rural Puducherry.
2. To study the Pattern of locomotor disability

METHODOLOGY

The study was conducted at Kuruvintham village selected by simple random sampling method from Bahour commune panchayat, located 20 kilometers southern to Pondicherry and 7 kilometers from the institution with a total population of 5787.

Sample size-calculated by using the formula,

$$n = \frac{Z\alpha^2 pq}{I^2}$$

$Z\alpha = 1.96$ (5% from the normal distribution table)

$I =$ relative error = 5%

$p = 2\%$

$q = 100 - p = 98\%$

(Assuming that prevalence of disability in Tamilnadu is 2%, from previous study)

$$n = \frac{(1.96)^2 \times 2 \times 98}{25}$$

$$= 30.21$$

The prevalence of disability in Tamilnadu was 2% in NSSO survey 2002 and the sample size using the prevalence value came too small hence the whole population in the village was selected for the study.

The study was designed as a cross sectional survey of the selected population using a questionnaire developed for the purpose. The sampled population was enumerated by a house to house survey from March 2012 to February 2013 Children below 3years were excluded as it is difficult to assess the disability among them and persons above 60 years were excluded as old age related disability would increase the prevalence rate.

After explaining the purpose of the study and obtaining written informed consent, the demographic details like name, age, sex, address, education, occupation, income, type of house and type of family for all members between 3 and 60 years of age in each household were collected from the head of household or a responsible person available in the house. The respondent was then asked if any member of the family had any disability. Disabilities were classified according to the WHO International Classification of Impairments, Disabilities, and Handicaps (1980)⁴ and information regarding pattern and causes of disabilities like hearing, visual, and speech, locomotor and mental were obtained. Besides the proforma details people with disabilities were further probed with direct face to face depth interview and information like extent of disability, age at onset of disability, educational and occupational status were obtained. Mop up rounds of survey were conducted to cover those houses which were missed during the initial round.

Statistical analysis: Chi square test, Proportions

RESULTS

Table 1: Age wise distribution of locomotor disability

Age groups in years	Locomotor disability		
	Total	Numbers	Prevalence
3≤10	169	0	0
10≤20	335	3	9
20≤30	995	5	5
30≤40	917	6	6.5
40≤50	793	7	8.8
50≤60	831	16	19.2
Total	4040	37	9.1

Table 1 show that the prevalence per 1000 was highest in the age group of 51 – 60 years. No trend was observed with age. Locomotor disability was the predominant type for all age groups except the youngest.

Table 2: Sex wise distribution of locomotor disability

Sex	Total Population	Locomotor disability	
		Number	Prevalence
Male	2007	24	12
Female	2033	12	5
p-value		0.0403	

The prevalence of disability was higher among males than females. Locomotor disability was significantly more among males when compared to females (p value <0.5).

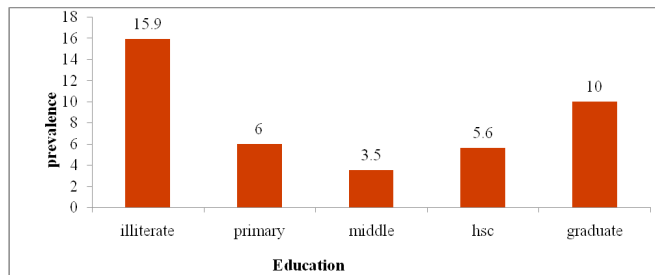


Figure 1: Education –disability prevalence

Figure 1 shows that the locomotor disability was predominant among illiterate people with prevalence of 15.9 per 1000.

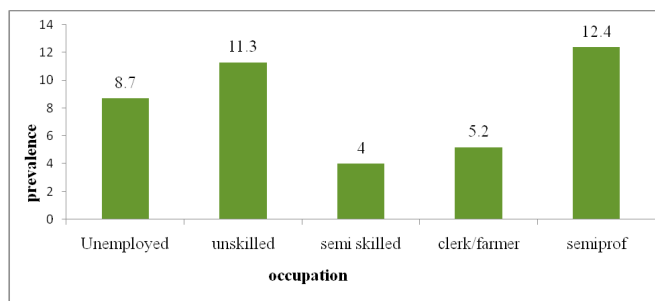


Figure 2: Occupation disability prevalence

Figure 2 showed the prevalence of locomotor disabled were predominant among semiprofessional (12.4 per 1000) followed by 11.3 per 1000.

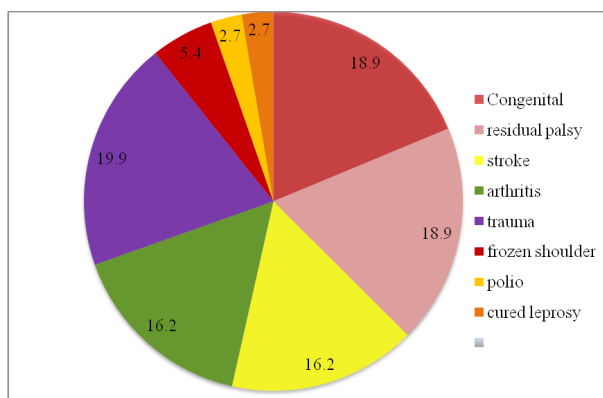


Figure 3: Causes of locomotor disability

Figure 3 showed the predominant causes of locomotor disability were congenital and residual palsy with a prevalence of 18.9 per 1000 each.

DISCUSSION

Locomotor disability (9.1 per 1000) was the most common disability in the present study followed by visual (2.9 per 1000) and hearing (2.9per 1000) .Similar results were found in NSSO where Locomotor disability was most prevalent (1%).In Census 2001 visual disability was the most common of all the disabilities. ³

The prevalence of disability was higher among males in the present study , similar to NSSO where the prevalence was higher among males in both rural(2.12%) and urban area(1.67%).The prevalence of disability was higher in male in census 2001(2.37%) .The prevalence of locomotor disability was significantly higher among males in the present study. Similar findings were found in the NSSO and in a study by Srivatsava et al in Uttar Pradesh.¹⁰

Nearly 50% of the disabled were illiterate in NSSO 2002³ and Census 2001. ⁴However highest literacy level was found in Delhi and Kerala and lowest literacy level in Arunachal Pradesh and Orissa. The present study found higher prevalence of disability among the illiterates. The educational status varied with the type of disability. The two main reasons for these variations were lack of special schools in the local area and dropouts with the onset of disability.³ similar results were found in a study in Uttar Pradesh where the prevalence of disability among illiterate was 47.2 per 1000. ¹⁰

The leading causes of locomotor disability in the present study were congenital, residual paralysis (18.9%) and stroke (16.2%). 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%).³ A study conducted in Burdwan, West Bengal found the causes of locomotor disability were residual paralysis (55.1%) and congenital stiffness (22.7%).¹¹ This implies lack of reconstructive surgeries and its awareness among people in the rural areas of Burdwan.

There were young adults affected with stroke in the present study in contrast to a study conducted in Mandur, Goa where stroke affected the elderly people.⁸

NSSO 2002 and a study conducted in Mandur, Goa⁸ showed 50% of the locomotor disabilities were due to poliomyelitis. In the present study no residual paralysis due to polio was found in the younger age groups highlighting the impact of the Polio programme. In Pondicherry the polio immunization coverage has been high since the 1999.¹²

The prevalence of leprosy in Puducherry is 0.34/10,000¹¹ and Puducherry achieved elimination of Leprosy by 2012.¹³ It is important to note that disability due to leprosy was in the 50-60 year age group shows how the National Leprosy eradication Programme(NLEP) has been successful in controlling this debilitating disease.

CONCLUSION

A cross sectional study conducted in rural Puducherry showed the prevalence of locomotor disability as 9 per 1000 population and was significantly associated with factors like poverty and educational status. The rates found in this study were comparable to national figures. An important finding was the absence of disabilities in the younger age groups due to leprosy and polio reflecting on the impact of the respective programmes of elimination. However there was increase in the prevalence of stroke especially among the young, cataract, disabling arthritis, and Road traffic accidents leading to disabilities.

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