

# A study of locomotor disabilities in a Malay community in Kuala Selangor

Osman Ali, MD (UKM), MPH (Tulane)

*Lecturer*

Rampal KG, MBBS (Agra), MPH (Bangkok)

*Lecturer*

*Dept. of Community Health*

*Faculty of Medicine*

*Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.*

## Summary

A study was conducted to determine the prevalence of locomotor disability in a Malay Community in Tanjung Karang, Kuala Selangor in 1984. The causes of these disabilities, the mobility and occupational handicaps they caused and the types of treatment received were determined. Fifty percent of the households in this area were selected by stratified random sampling and all persons above seven years of age were included in the sample.

The prevalence of locomotor disability was 3.9%. The prevalence among males was 5.2% and among females 2.6%. The prevalence increased with age, being as low as 0.6% in the 7-14 year age group and as high as 20.5% in the above 55 year age group. The disabilities resulted mainly from trauma (49%) and musculoskeletal and neurological problems (46.9%). Ninety percent (44 cases) had difficulty only in performance of daily activity and 20 cases (40.8%) had no mobility handicap whatsoever. Forty two (85.7%) of the 49 cases had received treatment.

*Key words:* Locomotor disability, Malay community, occupational handicaps.

## Introduction

Disability implies a transformation of body structure which results in the deprivation of the normal ability to perform an activity. This could arise from disease or injury. The number of disabled in the world suffering from some form of physical or mental impairment has been estimated to be more than 400 million. In the developed countries the estimated prevalence is 8% for disability and 4% for handicapping conditions.<sup>1</sup> A study conducted by the University of Malaya in 1981 at Kuala Langat, Selangor had shown that the prevalence for disability was 94.9 per thousand of the population and handicapping conditions 18.3 per thousand. Musculoskeletal disability was the third leading cause after aural and ocular.<sup>2</sup>

A lack of uniformity in the classification of disability and handicap has led to a difficulty in comparing data. This study was conducted using the WHO classification of Impairment, Disability and Handicapped. The objective of the study were to determine the prevalence of locomotor disabilities among Malays, the causes of these disabilities, the mobility handicaps they cause and types of treatment received.

## Materials and methods

The study was conducted in the Tanjung Karang subdistrict of Kuala Selangor in 1984. This included four areas, Kampung Tengah, Sri Desa, Sri Jaya and Kampung Sungai Kajang.

A census of the area was conducted to obtain data. The area was divided into urban and rural, based on the district council boundary. There were a total of 622 Malay households in the studied area with a population of 2343 peoples. Fifty percent of the households were selected from each strata (urban and rural) by stratified random sampling. A hundred and fifty households from within the district council limits and a hundred and sixty two from outside the limits were selected. All members of the selected households above seven years of age (1259 persons) were included in the sample. Members below seven years old were not selected because of the low prevalence among this age group.

Questionnaires based on WHO Classification of Impairment, Disability and Handicap were prepared and utilised. The presence of locomotor disabilities, their causes, the mobility handicap they resulted in and types of treatment received were determined. All persons in the sample were interviewed and examined and the possible diagnoses confirmed by physicians.

Disability was defined as any restriction or lack of ability to perform an activity in the manner or within the range considered normal for human being. For locomotor disability, it referred to an individual's ability to execute distinctive activities associated with moving, both himself and objects from place to place. It comprised ambulation disabilities, confining disabilities etc.

Handicap was defined as a disadvantage for a given individual, resulting from an impairment or disability that limited or prevented the fulfilment of the role that was normal (depending on age, sex, and social and cultural factors) for that individual. It was divided into mobility and occupation handicap where mobility handicap referred to the individual's ability to move about effectively in his surrounding and occupation handicap referred to the individual's ability to occupy his time in a manner customary to his sex, age and culture (occupation handicap will not be reported in this paper).

## Results

There were 622 households in the study area and 312 were selected for the study. There were a total number of 1259 persons aged seven years and above of whom 609 (48.4%) were males.

**Prevalence of locomotor disability:** The prevalence of locomotor disability was 3.9 percent or 39 per 1000 with 49 of the 1259 person examined having locomotor disability. The prevalence among males was 5.2% and among females was 2.6% (Table I). The difference between the sexes was significant ( $X^2 = 5.86$ ,  $p < 0.05$ ). Prevalence increased with age significantly ( $X^2 = 79.7$ ,  $p < 0.01$ ) being 20.2% in the above 55 year age group (Fig. 1). Most of the cases (71.4%) had disability in ambulation.

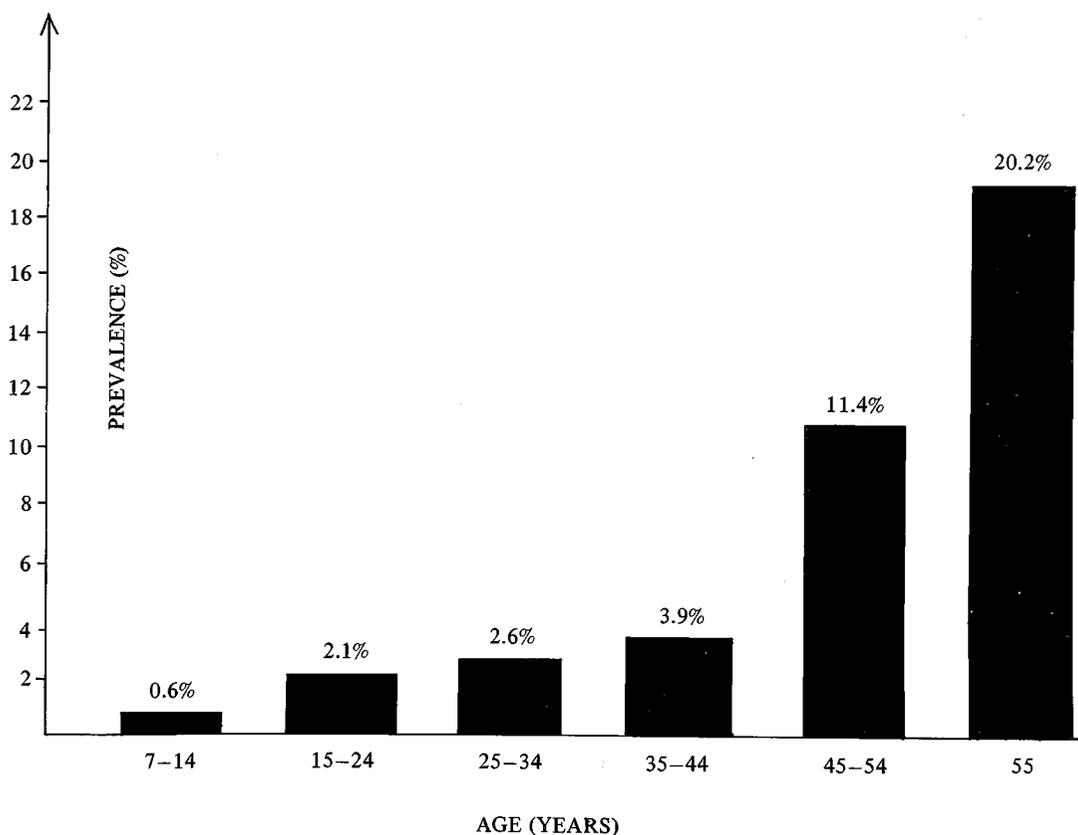
**Cause of locomotor disability:** Among the 49 cases of locomotor disability, two (4.1%) had locomotor disability due to congenital defects, 24 (49.0%) as a result of trauma and 23 (45.9%) due to musculoskeletal and neurological disorders (Table II). The cases with congenital defect included one case each of congenital amputation of thumb with syndactyly of the left hand and arthrogryposis multiplex congenita. Of the 24 trauma cases, 12 were a result of motor-vehicle accidents, nine to working hazards, two a result of sports and one due to accident at home. Osteoarthritis of knee joints (10 cases) and poliomyelitis (4 cases) were the main causes of disabilities when not due to trauma.

**Severity of locomotor disabilities:** Although the prevalence of locomotor disability (3.9%) appeared high, it was found that 44 (90%) of the cases had no difficulty in the performance of activity.

**Table I**  
**Prevalence of locomotor disability by sex**

Sex	Number examined	Number with locomotor disability	Prevalence %
Male	609	32	5.2
Female	650	17	2.6
Total	1259	49	

$X^2 = 5.86, df = 1, p < 0.05$



**Fig. 1 Prevalence of locomotor disability by age**

**Mobility handicaps:** In determining mobility handicap, it was seen that 20 (40.8%) of the cases had no mobility handicap, whatsoever, while 26 (53.1%) of them had mobility handicaps which varied from reduced mobility to variable restriction of mobility and in three mobility was severely restricted (Table III).

**Table II**  
**Distribution of locomotor disability by cause**

Cause	Number	Percentage %
Congenital	2	4.1
Traumatic (Accidents)	Domestic	1
	Occupational	9
	Motor vehicle accidents	12
	Sport	2
Non-Traumatic	Osteoarthritis	10
	Poliomyelitis	4
	Synovitis of knee	1
	Tendinitis of elbow	1
	Post-infective hip deformity	1
	Spondylolisthesis	1
	Stenosing tenovaginitis (trigger finger)	1
	Blount's disease	1
	Post-meningitis cerebral palsy	1
	Paraparesis	1
	Unspecified	1
	<b>Total</b>	<b>49</b>

**Type of treatment:** Among the 49 cases who had disability only 42 (85.7%) received treatment and seven (14.3%) did not receive any treatment (Table IV). Among the 42 cases who received treatment, 19 were treated by a doctor or medically qualified personnel, three by traditional healers (bone setting and herbs), while 20 received both kinds of treatment. Among the 19 persons treated by medical personnel, 16 reported that they improved with treatment given while three reported no change in their disability.

### Discussion

Reporting of disabilities and chronic disabling conditions is not mandatory in Malaysia and information on prevalence of disabilities is limited. This study aims to give information on locomotor disability, which is among the leading causes of disability.

The present findings are almost similar to those of a survey on disabilities (includes aural, ocular, mental etc.) in Kuala Langat, 1981.<sup>2</sup> The prevalence of disability among males in the area

**Table III**  
**Distribution of case by extent of mobility handicaps**

*Scale Category	Extent of mobility handicap	Number	Percentage
0	Fully mobile	20	40.8
1	Variable restriction of mobility	7	14.3
2	Impaired mobility	13	26.5
3	Reduced mobility	6	12.3
4	Neighbourhood restriction	1	2.0
5	Dwelling restriction	1	2.0
6	Room restriction	1	2.0
7	Chair restriction	0	0
8	Total restriction of mobility	0	0
<b>Total</b>		<b>49</b>	<b>100</b>

\*

**Scale categories**

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| <p>0 <i>Fully mobile</i> (not in categories 1–9)</p> <p>1 <i>Variable restriction of mobility</i> (not in categories 2–9)<br/>         Includes: a bronchitic with winter impairment of exercise tolerance, or a severe asthmatic with intermittent impairment of exercise tolerance, and impairments and disabilities following a fluctuating course, such as mild rheumatoid arthritis or (osteo) arthrosis</p> <p>2 <i>Impaired mobility</i> (not in categories 3–9)<br/>         Includes: restriction such that the ability to get around is not interfered with but getting around may take longer, e.g., because seeing disability makes the individual uncertain in getting around, or because of other uncertainty, or, in an urbanized society, because the individual has difficulty but nevertheless is able to cope with public transport under all circumstances</p> <p>3 <i>Reduced mobility</i> (not in categories 4–9)<br/>         Includes: reduction such that the ability to get around is curtailed, e.g., because seeing disability interferes with the ability to get around; or curtailment because of uncertainty, frailty, or debility; or disability on severe exertion due to cardiac or respiratory impair-interference with following occupation by</p> | <p>virtue of difficulty in getting to and from occupation when this is followed away from the individual's dwelling</p> <p>4 <i>Neighbourhood restriction</i> (not in categories 5–9)<br/>         Includes: restriction to immediate neighbourhood of dwelling, such as by disability on moderate exertion owing to cardiac or respiratory impairment</p> <p>5 <i>Dwelling restriction</i> (not in categories 6–9)<br/>         Includes: confinement to dwelling such as by severe seeing disability or disability on mild exertion owing to cardiac or respiratory impairment</p> <p>6 <i>Room restriction</i> (not in categories 7–9)<br/>         Includes: confinement to room, such as by disability at rest owing to cardiac or respiratory impairment</p> <p>7 <i>Chair restriction</i> (not in categories 8 or 9)<br/>         Includes: confinement to chair, such as by disability when recumbent owing to cardiac or respiratory impairment, or by dependence on hoists or similar appliances for getting in and out of bed</p> <p>8 <i>Total restriction of mobility</i><br/>         Includes: bedfast or confined to bed</p> <p>9 <i>Unspecified</i></p> |
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**Table IV**  
**Distribution of cases by treatment received**

Treatment	Number	Percentage
No treatment	7	14.3
Treated by medically qualified personnel	19	38.8
Treated by traditional healer (bone setting and herbs)	3	6.1
Treated by medically qualified personnel and traditional healer	20	40.8
<b>Total</b>	<b>49</b>	<b>100</b>

(114 per 1000) were higher than females (80 per 1000) and the prevalence increased with age, as low as 24.1 per 1000, in five year old children, 181.8 per 1000 in 45 year old and as high as 612.9 per 1000 in 70 and older.

The disabilities were severe in less than 10% of the individuals and did not affect their normal life. Of the cases with severe mobility handicaps, mobility was restricted to neighbourhood or house but none had mobility restricted to chair, bed or total restriction.

Regarding the choice of treatment, of the 49 cases, 20 had used a combination of modern and traditional medicine, 19 had only modern medicine and three had only traditional medicine. It appears that traditional medicine continues to play an important role particularly in conjunction with modern medicine.

## References

1. World Health Organisation. Classification of Impairment, Disability and Handicap, 1980. WHO, Geneva.
2. Chen P.C.Y., Arokiasamy J.T., Gan C.Y. The Prevalence, Nature and Severity of Disabilities in a Malaysian Community. Med. J. Malaysia, 1983; 38 : 206-211.