THE PREVALENCE, NATURE AND SEVERITY OF DISABILITIES IN A MALAYSIAN COMMUNITY

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SUMMARY

A total of 2518 persons were screened for disabilities. The overall prevalence of disability was 94.9 per thousand persons, while that of handicapping conditions was 18.3 per thousand. There is an increase in disabled persons with increasing age, with males having a higher prevalence than females. Predominant causes of disabilities were aural, ocular and musculoskeletal conditions, the latter largely involving the lower limbs. Cataracts were an important cause of impaired vision. Poliomyelitis and fractures were largely responsible for disabilities involving the lower limbs. A large proportion of handicapping conditions were due to mental conditions that included mental retardation, mongolism and cerebral palsy.

INTRODUCTION

The number of disabled persons in the world suffering from some form of physical or mental impairment has been estimated to be more than 400 million. In developed countries it is estimated that about 8% of the population suffer from disabilities while 4% are sufficiently disabled to be considered as handicapped. [1] However, in most parts of the developing world, including Malaysia, little is known of the prevalence of disabilities and handicapping conditions.

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The number of handicapped persons (blind, deaf, mentally retarded etc) registered in special schools undoubtedly represent only a fraction of the total number of disabled persons in this country. A large number of persons who have mental or physical disabilities are not registered. Apart from these registered persons, the prevalence, nature or severity of the disabling conditions in this country is not clear. Without this basic information, it becomes difficult to plan for the management and care of the disabled and handicapped.

The present study is an attempt to estimate the prevalence, nature and severity of disabling conditions in this country. It is hoped that the data collected would be useful not only to health-planners but also to doctors in their special fields as well as to educationists and social welfare workers in their efforts to contribute to the care of the disabled and handicapped.

In the present study, the word *disability* refers to any loss or reduction of functional activity, mentally, physically or socially that results from a physical or mental condition. It includes both "impairments" and "handicaps". Acute conditions are not included in this definition. The term *impairment* refers to any abnormality of anatomical structure, function or body mechanism that is limiting but still allows the affected person to lead a reasonably normal life. It excludes a person whose eye-sight is corrected satisfactorily by simply wearing glasses but would include a person whose arm movements are limited due to an old fracture. The term *handicap* refers to a disability which is severe enough to make the affected person dependent on others for everyday living. It refers to children who need special education because of their physical or mental defects. It also refers to adults whose physical or mental defects are such that they require others to look after them.

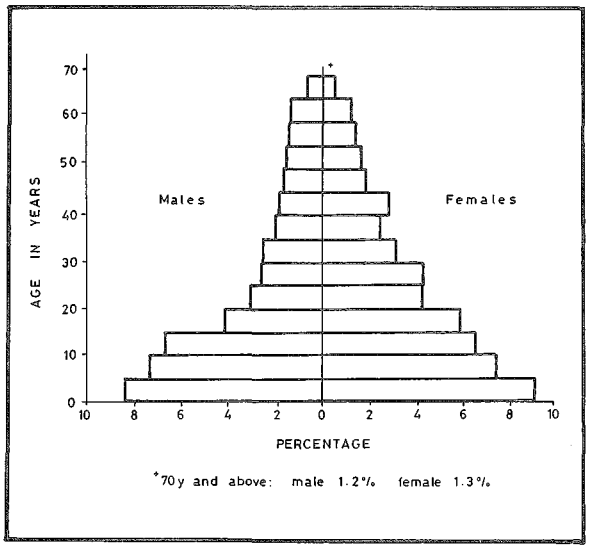

Fig. 1 Population pyramid of the 2518 people screened for disabilities.

METHODOLOGY

The study was carried out in the Kuala Langat District which in 1980 (census) had a population of 103,894 of whom 77% were rural and 23% were "urban" (i.e. those living in towns of 1000 - 9999 people). Approximately 47% of the population is Malay while 33% are Chinese and 20% are Indian. 41% of the population are below 15 years, 40.5% 16-40 years, and 18.5% are 41 years and over.

With the assistance of the Statistics Department at Kuala Lumpur, census enumeration blocks of the district were stratified for ethnic groups before being randomly selected. Each enumeration block contained 100 living quarters.A second stage random sampling of living quarters within each selected enumeration block was then carried out, and the process yielded a total of 520 randomly selected households containing a total of 2518 persons for detailed study. The sample thus contained 2.5% of the total population of the Kuala Langat District.

The field survey was carried out by 8 teams over a period of 3 weeks in 1981 (15th November 1981 to 5th December 1981). Each team consisted of one doctor and one trained field assistant. The disabilities were detected by using a pre-tested questionnaire, aided by personal observation and simple physical tests. Equipment and methods used for the detection of the disabilities were standardized for all teams.

TABLE I
ETHNIC DISTRIBUTION OF THE 2518 PEOPLE SCREENED FOR DISABILITIES

Ethnic Group	No.	%
Malay	1420	56.4
Chinese	486	19.3
Indians	609	24.2
Others	3	0.1
Total	2518	100.0

THE STUDY POPULATION

A total of 2518 persons were screened for disabilities. The distribution by age, sex and ethnic group of these 2518 persons is shown in Fig. 1 and Table I. It will be noted that the age distribution of the study population is similar to the general pattern for Malaysia as a whole, and that the proportion of Malays, Chinese and Indians included in the study were 56.4%, 19.3% and 24.2% respectively, the sample containing more Indians and fewer Chinese than is the general pattern in Malaysia as a whole.

Occupations of the heads of households of the 520 households included in the sample are shown in Table II. The distribution of occupational categories is similar to that seen in primarily rural communities and rural small towns.

TABLE II
OCCUPATIONS OF HEADS OF HOUSEHOLDS

Occupation	No.	%
Labourer	156	30.0
Housewife	96	18.5
Farmer/Fisherman	78	15.0
Skilled Workers	53	10.2
Pensioner	42	8.1
Doing small business	30	5.8
Unemployed	26	5.0
Unable to state occupation	14	2.7
Office/Clerical jobs	14	2.7
Professional/Technical and related workers	11	2.0
Total	520	100.0

OBSERVATIONS

Types of Conditions

Of the 2518 persons surveyed, 239 persons were found to have a total of 262 disabling conditions.

TABLE III
TYPES OF DISABLING CONDITIONS

Condition	Impairment	Handicap	Total
Aural	101	1	102
Ocular	44	7	51
Musculoskeletal	36	10	46
Disfiguring	25	0	25
Mental*	1	7	16
Other conditions	9	7	16
Total	216	46	262

* including intellectual and psychological problems.

Of these disabling conditions, 46 were severe enough to be considered as handicapping conditions. The distribution of the type of disabling conditions detected is shown in Table III. The overall prevalence of disability was therefore 94.9 per thousand of the population while the prevalence of handicapping conditions was found to be 18.3 per thousand.

Prevalence Rates by Age and Sex

The prevalence rates of disabilities by age group is shown in Table IV. In general, there is a progressive increase in disabilities with increase in age and this pattern is particularly true for those above 40 years of age.

TABLE IV
PREVALENCE RATES OF DISABILITIES BY AGE GROUP

Age	No. of disabilities	Rates (per 1000)
0 –	1	12.2
1 –	7	19.4
5 –	9	24.1
10 –	20	60.2
15 –	11	43.7
20 –	10	54.3
25 –	17	98.8
30 –	20	138.9
35 –	8	73.4
40 –	13	114.0
45 –	16	181.8
50 –	13	168.8
55 –	18	257.1
60 –	23	348.5
65 –	15	517.2
70 +	38	612.9
Total	239	94.9

TABLE V
DISTRIBUTION OF DISABILITIES BY SEX

Sex	Impairment	Handicapping condition	Total
Male	105	25	130
Female	88	21	109
Total	193	46	239

Table V provides the sex distribution of disabilities and handicapping conditions. The rates for disabilities and for handicapping conditions for males were found to be 114 per thousand and 22 per thousand respectively, while those for females were found to be 80 and 16 per thousand respectively.

Specific Causes of Disabilities

Specific causes of disabilities suffered by the 239 persons are shown in Tables VI to XI. Of the 262 conditions detected, 102 (39%) were found to be aural in nature. 101 were impairments and only one was severe enough to be handicapping (Table VI). Ocular problems were found to be the second most common cause of disabilities (19.5%). Cataracts are an important cause of impaired vision (Table VII).

The third most common cause of disabilities is the group collectively called musculo-skeletal conditions. In this group it will be noted that 28 (61%) of the 46 disabilities were found to be in the lower limbs, and that disability due to poliomyelities and fractures were the two most important causes seen (Table VIII).

For the group of conditions described as mental conditions, it will be noted that mental retardation (cause unknown) accounts for 10 (45%) of the causes in this group (Table IX). Specific causes of disfiguring conditions and other causes are given in Tables X and XI.

DISCUSSION

Information on illness and their severity is often lacking especially in developing countries. The usual source of morbidity information is the routine data collection system which usually confines itself to collecting the incidence of notifiable communicable diseases. This survey attempts to determine the prevalence of chronic disabling

TABLE VI
TYPES OF AURAL DISABILITY

Aural Condition		Impairment	Handicapping condition	Total
A. Mild impairment of hearing (unable to hear watch tick)				
(1) Unilaterally	) Cause not known	39	—	39
(2) Bilaterally	) Cause not known	40	—	40
B. Moderate impairment of hearing (bilateral) Unable to hear normal conversation. Can hear only when voice is raised	) Cause not known	11	—	11
C. Severe impairment of hearing				
(1) Unilateral*		11	—	11
(2) Bilateral (cause unknown)		—	1	1
Total		101	1	102

* Causes include:
Congenital absence of auditory meatus, perforated ear drum, congenital deafness, and unknown causes.

conditions in a Malaysian community.

The overall prevalence of disability in the population studied was 94.9 per 1000. In Wellington, New Zealand, Jack *et al* [1] using a postal questionnaire established that the overall prevalence of physical disability for persons 5 years and over was 87.3 (± 4.2) per 1000. In another survey of chronic illness, injury and impairment covering all ages conducted by the Australian Bureau of Statistics in 1974, [2] it was found that the rate for those whose conditions limited their activities in some way was 89.2 per 1000.

In this study the prevalence of handicapping conditions was found to be 18.3 per 1000. The New Zealand Study [1] had reported the prevalence of handicapping disability as 41.3 (± 2.5) per 1000. The lower rate in the present study can be accounted for by differences in classification and differences in population structure, with New Zealand having a higher proportion of older people.

Preliminary estimates from several developing countries suggest that at any given time, about 1.5 per cent of the total population consist of disabled persons who can benefit from rehabilitation. The hadicapping conditions in the present study

TABLE VII
CAUSES OF OCULAR DISABILITY

Ocular Condition	Impairment	Handicapping condition	Total
A. Visual acuity < 6/60 of one or both eyes (using Snellen's chart)			
1. Cataracts	8	4	12
2. Traumatic injury to eyeball	6	-	6
3. Corneal opacaties	2	1	3
4. Squint	2	-	2
5. Hypertensive retinopathy	1	-	1
6. Retinal detachment	-	1	1
7. Severe myopia	2	-	2
8. Occluded pupil	1	-	1
9. Vitamin A deficiency	1	-	1
10. Cause unknown	14	1	15
B. Other ocular conditions			
1. Squint	5	-	5
2. Vitamin A deficiency (night blindness)	1	-	1
Total	43	7	50

TABLE VIII
CAUSES OF MUSCULO-SKELETAL DISABILITY

Musculo-skeletal condition	Impairment	Handicapping condition	Total
A. Lower limbs			
1. Poliomyelitis	5	3	8
2. Paraplegia			
(i) Due to illness	-	1	1
(ii) Cause unknown	-	1	1
3. Chronic osteomyelitis	1	-	1
4. Old fractures (traumatic injury)	5	-	5
5. Bound feet	1	-	1
6. Contractures (burns)	3	-	3
7. Chronic ulcer	1	-	1
8. Muscular dystrophy	-	2	2
9. Unknown causes	5	-	5
B. Upper limbs			
1. Contractures (burns)	1	-	1
2. Chronic ulcer (cause unknown)	1	-	1
3. Congenital absence of forearm	2	-	2
4. Frozen shoulder	1	-	1
5. Claw hand (Leprosy)	-	1	1
6. Paresis of arm (cause unknown)	1	-	1
C. Digits (Functional impairment or absence of fingers or toes)			
1. Traumatic injury	3	-	3
2. Congenital deformity	1	-	1
3. Constriction bands (congenital)	1	-	1
D. Spine			
1. Kyphosis			
(i) Cause unknown	3	-	3
2. Scoliosis (cause unknown)	1	-	1
E. Skull (Fracture due to accident)	-	1	1
F. Other condition			
1. Osteogenesis imperfecta	-	1	1
Total	36	10	46

TABLE IX
CAUSES OF MENTAL DISABILITY

Mental condition	Impairment	Handicapping condition	Total
1. Psychosis			
(i) Schizophrenia	-	2	2
(ii) Other psychoses	-	4	4
2. Cerebral palsy	-	2	2
3. Mental retardation (cause not known)	-	10	10
4. Mongolism	-	3	3
5. Delayed milestone	1	-	1
Total	1	21	22

TABLE X
CAUSES OF DISFIGURING CONDITIONS

Disfiguring condition	Impairment	Handicapping condition	Total
1. Severe skin conditions			
i) Psoriasis	2	-	2
ii) Eczema	2	-	2
iii) Leucoderma	1	-	1
2. Prominent scars/growth/tumours			
i) Thyroid enlargement (without signs of thyrotoxicosis)	4	-	4
ii) Burn scar on face	1	-	1
iii) Dermoid cyst on ear	1	-	1
iv) Lymphoma of forearm	3	-	3
3. Torticollis	1	-	1
4. Deformity with minimal functional impairement			
i) Hand	4	-	4
ii)	1	-	1
5. Congenital absence of left ear	1	-	1
6. Harelip and cleft palate	4	-	4
Total	25	-	25

constitute 1.8 per cent of the study population. This figure does not include those with impairments. It is therefore reasonable to conclude that in this country, the percentage of the population who are disabled and who would benefit from some form of rehabilitation would be higher than estimated.

In the present study, the prevalence of disabilities increases with increasing age. This progressive

TABLE XI
CAUSES OF OTHER DISABILITIES

Condition	Impairment	Handicapping condition	Total
1. Cardiovascular diseases			
i) Congenital heart disease	-	1	1
ii) Buerger's disease	-	1	1
iii) Stroke (cause not known)	1	2	3
2. Bronchial asthma (severe)	-	1	1
3. Abdominal tumour	-	1	1
4. Severe migraine	1	-	1
5. Rheumatoid arthritis	2	-	2
6. Periauricular sinus (Chronically infected)	1	-	1
7. Diabetes mellitus	1	-	1
8. Dwarfism (uninvestigated)	1	-	1
9. Thyrotoxicosis	1	-	1
10. Nephrotic syndrome	-	1	1
11. Parkinsonism	1	-	1
Total	9	7	16

increase in disabilities with age is particularly evident from 40 years onwards. Nchinda [3] in studying illness prevalence among households in a rural district of Cameroon found that the prevalence of chronic illnesses increase with age. This same tread of disability increasing with age has also been reported in the New Zealand Study.

A higher prevalence of disability is observed among males (114 per 1000) compared to females (80 per 1000). Similarly, as far as handicapping conditions are concerned, it is the males who have a higher prevalence (22 per 1000) than the females (16 per 1000). However, in the New Zealand [1] study (1980), the prevalence of disabilities was higher in females (90.1 per thousand) than in males (75.3 per thousand).

The types of disabilities encountered may differ from study to study as definitions, classifications and mode of detection may differ. In this study, aural disabilities ranked highest followed by ocular and musculoskeletal disabilities. Nchinda [2] reports that in his study, the highest percentage of chronic illness were diseases of the musculoskeletal system. Belcher [4], in his study showed that among chronic illnessess, ocular disabilities were common while Jack *et al* [1], in New Zealand reported that in the Wellington survey, the 3 most common disabling conditions were arthritis, ear diseases and accidental injury.

Analysing the specific causes of aural disabilities detected in this study, it is seen that the majority had mild to moderate impairment of hearing. The cause of these impairments will need to be further investigated. As far as ocular conditions are concerned, a large proportion are due to a visual acuity of less than 6/60 of one or both eyes, with cataracts ranking as the highest cause of visual impairment. The majority of disabilities from musculoskeletal conditions are due to problems of the lower limbs. Poliomyelitis and traumatic injury rank as the highest causes of disabilities of the musculoskeletal system.

As noted earlier, disabilities may impair a person or they may result in disability thus rendering the victim dependent upon others. From Table III, it will be noted that mental conditions, which ranks fourth as a cause of impairment, is the leading cause of handicapping conditions (45.7%). Of these, mental retardation (cause not known) would be the most important cause of handicapping mental conditions. The second most important group of causes of handicapping conditions is made up of conditions of the musculoskeletal system which account for 21% of all handicapping condition.

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