

Study of Prevalence and Types of Disabilities at Rural Health Centre Mandur – A Community Based Cross Sectional House to House Study in Rural Goa

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Abstract

Aims and Objectives: To study the prevalence types and causes of disabilities at rural field practice area under Rural Health Training Centre and to make suitable recommendations based on the study findings

Material and Methods: It was a cross sectional house to house survey in five sub-centre areas in the field practice area of the department of Preventive & Social Medicine Goa medical college. Study lasted from June 2005- October 2006. Systematic random sampling with one stage cluster sampling was used. Appropriate study instrument and statistics were used.

Results: The total population of the present study was 4868 persons which were obtained from 936 families residing in the 5 subcentres of Rural Health Centre Mandur which had a total population of 36180. The total “persons with disability” were 190. Total numbers of disabilities found in the study were 232. The overall prevalence of disabilities was 3.90%. There was a statistically significant association between age, education, occupation, per-capita income and prevalence of disability. The main types of disabilities were visual disability (41.80%) hearing and speech disability (22.41%), locomotor disability (19.39) and mental retardation and mental illness (16.40%). Commonest causes of disabilities were cataract, presbycusis, fracture, moderate mental retardation.

Conclusion: Appropriate targeted intervention at the earliest is the need of the hour

Key words: Disability, Prevalence

Introduction

Among the many socio-medical problems, those of the disabled stand out prominently. Disabled persons are perceived only in the light of their infirmities. Around 10% of the world’s population is disabled. Some studies show more prevalence, while others using stricter definition show less prevalence. Usually only 4-7% of a developing country’s population is listed as disabled in the national surveys⁵.

In the Census of India 2001 (Disability rates in Goa), the data was collected rapidly by the census workers who did not have any precise instruments for classifying the person as disabled or nondisabled.

Man is predominantly a visual animal. Our language reflects this primacy of vision in our life. Therefore, it is no surprise that loss of vision has a devastating effect on man. Hearing is one of our most precious senses. Spoken words are the universal means of communication. The loss of this sense excludes the individual from much of what is going on around him and adjustment to this deprivation imposes a profound reorientation. Musculoskeletal conditions are prevalent and their impact is pervasive. They are the most common cause of severe long-term pain and physical disability, and they affect hundreds of millions of people around the world. Mental disability is among the most distressing and incapacitating conditions. Many of them tend to run a chronic or recurrent course, thereby impose a severe burden on the affected individual, family and the community. The stigma associated with mental illnesses further aggravates the

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social burden and interferes with effective treatment. Disability associated with mental illnesses rank among the most widespread and severe public health problems.

It is suggested that “no survey without service” should be adopted as a slogan for all epidemiological studies. So this study was undertaken to help the disabled so as to bring more public health benefit to the disabled population.

Aims and Objectives

1 To study the prevalence types and causes of disabilities at rural field practice area under Rural Health Training Centre.

2 To make suitable recommendations based on the study findings.

Material and Methods

The present study was conducted at Mandur which was the rural field practice area under the Department of Preventive and Social Medicine, Goa Medical College. The Rural Health and Training Centre is 12 kilometers away from Goa Medical College. The total population under RHTC Mandur was 36,180 according to the survey by ICDS Anganwadi worker's. The current study was a Descriptive Cross sectional study. This was chosen from the 5 subcentres of RHTC Mandur. The population was chosen as fixed proportion to the population of the village. The prevalence of disability was found to be 7.6% in the pilot study. Systematic random sampling with one stage cluster sampling of the families was done. This was done as the sampling of single person was difficult. It was obtained from the anganwadi worker's registers. The 936 families were systematically chosen and representative sample of 4868 people was obtained according to probability proportional to sample size. The sample size for the main study was calculated with the formula

$$N (\text{sample size}) = 4 pq / L^2$$

Where p=the crude prevalence

$$q = 100 - p =$$

L= allowable error (10% of the crude prevalence)

$$N = \frac{4 \times 7.6 \times 92.4}{0.76 \times 0.76}$$

$$N = 4863$$

The assessment of disability was done as follows. For visual disability assessment for preverbal children (<2years) eye closing test, for verbal children (2-4years) –picture naming test, for above 4 years children Snellen's test was used. For hearing disabilities tuning fork test was used. For locomotor disability, in children milestone delay was used and for adults goniometry was used; for mental retardation and mental illness field tested questionnaire was used. The patient was referred to a

specialist for further investigations and management. Disabilities studied were visual, hearing, speech, locomotor, mental illness and mental retardation. Disabilities not studied are hidden disabilities; sexual disabilities, respiratory, cardiac disabilities, dental disabilities and other sensory disabilities. Statistical methods that were used were the chi-square test, the chi-square trend and the percentages.

Observations

The number of person in the age group 0-15 years was 1033 out of the total study population of 4868. The proportion in the age group 0-15 years was 21.2%. The number of persons in the age group 16-30 years was 1305 out of the total study population. The proportion of people in the age group 16-30 years was 26.8%. The number of persons in the age group 31-45 years was 1269 out of the total study population. The proportion of people in the age group 31-45 was 26.1%. The number of persons in the age group 46-60 years was 768 out of the total study population. The proportion of persons in the age group 46-60 years was 15.8%. The number of person in the age group above 60 years was 493 out of the total study population. The proportion of people in the age group was 10.1. The most of the study population were Hindus and Christians, Hindus comprising about 65.7% of the study population and Catholics 32.76%. The Muslims comprised 1.5%. According to the Census of India Goa (2001) Hindus comprised 65.8% of the Goan population and Christians about 26.7% and Muslims about 6.8% and the others about 0.7%. 61.2% of the study population were married, 9.2% were widowed.

The total disabilities found in the present study were 232. The total people with disabilities were 190. Out of these 97 disabilities were visual disabilities, 52 were hearing disabilities, 45 were locomotor disabilities and 38 had mental disabilities. “People with one disability” were 140. “People with two disabilities” were 3. “People with 3 disabilities” were 4. “People with 4 disabilities” were 1. Out of the 936 families studied, 18.4 % (172 families) had one or the other disabled member in their family.

Table 1 shows the age distribution of the disabled and non disabled population. The prevalence of disability in children 0-15 years was 1%. As the age increased the prevalence rose but not in a fully linear manner. The maximum prevalence was found in the age group of 60 years and above (22.7%). The overall prevalence was 3.9%. Since this was for all age groups we cannot derive any clinical inference even if it was statistically significant. Prevalence of disability according to sex revealed that prevalence in males (4.2%) was higher than the prevalence in females (3.6%). Prevalence found in Muslims (4.1%) was higher than the other religions Hindus (3.9%) and Christians (3.9%).

Age Group (Years)	Total No.	Disability Present	
		No	%
0-15	1033	10	0.96
16-30	1305	25	1.91
31-45	1269	14	1.10
46-60	768	29	3.77
>60	493	112	22.71
Total	4868	190	3.90

$\chi^2 = 529.332$ d.f. = 4 $p < 0.01$

Liner trend value = 256.506 $p < 0.01$

Table 1. Age distribution of disabilities.

Educational Status	Total No.	Disability Present	
		No	%
Uneducated	1014	97	9.56
Primary	834	39	4.67
Secondary & Above	2536	45	1.77
Total	4538	181	4.12

$\chi^2 = 111.881$ d.f. = 2 $p < 0.01$

Liner trend value = 110.26

Table 2. Educational status and disabilities

Occupational Status	Total No.	Disability Present	
		No.	%
Unemployed	716	108	15.08
Housewife	530	14	2.64
Unskilled Work	392	21	5.35
Semi Skilled Work	819	16	2.87
Skilled Work	555	15	1.83
Professional	336	6	1.78
Total	3348	180	5.37

$\chi^2 = 175.948$ d.f. = 5 $p < 0.01$

Liner trend value = 101.296 $p < 0.01$

Table 3. Occupational status and disabilities (British registrar general classification of occupation)

Table 2 shows that the maximum prevalence was found in the uneducated group (9.56). The prevalence among educated was 2.6%. 53.6% of the disabled were uneducated. There was not even a single disabled who had graduated. Disability might be the reason for the school dropout. There are no special schools in the locality for the disabled which could be reason why disabled could not pursue education. Chi-square value was found statistically significant with a high linear value, stating that there was a strong linear association between the two variables educational status and disability prevalence.

Table 3 shows the occupational status distribution of disabled and the non disabled with prevalence. The chi-square was statistically significant with a high linear trend value.

Table 4 shows the social class of the disabled and the nondisabled (BG Prasad classification) with prevalence in each income group. The maximum prevalence of disability is found in the lower social class 10.5%. Chi-

Social Class	Total No.	Disability Present	
		No	%
I	1044	29	2.0
II	1305	46	3.5
III	935	38	4.0
IV	882	41	4.6
V	342	36	10.5
Total	4868	190	3.9

$\chi^2 = 54.508$ d.f. = 4 $p < 0.01$

Liner trend value 39.97 $p < 0.01$

Table 4: Social class and disabilities

square test was statistically significant stating that there was a statistically significant association between the two variables. It can thus be inferred that as the social class improved the disability prevalence decreased.

The main types of disabilities were visual disability (41.80%), hearing and speech disability (22.4%), locomotor disability (19.4%), mental retardation and mental illness (16.4%). Prevalence according to the type of disability revealed 2% prevalence for visual disability, 1.1% for hearing and speech disability, 0.9% for locomotor disability and 0.8% for mental retardation and mental illness.

Table 5 shows the commonest causes of disabilities encountered in the study according to age group. The commonest causes were cataract, presbycusis, fracture, moderate mental retardation. The prevalence of cataract

Age Group	% affected	Common Disabilities
0-15	0.96	MR, VD, HD, Loc, Sp.
16-30	1.91	Loc, MR, VD, HD, Sp
31-45	1.10	MR, Loc, MI, VD
46-60	3.77	VD, HD, MI, Loc, MR
>60	22.71	VD, HD, Loc
Total	3.90	VD, HD, MR, MI

Table 5: Age wise commonest disabilities. Abbreviations used: MR-Mental Retardation, VD-Visual Disability, HD-Hearing Disability, Loc-Locomotor Disability, Sp-Speech Disability, MI-Mental Illness.

was 1.7%. The prevalence of presbycusis was 0.8%. The prevalence of fracture was 0.36%.The prevalence of moderate mental retardation was 0.3%.

Discussion

The present study has been compared with similar studies.

Pati R R (2004) found 1.6% prevalence in 5-14 years age group, 0.9% in the 15-44 years age group and 7.4% in 45-59 years age group. The overall prevalence was 2%. This survey team did not have trained specialists such as the ophthalmologists, ENT surgeon, audiologist, pediatrician, psychiatrists. The highest prevalence was found in the age group 15-45 years, which was statistically higher than the other age groups⁵. The same study found the prevalence of disability to be 1.9% for males as compared to 2.1% for females. Statistically significant results were not obtained in the study ($\chi^2=0.53$). In the present study the similar prevalence was found. In the present study the highest prevalence was found among >60 years age group. Pati R R did not take >60 years age group into picture.

Pandit A (1981) found the prevalence of handicapped in the rural children to be an alarmingly high 10%. The study team was assisted by the audiometry assistant, IQ testing and visual acuity checking with the help of the specialist's .A high prevalence was thus found. There was 5.4% over reporting by the medical social worker⁶. The present study was having standardized definitions and since a doctor was doing the survey better detection was possible.

Venkatarao (2005) found prevalence rate of 74% among 60 years and above. In the present study it is 22.71%. This was much higher than the current study⁹.

Raizada (1984) studied 40 years and above age group, found the prevalence of cataract to be 86.7% in 80 years and above age group, 88.67% in 75-80 years age group, only 15.9% in the age group 40-45 years. The similar finding was observed in the current study. Most common cause of visual disability was cataract. The prevalence

of cataract was 1.7%. 15% of people in >60 years of age group had cataract. Lower prevalence was due to cataract surgeries being performed in the area where the current study was done, which was close to the medical college.

The census of India Goa showed the prevalence of disability to be 1.2%. This was because of the crude definitions used by the Census workers⁷. The prevalence in males was found to be 1.3% as compared to females 1%⁹. The prevalence among illiterates was 1.1%.and literates was 0.9%. The current study also showed the prevalence of disability in males was more than females.

Sharma KL⁸ (1961) found the highest prevalence 50.96 in social class 5 (<15 Rs/day). Blindness was 2 times more in the poor class as compared to the rich class and it is seen that there is gradual rise in prevalence with lowering in the social class. In the current study the prevalence among the social class 5 was 10.5%.The sample size in the current study was small than in the Sharma KL study .Hence if similar studies are done this would prove to be an important data source.

Pandit A⁴ (1981) showed the leading causes of visual handicapped was due to vitamin A deficiency. 31.7% of visual handicapped had squints. 4.3% had congenital abnormalities. 25 children (17%) of visual handicapped had them because of neglected eye infections. 51.6 % of all handicapped children had hearing disability and speech problem. The majority of them (63.8%) had hearing deficits due to chronic otitis media. 6.1% of children with auditory handicapped had congenital deafness. 32 (9.8%) of the children were found to have speech problems. 42(6.6%) of the handicapped children had mental handicapped. On field IQ testing 41% of these were to be profoundly retarded while 44.4% had moderate to severe mental handicapped. Only 14.5% of these children had mild to moderate MR. Mental retardation was underreported because scholastic backwardness and mild mental MR was not considered very serious in a rural setup. 64 children had physical handicaps. 54.7% of these children had post polio problem. Most of these children were extensively affected with paralysis, limb deformities. 18.8% of these children were handicapped because of neglected old fractures and infections (Osteomyelitis). 3 children were handicapped because of congenital dislocation of the hip. 4.7 % children had myopathies. 5 children (7.8%) with paralysis of cerebral origin but with almost normal IQ. 23% of children had multiple handicaps. In the current study Vitamin A deficiency was not the leading causes of visual disability as extensive Vitamin A prophylaxis was going on a wide scale in the current study area. Mental retardation was also exactly reported as doctor and the Anganwadi worker both contributed to the data collection for the current study.

Recommendations

1. Disability clinic should be started in all hospitals in Goa comprising of a pediatrician a orthopedician, Physiatrist, ophthalmologist, psychiatrist and a ENT specialist for early detection and early treatment of disabilities.
2. Training for intern's health workers and medical officers for disability detection should be done. Awareness talks should be given in all hospitals regularly.
3. Disabled should be made aware of all the social security measures that they can avail.

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