A Follow up Study of Usefulness of Wheel Chair
(Preliminary Report)

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101 cases who were provided with mobility aid like wheel Chair/Tricycle in the last three years have been studied in relation to its usefulness. The maximum cases were due to Spinal cord injury in the age group of 2nd, 3rd & 4th decade. The majority of cases were from low income group of rural background. The 22 cases out of total 31 cases, who have responded, were able to use wheel chair during toilet activities. More than half number of cases were using wheel chair between 4 to 6 hours a day. All the disabled have accepted the usefulness of wheel chair in their daily life. Nearly 30% of cases have reported some minor wear and tear in wheel chair which was repaired locally.

INTRODUCTION

Wheel chair mobility is an important aspect of the rehabilitation of spinal cord injured patients. Several factors affect mobility like material, design, physical dimensions of the wheel chair, level of fitness, strength and ability of user along with external factors such as texture, hardness and uniformity of road surface and the home situation of the patient.

In developing countries apart from above, socio-economical and cultural factors also contribute significantly in overall suitability and acceptability of the wheel chair. Our majority of spinal cord injured cases are from rural background with low socio-cultural status wherein neither home surroundings nor roads are suitable for the mobility of wheel chair.

In view of above, it has been envisaged to study the usefulness, suitability and acceptability of the wheel chair in their activities of daily life.

METHOD & MATERIAL

All the cases to whom wheel chair was provided during last three years have been studied. A detailed questionnaire was prepared and sent to each case along with stamped envelope. Out of 101 cases, nearly 31 cases have responded by filling the questionnaire and returned to us. The present study is based on the analysis of these questionnaires.

OBSERVATION & DISCUSSION

In the present study 101 wheel chairs were provided to the cases who have attended Deptt. of Physical Medicine & Rehabilitation, K. G. Medical College, Lucknow in the last three

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years. These aids were provided under ADIP scheme of Ministry of Welfare, Govt. of India.

Table No. 1 shows incidence of age in relation to sex. Male out numbered the females. More than three fourth of cases were in 2nd, 3rd and 4th decade of life and then gradual decline was noted as the age advances.

Table I. Incidence of age & sex

Age (years)	Male	Female	Total
0–10	2	2	4
11-20	18	4	22
21-30	29	4	33
31-40	22	1	23
41-50	5	3	8
51-60	5	1	6
above 60	5	—	5
	85	15	101

Various causes of locomotor disability were analysed as shown in Table 2. Majority of the cases were due to spinal cord injury followed by amputations and poliomyelitis of both lower limbs. Out of 66 spinal cord injury cases, the maximum cases were in 3rd decade of life.

Among 101 cases, eight cases were given Tricycle (hand driven) and the rest were provided with wheelchair, manufactured by ALMCO (Artificial Limbs Manufacturing Corporation of India) Kanpur. 80% cases were from rural areas and nearly all the cases were provided with free aid under ADIP scheme. Thirty-one disabled persons who were using wheelchair were followed up in our study. These wheelchairs were provided during the period of 1986 to 1989. There were 28 males and 3 females. The maximum number of cases were in age group of 11-30 years (Table No. 1) with a range between 10 years to 88 years. Six cases were illeterate and rest of them were at least junior high school.

Out of 31 persons in follow up only nine were unemployed before being disabled while after disability, twenty were without vocation despite using wheelchairs.

Out of 31 persons, 21 were from rural areas & rest were from urban background. As far as economic status is concerned, 19 persons were from low income group while 9 were from middle income group & rest were from high income group.

The causes of disability were analysed. The maximum cases (20) were of spinal cord injury cases, four were amputees and one was of myopathy.

Most of the wheelchairs provided were folding type and hand driven except one who was using autodriven Tricycle. Out of 31 cases,

Table II. Incidence of various locomotor disorders versus age

Age (years)	Total	Spinal cord inj.		Amputation BK	Amputation AK	Bilat.	Poliomyelitis Myopathy		Hemiplegia		Misc.
0-10	4	1	—	—	—	—	1	1	—	—	1
11-20	22	13	5	—	—	—	3	—	—	—	1
21-30	33	27	1	—	—	3	2	—	—	—	—
31-40	23	17	1	1	—	2	—	—	—	—	2
41-50	8	7	—	—	—	1	—	—	—	—	—
51-60	6	—	1	—	1	1	1	—	—	—	2
Above 60	5	1	—	—	—	1	1	—	—	2	—
Total	101	66	8	1	1	8	8	1	—	2	6

Table III. Age & sex

Age	Male	Female	Total
0-10	1	0	1
11-20	8	3	11
21-30	8	0	8
31-40	8	0	8
41-50	1	0	1
51-60	0	0	0
Above 60	2	0	2
Total	28	3	31

Table VI. Occupation

Occupation	Before Disability	After Disability
Student	2	3
Farming	7	2
Service	6	1
Self Employed	7	5
None	9	20
Total	31	31

Table V. Rural/Urban

	Male	Female	Total
Rural	20	1	21
Urban	8	2	10
Total	28	3	31

Table VI. Types of disability

	Male	Female
Paraplegia	17	3
Quadriplegia	3	0
Amputation	4	0
Myopathy	1	0
Misc.	3	0
Total	28	3

Table VII. Toilet facilities

	Male	Female
Outside Home	19	0
Inside Home	9	3
	28	3

Table VIII. How many hours a day use of wheel chairs

	Parap.	Quad.	Amp.	Myop.	Misc.	Polio	Total
Less than 2 hours	7	1	0	0	1	3	12
4 hours	5	1	1	1	2	—	10
6 hours	7	0	2	0	0	—	9
Total	19	2	3	1	3	3	31

Table IX. Application of wheel chair in domestic works

Partial	13
Incomplete	6
Complete	12
	31

25 were self driven and six cases were using the wheel chair with the help of others. 18 persons were having toilet facilities outside house. Rest of the 13 cases were having toilet facilities inside the home including three female patients. 22 cases were able to use their wheel chairs for their toilet activities while rest were unable to reach to the toilet.

The utility of wheel chair in terms of number of hours in a day was also studied. 12 persons were using wheel chair for less than two hours a day, in whom nine were paraplegics. Ten patients were using wheel chair for less than four hours a day and the remaining cases (nine) were using for more than six hours a day. All the disabled persons accepted utility of wheel

chairs in daily life except one who kept aside the wheel chair without giving any reason.

Difficulty in use of wheel chairs was also studied. Three persons had pain in both upper limbs while using wheel chair. Some of the cases have reported wear and tear in the wheel chair as well. Front wheel was broken in five cases, while rim in two wheel chairs. The spokes and rexin seat was damaged in one case each but repaired locally with minimum expenditure.

The usefulness of wheel chair for education and vocational purposes was also studied. In younger age group (eight cases) wheel chair was being used for purpose of education while in nine cases, for vocational purpose and in two cases for ADL.

The wheel chair was completely used for domestic purposes in 12 cases while partial usefulness was stated by 13 cases. 18 out of 31 cases were using cushion in the seat of wheel chair. Three had cotton cushion and 15 had of foam. In out of thirteen remaining cases, five developed pressure sores for which they have taken treatment locally.

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