Comparative Study of Traumatic Paraplegia Institutional Versus Community Level Rehabilitation

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The existing rehabilitation facilities for traumatic paraplegia is purely institutional. There is no rehabilitation facility in community which can effectively implement the institutional training in the community. This paper is a preliminary effort in highlighting the factors responsible for failure of institutional rehabilitation, when practised in community.

This study was conducted in the Department of Rehabilitation, Safdarjung Hospital, New Delhi. Only those cases of traumatic paraplegia, who were rehabilitated fully were included. In planning of rehabilitation programme, due consideration was given to needs and requirements of patient in their community. Assessment of architectural barriers and methods of overcoming them were also done. They were sent back to their community after excellent to good achievement of physical and vocational rehabilitation. Rehabilitation aids, wherever indicated were provided from the institution. During implementation of rehabilitation programme, expert service of physiatrists, physio-therapist, occupational-therapist, clinical psychologist, orthotist, medico-social worker and vocational counsellor were used.

These patients were followed up with the help of pre-tested questionnaire after 1-2 years. Only those patients, who responded to questionnaires were included in this study. The results were assessed in terms of community level usefulness of physical and vocational rehabilitation as per determinants shown in Table 1. On the basis of total score, the final results were calculated, Table 2.

Table 1

Determinants	*Score*
A. PHYSICAL REHABILITATION	
1. *Subjective opinion*	
– Fully or satisfactorily useful	2
– Useful at times	1
– Not useful	0
2. *Activities of Daily Living (ADL)*	
– Full independence	2
– Partial independence	1
– Full dependence	0
3. *Ambulation*	
– Complete independence	2
– Assisted ambulation	1
– Not ambulatory	0
4. *Indoor ambulation aids*	
– Using	2
– Sometimes using	1
– Not using	0
5. *Outdoor ambulation aids*	
– Using	2
– Sometimes using	1
– Not using	0
B. VOCATIONAL REHABILITATION	
– Fully useful	10
– Partially useful	9-1
– Not useful	0

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Table 2. Grading of final results according to total score

Grades	Percentage
Excellent	75+—100
Good	50+— 75
Fair	25+— 50
Poor	0 — 25

OBSERVATIONS AND DISCUSSION

Only 48 patients responded to the questionnaire. 30 patients were male and 18 were female. Maximum number of cases were in the age group of 24-40 years (36 patients) and 10 patients were less than 20 years of age. Rural patients (36 cases) predominated with a rural-urban ratio of 3 : 1. Most of the patients had institutional care for 2-4 months (44 cases) except 4 cases, who were in hospital for lesser period. Forty-six patients were given ambulation aids as shown in Table No. 3. Two patients did not require any aids. All the patients were discharged from institution with excellent, or good results.

Table 3. Type of rehabilitation aid

Name of rehabilitation aid	Male	Female	Total
Crutches	6	—	6
Calipers + crutches	8	6	14
Calipers + crutches & tricycle	8	2	10
Wheel chair	—	4	4
Caliper, crutches & wheel chair	2	2	4
*Tricycle	6	—	6
Trolley	—	2	2
Total	30	16	46

*Only tricycle was given to those cases where no rehabilitation aid for indoor activities was possible due to architectural barriers.

During follow-up *Subjective opinion* of patients revealed that institutional rehabilitation was (1) fully or satisfactorily useful in 26 patients (2) useful at times in 10 patients and (3) not useful in 12 patients (Table 4). Last two categories of useful at times and not useful showed deterioration of institutional rehabilitation in community level achievement.

Table 4. Subjective opinion on community level utility of institutional rehabilitation

Utility	Male	Female	Total
Fully useful	10	4	14
Satisfactorily useful	6	6	12
Useful at times	6	4	10
Not useful	8	4	12
Total	30	18	48

A.D.L. assessment revealed that 20 patients retained full independence in A.D.L. while 16 patients could retain only partial independence in A.D.L. in their community, and 12 patients became completely dependent in A.D.L, when they went back to community (Table 5).

Table 5. Activities of daily living (ADL) (at community)

A.D.L.	No rehabilitation aid	Crutches	Calipers & crutches	Tricycle, caliper & crutches	Wheel chair	Wheel chair, calipers & crutches	Tricycle	Trolley	Total
Fully independence	2	6	4	4	2	—	—	2	20
Partial independence	—	—	6	4	—	4	2	—	16
Dependent	—	—	4	2	2	—	4	—	12
Total	2	6	14	10	4	4	6	2	48

The community level achievement of the institutional rehabilitation deteriorated in patients with partial independence and full dependence.

This can be further improved by better understanding of the A.D.L of patients individually in the institution.

Ambulation : Only 30 patients retained complete independence in ambulation in the community—of which 28 were using ambulation-aids and 12 were not using them. Rest of the patients, either had to take the assistance of one person, or did not find ambulation aids helpful in their community (Table 6). They rejected them and fulfilled their ambulatory requirement by crawling and lifting by others. *The community level achievement deteriorated in patients, who needed assistance for ambulation and those who did not use rehabilitation aids*— which can be minimized by assessment of a right type of aid and adequate training.

Table 6. Ambulation (at home)

Level	No. of cases
Independent with or without ambulation aid	30
Dependent with ambulation aid	6
Not using ambulation aid	12
Total	48

Ambulation aids : On analysis of ambulation aids for indoor activities and outdoor activities, it was observed that out of 46 patients, who were given ambulation aids only 32 patients were using them for indoor activities and 28 patients were using them for outdoor activities in their community. 14 and 18 patients rejected the ambulation aids for indoor and outdoor activities respectively because they found it unsuitable to their needs (Table 7, 8).

These cases again reflect the community level deterioration of institutional rehabilitation.

Proper prescription of ambulation aids, with right modification can increase their usefulness in community.

It was further observed that rejection of ambulation aids for indoor activities was not seen in patients, who were given crutches, trolley and wheel chair, caliper and crutches. It was seen only in 6 out of 22 patients, who were

Table 7. Use of ambulation aids for indoor activities

	Crutches	Caliper & crutches	Tricycle, caliper & crutches	Wheel chair	Wheel chair, calipers & crutches	Tricycle	Trolley	Total
Yes	6	10	8	2	4	—	2	32
No	—	4	2	2	—	6	—	14
Total	6	14	10	4	4	6	2	46

Table 8. Use of Ambulation aids for outdoor activities (in the community)

	Crutches	Caliper & crutches	Tricycle, caliper & crutches	Wheel chair	Wheel chair, caliper & crutches	Tricycle	Trolley	Total
Yes	6	8	6	—	2	4	2	28
No	—	6	4	4	2	2	—	18
Total	6	14	10	4	4	6	2	46

given caliper and crutches for indoor activities. Maximum rejection was seen in those cases who were given either wheel chair or tricycle (Table 7). *So, it was observed that whenever advisable for indoor activities, crutches and trolley were best, caliper and crutches were satisfactory and single appliance like wheel chair and tricycle were quite unsatisfactory.*

The rejection of ambulation aid for outdoor activities was not found at all in patients on crutches and trolley. So it was observed that wherever indicated crutches and trolley were most acceptable, caliper and crutches were satisfactory, while wheel chair showed very poor utility for outdoor activities (Table 8). The reasons for rejection of ambulation aids were architectural barrier and deterioration of general condition of patient.

On analysing the repair of these ambulation aids, it was observed that out of 88 ambulation aids, only 24 required repair of minor wear and tear during 1-2 years of follow-up period, 14 by local artisan and 10 by patients themselves. None of the ambulation aid require services of rehabilitation workshop for repair (Table 9). This clearly shows that enough skill is available in the community for dealing with problem of minor wear and tear.

Vocational Achievement : It was found that level of vocational rehabilitation achieved in the institution was retained to some extent in community only in 8 patients, while 12 patients found it useless in their community. 28 patients used the vocational training in community but could not get sufficient monetary return (Table 10). *Community level achievement deteriorated in 40 patients.*

On analysing the above determinants of community level achievements of institutional rehabilitation, it was considered that vocational independence could be taken as the final guiding factor. On this ground, only 8 patients could retain the full rehabilitation status. (Table 10).

Table 10. Institutional versus community level achievement

Achievement	Institutional achievement	Community level achievement
Full rehabilitation	48	8
Partial Rehabilitation	—	28
Rehabilitation failure	—	12
Total	48	48

The results were analysed on the basis of score chart given in methodology. The total score of 48 cases is 960. On the basis of above scoring, those patients who maintained their institutional rehabilitation achievement in community could score only 360 (fair), while those patients whose institutional rehabilitation achievement deteriorated, scored only 172 (poor) marks. Thus the overall achievement in

Table 9. Repair of rehabilitation aids (in the community)

Place	Crutches	Calipers	Wheel chair	Tricycle	Trolley	Total
No Repair	26	20	6	10	2	64
Self Repair	4	4	2	—	—	10
Local Artisan	4	4	—	6	—	14
Rehab. Units	—	—	—	—	—	—
Total	34	28	8	16	2	88

both the groups can be ranged from fair to poor only. On one hand, it will imply that there is some use of institutional rehabilitation in community, on the other hand, it also indicates that there is substantial deterioration in institutionally rehabilitated cases from excellent to fair when practised in community. This strongly points towards developing proper community level rehabilitation services, which can utilise the maximum from institutional training.

CONCLUSION

This study shows that the rate of failure of institutional rehabilitation of paraplegics in the community is quite high.

Therefore community oriented planning for their rehabilitation programme is the only alternative. Thus rural approach to the present methods of institutional rehabilitation for paraplegic is a must in order to overcome the high rate of failure.