

# **Psychosocial Outcome after Rehabilitation of Paraplegic Patients and the Factors Affecting Them**

**Dr. G.Handa, Dr. U. Singh , Dr. K.S. Sundaram, Dr. S. Wadhwa**

## **Abstract**

Paraplegic rehabilitation requires a multi- dimensional approach to the patient. One of the important factors that often is overlooked in the institutional care is the psychosocial and environmental barriers affecting the rehabilitation outcome. In our study we evaluated the psychosocial outcomes after discharge from rehabilitation for thirty patients. The level of rehabilitation was measured using ESCROW scale included in Long range evaluation system scale. The difference in the pre and post discharge score indicate that there is deterioration in the level of rehabilitation after the patient is discharged to home environment. Further it was seen that there were better scores in group of patients which were less educated, those living in town/village, traumatic paraplegics, lower level of injury, incomplete injury, duration of more than a year of paraplegia, less number of hospitalisations and medical complications. The other sociodemographic factors do not affect the ESCROW profile as seen in our study.

## **Introduction**

Paraplegia is a condition that puts whole life of a patient out of gear. There are many factors which affect the rehabilitation of paraplegic patients in addition to disease related factors. Sociodemographic factors play an important role as they are the ones which are inherent to the person and are not affected by the usual rehabilitation strategies employed at institutional level. Thus it is necessary to study those limiting factors which inspite of best medical management and rehabilitation may limit the persons autonomy to explore his/her environment.

There are many studies mostly done in western countries which address to psychosocial issues in paraplegics using different methods to evaluate the outcomes<sup>1</sup>. In a group of thirty

patients we studied their sociodemographic variables and their effect on psychosocial outcomes using ESCROW scale<sup>2</sup>.

## **Material and Methods**

Paraplegic patients attending the Department of physical medicine and rehabilitation at AIIMS were included with the duration of Paraplegia varying from three months to five years. Total of thirty patients were studied. The inclusion criteria being paraplegia of duration less than five years, those who received complete comprehensive rehabilitation and having absence of any medical complications necessitating hospitalisation other than those related to paraplegia. The exclusion criteria being patients of extremes of age (<15 and >60).

Functional evaluation and medical examination was done and sociodemographic data was collected. Each of the variables were then grouped into two or three groups for e.g

*Address for correspondence :*

*Dr. Gita Handa, Deptt. PMR, AIIMS,  
New Delhi-110029, India.*

age was grouped as age less than thirty and greater than thirty years. ESCROW scores were then averaged for each group and the difference was then evaluated by comparing the mean and standard deviation values. Paired t-test performed to compare the significance of the observed values. The ESCROW score consists of following six factors i.e Environmental barriers, Social interaction, Cluster of family members, Resources, Outlook and Work status. Each of above consists of four variables of varying independence scored from one to four. Score one representing minimum impairment and four representing maximum impairment. This was evaluated at discharge and at followup. The difference in score was then calculated and scores compared.

## Results

The demographic profile of the sample group (Table-1) revealed that 60% of patients were of less than 30 years of age and 40% greater than thirty years, males were four times

the females (m:f-4:1), 60% of the patients were married at time of developing paraplegia, only 23% had completed their college education, maximum number of patients were residing with the parents (46.6%), 50% were residing in city and 5 and 10% in town and village respectively, 16.67% of the patients lived in multistoried houses without any lifts etc.

Variables which changed as an impact of disease were that one patient got separated from the spouse, one patient improved his educational status, 50% of the patients had to change their vocation or had to leave the job which they were doing in preinjury period, 56.6% of the patients had to change their living arrangement in order to adjust to the disability

Other variables related to disease which were studied are causes of paraplegia, site of injury, type of injury, duration of injury, number of hospitalizations and place of discharge.

The scores were obtained at discharge and at follow up and the difference in score calculated. The mean and S.D calculated for each

**Table-1**

<i>Disease related variables</i>		
1. Cause of Paraplegia	Traumatic -	76.67%,
	Non traumatic-	33.3%
2. Site of injury	Dorsal-	50%
	Lumbosacral-	50%
3. Type of injury	Complete-	26.67%
	Incomplete-	73.33%
4. Duration	One year-	36.67%
	More than a year-	63.33%
5. Hospitalisations	One-	70%
	More than one-	30%
6. Place of Discharge	Home-	70%
	Other than home -	30%

**Table -2**

<i>The ESCROW scores obtained</i>				
Score	Mean	S.D	Min. score	Max. score
Discharge	13.7	4.72	5	23
Follow up	12.66	4.51	5	23
Difference	1.433	3.03	-4	9

**Table-3**

*Analyses of escrow scores in relation to sociodemographic variables*

Variable	ESCROW score difference
1. Age - < 30	1.3 ± 2.9
> 30	1.5 ±
3.3 2. Gender -males	1.4 ± 3.2
females	1.5 ± 2.1
3. Marital status	
single	1.5 ± 2.8
married	1.3 ± 3.4

(Pooled estimate of variance was not significant)

**Table-4**

4. Education	
Undergrad	1.8 ± 3.09*
Graduate	1.1 ± 3.9* 5.
Vocation	
No change	1.6 ± 2.7*
change	1.2 ± 3.3* 6.
Household	
parents/spouse	1.89 ± 3.4
others	0.63 ± 2.4
7. Residence	
town/village	1.6 ± 3.6
city	1.2 ± 2.8
8. House type-	
semipermanent	1.8 ± 3.6
permanent	1.2 ± 2.8

Then the score of the different groups of variables grouped together and added in each group and the difference in scores evaluated for the statistical significance using paired t test.

As observed above that the scores ranged from very low to near normal. The negative value in the difference indicated that there is decrease in the psychosocial outcome scores indicating worsening of the condition of the patient in the community.

Further analyses of scores indicated that there was some change in the different groups of patients though their statistical analyses was not significant owing to less number of patients included in the sample size. However, being a pilot study it gave us clues regarding the direction of further studies on more patients.

Thus from above analyses we infer that the disease related variables affect the escrow score more than the demographic variables. The change in score was more in traumatic lesions, dorsal level, incomplete injury, duration more than a year, less hospitalizations, discharge to home, living arrangements with parents or spouse, less educated initially. Factors which do not influence the outcome are gender, marital status, residence, house type.

\* Pooled estimate of variance not significant

**Table-5**

9. Cause of paraplegia			
traumatic	1.6	±	3.3
non traumatic	0.8	±	1.8
10. Site of lesion			
Dorsal	6.6	±	2.1
Lumbosacral	2.2	±	3.6
11. Type of injury			
Complete	0.3	±	1.9
Incomplete	1.8	±	3.3
12. Duration			
less than year	0.72	±	
more than year	1.8	±	3.1

**Table-6**

13. No. of hospitalizations			
one	2.7	±	2.6
more than one	0.6	±	3.07
14. Discharged to			
Home	1.6	±	2.8
others	0.8	±	3.5

## Discussion

The observations in the study reinforced the facts highlighted in other studies<sup>2,3</sup> that there is no change in marital status as compared to normal population, poor vocational outcome and no change in educational level postinjury. One contrasting study on a Swedish community<sup>4</sup> reported that 80% of the paraplegics were engaged in gainful employment or education. The fact that extensive society support and stimulation along with better facilities can satisfy important needs and expectations of well functioning SCI subjects was highlighted.

Lack of adequate vocational rehabilitation<sup>5,6,7</sup> in post SCI patients is of same severity as highlighted in other studies. The possible reasons vary from general unemployment in normal population, lack of motivation to work, lack of self confidence, lack of employers understanding regarding the ability of the injured, local distance to place of employment, insufficient adaptation of working place etc. In our sample however no attempt was made to analyze the cause of lack of employment in different populations, but there are problems awaiting solutions, such as improved facilities of employment for a disabled person and measured motivation to work.

Our study correlated with another large-scale study<sup>8</sup> which examined the relationship between life satisfaction to impairment disability and handicap and found positive impact of social integration, occupation and mobility. The importance of social functioning level and assessment of architectural barriers and their bearing on daily living, social interactions and occupational outcome is evident in this study<sup>9</sup>. Psychosocial adjustment to disease showed decline in our study. Although specific inventories, were not used but general outlook and decision making capacity was evaluated in our scale<sup>10,11</sup>. The results of the above study points towards the fact that there are issues other than medical and physical rehabilitation which should be looked into if we want the fruits of institutional care to be effectively transmitted to the patients in the community. The environmental and sociodemographic factors are as important as disease related factors as the quality of life of patients with SCI is multidimensional. In this study we have tried to analyse these factors and the change in these as a result of comprehensive rehabilitation. It was set back to know that in some cases there was deterioration in the adjustment as indicated by negative score. This finding highlights the fact that rights of disabled patients

are largely neglected and compliance to laws on architectural barriers and reemployment are not cared for. Home visits and understanding of the family environment, adequate family support and society integration is essential for successful rehabilitation and continuity of education must be ensured at time of discharge. We obviously cannot rule out that due less no of patients and lack of sensitivity in our scale the definite recommendations and predictors of outcome are not defined but looking at the fact that the results match with some of the studies done using more elaborate scales we infer that this scale is though less sensitive but can be used to quantify the third dimension of rehabilitation which was for a long time totally neglected aspect of rehabilitation especially during a patients hospital stay where in medical problems take the centre stage. The present scales such as FIM etc have totally overlooked these facts and hence adding further to this neglect. Apart from ensuring complete functional and medical rehabilitation the sociodemographic, environmental and psychosocial factors affecting the patients autonomy should also assume importance prior to discharge planning and its continuity ensured in the community.

## References

1. Carl V. Granger, Health accounting - Functional assessment of the long term patient, in Handbook of physical medicine & rehabilitation. 3rd edition, 1982, W.B. Saunders company, Page 258-272.
2. De vivo et al .Trends in spinal cord injury demographics and treatment outcomes between 1973 and 1986. Archives of Physical medicine and rehabilitation 1992;73:424-429.
3. Lang et al. Post clinical follow upof pateints through domestic check ups. Paraplegia:1980 April:18(2):140-8.
4. Siosteen, A. et al. The quality of life of three functional spinal cord injury sub groups in a Swedish community. Paraplegia 1990; 28: 476-482.
5. EL Ghatit, A.Z. Education and training levels and employment of spinal cord injury patients. Archives of Physical Medicine and Rehabilitation. 1979; 60: 205-406.
6. EL Ghatit, A.Z. Outcome of marriage existing at the time of a male's spinal cord injury. Journal of Chronic Disease, 1975; 22: 383-388.
7. EL Ghatit, A.Z. Variables associated with obtaining and sustaining employment among spinal cord injury males: a follow-up of 760 veterans. Journal of Chronic Diseases, 1978;31:363-369.
8. Fuhrer M.J et al .Relationship of life satisfaction to impairment, disability and handicap among persons with spinal cord injury living in the community. Archives of Physical medicine and rehabilitation 1992;73:552-7.
9. Tarrico et al. The social and vocational outcome of spinal cord injured patients. Paraplegia 1992:30: 214-9.
10. Lundqvist C, Siosteen A et al Spinal cord injury: Part-I: Clinical, functional and emotional status, Spine.1991, Jan:16 (1): 78-83.