

# Functional Independence and Quality of Life for Persons with Locomotor Disabilities in Institutional Based Rehabilitation and Community Based Rehabilitation - A Comparative Study

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## ABSTRACT

**Purpose:** To compare the functional independence and quality of life of persons with locomotor disabilities who undergo Institutional Based Rehabilitation (IBR) and similar persons who undergo Community Based Rehabilitation (CBR).

**Methods:** Purposive sampling was done. Thirty males with locomotor disabilities -15 from IBR and 15 from CBR- were selected. Both the groups were first administered the Functional Independence Measure (FIM) questionnaire, followed by the Quality of Life (WHOQOL-BREF) questionnaire.

**Results:** There were no significant difference between IBR and CBR with regard to functional independence ( $t$  value = -1.810,  $P < 0.05$ ), and with regard to Quality of Life (QOL) ( $t$  value of 0.468,  $P < 0.05$ ).

**Key words:** rehabilitation, CBR, IBR, functional independence, quality of life, service delivery.

## INTRODUCTION

According to a report published by World Bank (O'Keefe, 2007) people with disabilities comprise between 4% and 8 % of the Indian population. Locomotor disability is defined as difficulties in activities of daily living related to lower limb function, which can be the consequence of diseases or impairments of the cardiovascular, pulmonary, nervous, sensory and musculoskeletal systems. Odding et al (2001) concluded that locomotor complaints, heart failure, COPD

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and diabetes mellitus contribute considerably to locomotor disability among non-institutionalised elderly people. The World Bank report (O'Keefe, 2007) also revealed that persons with locomotor disabilities were more likely to have sought treatment, than persons with hearing and speech disabilities.

The two broad approaches for the rehabilitation of persons with disabilities are Community Based Rehabilitation (CBR) and Institutional Based Rehabilitation (IBR). While both CBR and IBR have their merits and limitations, the issue is to find out the more suitable model of these two (Arora, 2007). Parents often report significant difficulty in navigating the complex system of rehabilitation care to obtain the required medical, mental health, educational, and social services (Kersten et al, 2001; Brehaut et al, 2004). Limited financial resources, lack of appropriate services, and insufficient support systems are the family-system risk factors that can contribute to poor prognosis (Singer and Powers, 1993) of persons with disabilities in both types of rehabilitation.

Community-based rehabilitation (CBR) is a fast-growing model for providing services to people with disabilities (Lightfoot, 2004). Since its inception about three decades ago, CBR has evolved as a rights based approach for enhancing the quality of life for persons with disabilities, particularly in developing countries. According to the World Health Organisation (1998), "Quality of life is defined as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns."

According to Arora (2007), the quality of rehabilitation services tends to be better in IBR than in CBR, as IBR services are provided by professionals and specialists, with the assistance of more sophisticated equipment and tools. However, the results are contradictory when comparisons are made to determine the effects on independence in older people needing rehabilitation. A study by Ro and Kim (1995) showed that non-institutionalised elderly had higher scores in Self Efficacy, Instrumental Activities of Daily Living and Quality of Life as compared to the institutionalised population; while Green et al (2005) reported that care in a locally-based community hospital is associated with greater independence for older people, than care in wards in a district general hospital.

## **METHODS**

The principle aim of the study was to compare the functional independence and quality of life of persons with locomotor disabilities who had undergone

Institutional Based Rehabilitation and those who were under Community Based Rehabilitation services.

### **Sample**

Since it is a pilot study, a small sample size of 30 was chosen to reach an optimal size for Student's t-test, using purposive sampling technique. The subjects consisted of 30 males with locomotor disabilities, above 21 years of age, belonging to low socio-economic status. People with co-morbid and chronic medical or mental conditions were excluded. For the IBR group, 15 males were selected from the regular clientele services of National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD). Another 15 males were selected for the CBR group, from various locations in and around Chennai in Southern India.

### **Procedure**

Verbal informed consent was obtained from those who were willing to participate in the study. Functional Independence Measure was administered first, followed by the Quality of Life measurement. Tests were administered individually, in a private setting. The data were entered on an Excel spreadsheet and analysed with descriptive statistics using SPSS version 10. The statistical tests were done to compare IBR and CBR in terms of Functional Independence and Quality of Life.

### **Tools**

#### **WHO Quality of Life-BREF (WHOQOL-BREF)**

The WHOQOL-BREF, developed by the World Health Organisation (1998), is an instrument comprising 26 items which measure the following broad domains: physical health, psychological health, social relationships, and environment.

#### **Functional Independence Measure (FIM)**

The FIM, an assessment instrument of functional status, consists of 23 items in 7 areas of functioning such as Self Care, Sphincter control, Mobility, Locomotion, Communication, Social adjustment/cooperation and Cognition/problem-solving. Scoring is done using a 7- point scale (7 stands for complete independence and 1 stands for complete dependence).

## RESULTS AND DISCUSSION

**Table 1: Descriptive of Sample Variables**

Variables	CBR			IBR		
	Min.	Max.	Mean (SD)	Min.	Max.	Mean (SD)
Age	30	67	53.60 (13.55)	27	72	37.00 (18.13)
Self care	38	54	47.80 (5.72)	44	53	50.40 (3.44)
Mobility	21	34	30.20 (4.96)	30	33	32.00 (1.13)
Cognition	30	35	33.60 (1.92)	35	35	35.00 (0.00)
FIM	89	121	111.60 (12.03)	112	121	117.40 (3.04)
QOL	4	5	4.20 (0.41)	1	5	4.00 (1.60)
Health	2	5	3.60 (1.05)	3	5	4.40 (0.89)
Physical	23	33	25.80 (3.89)	21	28	25.80 (2.73)
Psychological	14	24	19.60 (3.74)	19	26	23.20 (2.88)
Social	6	15	10.60 (3.31)	9	15	13.20 (2.48)
Environmental	29	42	33.00 (4.81)	23	38	33.80 (5.97)

**Table 2: Difference between Mean Scores of Functional Independence and Quality of Life among CBR and IBR persons**

VARIABLES	GROUP	MEAN	SD	t	P
FIM	CBR	111.60	12.029	-1.810	NS
	IBR	117.40	3.043		
WHOQOL-BREF	CBR	4.20	.414	0.468	NS
	IBR	4.00	1.604		

NS – Not Significant

The results show that there is no significant difference between persons who undergo Community Based Rehabilitation (CBR) and Institutional Based Rehabilitation (IBR), in terms of functional independence ( $t = -1.810$ ). A similar finding was reported by Gladman et al (1993) in a randomised controlled trial of domiciliary and hospital-based rehabilitation for stroke patients after discharge from hospital. Their study concluded that overall there was no difference in the effectiveness of the domiciliary and hospital-based services.

With regard to Quality of Life (QOL), the 't' value was found to be 0.468 between persons with locomotor disability in CBR and IBR, and the differences were not

statistically significant. Similar finding was reported by Imfeld et al (2006). They studied Quality of Life improvement in intermittent claudication after hospital-based rehabilitation and home-based physical training, and concluded that after 3 months of training the improvement was comparable and not consistently different between the groups.

In the present study, it was expected that the advanced techniques of the IBR approach should have resulted in more functional independence but the scores of CBR are also found to be high, possibly because of greater awareness of the importance of rehabilitation in CBR; the focus on more practical activities of daily living skills in CBR, compared to goal oriented of IBR approaches; and focus on individualised therapy by CBR workers, rather compared to group therapy setting in IBR.

When considering functional independence, the IBR approach concentrates on improving muscle strength and power, on increasing or attaining the exact range of motion, or on balance and co-ordination. The focus here is on correcting physiological aspects through which functional independence can be accomplished. In CBR however, the workers assist the person with disability to perform skills like eating, grooming, dressing, toileting, etc. With repeated training within the communal environment, the person grows accustomed to the activities of daily living. This could be the reason for developing good functional independence in CBR as well.

## **CONCLUSION**

This study attempted to find and compare the benefits of Community Based Rehabilitation (CBR) and Institutional Based Rehabilitation (IBR). No statistically significant differences were found between these two approaches in terms of Quality of Life as well as Functional Independence. This shows that both models are more or less equally effective in rehabilitating persons with locomotor disabilities. This finding is helpful as persons with disabilities can opt for the approach that is easily accessible.

### **Limitations**

The present study was confined to a small sample of persons with locomotor disabilities and data was collected using only two measures. Chances of reporting bias are possible, since the study relied mainly on self-reports. Gender

differences could not be studied as the samples comprised only males. Effects of socio-demographic variations were not considered in the study.

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