

The Effect of Community-Based Rehabilitation Program on Quality of Life of People With Physical Disability in Bostanabad, Tabriz, Iran

Roghieh Hatami¹; Mehdi Rassafiani^{1,2,*}; Ebrahim Pishyareh¹; Saman Karami¹; Omid Hashemi¹

¹Student Research Committee, Department of Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, IR Iran

²Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, IR Iran

*Corresponding author: Mehdi Rassafiani, Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, IR Iran. Tel: +98-2122180037, E-mail: mrassafiani@yahoo.com

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Background: Many people with disability are living in developing countries, requiring short- and long-term rehabilitation services. These services are provided by various professionals and are very expensive. Community Based Rehabilitation was developed by World Health Organization to provide the basic rehabilitation services for those are living in remote and poor areas, not having access to hospitals and rehabilitation clinics.

Objectives: The aim of this study was to examine the effect of a Community-Based Rehabilitation (CBR) program on Quality of Life (QOL) of people with physical disability in rural areas of Bostanabad, Tabriz, Iran.

Patients and Methods: In this descriptive-analytical and comparative study, two groups of participants were selected as the case and control according to their living place. Participants in the case group included 48 people with physical disability, aged between 18 and 50 years old (Mean = 32, SD = 8.78) who lived in the villages covered by the CBR program. On the other hand, participants in the control group included 45 people with physical disability in the close-by villages not covered by the CBR program (Age between 18 and 50 years old; Mean = 33, SD = 9.98). People with other types of disabilities or multiple disabilities were excluded from the study. All participants in this study completed two questionnaires, including demographic and the Short-Form 36 (SF-36) to evaluate QOL. Data were analyzed using t-test for independent groups.

Results: Data were analyzed using SPSS software. The results demonstrated a significant difference in QOL between the two groups ($P > 0.002$). Participants in the CBR program group showed a higher level of QOL compared with the other group.

Conclusions: The results of this study show that applying CBR programs in the rural and remote areas can be effective in improving the QOL of people with physical disability.

Keywords: Quality of Life; Disability Evaluation; Rehabilitation

1. Background

According to the World Health Organization (WHO), almost 15.6% of the total population are suffering from some types of disabilities (1). Increasing incidents, such as diseases caused by pollution, and genetic factors increase the number of People With Disabilities (PWDs). That's why, despite all the advances, disability is a reality that cannot be ignored; therefore, making these people's Quality of Life (QOL) better is critical (2).

Studies have shown that 75% of PWDs live in developing countries. Disability considerably causes economic, social and emotional losses for these people, their families and communities. The current model of rehabilitation that is based on institute, if wanted to cover all needs of PWDs seriously, it needs budget more than total budget of health in developing countries. According to estimates, available services are only sufficient for 2% of PWDs. Due to important issues such as overall differences between the required services and available facilities and lack of

trained staffs, the need for available rehabilitation services was truly felt (3). Following the declaration of Alma Ata Conference in 1987 as "Health for All" and regarding restrictions of specialized medical rehabilitation services, the WHO announced the concept of Community-Based Rehabilitation (CBR) to enhance the QOL of PWDs through community initiatives. Community-based rehabilitation was also followed to give rehabilitation services to people with disability in developing countries.

The focus of this program is to train people with disability until they can perform Activities of Daily Living (ADL), go to school, play with others, have relationships with family, contribute or participate in family meetings and social activities, and build an independent life using local resources. From the perspective of the WHO, United Nations Educational, Scientific and Cultural Organization (UNESCO) and International Labour Organization (ILO), CBR is a strategy within community development

for the rehabilitation, equalization of opportunities, and social integration of all PWDs. The community-based rehabilitation program in its 2004 statement stressed that people with disability have the right and duty to participate in all stages (planning and implementation) of the CBR program.

The needs of people vary from person to person, because every one's needs originate from specific geographical and cultural context of his or her living environment. The CBR strategy makes it possible to provide specialized services for people in local area; however, this strategy is not only the distribution of service but the main purpose of this program is involving disabled people, their families and communities where they live, in the process of rehabilitation and empowerment (4). Although these services, which are provided at the community level, cannot meet all needs of PWDs, up to 70% of their needs can be met in the community (5). The CBR programs have the cooperation and assistance of the following seven sections: 1-PWDs, 2-Families of PWDs, 3-Community, 4-state (international-regional or local level), 5-NGOs (Non-governmental organizations) in all levels including local, regional, national and international level, 6-medical professionals, health professionals, educators, social scientists and other specialists, and 7-the private sector. By coexistence of all the above-mentioned seven, CBR will be able to implement its policies and programs and return PWDs to their proper place.

Currently, the CBR program is implemented in more than one hundred countries, including Iran that has come into force from 1992 in collaboration of Welfare Organization and the Iranian Ministry of Health and Medical Education (6). Also, the CBR program in Iran involves six types of services: providing education and training opportunities (e.g. special education in mainstream or special schools, training in ADL skills), early childhood intervention and referral especially to medical rehabilitation services which provide rehabilitation aids, creating micro and macro income generation and social support seeking to create positive attitudes towards PWDs and their community involvement through strengthening their capabilities to entitle the five basic CBR principles which include: equality, social justice, solidarity, dignity, self-esteem and general integration (7). The CBR in Iran initially began on a pilot basis in two districts of Semnan Province. After the program accomplished successfully in these districts, it began in other provinces. East Azarbaijan province in 1999 began to implement the CBR program and the first urban project was designed in Shabestar. Bostanabad City, Iran, also hosted the project in 2007.

Bostanabad City has 182 villages with over 77,495 rural population (8); 168 rural villages in the city with a rural population of over 67500 people, 1155 of whom were identified as PWDs and 680 persons have participated in the CBR program, and people with physical disability were higher than others (26.6%). As QOL is one of the indica-

tors of health and welfare services and with regard to this fact that most severely disabled people cannot achieve the full performance, their treatment and rehabilitation program should pursue more balanced goals. Since disability resulting from the same defect is different from person to person and its consequences straightly is related to one's own assessment of his or her disability and cultural conditions, QOL for people with disabilities can be associated with these factors.

Finally, for the most severe disabilities, establishing peace and security, should be one of the main goals of treatment and rehabilitation. Thus, it is expected that CBR increases the QOL of people who use this services. Furthermore, the results of this study help to examine the effectiveness of the implemented program and as a result provide evidence for its further development.

2. Objectives

Therefore, the purpose of this study was to assess and compare the QOL of individuals with physical disabilities participated in the CBR program. People with other types of disabilities such as mental, visual, auditory and those with multiple disabilities were excluded from the study. The type and level of participant's disabilities were determined by the experts of the Welfare Organization.

3. Patients and Methods

The participants included people with physical disabilities aged between 18 and 50 years that were selected from the villages covered by the CBR program as the case group (Mean age = 32 years old; SD = 8.78) as well as other participants from non-covered villages as the control group (Mean age of = 33 years old; SD = 9.98). The number of participants in the case group was 48 and in the control group was 45. All the people who had the inclusion criteria were invited through the local health care for Evidence-Based Practice. Therefore, all those people who were interested and volunteered for the study included in this research.

The demographic questionnaire included age, sex, marital status, education, employment status and level of physical disability. Quality of life was evaluated with the Iranian version questionnaire of the SF-36. It is a generic measure that is widely used in clinical research. The instrument contains 36 items in eight categories, including physical functioning, health problems, physical pain, general health, vitality, social functioning, emotional functioning and mental health. The eight subscales are considered in two contexts: physical and mental. The scores of each subscale are 0-100. If the score were closer to 100, QOL would be better. It should be noted that reliability and validity of SF-36 scale were evaluated in Iran and the results indicated that the reliability ($\alpha \geq 0.7$) and convergent validity ($r = 0.4$) of the scale are high (8). The results showed that this tool had an appropriate reliability in various cultures (9).

To collect information, we coordinated and got permission to visit homes of the participants. Research objectives and questions were described for the participants and their families. The informed written consent was obtained from the individuals and/or their families, and the process of gathering information through completing questionnaires given to the person was continued. After collecting the required data, SPSS software, version 19 was used to analyze the data. Independent t-test was used to compare the two groups of the participants.

4. Results

Participants in this study included 93 people (40 females (43.0%), 53 males (57.0%)) (Table 1). As illustrated in Table 1 most of the participants in both groups were illiterate, more than half of them were employed and married and the most prevalent level of motor disability in both groups were mild. (information about the level of physical disabilities was extracted from the records of Bostanabad Welfare Office (10), which had been determined by experts in rehabilitation). Results showed that both groups are almost similar to each other on these characteristics.

Table 1. Demographic Characteristics of Both Groups (Covered and Non-covered Community-Based Rehabilitation)^a

Characteristics of Participants	Group	
	Covered	Non-covered
Gender		
Female	22 (45.8)	19 (42.2)
Male	26 (54.2)	26 (57.8)
Education		
Illiterate	18 (37.5)	16 (35.6)
Primary school	16 (33.3)	13 (28.9)
Secondary school	5 (10.4)	6 (13.3)
High school	6 (12.5)	6 (13.3)
University	3 (6.3)	4 (8.9)
Level of motor disability		
Mild	25 (52.1)	23 (51.1)
Moderate	11 (22.9)	9 (20)
Sever	12 (25)	13 (28.9)
Employment		
Employed	25 (52.1)	24 (53.3)
Unemployed	23 (47.9)	21 (46.7)
Marriage status		
Single	21 (43.8)	20 (44.4)
Married	27 (56.3)	25 (55.6)

^a Values are presented as No. (%).

The mean score of QOL in people who were covered by the program was 68.06, SD = 24.22 and for those non-covered by the program was 53.97, SD = 18.54 (P < 0.002). The results and overall mean scores on the eight subscales of the SF-36 are shown in Table 2. Regarding the significant level of the t-test that was 0.002, the mean of total score and subscales of QOL for individuals covered by the CBR were higher than the scores of the non-covered group.

5. Discussion

The purpose of this study was to assess the QOL of PWDs (18 - 50 years old) covered by the CBR programs. The importance of QOL in rehabilitation sciences has been increased dramatically in recent years (7). The reason is that the original goal of rehabilitation is to improve the QOL (11) and the assessment of QOL before, during and after the rehabilitation program, often is important (12). Information that obtained from the assessment of QOL in PWDs is useful to determine the problems of these people, set priorities to deliver rehabilitation services, better management, plan for healthy economy, and create new ideas and solutions to problems (13).

The results of this study showed a significant difference in the QOL between the individuals covered by the CBR program and those non-covered by the program in villages of Bostanabad City in all 8 SF-36 subscales. The reviewed studies show that these findings are consistent with the results of other studies which have been conducted on the QOL and effectiveness of the CBR programs. The first study on the impact of CBR was done by Nelson in 1982 (Cited in Norbakhsh (2)). The participants were 417 disabled persons covered by the CBR program in five countries of Botswana, India, Mexico, Pakistan and Sri Lanka. Seventy-eight percent of disabled people were covered by CBR had improved and this was the first sign of the impact of CBR technology. Another study evaluated the CBR program in Guyana (Cited in Norbakhsh (2)). The results of the study were: Mothers of disabled persons, therapists and managers had acceptable response to rehabilitation services, which had been easily delivered by the CBR program. Arnold's 1988 report was focused on the successful implementation of the CBR program in Nepal. He emphasized on the implementation of CBR programs in the development and integration of and integration of PWDs (Cited in Norbakhsh (2)).

Naziri and Kamali (14) studied the effectiveness of CBR on QOL of people with physical disabilities in Khomeinishahr, Isfahan. The results demonstrated the effects of CBR on all aspects of QOL except mental health index. In addition, it improved the activities of daily living in both men and women.

Awareness of PWDs and their families in the rural areas covered by the program were not significantly different from controls. However, the education level had a significant relationship with the QOL. The more educational level, the higher QOL was (14).

Table 2. Mean and Standard Deviation of Eight Subscales of Short-Form 36 Questionnaire of General Population Subjects Covered and Non-covered by the Community-Based Rehabilitation ^a

Variables	Covered (N = 48)	Non-covered (N = 45)	P
Physical function	71.8 ± 32.4	62.04 ± 32.5	0.1
Health problems	66.66 ± 3.38	41.1 ± 39.5	0.002 ^b
Psychological problems	73.6 ± 8.38	57 ± 39.9	0.04 ^b
Vitality	65.5 ± 25.4	50.50 ± 20.3	0.002 ^b
Mental health	66.02 ± 19.82	57.06 ± 15.28	0.01 ^b
Social functioning	73.17 ± 29.2	61 ± 21.3	0.02 ^b
Physical pain	74.06 ± 30.38	58.5 ± 26.72	0.01 ^b
General health	61.25 ± 29.23	47.33 ± 22.27	0.01 ^b

^a Values are presented as Mean ± SD.

^b P < 0.05.

Nemati (15) examined the effectiveness of CBR program on the QOL of people with physical disabilities in Brojerd, Lorestan. The results showed improvement in QOL in both females and males participants, although the females improved more than males (15).

Shiani and Zare (16) evaluated the effect of CBR program on the QOL of old people in Kahrizak, Tehran in a case-control study. The results of their study showed the group who received the program had higher QOL compared to the other group.

Nazari (6) evaluated the effectiveness of CBR program on function abilities of people with disabilities in Zabol. The results showed improvement of daily living skills, motor skills, academic performance and social involvement in the participants.

Aminzadeh et al. (5) in their research examined the effects of family training in a CBR program on the awareness, motor skills and attitudes of people with physical disabilities and their families in rural areas in Babolsar and found a positive impact on prevention of complications such as ankylosing arthritis and bedsore, but it had no significant effect on the skills level of PWD's independent level in daily activities.

Awareness of PWDs and their families in the villages covered by the project was not significantly different from the non-covered group (5). Sattari et al. (17), also compared rural families' attitudes towards disabled member in villages that were covered by the CBR program and those non-covered by this program. Results showed that families in covered areas had favorable attitudes toward the disability. Also, some variables such as the level of education, gender and familiarity with the welfare organization had a significant effect on the families' attitudes towards disability (17).

The results of this study indicate that applying CBR programs in rural and remote areas can enhance the function and the QOL of PWDs. Therefore, it is highly recommended to use CBR in other areas.

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Authors' Contributions

This article is a student project within which Roghieh Hatami was the first contributing into this article in writing the proposal and developing with Saman Karami and Omid Hashemi. Mehdi Rassafiani is the main supervisor and Ebrahim Pishyareh is associate supervisor of the research project.

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