

## HOME BASED TRAINING: MAIN STRATEGY OF COMMUNITY BASED REHABILITATION IN IRAN

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### ABSTRACT

**Objective:** Study of effectiveness of “home based training” in community based rehabilitation program on disabled people, who were trained and evaluated at the end of the course, under supervision of 21 pilot health and medical networks.

**Methodology:** In a cross-sectional study, 614 disabled people who had participated in “home based training” were selected with stratified random sampling method. They were evaluated according to function progress level variables by community based rehabilitation program experts. Age groups, sex, disability groups, employment state and teacher’s relation variables were studied from their files and recording data. Statistical analysis was performed with Chi-square test.

**Results:** There was a relationship between age group and disability group with functional progress level (P value =0.014 & P value <0.001). Low age groups, visual disabled group, epileptic patients and individuals with learning disability had the best results. High age groups, mixed age disability group and individuals with verbal and hearing problems had the least favorable results. There was a relationship between teacher’s relation with progress or no progress state (P value = 0.038). Individuals that were teachers had the best results and individuals with teachers other than first or second relation or health worker had the least favorable results.

**Conclusion:** Home based training in community based rehabilitation program is an effective method for improving the functions of disabled people in some selected groups.

**KEY WORDS:** Community based rehabilitation, Community health services, Home based training, Rehabilitation.

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### INTRODUCTION

World Health Organization estimates 7-10% of the general population is disabled in the world, most of them in developing countries

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where basic services are limited and they have no access to institutional rehabilitation services. WHO developed community - based rehabilitation (CBR) in response to the need to promote rehabilitation services for disabled people in the late 1970s.<sup>1,2</sup>

In 1994, a collaboration involving ILO, UNESCO and WHO resulted in issuance of a “Joint Position Paper on CBR” to develop CBR programs.<sup>3</sup> In 2004, ILO, UNESCO and WHO produced a revised Joint Position Paper defined CBR as a strategy for rehabilitation, equalization of opportunities, poverty reduction and social inclusion of people with disabilities.<sup>4</sup>

During the past two and a half decades CBR has been implemented in many countries. While majority of medical personnel in Iran have little information about recent developments in rehabilitation of disabled people, CBR has been used in our country since 18 years ago and now serving disabled people in 65 cities. It will be implemented all over the country within the primary health care (PHC) referral frame work.<sup>5</sup>

CBR is mainly based upon "home based training" (HBT) program. For implementing HBT, Welfare Organization of Iran translated and modified WHO guidelines through cultural differences and then published 34 Farsi booklets about seven major disabilities: visual, hearing- speech, physical- motor, learning, behavioral, epilepsy and mixed.<sup>5</sup> Depending on the type of disability, the appropriate booklet was offered by health workers to patients' families. Health workers were also involved in education and promotion of disabled people. They would select a member of families of disabled person as a trainer and gave them WHO booklets about related type of disability and involved them to provide effective rehabilitation services. Trainers would take the responsibility of rehabilitation under supervision of health workers.

In addition to HBT program, staff of CBR provides the following services: diagnostic, therapeutic, educational, occupational, learning and rehabilitation appliances.

In the present study, we evaluated the effectiveness of "home based training program" of disabled persons and noted progress they had in their abilities and some related factors.

## METHODOLOGY

This cross sectional study is based upon rural disabled population of 21 cities under surveillance of primary health care national network, who had participated in HBT and their abilities were evaluated by CBR supervisors. Proper education through booklet could improve disabled persons' abilities. Supervisors of CBR classified the level of progress of patients in three levels of useful, relatively useful

and not useful after passing the education course for each booklet. Provincial experts of CBR trained all CBR supervisors about how to collect data and studied the trend of proper data collection in each city. They periodically reported related data to national CBR office. For calculating functional progress level (F.P.L.), we used mean of the points extracted from evaluation of WHO booklets as follows: point of the evaluated manual as "non useful" was 0, point of the "relative useful" as 1 and "useful" was 2. Mean of the points with using this formula was:

$$F.P.L. = \frac{\Sigma(nomuseful) + \Sigma(useful) + \Sigma(slightly\ useful)}{N}$$

The acquired F.P.L. was ordered as follows:

F.P.L.=0	No progress
0< F.P.L.<1	good progress
1< F.P.L.<2	Excellent progress

Age, sex, type of disability, employment status and trainer's relation as independent variables and functional progress level as dependent variable were considered. Confounding factors were financial support, getting rehabilitation equipments, training outside of the family, referral to upper levels and job opportunity.

By designing a pilot study and reviewing 30 selected disabled persons, sample size was calculated about 600. Among 4103 disabled people who had participated in HBT since the beginning of the plan and appropriate to the size of 21 cities, stratified random sampling was performed. Finally 614 persons were chosen using random numbers table as simple randomization (Table-I). These patients had participated at training courses for the last seven years since 1993. Statistical analysis was performed with Chi-square test and logistic regression.

## RESULTS

Six hundred fourteen (614) persons from 21 centers met the inclusion criteria. There were 344 males (56%) and 270 females (44%). Three hundreds and fifty four persons (57.7%) were in age groups of 6-24 years and the rest were

Table-I: Number of disabled persons under study from twenty one cities

<i>Name of city</i>	<i>No.</i>	<i>Name of city</i>	<i>No.</i>	<i>Name of city</i>	<i>No.</i>
Urmia	26	Shahrud	10	Astanehashrafieh	23
Khomeinishahr	15	Zabol	67	Behshahr	12
Tiran & Korun	29	Fasa	105	Minab	20
Najafabad	43	Saghez	44	Bandarlengeh	34
Farsan	11	Ghorveh	29	Malayer	21
Shooshtar	23	Bouyerahmad	12	Taft	26
Semnan	6	Talesh	48	Mehriz	6

in other age groups. Age groups of four persons (0.7%) were uncertain. Physical- motor was the most common disability as 148 cases (24.1%) among disability groups. First degree relative was the most common trainer in 380 cases (61.9%) among trainer groups. Trainer groups of eleven persons (1.8%) were uncertain. Of disabled people in age groups of 15-65 years, there were 255 (84.8%) jobless and 46 (15.3%) had occupation.

Considering confounding factor of age, disabled people were evaluated in the equal age groups. With using  $\chi^2$  test, relations between independent and dependent variables were tested. There was a relationship between age group and disability group with functional progress level (P value = 0.014 & P value <0.001) (Tables-II & III). However, the effects of other confounding factors were likely. Therefore, we tested statistical relation of two concerned factors (age group and disability

type which showed relation with progression) to other likely confounding factors (education outside of the family, education level, referral to upper levels, receiving rehabilitation equipments, job opportunity and getting income) and there weren't any confounding role between above mentioned factors.

Using logistic regression after changing dependent variable into two groups, multivariate analysis did not show appropriate model. Then functional progress level variable was changed to two states: non progress and with progress states (with combining functional progress levels of good and advanced progresses) and was evaluated with other variables (sex, age group, disability group, employment state and trainer's relation). There was a relationship between trainer's relation with progress or non progress state. (P value= 0.038) (Table-IV).

Table-II: Absolute and relative frequency distribution of functional progress level in persons under study according to age group.

<i>Age group</i>	<i>Functional progress level</i>						<i>Total</i>	
	<i>Excellent progress</i>		<i>Good progress</i>		<i>No progress</i>			
<5	23	46.9%	20	40.8%	6	12.2%	49	100%
6-10	56	41.8%	54	40.3%	24	17.9%	134	100%
11-14	15	20.3%	49	66.2%	10	13.5%	74	100%
15-24	57	39%	74	50.7%	15	10.3%	146	100%
25-34	31	39.2%	39	49.4%	9	11.4%	79	100%
35-64	43	45.3%	44	46.3%	8	8.4%	95	100%
>65	8	24.2%	18	54.5%	7	21.2%	33	100%
Total	233	38.2%	98	48.9%	79	13%	610	100%

(P= 0.014, df = 12,  $\chi^2=25.086$ )

Table-III: Absolute and relative frequency distribution of functional progress level in persons under study according to disability group

Disability group	Functional progress level						Total	
	Excellent progress		Good progress		No progress			
Visual	16	33.3%	31	64.6%	1	2.1%	48	100%
Hearing -speech	19	35.2%	22	40.7%	13	24.1%	54	100%
Physical -motor	66	44.6%	69	46.6%	13	8.8%	148	100%
Learning	34	43.6%	29	37.3%	15	19.2%	78	100%
Behavioral	8	29.6%	14	51.9%	5	18.5%	27	100%
Epilepsy	43	62.3%	24	34.9%	2	2.9%	69	100%
Mixed	46	25%	109	59%	29	15.8%	184	100%
Others	2	33.3%	3	50%	1	16.7%	6	100%
Total	234	38.1%	301	49%	79	12.9%	614	100%

( $P < 0.001$ ,  $df = 14$ ,  $X^2 = 55.706$ )

## DISCUSSION

Some studies have shown the effectiveness of CBR in rehabilitation of disabled people.<sup>6-8</sup> On the other hand, some studies have doubted on it.<sup>9-10</sup> May be, it has particular application to remote, rural and indigenous communities<sup>11</sup> where it is more cost- effective.<sup>12</sup> It seems there is no real focus of research in CBR and the evidence based for CBR is fragmented and incoherent on almost all aspects of CBR.<sup>10</sup>

In Iran, there were few studies about community based rehabilitation. A local study about effectiveness of CBR in 14 provinces in Iran in 2004 showed recent increased frequency of disabled persons with physical - motor disabilities who were able to do independently their activities and decreased number of totally dependent disabled

persons.<sup>13</sup> Another study showed that HBT has positive effects only upon protective skills of the family but not upon the independency skills of the disabled persons and their families.<sup>14</sup> In another study evaluating attitudes of rural families with handicapped members, the authors showed there are more appropriate attitudes towards the disability phenomenon where CBR plan has been executed.<sup>15</sup> In yet another study evaluating different psychiatric rehabilitation nursing models in the care of schizophrenic patients, the authors suggested multi- dimensional model as the best one because it is community based.<sup>16</sup>

In our study, about 49% of disabled people who participated in the education course have achieved good progress level and 38.2% excellent progress level. This reflects improving abil-

Table-IV: Absolute and relative frequency distribution of the rate of progress or no progress in ability of the persons under study according to relationship with trainer

Relationship with trainer	Progress State				Total	
	With progress		No progress			
Fist degree relative	329	86.6%	51	13.4%	380	100%
Second degree relative	7	87.5%	1	12.5%	8	100%
Health worker	109	86.5%	17	1.3%	126	100%
individual	74	98.7%	1	13.5%	75	100%
Others	11	78.6%	3	21.4%	14	100%
Total	530	87.9%	73	12.1%	603	100%

( $P = 0.038$ ,  $df = 4$ ,  $X^2 = 10.170$ )

ity level of disabled people with achievement of the program. The most participating age group was 15-24 years with frequency of 23.8% and the least participating age group belonged to >65 years with frequency of 5.4% that showed active cooperation of the young people and less cooperation of elders in the project.

In this study, age group of disabled people was related to their progress (P value= 0.014). The most common frequency of "excellent progress" was <5 years (46.91%). The majority of disabled people belonged to age group of 6-10 years (41.8%) also had excellent progress during educational course. These observations were probably due to the fact that education at early childhood not only give better results but also could prevent further complications of disability. The most common cause of "no progress" was at age group of 65 years or more (21.2%). There were less people in this group who achieved excellent progress level (24.2%). This matter was probably related to the less effectiveness of educational courses at elderly level with long standing disability.

Type of disability of disabled people, was related to functional progress level too (P value < 0.001). The best result was seen at visual and epilepsy group. Disabled visual group had good or excellent progress at 97.9% while only 2.1% had no progress after ending education course. The most common frequency "excellent progress" was of epilepsy group (62.3%) and only 2.9% of them had no progress in their abilities. Most of the learning group (43.6%) also acquired excellent progress. Mixed disability group had less success and only 25% achieving excellent progress. The most common frequency of "loss of progression" belonged to the hearing- speech disability group (24.1%).

Relationship of trainer with disabled persons was related to progress state (P value= 0.038). First degree relatives of disabled people had the most cooperation at learning them (61.9%). So if the disabled persons were trainers of themselves (after acquiring enough education by health workers), the most progress would be expected (98.7%). In case the trainer was not first or second degree relative, or not health

worker, the least progress was expected (78.6%).

In conclusion, performing home based training of CBR project is an effective way for improving the function of disabled people in some selected groups. The following measures are suggested:

1. Introducing disabled people in lower age groups and starting educational courses as soon as possible is very useful. Educational courses for elderly disabled people can result in least benefits. Therefore, considering the limited financial resources, it would be better using educational services of CBR plan for younger age groups.
2. Disabled people in visual and learning groups and epileptic persons have the best results when getting appropriate education. This is important for decisions regarding trainers and allocation of resources.
3. Proper selection of trainers could affect the progress state of disabled persons. We suggest that if disabled persons are able to be trainers of themselves, it's the best way. Otherwise, using trainers from first or second degree relatives or health workers is preferable to the others.
4. Optimization of evaluating system of disabled people has good effects at level of their progress. Therefore, further studies are recommended.

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