ORIGINAL RESEARCH

Impact of Community-based Rehabilitation on Persons with Different Disabilities

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ABSTRACT

There are some barriers that persons with different kinds of impairments commonly face, and there are also some impairment-specific barriers. Disaggregated data are needed to assess the impact of different CBR activities on different groups of persons with disabilities.

Purpose: *This article assesses the impact of CBR on key variables linked to the five domains of the CBR Matrix, on 4 groups of persons with disabilities - visual, hearing and speech, physical and intellectual disabilities.*

Method: *A questionnaire survey was carried out involving 2,332 persons with disabilities, in a random stratified sample of villages covered by a CBR programme, in 9 sub-districts of Karnataka state (India) and in a control area. Data were collected pertaining to different activities in the lives of persons with disabilities. Through a participatory approach involving CBR workers and DPO representatives, some key indicators were identified to assess the impact of CBR on the five domains of the CBR Matrix - health, education, livelihood, social participation and empowerment.*

Results: *Among all the 4 groups of persons with disabilities, the CBR programme was found to have had a positive impact across all the five domains of the CBR Matrix. However, there was no uniform impact on different variables among the 4 groups; different groups of persons with disabilities benefited differently from different activities. Persons with physical disabilities seemed to benefit in more areas compared to persons in the other groups.*

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Conclusions: *CBR programmes can have a positive impact on persons with visual, hearing and speech, physical and intellectual disabilities. Disaggregated data can help CBR programmes to identify groups of persons who benefit less from specific activities and adopt strategies to improve their participation.*

Key words: *CBR, impact, CBR Matrix, different disabilities.*

INTRODUCTION

When the idea of Community-based Rehabilitation (CBR) was launched in the early 1980s, it was seen as an approach to answer the needs of persons with disabilities in rural and isolated areas of countries which had limited access to rehabilitation services. The first manual on CBR, published by WHO in 1989, indicated that CBR could be useful for different groups of persons with disabilities (World Health Organisation, 1989).

The preamble to the United Nations Convention on Rights of Persons with Disabilities (United Nations, 2007) recognises the diversity of persons with disabilities. CRPD touches upon different life-domains including education, health, work and employment, social protection and participation (Articles 24 -30), recognising these as key aspects of life. These same life-domains are also part of the CBR Matrix in the CBR Guidelines (WHO, UNESCO, ILO and IDDC, 2010).

CBR activities are designed to improve the quality of life and meet the basic needs of people with disabilities, reduce poverty, and enable access to health, education, livelihood and social opportunities – all these activities support the aims of the CRPD (IDDC, 2012).

However, over the years, groups of persons with different impairments have expressed doubts regarding the suitability of CBR to answer their specific needs. For example, an organisation of persons with visual impairments had criticised CBR programmes because "the national, cross-disability CBR projects have many disadvantages. Indeed, they must be considered to be detrimental to an adequate rehabilitation. They should therefore be rejected in favour of CBR projects geared to the needs of specific groups of handicapped people" (Heilbrun and Husveg, 2000).

Sometimes, persons with different impairments feel that their group has specific needs that may not be addressed in a cross-disability CBR programme.

For example, an association of persons with hearing disability felt that their needs were different from other groups of persons with disabilities and were usually not addressed: "In order to be effective where the hearing impaired are concerned, CBR personnel should be trained in different systems of communication such as sign language, gestures, lip reading, finger alphabet, etc" (Chauhan, 1999).

At the same time, there is little published material to show how groups of persons with different impairments benefit from cross-disability CBR programmes. The World Report on Disability (WHO and World Bank, 2011) recognises that persons with disabilities are diverse and have heterogeneous needs, and recommends that disability data needs to be disaggregated for different impairment groups.

Mandya CBR Programme: This programme covers 9 sub-districts - 7 in Mandya district and 2 in Ramanagaram district, in Karnataka state of India. It was initiated in 1997-98. Over the years, the programme was gradually extended to cover a population of around 1.8 million persons. The programme is run by two non-governmental organisations which work in close collaboration and use similar project implementation strategies. The programme directly involves about 22,000 persons with disabilities.

The Mandya CBR programme is implemented through a small number of full-time, paid CBR workers, each of whom works in 15-20 villages. Individual CBR workers follow about 200-300 persons with disabilities. CBR workers visit homes of newly identified persons with disabilities, and provide information and support. Persons with disabilities are also encouraged to set up self-help groups (SHGs) and most of the CBR activities are implemented through these SHGs. CBR activities cover all the five domains of the CBR Matrix (WHO, UNESCO, ILO and IDDC, 2010) - health, education, livelihood, social and empowerment.

The main CBR strategy is mainstreaming, which means accessing existing services provided by Government, non-profit and private organisations. Two big cities, Bangalore and Mysore, are close to Mandya. A range of referral services and specialised institutions in the areas of health, education, social welfare and occupation are available in these two cities. Bangalore also has the state level organisation of persons with disabilities (DPO). The CBR programme maintains links with different services to facilitate referrals.

The CBR programme in Mandya district classifies persons with disabilities involved in the CBR activities into 8 groups, as advised in the WHO CBR Manual (1989):

- People who have difficulty seeing (visual disabilities);
- People who have difficulty hearing or speaking (hearing and speech disabilities);
- People who have difficulty moving a part of their body (physical disabilities);
- People who have no feeling in their hands or feet (leprosy-related disabilities);
- People who show strange behaviour (psychosocial disabilities);
- People who have fits (convulsions-related disabilities);
- People who have difficulty learning (intellectual disabilities);
- People with other disabilities such as albinism or short stature (other disabilities).

The Mandya CBR Research Project: A multi-disciplinary research initiative on the impact of the Mandya CBR programme was carried out from 2009 - 2012. It aimed to assess the impact of CBR on key variables linked to the five domains of the CBR Matrix, on 4 groups of persons with disabilities - visual, hearing and speech, physical and intellectual disabilities.

The research initiative included 2 main phases – (i) a questionnaire survey of different groups of persons with disabilities, carried out during 2009-2010; and (ii) a participatory research involving emancipatory approach through sharing life-stories, conducted by a group of persons with disabilities from the local communities, and supported by a group of external researchers, carried out during 2010-2011. Finally, the principal findings from the participatory research were presented to the communities during 2011-2012 by the local associations of persons with disabilities and the CBR workers.

The principal global findings of the questionnaire survey have been presented in a separate publication (Biggeri et al, 2012). Journal articles on specific findings from the survey have been published (Biggeri et al, 2013) and more are planned. Analysis of findings from the participatory research has not yet been completed.

This article focusses on the results of the survey related to the impact of CBR on 4 groups of persons – those with physical disabilities, visual disabilities, hearing and speech disabilities, and intellectual disabilities.

METHOD

A random sample household survey was conducted in areas covered by the CBR programme in 9 sub-districts (the CBR area). A random sample household survey was also conducted in 1 sub-district of neighbouring Mysore district (the control area).

The CBR programmes reached a total of 2,045 villages in Mandya District. A one-stage cluster sample design was drawn in order to gather the data, using the villages as first-stage units. Three variables were chosen to stratify the first stage units: the geographical area, the total size of the village and the year the CBR activities were started. A total of 2,540 persons with disabilities were identified and interviewed, including 1,919 CBR beneficiaries in 237 sample villages and 455 persons with disabilities in 28 villages not covered by the programme as a control group.

Several tools were prepared to conduct the survey. Seven questionnaires were prepared for different stakeholders (persons with disabilities participating in the CBR programme, persons with disabilities of the control areas, caregivers, nursery teachers, heads of the village councils, SHG coordinators and village rehabilitation workers), as well as manuals for supervisors, interviewers and for the data entry process. A 2-week full-time training was carried out for 30 interviewers and 5 supervisors. During the training, questionnaires were field-tested in areas not involved in the survey.

The questionnaire for collecting information from persons with disabilities was divided into 4 core sections: the first section contained personal, demographic and household characteristics; the second section was about daily activity limitations; the third section was composed of the Participation Scale developed by WHO; and the fourth section had questions related to outcome variables. This article deals mainly with data related to section 4 of the persons with disabilities questionnaire. The full questionnaire is available online (Biggeri et al, 2012).

The two areas - CBR and control - were similar, except for the presence of the CBR programme and their distance from the big cities. The control area was closer to the city of Mysore and had greater access to different referral facilities including special schools. On the other hand, in Mandya district, there was 1 centre for vocational training of persons with visual impairments and 1 special school for children with hearing and speech impairments.

Informed consent was sought from all the interviewed persons, who were assured there would be no negative impact from the CBR programme if they did not want to participate in the survey. About 84% of the persons with disabilities in the sample villages were interviewed. The remaining 16% included persons who were away from home and therefore not available to be interviewed, and those who did not give their consent.

While conducting the survey in the control area, it was found that a non-governmental organisation had recently started a CBR programme in some villages, focussing only on persons with visual disabilities. Persons who had been involved in that programme were excluded from the analysis of this research.

All the data collected through questionnaires was entered using Epi-Info, verified and checked for quality control.

The preliminary results from the data analysis were presented to the CBR personnel and to the representatives of local associations of persons with disabilities (DPOs). In a participatory exercise, CBR personnel and DPOs were asked to identify one or two key variables for each domain of the CBR Matrix. This paper limits itself to the analysis of research data related to those variables.

The data from the CBR and the control group for each variable were compared through the Fisher test by calculating the two-tailed 'P' value and the differences were considered significant if 'P' value was ≤ 0.05.

Persons with Different Disabilities in the Mandya CBR Programme

As explained above, the CBR programme worked with persons with disabilities grouped under 8 categories. However, this article focusses on the impact of CBR activities on only 4 of the groups – persons with visual disabilities, hearing and speech disabilities, physical disabilities and intellectual disabilities.

The remaining 4 groups of persons with disabilities (leprosy-related disabilities, psychosocial disabilities, convulsions-related disabilities and other disabilities) together constituted a very small part of the research sample - only 1.5% in the CBR area and 2.7% in the control area. This data were considered inadequate to draw conclusions about the impact of the Mandya CBR programme on these 4 groups of persons.

Table 1 presents information about the number of persons with different disabilities who were interviewed in the CBR and control areas.

Table 1: Persons with different disabilities in the research sample

	CBR Area sample	Control Area sample
Persons with Visual disabilities	160 (8.3%)	37 (8.9%)
Persons with Hearing & speech disabilities	367 (19.1%)	60 (14.5%)
Person with Physical disabilities	984 (51.3%)	215 (51.9%)
Persons with Intellectual disabilities	355 (18.5%)	78 (18.8%)
Other persons with disabilities (Leprosy, Psychosocial, Convulsions and Others)	29 (1.5%)	11 (2.7%)
Multiple	23 (1.3%)	13 (3.2%)
Total	1918 (100%)	414 (100%)

The mean age of persons in the sample from the CBR area was 16.9 years, while the mean age of persons in the control area was 21.6 years. Women comprised 41.3% of the sample from the CBR area and 44.2% in the control area.

Identification of Key Variables

The following variables were identified through a participatory exercise involving DPO representatives and CBR workers, who were asked to focus on variables that were relevant to the CBR activities:

(1) Variables related to Poverty: Information collected in the survey covered house and land ownership, kind of house, access to water, food, toilets, ownership of household commodities, etc. From these, the group selected one key variable - "whether the persons had adequate food to eat or not; and if not, how often the person did not have adequate food."

(2) Variables related to Health: Information collected in the survey covered activities of daily living, access to vaccinations, surgery, regular medicines, specialist visits, access to technical appliances, etc. From these, two key variables were selected - visits to the specialists and whether the persons had any kind of technical appliances such as wheelchairs, crutches, tricycles, artificial limbs, special footwear, hearing aids, eye glasses and white canes.

(3) Variables related to Education: Information was collected about the level of school education, and whether the persons had received scholarships. Both pieces of information were considered important and were selected as key variables.

(4) Variables related to Livelihood: Information was collected about job training, apprenticeship, whether employed or not, the kind of employment if employed, hours of work, wages, access to credit funds, access to disability pension, etc. Three variables were identified as important in this area - employment, disability pension and access to credit funds.

(5) Variables linked to Social and Empowerment domains: It was felt that the areas of social relationships and empowerment had some overlaps and therefore needed to be looked at jointly. During the survey, information was collected about participation in self-help groups (SHGs), friendships, marriage, participation in sports and leisure activities, religious functions and cultural activities, access to disability certificatation and disability identity card, access to special schemes for persons with disabilities such as bus and train passes, participation in the DPOs, role in the DPOs, etc. From these, five key variables were identified - having friends, participation in SHGs, participation in Gram Sabha (village council) meetings, disability certificate and DPO participation.

RESULTS

Poverty: Persons were asked if they had enough food to eat and if not, how often they did not have sufficient food. The percentage of persons with disabilities who reported that they often or sometimes did not have enough food to eat was as follows:

Table 2: Variable Related to Poverty

Group	CBR area	Control area	P
Percentage of Persons who did not have enough to eat			
Visual disabilities	62.2%	57.6%	0.7189
Hearing & speech disabilities	50.0%	62.3%	0.0912
Physical disabilities	52.7%	57.5%	0.2191
Intellectual disabilities	47.4%	59.7%	0.0599

Thus, except for persons with visual disabilities, among the other persons with disabilities the percentage of those who did not have enough to eat was higher in the control area. However, none of these differences were statistically significant.

Though this data shows that no significant differences were found between the CBR area and the control area, it underlines the general situation of poverty among persons with disabilities in both the areas.

Variables in the Health Domain: Two variables from the health domain were identified – the percentage of persons who had access to specialist visits and the percentage of persons who had received a technical aid.

Table 3: Variables Related to Health Domain of CBR Matrix

Group	CBR area	Control area	P
Percentage of persons who had a specialist visit			
Visual disabilities	56.8%	30.3%	0.0046
Hearing & speech disabilities	28.4%	18.3%	0.1181
Physical disabilities	27.7%	33.6%	0.0919
Intellectual disabilities	34.9%	28.2%	0.2980
Percentage of persons who had a technical aid			
Visual disabilities	19.5%	10.0%	0.8261
Hearing & speech disabilities	20.2%	18.9%	0.0740
Physical disabilities	11.7%	6.1%	0.0256
Intellectual disabilities	10.7%	2.6%	0.0181

The data shows that except for persons with physical disabilities, among the remaining 3 groups persons in the CBR area had more access to specialist visits compared to those in the control area. However, the difference was statistically significant only for persons with visual disabilities.

Regarding the persons who had received a technical aid, the percentage in all the 4 groups was higher in the CBR area than in the control area, and the difference was statistically significant for persons with physical disabilities and persons with intellectual disabilities.

Variables in the Education Domain: Three variables were identified in the education domain – the percentage of persons who had no education, percentage of persons who had at least 10 years of education and percentage of persons who had received a scholarship.

Table 4: Variables Related to Education Domain of CBR Matrix

Group	CBR area	Control area	P
Percentage of persons who had no education			
Visual disabilities	48.6%	57.1%	0.4657
Hearing & speech disabilities	46.2%	64.3%	0.0100
Physical disabilities	36.5%	53.4%	0.0001
Intellectual disabilities	71.4%	70.1%	0.8914
Percentage of persons who had more than 10 years of education			
Visual disabilities	17.1%	2.9%	0.0201
Hearing & speech disabilities	12.3%	3.6%	0.653
Physical disabilities	32.2%	14.1%	0.0001
Intellectual disabilities	2.2%	0	0.3614
Percentage of persons who had received a scholarship			
Visual disabilities	27.1%	42.9%	0.3412
Hearing & speech disabilities	30.1%	44.4%	0.1771
Physical disabilities	42.9%	39.6%	0.5765
Intellectual disabilities	40.3%	27.3%	0.2387

Except for the persons with intellectual disabilities, where the situation in the two groups was similar, in the remaining 3 groups of persons with disabilities, the percentage of persons who had no education was higher in the control area compared to the CBR area. The differences were statistically significant for persons with hearing and speech disabilities and persons with physical disabilities.

Regarding persons with 10 or more years of education, in all the 4 groups the percentage was higher in the CBR area compared to the control area. The differences were statistically significant for persons with visual disabilities and persons with physical disabilities.

Finally, regarding persons who had received a scholarship, the situation was better in the control area compared to the CBR area for persons with visual disabilities and persons with hearing and speech disabilities. However, none of these differences were statistically significant.

Variables in the Livelihood Domain: Three variables were identified in the livelihood domain – whether the person had a job in the previous 12 months (including the jobs with in-kind payment), whether the person received a monthly

pension and whether the person had taken a loan from the rotating credit fund in the previous 12 months. The analysis showed the following situation:

Table 5: Variables Related to Livelihood Domain of CBR Matrix

Group	CBR area	Control area	P
Percentage of persons who had a job in previous 12 months			
Visual disabilities	28.6%	6.9%	0.0106
Hearing & speech disabilities	60.7%	39.1%	0.0065
Physical disabilities	50.5%	42.5%	0.0001
Intellectual disabilities	14.6%	15.5%	0.8243
Percentage of persons who received a monthly pension			
Visual disabilities	80.3%	51.4%	0.0006
Hearing & speech disabilities	76.9%	56.4%	0.0028
Physical disabilities	87.2%	54.1%	0.0001
Intellectual disabilities	83.2%	54.9%	0.0001
Percentage of persons who took a loan in the previous 12 months			
Visual disabilities	53.3%	45.4%	0.4576
Hearing & speech disabilities	49.5%	41.5%	0.3739
Physical disabilities	58.9%	42.7%	0.0001
Intellectual disabilities	49.6%	43.9%	0.5686

Regarding employment, excluding the persons with intellectual disabilities for whom the situation was substantially similar in the two areas, the percentage of persons among the remaining 3 groups of disabilities was higher in the CBR area compared to the control area. In these 3 groups, the differences were statistically significant.

The percentage of persons receiving a monthly pension was higher in the CBR area for all the 4 groups of disabilities, and was statistically significant in all of them.

Finally, the percentage of persons who took a loan from the credit funds was higher in all the 4 groups in the CBR area compared to the control area. However, the difference was statistically significant only for persons with physical disabilities.

Variables in the Social Participation and Empowerment Domains: It was felt that the variables for the social participation and empowerment domains had

some overlaps, as these could express the impact of CBR in both the domains. A total of five variables were identified.

Three variables were considered more important in terms of social participation - having friends, self-help group membership and participation in Gram Sabha (village council) meetings. Two additional variables were considered more important in terms of empowerment - having a disability certificate and the membership of a DPO. The analysis of the data showed the following situation regarding these variables:

Table 6: Variables Related to Social Participation and Empowerment

Group	CBR area	Control area	P
Percentage of disabled persons who had friends			
Visual disabilities	86.0%	87.9%	1.0000
Hearing & speech disabilities	85.6%	88.7%	0.6739
Physical disabilities	89.9%	90.3%	1.0000
Intellectual disabilities	47.9%	67.7%	0.0033
Percentage of persons who were members of a SHG			
Visual disabilities	23.9%	3.1%	0.0039
Hearing & speech disabilities	18.9%	0	0.0002
Physical disabilities	26.5%	7.1%	0.0001
Intellectual disabilities	14.4%	1.7%	0.0039
Percentage of persons who participate in Gram Sabha meetings			
Visual disabilities	18.7%	3.7%	0.0516
Hearing & speech disabilities	15.7%	2.3%	0.0171
Physical disabilities	26.3%	6.5%	0.0001
Intellectual disabilities	2.6%	4.3%	0.3638
Percentage of persons with a disability certificate			
Visual disabilities	76.3%	48.6%	0.0014
Hearing & speech disabilities	71.9%	33.9%	0.0001
Physical disabilities	78.0%	45.2%	0.0001
Intellectual disabilities	76.7%	48.0%	0.0001
Percentage of persons who are members of a DPO			
Visual disabilities	15.1%	0	0.0158
Hearing & speech disabilities	13.8%	0	0.0044
Physical disabilities	20.2%	0.5%	0.0001
Intellectual disabilities	14.7%	2.4%	0.0232

In terms of having friends, the situation seemed to be better among persons in the control sample, though the differences had no statistical significance except among the persons with intellectual disabilities.

Different kinds of SHGs are promoted in rural areas, such as women's groups, farmers' groups and youth groups. The CBR programme promotes SHGs exclusively for persons with disabilities and their family members. In terms of participation in a SHG (either a pre-existing one or a SHG of persons with disabilities), in all the 4 groups the situation was much better in the CBR area, and the differences were statistically significant. In the control area, there were no specific SHGs for persons with disabilities.

Except for persons with intellectual disabilities, participation in the village council meetings was much higher in the CBR area, and the differences were statistically significant for persons with movement disabilities and persons with hearing and speech disabilities.

Regarding access to disability certificates which are necessary to gain access to the different Government schemes, the situation was much better in the CBR area in all the 4 groups, and all the differences were statistically significant.

Finally, regarding DPO membership, the situation was much better in the CBR area in all the 4 groups, and all the differences were statistically significant. The CBR programme has specific activities which promote setting up and collaboration with DPOs.

However, social participation and empowerment are both complex processes. Many would argue that measuring them in a few variables is reductive and can be misleading. This aspect needs to be considered while looking at these results.

DISCUSSION

Measuring the impact of a programme which covers different life domains is a complex issue. In addition to the different individual, social, cultural and economic factors, in a population of 1.8 million persons spread over more than 5000 square kilometres, there is a wide range of confounding factors including different stakeholders and programmes that can affect peoples' lives. The CBR programme is a small part of this world. The situation for the Mandya CBR project was further complicated by the proximity of the research areas to two big cities that have a wide range of referral services and specialised institutions.

Focussing on comparisons between the CBR area and control area, and the relative improvement in some specific aspects of lives, should not distract from the enormous limitations that continue to surround persons with disabilities in the areas where the CBR programme has been active for more than 10 years. For example, 36% -71% of persons with different impairments in the CBR areas had no education.

Focussing on a few measurable variables to talk about life domains like health, social participation and empowerment is also extremely debatable. Participatory phase of the research through the life stories had brought out some of the complexities and nuances of different barriers that abound in the daily lives of people with disabilities.

Therefore, this review of specific variables should be regarded as a partial critical look at the impact of CBR on persons with specific impairments.

Impact of CBR According to the Kind of Impairments

This analysis considered 14 key variables - 1 general, 2 in the health domain, 3 in the education domain, 3 in the livelihood domain and 5 in the social-empowerment domain. The results presented above have been grouped according to the variables. However, when they are grouped according to the kind of disabilities, an overview can be provided of the impact of CBR on these 4 groups, which is as follows:

Impact of CBR on Persons with Visual Disabilities: Among persons with visual disabilities, the following variables showed statistically significant positive differences in the CBR area compared to the control area - 26% more visits to the specialist referral services, 14% more persons who have more than 10 years of school education, 22% more persons with jobs, 29% more persons with pensions, 21% more participation in SHGs, 28% more disability certificates and 16% more participation in DPOs.

Thus, out of 14 variables identified for this analysis, for persons with visual disabilities there was a positive impact in 7 variables, across all the 5 life-domains of the CBR matrix.

Impact of CBR on Persons with Hearing and Speech Disabilities: Among persons with hearing and speech disabilities, the following variables showed statistically significant positive differences in the CBR area compared to the control

area -18% less persons had never been to school, 22% more persons had jobs, 21% more persons received pension, 19% more persons participated in SHGs, 13% more persons participated in village council meetings, 38% more persons had a disability certificate and 14% more persons were members of a DPO.

Thus, out of 14 variables identified for this analysis, for persons with hearing and speech disabilities there was a positive impact in 7 variables, across 4 life-domains of the CBR matrix - in education, livelihood, social participation and empowerment domains. No specific positive impact was noted in the variables related to the health domain.

Impact of CBR on Persons with Physical Disabilities: Among persons with physical disabilities, the following variables showed statistically significant positive differences in the CBR area compared to the control area - 6% more persons had access to technical appliances, 17% less persons had never been to school, 18% more persons had more than 10 years of education, 8% more persons had a job, 33% more persons were receiving pension, 16% more persons took a loan, 19% more persons participated in SHGs, 20% more persons participated in village council meetings, 33% more persons had disability certificates and 20% more persons were members of a DPO.

Thus, out of 14 variables identified for this analysis, for persons with physical disabilities there was a positive impact in 10 variables, across all the 5 life-domains of the CBR matrix.

Impact of CBR on Persons with Intellectual Disabilities: Among persons with intellectual disabilities, the following variables showed statistically significant positive differences in the CBR area compared to the control area - 8% more persons had access to technical appliances, 28% more persons were receiving pension, 13% more persons were participating in SHGs, 29% more persons had a disability certificate and 12% more persons were members of a DPO.

Thus, the Mandya CBR programme had a positive impact on the lives of persons with intellectual disabilities in 5 out of 14 key variables - in health, livelihood, social participation and empowerment domains. No specific positive impact was noted in the variables related to the education domain.

At the same time, the research showed a statistically significant positive difference in one field in the control area compared to the CBR area - 20% more persons with intellectual disabilities had friends. No explanation was available to explain this

difference. It could have been the result of some specific community initiative in the control areas, involving persons with intellectual disabilities. The research could have missed out on this information.

Views of CBR Workers and DPO Representatives Regarding the Results

Differences between the 4 groups of Persons with Disabilities: The research showed that the impact of the CBR programme activities could be different among persons with different impairments. Thus, persons with physical disabilities showed positive impact in 10 out of 14 key variables; persons with visual disabilities as well as those with hearing and speech disabilities, each showed positive impact in 7 out of 14 key variables; persons with intellectual disabilities showed the least benefit as there was positive impact in only 5 out of 14 variables.

These differences were discussed with CBR personnel and DPOs, who offered the following thoughts:

- Certain groups of persons have strong negative stereotypes in the communities and hence overcoming certain barriers is harder. For example, awareness and capacity-building activities with school teachers may improve the access for children with physical disabilities, while a similar impact may be missing or limited among children with intellectual disabilities.
- Specific technical skills, which the CBR personnel may lack, may be needed for certain groups of persons. For example, in the Mandya CBR programme only one CBR worker knew sign language and this could have had an impact on the involvement of persons with hearing and speech disabilities in some activities.
- Local laws can influence the way certain disabilities are looked at in the CBR programme. For example, persons who have convulsions are not considered as persons with disabilities by Indian laws.
- Training of CBR personnel in skills related to specific groups of persons with disabilities may not be adequate. For example, different CBR workers felt that they did not know how to deal with persons with psychosocial disabilities.
- Some variables may not adequately express the impact of the CBR activities. For example, while the CBR workers can inform persons with disabilities in the villages about the specialist referral services in the cities and how to access them, other barriers such as transport and financial difficulties may

prevent these persons from availing of these services. At the same time, some groups of persons with visual or hearing impairments may have less need for specialised health services.

- In the case of persons with intellectual disabilities, the information collected may have been influenced by the persons' own capacity to understand and answer the questions, and also whether the information had been provided by a family member.

CONCLUSIONS

Each individual is part of an ecosystem where different aspects such as family, age, class, gender, religion, ethnic group and socio-economic situation, interact and inter-connect with other individuals in the family, neighbourhood, community and society. The ecosystems of persons with disabilities need to negotiate additional factors, especially in terms of barriers that surround them. A study on the impact that a CBR programme has on persons' lives is a complex undertaking and cannot be reduced to a few variables.

This paper focusses on a few key variables, to compare the situation of persons with disabilities in a randomly selected sample of villages in an area covered by a CBR programme and in a control area. The results of the research need to be seen as one aspect of looking at the impact of CBR.

The research shows that cross-disability CBR programmes can potentially benefit the persons with different impairments in all the five life-domains of the CBR matrix. The extent and degree of the positive impact may differ between different groups. Disaggregated data can be useful for CBR programmes to understand whether the different activities are accessible to the different groups and which groups face barriers in accessing specific activities.

This research provided evidence that a CBR programme in 9 sub-districts of Karnataka state in India has had a positive impact among persons with visual, hearing and speech, physical and intellectual disabilities, in the areas of health, education, livelihood, social participation and empowerment.

Similar studies are needed for other groups of persons with disabilities who are not sufficiently represented in this research.

Limitations

The analysis was made simpler by limiting the number of variables to assess the impact of CBR on complex life-domains. At the same time, this provided an extremely narrow and partial view of the impact of CBR. The specific variables identified may not have been the most suitable ones for studying those life domains. It is also debatable whether concepts of empowerment and social participation can be reduced to a small number of measurable variables.

It is important to keep in mind that the research covered a big geographical area and a large population with different confounding factors, the more so because two big metropolitan cities were close to the research areas.

In the study sample, the number of persons with disabilities related to leprosy, psychosocial issues and convulsions was small and consequently it was not possible to make an assessment of the impact of the Mandya CBR programme on them. As all their conditions are also linked to social stigma and prejudice, for them the impact of a CBR programme could be different from the findings of this research work. This issue needs to be studied separately.

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Conflict of Interests

Sunil Deepak works for AIFO-Italy, the organisation that funds the Mandya CBR programme. Jayanth Kumar works with Amici India and has been involved in the training and supervision activities of the Mandya CBR programme.

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