

# Features of integrated professional training for physically disabled people in a community-based rehabilitation programme in the rural and urban areas of Congo

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## Abstract

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**Background:** The rehabilitation of physically disabled people has been explored from the perspectives of patients, health professionals, rehabilitation agencies, etc. However, no study has linked disability types, training programmes and career prospects. In this study, we therefore evaluated the professional integration of trained disabled people.

**Methods:** This retrospective survey included all physically disabled people admitted to two rehabilitation centres in Congo between 1996 and 2005. Data collection used registers from two units, the medical unit and the rehabilitation unit, to obtain information on age, sex, disability type, follow-up training, present living activity and field of training. We defined 'professional integration' as being when the current profession matched the training received at the rehabilitation centre.

**Results:** The percentage of participants with integrated training was 96.8% (95% CI; 92.1–98.7%). In the urban setting, 6.7% (95% CI; 2.6–16.1%) of the trainees were not integrated, while all were integrated in the rural setting. Trainees aged between 16 and 25 years and those 51+ years represented 12.5% (95% CI; 4.9–28%) and 50% (95% CI; 25.3–74.6%) of the non-integrated cases respectively. Paralysis from poliomyelitis was the most common [62.9% (95% CI; 54.3–70.8%)] disability, and the non-integrated participants included people with poliomyelitis [1.2% (95% CI; 0.2–6.7%)], general paralysis [10.5% (95% CI; 2.9–31.3%)] and sight disorders [50% (95% CI; 9.4–90.5%)]. Tailoring was the main field of training [57.4% (95% CI; 48.7–65.7%)], and high numbers of participants with non-integrated training worked in tailoring, shoe making, welding and computer repair.

**Conclusions:** Despite a high rate of integration in Congo, professional training and subsequent integration would still benefit from a comprehensive approach that considers the type of disability, training and socio-demographic features. Further studies targeting alumni from the training programmes and their ongoing assessment are warranted.

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## Introduction

The rehabilitation of physically disabled people remains a major public health problem worldwide. This problem is felt at all levels of the health care system, regardless of the socio-economic level of the disabled person. For example, historically, many children in the USA with complex problems or disabilities were excluded from public schools.<sup>1</sup>

Research suggests that chronic conditions in school-age children are associated with a greater risk of failure and the necessity to repeat one or more grades. In addition, children with special health care needs often miss school. Multiple absences affect students' grades and ultimately cause these children to fall behind.<sup>2</sup> Moreover, physical impairment is created by a combination of the functional limitations

imposed by the disability and by the reaction of society to it. In other words, to cite Hellander,<sup>3</sup> "handicapped people are categorised according to difficulties they can experience; difficulties linked either to restriction of functions, restriction of activities, or to difficulties in socialisation". Furthermore, evidence has shown that the desire of most physically impaired people is social independence, which is correlated with social activity.<sup>4</sup>

Successful integration is considered, in some way, to be dependent on efforts that will reduce the secondary socially-induced handicaps, including stigmatisation.<sup>5</sup> Developed countries have tried to address these problems to some extent. In the USA, for example, with the passing of the Education for All Handicapped Children Act of 1975 (PL 94-142), the Rehabilitation Act of 1973 (Section 504 of

PL 93-112) and the Individuals with Disabilities Education Act of 1990 (PL 101-476), children with special health care needs now attend public schools.<sup>6</sup> In sub-Saharan countries, many disabled people still experience problems with living conditions; thus, many changes are needed to improve their situation.

The prevalence of disabilities differs between geographical areas. Hellander estimates that, globally, the prevalence of disabled people (excluding those due to certain curable diseases) is 5.2%, of which 4.5% are found in Africa alone.<sup>3</sup> War and poverty account for the high prevalence of disabilities in Africa.<sup>7</sup> For instance, more than 100 million people became impaired due to protein-energetic malnutrition, while others became so due to vitamin A deficiency, iodine deficiency or polio, which are rampant as a result of war and poverty.<sup>8</sup>

The professional training of disabled individuals has been considered as a response to this crisis and has been adopted to facilitate their socialisation and social integration. Four compulsory requirements for successful professional training for physically disabled people that can be applied in our case have been described. First, meaningful educational and training opportunities that open doors to equal access to employment must be created; second, training for the physically disabled candidate that promotes adaptability must be provided; third, the necessary knowledge and skills to perform the work must be imparted to physically disabled people; and fourth, the relationship between public governmental agencies, the labour market and institutions specialising in specific education must be forged.<sup>9</sup> In Milan, Italy, for example, it was found that only 61% of the available jobs require skills possessed by only 32% of the registered disabled people.<sup>9</sup> Accordingly, the main obstacle to workplace integration of disabled people is not their physical limitations, but rather their limited knowledge, that is, the lack of required knowledge and technical skills generally explained the unemployment status in this population.<sup>9</sup>

Disability issues have been explored from different perspectives, including those of disabled people, health professionals, rehabilitation agencies, etc. However, to our knowledge, these streams of research have not been brought together to link the disability type, training and career prospects of the trained, physically disabled person. Therefore, we evaluated the professional integration of physically impaired people after training by monitoring the trainees, their fields of training, their respective disabilities and the jobs they hold.

## Methods

A retrospective descriptive survey was conducted in the Goma and Butembo health zones (districts) from January 1996 to December 2005.

Three centres for disabled people, 'Heshima Letu' in Butembo (rural), 'Shirika la Umoja' (urban) and PAPH (Programme pour l'Aide et la Protection de la Personne Handicapée) (urban) are located in the Goma health zone. An outreach programme of community-based rehabilitation was conducted at these centres. A multidisciplinary team of clinicians, nurses, orthopaedic technicians and eye clinicians travel to remote areas monthly for patient consultation and/or rehabilitation. Clients living very far from the outreach points travel to a clinic for assessment. After the consultation in the health/hospital centre or outreach site, two categories of disabled people were identified: Either the client had no active medically or surgically treatable condition, or the client had an acute/sub-acute treatable condition that requires medical/surgical management prior to rehabilitation. In the stable group, consenting physically impaired individuals received training in one of several fields. Those who had a treatable condition were given treatment and, upon discharge, they were counselled on professional training opportunities. The individuals were offered the opportunity to receive home rehabilitation. To increase the autonomy of the patients once back in their communities, the training programme was optional and tailored to the will, choice and needs of the client/patient. Once the training was completed, each trainee could enter the workforce and become financially independent.

**Table 1: Socio-demographic baseline data**

| Variable                          | Number | Percentage (95% CI) |
|-----------------------------------|--------|---------------------|
| <i>Age ranges</i>                 |        |                     |
| 16–24                             | 32     | 25.1 (18.4–33.3)    |
| 25–50                             | 69     | 54.3 (45.6–62.7)    |
| 51–60                             | 6      | 4.7 (2.1–9.9)       |
| missing values                    | 20     | 15.7 (10.4–23.07.)  |
| Total                             | 127    | 100                 |
| <b>Sex</b>                        |        |                     |
| Male                              | 57     | 44.8                |
| Female                            | 70     | 55.1                |
| Total                             | 127    | 100                 |
| <b>Setting</b>                    |        |                     |
| Urban                             | 68     | 53.5 (44.8–61.9)    |
| Rural                             | 59     | 46.4 (38.0–55.1)    |
| Total                             | 127    |                     |
| <b>Training integration level</b> |        |                     |
| Integrated                        | 123    | 96.8 (92.1–98.7)    |
| Non-integrated                    | 4      | 3.1 (1.2–7.8)       |
| Total                             | 127    |                     |

Our study population included all physically impaired individuals that were consulted between 1996 and 2005. For cross-checking purposes, data were collected using two different registers for review: one from the medical unit and the second from the rehabilitation unit. The following variables were checked: age, sex, type of handicap, follow-up training, present living conditions and field of training.

Table II: Participants by handicap type and field of training

|                          | N  | %    | 95% CI    |
|--------------------------|----|------|-----------|
| <b>Type of handicap</b>  |    |      |           |
| Poliomyelitis            | 80 | 62.9 | 54.3–70.8 |
| Paralysis (idiopathic)   | 19 | 14.9 | 9.7–22.1  |
| Clubfoot                 | 11 | 8.6  | 4.9–14.8  |
| Amputation               | 6  | 4.7  | 2.1–9.9   |
| Dwarfism                 | 2  | 1.5  | 0.4–5.5   |
| Tuberculosis             | 2  | 1.5  | 0.4–5.5   |
| Genu varum               | 2  | 1.5  | 0.4–5.5   |
| Sight problems/loss      | 2  | 1.5  | 0.4–5.5   |
| Cerebral palsy           | 1  | 0.7  | 0.1–4.3   |
| Osteomyelitis            | 1  | 0.7  | 0.1–4.3   |
| Deafness                 | 1  | 0.7  | 0.1–4.3   |
| <b>Field of training</b> |    |      |           |
| Tailoring                | 73 | 57.4 | 48.7–65.7 |
| Soap making              | 19 | 14.9 | 9.7–22.3  |
| Shoemaking               | 17 | 13.3 | 8.5–20.3  |
| Typing                   | 7  | 5.5  | 2.6–10.9  |
| Carpentry                | 6  | 4.7  | 2.2–9.9   |
| Shaving                  | 3  | 2.3  | 0.8–6.7   |
| Tannery                  | 1  | 0.7  | 0.1–4.3   |
| Computer repair          | 1  | 0.7  | 0.1–4.3   |

For the purpose of this study, we defined 'professional integration of training' as when the current main work or profession of a client corresponded to the field of training that the client had received at the rehabilitation centre; while physical rehabilitation refers to any therapeutic procedure [medical or surgical] aimed at stabilising a client's physical impairment upon arrival at a centre and prior to dealing with any other social aspect of her disability. Professional training was defined as 'the choice of training in a professional field', with a summative assessment to ensure that the disabled individual could practice the job for the rest of his/her life. Professional training also can be referred to as 'post-rehabilitation vocational training'.

Out of 715 disabled individuals selected for the study, 128 (17.9%) met the inclusion criteria (presence of a permanent disability, history of training from one of the centres and a good record of the required information). Data were entered and analysed using SPSS software (version 11.0). Percentages along with 95% confidence intervals (CIs) were computed using the Wilson calculation.<sup>10</sup>

Authorisation to conduct the survey was obtained from the Catholic University of Graben, and a research review board approved the project.

## Results

The socio-demographic data in Table I show that most of the participants were between 25 and 50 years of age [54.3% (95% CI; 45.6–62.7%)] and that there were more

Table III: Training integration of disabled people

|                           | Integrated |      |            | Non-integrated |      |            |
|---------------------------|------------|------|------------|----------------|------|------------|
|                           | N          | %    | 95% CI     | N              | %    | 95% CI     |
| <b>Setting</b>            |            |      |            |                |      |            |
| Rural                     | 68         | 100  |            | 0              | 0    |            |
| Urban                     | 55         | 93.2 | 83.8–97.3  | 4              | 6.7  | 2.6 – 16.1 |
| <b>Age ranges</b>         |            |      |            |                |      |            |
| 16–25                     | 28         | 87.5 | 71.9–95    | 4              | 12.5 | 4.9–28.1   |
| 26–50                     | 69         | 100  |            | 0              |      |            |
| ≥ 51                      | 6          | 50   | 25.3–74.6  | 6              | 50   | 25.3–74.6  |
| <b>Type of disability</b> |            |      |            |                |      |            |
| Poliomyelitis             | 79         | 98.7 | 93.2–99.7  | 1              | 1.2  | 0.2–6.7    |
| Paralysis (general)       | 17         | 89.4 | 68.6–97.1  | 2              | 10.5 | 2.9–31.3   |
| Clubfoot                  | 11         | 100  |            | 0              |      |            |
| Amputation                | 6          | 100  |            | 0              |      |            |
| Nanism                    | 2          | 100  |            | 0              |      |            |
| Sequel TB spine           | 2          | 100  |            | 0              |      |            |
| Genu varum                | 2          | 100  |            | 0              |      |            |
| Sight disorder            | 1          | 50   | 9.4–90.5   | 1              | 50   | 9.4–90.5   |
| Cerebral palsy            | 1          | 100  |            | 0              |      |            |
| Osteomyelitis             | 1          | 100  |            | 0              |      |            |
| Deafness                  | 1          | 100  |            | 0              |      |            |
| <b>Field of training</b>  |            |      |            |                |      |            |
| Tailoring                 | 70         | 95.8 | 88.5–98.5  | 3              | 4.1  | 1.4–11.4   |
| Soap making               | 19         | 100  |            | 0              |      |            |
| Shoemaking                | 17         | 50   | 34.06–65.9 | 17             | 50   | 34.06–65.9 |
| Typing                    | 7          | 100  |            | 0              |      |            |
| Joinery                   | 6          | 50   | 25.3–74.6  | 6              | 50   | 25.3–74.6  |
| Hairdressing              | 3          | 100  |            | 0              |      |            |
| Tannery                   | 1          | 100  |            | 0              |      |            |
| Computer repair           | 0          |      |            | 1              | 100  |            |
| <b>Total</b>              | 123        |      |            |                |      |            |

female participants of all ages (55.1%). The percentage of participants from urban areas (53.5%) was slightly higher than that from rural areas (46.4%). The percentage of participants whose training was integrated was 96.8% (95% CI; 92.1–98.7%) versus only 3.1% (95% CI; 1.2–7.8%) whose training was not integrated.

Table II shows that poliomyelitis, paralysis and clubfoot were the most common physical impairments. Cerebral palsy, osteomyelitis and deafness were represented by one case each. Tailoring, soap making and shoemaking were the dominant fields of training. Tannery and computer repair were represented by one case each.

## Training integration of disabled people

Table III shows that 6.7% of trainees were not integrated in the urban setting. In addition, ages outside of the average range represented some non-integrated cases: 12.5% (4.9

to 28.1%) and 50% (25.3 to 74.6%) for those between 16 and 25 years and 51+ years respectively. With regard to type of disability, almost all the participants were fully integrated with respect to their training, except for some individuals with poliomyelitis, paralysis in general and sight disorders. The following fields had a high number of participants with non-integrated training: tailoring, shoemaking, welding and computer repair. The single tannery case was integrated, while the single computer technician was not integrated.

## Discussion

Employment provides not only resources but also opportunities for social participation. This is especially important for people with disabilities; however, the employment of physically disabled people in many countries remains subject to significant barriers.

Evidence has shown that the rate of employment among people with mobility disabilities is much lower than that of the general population, as is the case with all severe disabilities.<sup>11</sup> Our findings point out the role of the type of disability not only in acquiring a job, but also in its integration. The most severe disability cases, such as paralysis and sight disorders, were correlated with non-professional integration of training (see Table III).

A number of parameters to consider in accelerating the training and social integration of disabled individuals have been considered. Among these are the nature of the motor problem,<sup>12</sup> neurological and neuropsychological faculties,<sup>13</sup> the use of a set of tests assessing the degree of the motor disability,<sup>10,14</sup> the presence of an additional support programme<sup>15</sup> and special training of teachers in the education and rehabilitation of disabled people.<sup>16</sup>

The integration of disabled workers must be understood and helped from a specific set of contextual points of view. Here, for example, the highly paternalistic attitude of society, the family and even the local administration regarding physically disabled people is, on the one hand, a threat to professional integration, despite the training offered and a facilitator factor on the other hand. For example, in some public places, such as small markets at inter-country borders in Congo, physically disabled people are exempt from paying taxes. While some use this exemption to boost their businesses, others use the free passage to carry goods for small traders in exchange for food, neglecting their vocational training.

The observed high rate of integration noted among the respondents is laudable [96.8% (95% CI; 92.1–98.7%)] and has resulted from a combination of efforts by several stakeholders, including the health authorities, non-governmental organisations supporting the programme, the families of disabled people, and the trainers of disabled

people. The provider's team and the Christian Blind Mission (CBM) programme supporting the current participants have a good track record and experience in the field, and have been running similar programmes in many countries worldwide. The strengths of current training programmes (with a high level of integration) lie in maintaining and even increasing integration rates, since the aim of such programmes is to provide opportunities for all trainees to practise the trades that they have learned. This training reduces the likelihood that disabled people will be begging for the rest of their lives; it also increases their chances for a self-sustainable life.

Differences were found between the age groups that had high proportions of non-integrated individuals (Table III). The lack of funds to implement a business after training in a specific field, the lack of focus in young people and the consideration of some jobs as 'inferior' by the young can explain these differences. The oldest trainees, on the other hand, developed resilience toward their disability prior to training. In the end, the oldest trainees tended to continue with their pre-training living activities. This observation is also in line with the employment age trend among the general population in Congo. The younger population often remains dependent on their parents, because they are either unemployed, even after graduation, or, if employed, their salaries are insufficient to allow for their independence. The older population relies primarily on self-generated income, typically from agriculture, after their retirement from the workforce. In the end, the middle-age group is burdened by having to work to meet most of the family's expenses.

In the study population, cerebral palsy, osteomyelitis and deafness were represented by small numbers of participants. We hypothesise that these disabilities are less common countrywide, but their under-representation in the programme is difficult to extrapolate to the country level. The settings for our study differed from the rest of the country, and possible selection bias due to several factors can explain the higher attendance by people with certain disabilities. Also, the geographical distribution of disabilities can differ within and between provinces. Finally, the health-seeking behaviour of people with conditions such as deafness and cerebral palsy could be low, as there is no effective short-term measure to deal with these two conditions. Also, osteomyelitis is considered a 'curable' condition, despite its long evolutionary course during which patients are attended primarily by orthopaedists, who effectively treat them before they reach a rehabilitation programme. In addition, only small numbers of participants in the programme were interested in tannery and in repairing computers, which might explain the current under-representation of these fields, which need to be promoted throughout the country

## Limitations

To be effective, the integration of training must reach far beyond the notion of being employed or not, or rehabilitated or not. An analysis of each specific case and situation is a requirement for success. This analysis was performed from a professional, medical and psychological point of view. It was set in the context of a case situation with regard to elements of civil law and social security regulations. The analysis explicitly takes the overall situation of the client into account.<sup>17</sup> Highly competent medical and job-specific knowledge, as well as psychological know-how, is required. Rehabilitation management does not refer to a fixed set of certain measures, but must be applied to the specific healing plan and resources of the client.<sup>17</sup> In our case, this study failed to consider the global picture of training-trainer integration and was limited only to the type of impairment.

The scope of our study also failed to establish two important components in community disability assessment. First, the role of the multidisciplinary team, composed of a primary health care nurse, a social worker and a peer counsellor in managing disabled people, was not considered. Second, community-based rehabilitation is a comprehensive approach that encompasses disability prevention and rehabilitation in primary health care activities, the integration of disabled children in ordinary schools and the provision of opportunities for gainful economic activities for disabled adults.<sup>18,19</sup> Our team's composition is predominantly curative rather than preventive and rehabilitative, which can restrict the services offered in terms of curative activities. The training is still tailored to a model of physically impaired people without any connection to the market place, society and government agencies. A future analytical study should be performed to connect these factors.

## Conclusions and implications

The types of disabilities encountered, the different fields of training and the professional integration of training by demographic and physical factors have been described. A comprehensive approach, in addition to medical intervention, is an important step toward achieving success in the professional integration of the training of physically disabled people. Ongoing assessment during the whole process remains important to tailor the curriculum to the requirements and constraints of disabled people. To implement a coherent and responsive adaptation and reinsertion, a qualitative survey exploring the views of programme alumni is needed. This may provide further understanding of trainees' experience about and the reasons surrounding their lack of social integration throughout the process.

*Conflict of interest:* We declare that the second author (MVP) is employed by CBM, an organisation that supports the

rehabilitation programme in the Northern Kivu province. However, the organisation did not play any role in the conception, funding, data collection, analysis or publication of this paper.

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