Physical Environmental Barriers to School Attendance among Children with Disabilities in two Community Based Rehabilitation Centres in Rwanda

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Background: It is estimated that more than 90% of children with disabilities in developing countries do not attend schools. Children with disabilities either do not receive any education or, if they do, it is often inappropriate. The **aim** of this study was to identify the physical Environmental barriers to school attendance by children with disabilities in two community based rehabilitation (CBR) centres in Rwanda. **Method:** A quantitative, cross-sectional, descriptive study was conducted to identify barriers to school attendance in two CBR centres. Parents/caregivers of children with disabilities participated in the study. The data was analysed using Statistical Package for the Social Sciences (SPSS).The level of significance (alpha) was set at α=0.05. **Results:** The long distance from home to the nearest school, and the status of the school physical environment were the major barriers to school attendance. **Conclusion:** To meet the Special Needs Education, strengthening existing measures to make a conducive physical environment would enhance school attendance among children with disabilities and subsequently the overall inclusive education.

Key words: Parents/caregivers, children with disabilities, barriers

Introduction

The prevalence of disability increases as war, conflict, and poverty increase. However, the needs of children with disabilities in developing countries are not well known. [1] More than 1 billion people around the world live with disabilities. A new report at the global prevalence of disabilities showed that about 15% of the world's populations have disabilities. [2] Many children with disabilities including those who have difficulties with learning, speech, cognitive, hearing, seeing, mobility and emotional, are likely to have never attended school. [3] In developing countries, fewer than 5% of children with disabilities reach the Education for All (EFA) goal of primary school completion. [4] It was estimated that a number of children with disabilities under the age of 18 years around the world varies from 120 to 150 million [5] a big number of whom, in many countries throughout the world, either do not receive any form of education or if they do, it is often inappropriate. [6] This number may be growing due to global conditions of increasing poverty, armed conflict, child labour practice, violence, abuse, and HIV/AIDS.

Working to increase the number of children attending school has become the objective of governments in their effort to attain equity and harmony in their societies. [7] The worldwide commitment to education for children with disabilities has been growing since 1975. [8] The world conference on Education for All: Meeting Basic Learning Needs (MBLN), held in Thailand 1990, aimed at bringing the benefits of education to every citizen in every society. [9] Also the World Summit for the children with disabilities, held in New York 1990, adopted the goal of Education for all by the year 2000 including learners with special education need (LSEN). [10] Furthermore, the Salamanca Statement in 1994, where 92 governments and 25 international organisations met at the world conference on Special Needs of Education, adopted a new statement on the Education of all children with disabilities, which called for inclusion to be the norm. In the conference, a new framework that ordinary schools should accommodate all children with disabilities, regardless of their physical, intellectual, social, emotional, linguistic or other conditions was also adopted. Children with disabilities should attend the usual neighborhood schools that would be attended if the child did not have a disability. It was also stipulated that every child has the fundamental right to education. He/she must be given the opportunity to achieve and maintain an acceptable level of learning, and every child has unique characteristics, interests, abilities and learning needs. [11] In ad-

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dition, the second UN Millennium Development Goal [12] aims at ensuring that all boys and girls, including those with disabilities, complete a full course of primary schooling.

Despite the above declarations and statements, some estimates showed that 98% of children with disabilities in developing countries do not attend school and 99% of girls with disabilities are illiterate. [12] Youth with disabilities run a great risk of remaining illiterate, which leads to restricted opportunities to further education, employment, and income. In developing countries, many families do not believe that children with disabilities should receive any education, and other families believe that children with disabilities are incapable of learning. [13] In Rwanda, during the genocide against the Tutsi, over one million people were killed, many became widows and orphans, and a very large number became disabled. The national census in 2002 estimated the prevalence of all disabilities in Rwanda at 4.8%. [14] However, the census did not indicate the percentage of children with disabilities in and out of schools. Article 40 of the Constitution of Rwanda affirms the right of every citizen to education whereby it is stipulated that "….the state has the duty to facilitate the education of disabled people." [15] The educational opportunities for disabled children lie within special schools and centres. There are a limited number of special schools which are exclusively for children with visual and hearing difficulties. [16] For the most part, educational provision for children with disabilities is provided by religious organizations and most of those schools are located in urban areas far from homes of children with disabilities. However, in recent years, a policy of inclusive education has been implemented in a number of schools around the country. [17] Primary school education is compulsory and the Government of Rwanda has implemented the policy of fee-free education to ensure attainment of the policy of universal primary education and Education for All by 2015. The aim of this study was to identify the physical environmental barriers to school attendance by children with disabilities in two community based rehabilitation centres.

Methods

A quantitative, cross-sectional, descriptive study design was used to identify the physical Environmental barriers to school attendance by children with disabilities in two CBR day centres (one in the urban and one in the rural areas). These centres were selected because a large number of children with disabilities were attending them once a week, to receive some sessions of exercises. All children with disabilities (CWDs) who attended these centres were not registered there. A sample of 94 parents or caregivers of children with disabilities was used. All children with disabilities aged 7-18 years who have never attended schools and those who have ever attended school and then dropped out participated in the study.

Study instrument and data analysis

A structured questionnaire with closed ended questions was developed by the researchers, based on literature and the researchers' experience. The researchers developed the instrument because no standardised questionnaire that met the specific objectives of this study could be found. The questionnaire included the socio-demographic questions like age and gender of the child, how many years the child attended school. The questions on types of disabilities and physical environmental factors were also included. The original questionnaire was in English and translated into Kinyarwanda for comprehensibility. Construct validity of the questionnaire was determined. The Data was analysed using (SPSS), 15.0 version and descriptive statistics for the frequency and percentages. Chi-Square was used to determine the association between variables. The level of significance (alpha) was set at 0.05. Ethical permission to conduct the study was obtained from all the institutions involved including the University of the Western Cape, South Africa, where the researcher was a registered student, the Ministry of Education, Rwanda, and the directors of the CBR programmes. All participants (parents and caregivers) completed the consent forms after reading an information sheet on the study, or having it read to them. Participation in the study was voluntary, and the participants were free to withdraw from the study at any time. Respect, confidentiality and anonymity were ensured.

Results

A total of 94 parents/caregivers of whom 66% were mothers, 15.9% fathers, and the rest 18.1% caregivers, of children with disability were involved in the study. The mean age of the children with disabilities was 11 years and the standard deviation was 3.36 years. Table 1 indicates the age group, gender and education level

of the children with disabilities. The education level indicates the number of years a child attended school. The results indicated that 57.4% children with disabilities had never attended school while the rest (42.6%) dropped out of school after attending some years. Thus, the majority of children with disabilities had never attended school.

Table 1 Age group, gender and education level of children with disabilities (N=94)

	Age group			
Gender	**7-10 years N (%)**	**11-14 years N (%)**	**15-18 years N (%)**	**Total N (%)**
Male	16 (17.1)	20 (21.3)	13 (13.8)	49 (52.1)
Female	19 (20.2)	18 (19.1)	8 8.5)	45 (47.9)
Total	35 (37.3)	38 (40.4)	21 (22.3)	94 (100)
Education level				
Never	30 (31.9)	20 (21.3)	4 (9.2)	54 (57.4)
1 year	6 (6.4)	12 (12.8)	3 (3.2)	21 (22.4)
2 years	1 (1.1)	3 (3.2)	4 (4.2)	8 (8.5)
3 years	-	2 (2.1)	5 (5.3)	7 (7.4)
4 years	-	1 (1.1)	1 (1.1)	2 (2.1)
5 Years	-	-	2 (4.2)	2 (2.1)
Total	35 (37.2)	38 (40.4)	21 (22.3)	94 (100)

Table 2 indicates the type of disabilities and school attendance by children with disabilities. The Chi-Square test found a significant association between speaking difficulties and never attending school (P-value=.001).

Table 2 A comparison between types of the disabilities and school attendance (N=94)

	Never attended school (N=54)	**Started school with disability (N=30)**	**Dropped out after acquiring disability (N=10)**	**Total (N=94)**
Difficulties	N (%)	N (%)	N (%)	N(%)
Seeing	5 (9.3)	4 (13.3)	1 (10)	10 (10.6)
Hearing	6 (11.1)	1 (3.3)	3 (30)	10 (10.6)
Speaking	24 (44.4)* **	2 (6.7)	2 (20)	28 (29.8)
Mobility	27 (50)	17 (56.7)	6 (60)	50 (53.2)
Feeling	1 (1.9)	-	-	1 (1.1)
Learning	12 (12.8)	9 (30)	-	21 (22.3)
Behaviour	7 (13)	2 (6.7)	2 (20)	11 (11.7)
Convulsion	20 (37)	7 (13)	1 (10)	28 (29.8)

χ^2 ***p≤.001

Time from home to the nearest school and difficulties with walking versus school attendance (this was only for children with mobility difficulties, N=50)

The findings revealed that it takes between 20 to 40 minutes in 44% of children without disabilities, to walk from home to the nearest school. The Chi-Square test found a significant association between never attended school and roads not well maintained (P-value=.002).

Table 3 A comparison of time to walk to the nearest school, difficulties with walking and school attendance (N=50)

Time in minutes	**Never attended school N (%)**	**Started school with disability N (%)**	**Dropped out after acquiring disability N (%)**	**Total N (%)**
<20	3 (11.5)	1 (5.6)	-	4 (8)
20-40	11 (42.3)	8 (44.4)	3 (50)	22 (44)
41-60	5 (19.2)	6 (33.3)	3 (50)	14 (28)
>60	7 (26.9)	3 (16.7)	-	10 (20)
Total	26 (100)	18 (100)	6 (100)	50 (100)
Difficulties				
The road is not well maintained	23 (88.5)* *	11 (61.1)	3 (50)	37(74)
It is not safe to walk	22 (84.6)	14 (77.8)	4 (66.7)	40 (80)
Disabled child cannot walk that distance	20 (76.9)	12 (66.7)	5 (83.3)	37(74)

*χ^2 **p≤..002*

Table 4 indicates reasons why children with mobility difficulties dropped out of school and compares this with whether the child developed the disability before school or after starting school. Four parents who had children who use wheelchairs reported that it was not possible for their children to move around the school.

Table 4 Reasons for dropping out of school (N=24)

	Started school with disability (N=18)	Dropped out after acquiring disability (N=6)
Reason	**N (%)**	**N (%)**
There were stairs at school	15 (83.3)	4 (66.7)
The child was unable to play in the playground	13 (72.2)	5 (83.3)
No toilet that my child could use	12 (66.7)	3 (50)
No special seat at school	13 (72.2)	3 (50)
The doors were a problem for my child	6 (33.3)	-

Discussion

A total of 94 parents/caregivers of children with disabilities participated in the study. About 57.4% of all children had never attended school and the rest had dropped out after attending for some years (Table1). The type of disabilities found among children who did not attend school was classified according to the International Classification of Functioning, Disability and Health (ICF). [18] Using the ICF, the types of disability include seeing, hearing, speaking, mobility, feeling, learning, behaviour, and fits or convulsions. [19] The predominant type of disability was mobility difficulties (53.2%) because the day centres were specifically following up people with mobility difficulties (Table 2).The literature stated that mobility difficulties are more common in countries with poor perinatal care and/or in countries with a recent history of wars. This could be another reason for the high percentage of mobility disabilities in Rwanda which is recovering from the aftermath of 1994 genocide. The lack of treatment facilities during the genocide, poor pre and perinatal care resulted in a high number of cases of cerebral palsy which resulted in different disabilities. [21] The history of meningitis epidemics [20, 22] also has caused some impairments of speaking, hearing, and learning.

Geographical and School environments

Physical environmental factors mainly affect children with mobility difficulties. [23] The results of this study indicated that it took 20 to 40 minutes in 44% children without disabilities to walk from home to the nearest school. Further 28% parents/caregivers reported that it took 41 to 60 minutes to walk to the nearest school. The findings revealed that many children from the urban area walk a greater distance to reach the nearest school than those from the rural areas. However, another study revealed that a long distance to and isolation from schools are the main barriers in rural than urban areas. [24] The reason for this difference could be that the parents/caregivers might not accurately estimate the time spent. School-home distance might be the reason for dropping out of school among children with mobility difficulty. Research has revealed that distance can be one of the barriers to learning by children with disabilities. [25] Many parents/caregivers of children who never attended school (88.5%) reported that the roads were not well maintained for their children to walk on (Table 3). The poor accessibility to schools reduces attendance among children with mobility disability. [23]

In many poor communities, especially in rural areas, children with disabilities are unable to reach their centre of learning because there are no transport facilities. [26] Over 83% parents/caregivers whose children started going to school with disabilities and dropped out after some years reported that there were stairs at school (Table 4). The stairs challenge children with mobility difficulties especially those who use wheelchairs and other assistive devices. [27] A high percentage (83.3%) of parents/caregivers whose children dropped out of school after developing disabilities reported the main barriers were children's inability to play with others. Toilets, seats or chairs, doors and class design were also reported. Some researchers [25, 28] indicated that in developing countries schools and classroom are often not accessible due to physical environmental barriers like stairs, toilet, chairs, classroom designs, tables, and playground. [29] Now, as inclusive education is envisaged, appropriate school building are being taken into account.

Conclusion

This study has been the first conducted in Rwanda to identify the physical environmental barriers to school attendance among children with disabilities. Among others, the distance from home to the nearest school, school design and inappropriate roads were the main barriers. To achieve inclusive education, appropriate school buildings such as toilets, seats or chairs, playground, doors and class should be designed in a way that also consider children with disabilities. In this

regard, there is a necessity to make adaptive learning facilities for children with disabilities and allow them to cope up with the learning environment and therefore increase their school attendance. A conducive physical environment may improve the school attendance in children with disabilities and hence a successful Education for All.

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Authors' contributions

SJB conceptualized the study and supervised data collection. He participated in the study design, the interpretation of data and drafting of manuscript. TM has participated in the revision of the references and the drafting of the manuscript. PS supervised the overall work and participated in drafting of manuscript.

Conflicts of interest

There is none.

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