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# Access to Supportive Health Services for People with Physical Disabilities: A Case of Health Facilities in Singida Rural District, Tanzania

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## Abstract

**Background:** It is estimated that above one billion people (15%) of the world's populations are living with disabilities. The poor and unfriendly infrastructure at health facilities is the core challenge for people with physical disabilities in accessing healthcare. This study aimed to explore at what extent the existing infrastructure and design of health facilities in Singida rural district, Tanzania supports people with physical disabilities to access healthcare. **Methods:** A cross sectional health facility-based assessment of all thirty-two functioning health facilities in the district was done between June and December 2020 using observational checklist and key informants' interviews consist of measurement procedures of the architectural condition of health facilities. Observation checklist was designed based on standard of health facilities in Tanzania, national guideline for safe care standards for dispensaries, health centers and district hospital of 2014 and national guideline for water, sanitation and hygiene in healthcare facilities of 2017. Data were analyzed by SPSS-26 using descriptive statistics to obtain frequencies tables, percentage and figure. Qualitative data were analyzed by using NVivo-12 software. **Results:** The study revealed that there was no signage, entrance area, parking and toilets designated for people with physical disabilities in all health facilities. There was no special seat, examination table/bed and special weight scale for people with physical disabilities in all facilities. Also, the doors were not wide enough to support wheelchair user to maneuver in all health centers and dispensaries. In addition, door handles were not user friendly for wheelchair users. In fact, only the hospital and health centers had wheelchairs while 27 (96.4%) of all dispensaries had no wheelchairs. Furthermore, ramp and pathways were not

available in all dispensaries. All health facilities had stairs but the challenge was most of the staircases had no floor located before the steps. **Conclusion:** The study revealed that the infrastructures in most healthcare facilities pose challenges to people with physical disabilities when they access healthcare services. These findings call for need of improving health facilities' infrastructure to accommodate people with physical disabilities and this should be given a priority.

## Keywords

Access, Healthcare Services, Health Facilities, People with Physical Disabilities

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## 1. Introduction

It is estimated that above one billion people (15%) of the world's populations are living with disabilities [1]. About 93 million children below 15 years of age in the world are affected with a reasonable or unembellished incapacity [2]. People with physical disabilities compose a large group compared to other types of disability in Tanzania [3]. The total number of people with physical disabilities in Tanzania is 3,372,000, whereby 850,416 are reported to be with physical disabilities and other types of disability are reported to be 2,521,584 [4].

Access to healthcare services for people with physical disabilities is an ability of people with physical disabilities to reach the health services in need [5] [6]. However, this is possible if healthcare services are available, affordable and acceptable and also if the existing infrastructure at health facilities support people with physical disabilities to access healthcare [7]. The poor and unfriendly infrastructure at health facilities is the core challenge for people with physical disabilities in accessing healthcare [8]. People with physical disabilities are more likely to experience difficulties in accessing healthcare than people without disabilities due to poor infrastructure in most health facilities [9].

The global academic societies, clinical specialists and campaigners for people with physical disabilities agreed on the significance of access to healthcare facilities and they claim suitable healthcare should be persuaded [5]. People with physical disabilities have their own health needs related to their impairments such as physical medicine and rehabilitation [9]. It is reported that in 2013, among the 43 nations, 42% of people with disabilities against 6% of people without disabilities recognized their health as deprived and 64% of people with disabilities who needed rehabilitation services could not access them [5]. In addition, 29% of birth from people with physical disabilities were not attend by qualified healthcare workers whereby around 22% of married women with disabilities had unfulfilled family planning [5]. In other nations over 70% of people with physical disabilities are reported to have poor health [5]. This problem is more in rural dispensaries, health centers than in district and referral hospitals, in developing coun-

tries [10] [11] [12]. The poor and unfriendly health facilities infrastructure limits the mobility of people with physical disabilities to access healthcare services [7].

Regardless of the efforts made by the government of Tanzania and various stakeholders to improve access to healthcare services for people with physical disabilities, there are still challenges facing a large number of people with physical disabilities [3]. In Tanzania, few studies have highlighted the challenges in accessing healthcare for people with physical disabilities. Bakar *et al.*, (2016) studied the lived experiences of people with disabilities and older people in Tanzania cited limited accessibility of healthcare and the major issues includes shortage of medical equipment and supplies at health facilities and cost occurred when seeking healthcare. Kupper *et al.*, (2016) studied social protection for people with disabilities in Tanzania reported unaffordability of healthcare cost and the cost to join social protection which limits them to access healthcare.

In general there have been no studies in Tanzania particularly in Singida rural district studied access to supportive health services for people with physical disabilities at health facilities. Thus little is known about the extent at which people with physical disabilities are experiencing difficulties in accessing supportive health services. Then, this study aimed to explore at what extent the existing infrastructure and design of health facilities in Singida rural district supports people with physical disabilities to access healthcare.

## 2. Material and Methods

### 2.1. Study Settings

This study was conducted in Singida rural district, Singida region, central Tanzania. The district has a total population of 225,521, of which 1402 are people with physical disabilities [13]. The district is administratively divided into 3 divisions, 21 wards and 84 villages [13]. The district is surrounded by Ikungi district to South, by Manyara region to the East and by Mkalama district to the West. The main economic activities within the district are small scale farming, fishing and self-employment [14]. The area was selected because it is a rural and impoverished area with limited access to healthcare, shortage of trained health staff, social economic hardship, physical barrier such as distances and poor infrastructure in health facilities [11]. The health facilities available in the district are 32 in which 28 (88%) are dispensaries, 3 (9%) are health centers and 1 (3%) is hospital. Thirty facilities (93.8%) are owned by the government.

### 2.2. Study Design, Sample Size and Sampling

The study was conducted between June and December 2020. It employed a cross-sectional study design conducted in all the 32 functioning health facilities in Singida rural district. Due to low number of health facilities in the district, all 32 functioning health facilities were purposeful sampled for observation. The study also included 15 key informant respondents based on their knowledge and experiences on access to healthcare for people with physical disabilities.

### 2.3. Data Collection Procedure and Analysis

Data were collected in all 32 functioning health facilities and only primary data were collected for analysis. Data was collected using the observational checklist consisted of measurement procedures of the architectural condition of health facilities and key informants' interviews. Observation checklist was designed based on standard of health facilities in Tanzania, national guideline for safe care standards for dispensaries, health centers and district hospital of 2014 and the national guideline for water, sanitation and hygiene in healthcare facilities of 2017 [15] [16] [17]. In-depth interviews were conducted among the 15 respondents from government staff, leaders from people with physical disabilities association, Non-Government Organization and healthcare providers. Data was collected using Kiswahili language and therefore transcripts were crosschecked in order to collect errors and translated into English language before the analysis.

The quantitative data was analyzed by SPSS-26 software using descriptive statistics to obtain frequencies table and percentage. Qualitative data was analyzed by using NVivo-12 software. Topics of interviews were prepared and the interviews stick to a broad thematic structure. The themes involved experiences of access to supportive health services for people with physical disabilities. The interviews took between 30 and 45 minutes and were audio-recorded. Audiotapes were then recorded verbatim and qualitative thematic content analysis was done by researcher to develop an initial coding scheme. The coding system enabled logical credentials of reasoned designs that become evident from the data ideas.

## 3. Results

This study was conducted in all 32 functioning health facilities *i.e.* one hospital, 3 health centers and 28 dispensaries. The results of the observational assessment are described under the broad categories: signage, designated entrance area, parking, health facilities door, ramp, pathways, staircases, special seat at health facility, wheelchairs, designated examination table/bed, special weight scales and designated toilets for people with physical disabilities as presented in **Table 1**.

### 3.1. Signage for People with Physical Disabilities

The results revealed that in all health facilities there was no signage to show if the buildings were accessible by wheelchair or other mobility aid users. The availability of signage at health facilities which is marked with universal symbols, lights at night, clearly indicates direction and to the large extent is helpful to support people with physical disabilities to get their healthcare needs.

### 3.2. Designated Entrance Area for People with Physical Disabilities

It was revealed that in all health facilities there was no designated entrance area for people with physical disabilities who use wheelchairs. Both patients with and

**Table 1.** Existing infrastructures at health facilities for people with physical disabilities.

Items	Types of facilities	Available (%)	Unavailable (%)
Signage	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Designated Entrance Area	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Designated Parking	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Floors at the Shared Parking for Wheelchair User	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Health Facility Door Width	Hospital	1 (100)	-
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Health Facility Door Handle	Hospital	1 (100)	-
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Health Facilities Alternative Door	Hospital	1 (100)	-
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Ramp	Hospital	1 (100)	-
	Health centers	2 (66.7)	1 (33.3)
	Dispensaries	-	28 (100)
Pathways	Hospital	1 (100)	-
	Health centers	2 (66.7)	1 (33.3)
	Dispensaries	-	28 (100)
Stairs Cases	Hospital	1 (100)	-
	Health centers	3 (100)	-
	Dispensaries	28 (100)	-
Floor Located before the Steps	Hospital	1 (100)	-
	Health centers	2 (66.7)	1 (33.3)
	Dispensaries	-	28 (100)
Continue Handrails Provided at the Stairs	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Special Seat at Health Facility	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Wheelchair	Hospital	1 (100)	-
	Health centers	3 (100)	-
	Dispensaries	1 (3.6)	27 (96.4)

**Continued**

Designated Examination Table/Bed	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Special Weight Scale	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)
Designated Toilets	Hospital	-	1 (100)
	Health centers	-	3 (100)
	Dispensaries	-	28 (100)

without disabilities used the same entrance to enter the facilities buildings. However, it was observed that all entrance area in all health facilities had no adequate space for wheelchair users to maneuver and no health facility in the district had signpost at the entrance area to show that it was accessible for people with physical disabilities. It was also observed that entrance area in the hospital and 2 (66.7%) health centers had pathways, whereas pathways were not available in all dispensaries. In addition, the entrance area in the hospital and 2 (66.7%) health centers had ramp but all dispensaries had no ramp.

### 3.3. Designated Parking for People with Physical Disabilities

In all health facilities there was no designated parking for people with physical disabilities. The findings revealed that both people with and without disabilities shared the same parking. The parking spaces were not specified for people with physical disabilities, both people with and without disabilities regularly use the available open space around health facilities for parking. The available parking spaces in all health facilities had no universal symbols to support people with physical disabilities to access healthcare. This symbol is used to indicate an accessible entrance or that a phone is lowered for wheelchair users. Moreover, all available parking spaces in all health facilities had no floor to support wheelchair users and other mobility aid users.

### 3.4. Health Facilities Doors

In all the health facilities except the hospital, the doors were not wide enough for wheelchair users to maneuver. However, the door handles were not user friendly for wheelchair users in all health centers and dispensaries. Furthermore, there was no alternative door for wheelchair or other mobility aid users in all health center and dispensaries. However, the stairs were available in all the facilities.

### 3.5. Ramps and Pathways for People with Physical Disabilities

The study found that only the hospital and 2 (66.7%) health centers had ramp and they were unavailable in all dispensaries. In addition, the study recorded the presence of pathways in the hospital and 2 (66.7%) health centers only. There-

fore, the inaccessibility of ramp and pathways was mainly in dispensaries as compared to health centers and the hospital.

### **3.6. Stairs Cases for People with Physical Disabilities**

Although all health facilities had stairs but the challenge was that most of the staircases had no floor located before the steps. The floors were available in the hospital and 2 (66.7%) health centers, and not available in a health center 1 (33.3%) and all dispensaries 28 (100%). Even though all health facilities had stairs but there was no continuing hand railings in both side of the stairs.

### **3.7. Special Seats at Health Facility for People with Physical Disabilities**

Our findings revealed the absence of special seats at the clinician's offices and at the reception designated for people with physical disabilities who were not using wheelchair or other mobility aids, in all health facilities. Furthermore, regardless of their physical disabilities these patients had to line up while waiting for health services.

### **3.8. Wheelchairs for People with Physical Disabilities**

The results indicate the presence of wheelchairs in the hospital and health centers while most dispensaries 27 (96.4%) had no wheelchairs. Also, the study found that all available wheelchairs were adjustable, could rotate within its fitting, shift right and left, and thus could support the diagnosis process for people with physical disabilities and support patients with physical disabilities when requiring assistance while turning, repositioning, or during transfer to another mobility aids.

### **3.9. Designated Examination Bed/Table for People with Physical Disabilities**

The study found that all health facilities had no examination beds/tables which were suitable for people with physical disabilities. Both people with and without physical disabilities used the same examination beds/tables. Furthermore, the available examination beds were not adjustable and did not have bedrails to assist in the diagnosis of people with physical disabilities.

### **3.10. Special Weight Scale for People with Physical Disabilities**

In all health facilities there was no special weight scale for people with physical disabilities. Weight scale was needed especially for patients with physical disabilities who used wheelchair and they were not able to stand. The available weight scales in all facilities were not in the form of wheelchairs or in bed scale or other mobility aid weight scale. Moreover, all available weight scales were not height adjustable and did neither rotate within its fitting and nor shift right or left to support People with physical disabilities.



### 3.11. Designated Toilets for People with Physical Disabilities

In all health facilities there was no special toilets designated for people with physical disabilities. Both people with and without disabilities shared the same toilets. The challenges of these shared toilets were the steps were of low height and were not wide enough to accommodate people with physical disabilities. Also, the ramp could not support people with physical disabilities who experienced difficulties in using stairs particularly those who had wheelchairs or other mobility aids. It was found that most toilets' doors were inaccessible for wheelchair and other mobility aid users. Toilets door were not wide enough to fit wheelchair or other mobility aid devices. The shared toilets floor areas were not slippery and there were no seats for those who cannot squat and there were no handrails on the sides. Moreover, water supply was not accessible for wheelchair and other mobility aid users.

## 4. Discussion

The findings of this health facility-based assessment revealed that the existing infrastructure in most health facilities in Singida rural district does not support people with physical disabilities to access healthcare. The poor design of health facilities and less attention to people with physical disabilities hinders the right of people with physical disabilities to access healthcare.

The study revealed lack of signage, designated parking area, ramps, pathways, mechanism doors, friendly door handle, continue handrails provided at the stairs and floors located before the steps, designated toilets, wheelchairs, designated examination table/bed, special weight scale, and special seats at the clinician's offices and at the reception for people with physical disabilities is part of several example of infrastructure obstacles [9] [18]-[23].

The study observed that in all health facilities there were no signage, handrails at the stairs, designated entrance area, designated parking, designated examination table/bed, special weight scales, designated toilets and special seats at the clinician's offices and at the reception for people with physical disabilities. Besides, 1 (33.3%) health centers and all dispensaries 28 (100%) had no ramps and pathways. Also, alternative doors were not available in all health centers and dispensaries. As well, 27 (96.4%) of all dispensaries had no wheelchairs and in all health centers and dispensaries door handles were not user friendly for people with physical disabilities. Considering the right of healthcare for people with physical disabilities, it is important, from the standpoint of living no one is left behind that the access to healthcare should be suitable for both people with and without physical disabilities [24]. Also, the lack of signage limits people with physical disabilities to know if the building is accessible by wheelchair user. Similarly, the interviews with key informants illustrated that the accessibility of designated entrance area and packing were not a considerable factor in the designing in most health facilities. In fact due to their mobility problems people with physical disabilities cannot compete with people without disabilities to access

car parking and entrance area and thus they need reserved parking and entrance area for themselves.

Furthermore, the clinicians from our study area faced challenges during examination of patients with physical disabilities since the available examination table/bed did not favor patients with physical disabilities as they were not height adjustable, did not have bedrails and did not support the diagnosis activities. Also, it is known that patients with physical disabilities need weight scale which is accessible for wheelchair users or other mobility aid users. The lack of special weight scale for people with physical disabilities observed in this study hinders the clinicians to perform their health check-up since the variation in individual weight can be a sign of many pathological conditions such as obesity and malnutrition.

In addition, the study found that the inaccessibility of wheelchairs was largely in few health centers and dispensaries and also findings from the interviews shows that health centers and dispensaries cannot afford to care large number of patients who need wheelchairs at one time and therefore if this situation occurred patients were supposed to wait one after another hence delayed them in obtaining the service in time.

Despite that most of the health facilities in this study had wider doors to support wheelchairs the doors were unfriendly due to absence of door handles and lack of continue handrails to favor wheelchairs users. Apart from that the accessibility of ramp and pathways in hospital were good compared to health centers and dispensaries. These findings indicate that special attention for provision of healthcare to accommodate people with physical disabilities is necessary.

The findings from this study observed the lack of designated toilets for people with physical disabilities and this means patients with disabilities were not comfortable when they were using the available toilets since they did not fit a wheelchair and did not allow shifting between the wheelchairs and also there was no slippery floor and no seats for those who cannot squat, no handrails on other sides at an appropriate height.

These findings agree with other studies which demonstrated similar situation especially in rural areas [24]. A study that interviewed people with physical disabilities showed that 63.9% of the respondents reported architecture obstacles like ramp and pathway from home to the health facilities [21]. Similarly a study conducted in Perak Malaysia informed inaccessibility of healthcare infrastructure for people with physical disabilities although all public hospitals had signage [25]. Another study conducted in Kumasi metropolis in Ghana reported the presence of wheelchairs in 91.7% of primary health facilities while other infrastructure was inaccessible in all primary health facilities [24]. Also, a related study in Brazil indicated that 47.1% of primary health facilities had ramps, 96.8% had special seats, 59.9% had designated toilets, while 24.8% had no stairs and no primary health facilities had height adjustable examination table/bed and only two primary health facilities had accessible weight scale for people with physical disabilities [23] [26]. However, our findings are contrary to previous studies in

India, where 85% of primary health facilities had accessible pathways, 90% had ramps for wheelchair users, whereas accessible entrance area and designated parking area were seen in 85% and 92.5% of primary health facilities respectively. In addition, very few facilities *i.e.* 37.3% had accessible doors and only 10.4% had friendly user door handle which is similar to our results [15] [26].

The infrastructure such as ramp, pathways, health facilities door and door handles were available in few health facilities evaluated in the present study this indicates that deliberate efforts should be taken to remove these obstacles, so that people with physical disabilities will have get their healthcare rights. The present study has demonstrated that the inaccessibility of infrastructure at healthcare facilities does not occur only in dispensaries and health centers but also in hospitals. A study conducted in England showed that people with physical disabilities faced a challenge to access primary healthcare as a result of poor infrastructure in most healthcare facilities [27] [28].

These findings indicate that people with physical disabilities are not given priority in the provision of healthcare. Special initiative should be taken to improve accessibilities of infrastructure at healthcare facilities for people with physical disabilities. The Tanzania health facilities standard have been outlined by the national guideline for safe care standards for dispensaries, health centers and district hospital of 2014 and the national guideline for water, sanitation and hygiene in healthcare facilities of 2017. Yet the standards themselves have not included any detailed requirements of people with physical disabilities except the national guideline for water, sanitation and hygiene in healthcare facilities of 2017 have included the designated toilets requirement for people with physical disabilities. Similarly, the national guideline for safe care standards for dispensaries, health centers and district hospital of 2014 have not addressed key issues such as accessibility of signage, designated entrance area, parking, health facilities door, ramps, pathways, staircases, special seat at health facility, wheelchairs, designated examination table/bed, special weight scale and designated toilets for people with physical disabilities. It is important to include accessibility standards of infrastructure at health facilities for people with physical disabilities in the future national guideline for safe care standards for dispensaries, health centers and district hospital.

## 5. Conclusion

This study found that inaccessibility of infrastructure at health facilities for people with physical disabilities were significant challenges to access healthcare for people with physical disabilities. The absence of signage, designated entrance area, packing, ramp, pathways, elevators, staircase, special seat, wheelchair, designated toilets, examination table, examination bed and weight scale for people with physical disabilities limit people with physical disabilities to access healthcare. There is a need to take deliberate efforts to address the problem of inaccessibility of infrastructure at health facilities for people with physical disabilities. The universal

health coverage in Tanzania can be attained by improving accessibility of infrastructure at health facilities for people with disabilities. Moreover, to achieve the sustainable development goal number 3 (SDG3), the government and other stakeholders in health sector should take deliberate efforts to make sure that people with physical disabilities get access to appropriate health care services.

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### **Authors Contributions**

Aika Samson Ndyamukama developed and reviewed the manuscript while Angel Dillip and Beatrice Chipwaza read and approved the final manuscript.

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### **Availability of Data and Materials**

All data are available at Ifakara Health Institute archive.

### **Ethical Approval and Consent to Participants**

The ethical approval for this study has been granted by National Institute of Medical research and Institutional Review Board of the Ifakara Health Institute (IHI/IRB/No: 28-2020).

### **Consent for Publication**

All authors consented for publication.

### **Conflicts of Interest**

The authors declare that they have no competing interest.

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## Abbreviations

CBO: Community Based Organization,

SDG: Sustainable Development Goals,

UNCRPD: United Nation Convention on the Rights of Persons with Disabilities.