

Title: Access to health care among people with physical disability in Muhanga District, Rwanda

Author's: Solange Umwali^{1*}, Monica Mochama¹,

Affiliations:

¹Department of public Health, Mount Kenya University Rwanda Kigali Rwanda

Corresponding Author:

Solange Umwali

Kigali City, Gasabo District

Abstract

Globally, around 5.8 per cent of the population with different kind of disabilities do not have full access to quality and affordable health care. However, the prevalence of people without disabilities who have access to health is estimated to 3.9%. In Rwanda, an estimate of 4.5 % of population is currently affected with physical disabilities. The main purpose of this study was to assess level of accessibility to health care and factors associated with inaccessibility to health care services among people with physical disability in Muhanga district. The design of this work was cross sectional study. and the two approaches used were both quantitative and qualitative approaches. Random sampling technique was used to recruit a minimum sample size of 129 participants. Factors associated with health care access among people with physical disability were considered statistically significant at $p \leq 0.05$. triangulation method was used to analyze qualitative data. All ethical aspects including participant's rights of participating or not in the study were considered. Results showed that 32.6% of respondents were between 18 and 30 years old while 61.2% of participants were above 30 years old. Moreover, the prevalence of people with disabilities with access to health services was only estimated to 24% (n=31). Regarding factors associated with inaccessibility to health care services, persons with disabilities who responded to face unsuitability of health care services were 17.4 times more likely to experience inaccessibility of health care services than those who received continuous health care services (OR=17.378, 95%CI, 3.436-87.891, $P.value=0.001$). Key informants revealed that access to health care services was not easy and transports were highlighted. As conclusion, high cost of care, unsuitability of health care and lack of equipment at health care facility are serious problems to people with disability in Muhanga district and need to be addressed.

Keywords: People with physical disability, Muhanga District

Introduction

The WHO lists revealed that at least four main elements of the right to health that include availability, acceptability, and quality and “accessibility “as one of those important elements. This term encompasses crucial constituents of accessibility which are mainly physical accessibility, economic accessibility and accessibility to health related information and non-discrimination as well [1]. Moreover, Equity in health "means that, in theory, everyone must have an equal probability to achieve their maximum level of health and, more practically, that none should be prevented from doing so" [2].

Different studies demonstrated that persons with disabilities face a variety of detrimental health disparities in comparison to their counterparts without disabilities [3], particularly disparities in access to healthcare services. Nearly 180 million young people live with different disabilities mainly physical, sensory, intellectual disabilities and/or mental disabilities that is severe enough to have an impact on their daily lives worldwide and are between the ages of 10 and 24 [4]. Around 150 million (80%) of these young people reside in low- and middle-income nations [4]. However, the poorest and most disadvantaged young people are one that are mostly affected by negative consequences of disabilities globally including being they are frequently excluded from the majority of opportunities such as education, economic development, social, and culture integration [5].

The needs of children with disabilities are among the most critical worldwide. Young people with these conditions often face discrimination and social isolation, and they are often excluded from participating in their communities due to discrimination [6]. Despite the various rights that they have, they are still unable to fully participate in their families' activities [6]. Many disabled people are not allowed to work or attend school. They also face a higher risk of being abused and exploited. In many countries, they are more likely to be victims of sexual and psychological abuse. In many countries, people with disabilities are often institutionalized and are subject to unwanted and unnecessary surgical procedures, such as forced sterilization. According to a report released by UNICEF, people with disabilities from minority and ethnic communities continue to face double discrimination due to their heritage and disability [6]. There are several

reasons why having access to high-quality healthcare is important. First, it might lessen the social and financial strain that comes with health issues, such as potential income loss [7]. As more people receive affordable, high-quality healthcare, life expectancy is projected to increase [8].

The Convention on the Rights of Persons with Disabilities (CRPD) is one of documents that focus on human rights in Article 25 which stipulate that people with disabilities have the right to enjoy the best achievable level of health, free of disability discrimination [9].

The Sustainable Development Goals (SDGs), which place a high priority on ensuring inclusive development, provide additional support for this right. People with disabilities appear to have varying levels of access to healthcare globally, depending on the nation and community. When it comes to getting healthcare services, people with disabilities trail other residents [10]. They have healthcare access challenges, especially in low- and middle-income nations like Rwanda, which widens the access gap between them and their counterparts in the industrialized world [11]. To solve this, it is necessary to evaluate the obstacles that people with physical disabilities have in accessing health care. As a result, the purpose of this study is to evaluate how well the Muhanga district's physically disabled population can obtain healthcare.

According to the global report on disabilities, 5.8% of disabled individuals worldwide do not receive needed care, compared to 3.9% of the general population. The rate grew to 6.4% in low- and middle-income countries, including Rwanda, as compared to 3.9% in developed nations (WHO, 2017). Furthermore, due to a lack of resources, ignorance, and harmful traditional beliefs and practices, it is estimated that less than 5% of individuals with disabilities in developing nations like Rwanda do not have access to professional rehabilitation [12].

According to National Institute of Rwanda (2014), 446,453 people with disability aged 5 and above are living in Rwanda out of which 221,150 are males and 225,303 are females. the report showed that Southern province occupy the 1st rank to have many people with disability with about 122,319, (f=27.4%) persons with disability (5 years and above) compared to 116,757, (f=26.1%) in east province, 110,032, (f=24.7%) in western province, 65,175, (f=14.6%) in northern province and 32,170, (f=7.2%) in Kigali city. Furthermore, in Muhanga disability prevalence rate is estimated to 3.8 and the rate is the highest in southern province. Walking/climbing, seeing, hearing and learning are the most common types of disability in Rwanda [13]. While little is known about factors that may hinder people with disability to access

the health care services, it is crucial to conduct a study that aims to assess access to health care among people with physical disability in Muhanga district, to inform public health intervention and strategies in order to cover the already existing gap of knowledge on access to health care among people with physical disability in Muhanga district.

Methods

Study design

This was a cross-sectional study. The study used both qualitative and quantitative approaches to further understand the factors that influence healthcare services access among people with physical disability.

Target Population

Study population of this study was 190 people with physical disability registered in Nyarusange, Cyeza sectors all located in Muhanga District. The target population is found in different organization where 1st organization is called Abahuzarukundo and composed of 30 persons with disabilities, 2nd group is called Dukoranumurava composed of 35 persons with physical disabilities. 3rd group is called Abadahigwa and is composed of 35 persons with physical disabilities, 4th group is called Abanyamahoro and composed with 30 persons with physical disability, 5th group is called Umucyo with 30 persons with physical disability while 6th group called Twisunganebabyeyi composed of 30 persons with disabilities. The common disabilities found there include blindness, loss of hearing and physical deformities.

Sample size and sampling procedure

The sample size of this study was 129. Data collection was started by organizing participants who were accepting to participate in the study. Surveyor was introducing her/himself to participants and provides consent form to participant for signature. Surveyor was start asking participants one to one question based on sequential questionnaire structure. Data collected to each participant was entered into open data kits (ODK) immediately. When all questions were completed, the surveyor was provided many thanks to participant and call for the next participant to enter in the room for questionnaire administration. At the end of the day data collected in ODK was sent to researcher's Google drive.

Regarding qualitative data collection procedure, the purposively selected health care providers were give appointment for in-deep interview. At least 4 health care providers were asked

questions to express their observation about accessibility and challenges of people with disabilities in relation to health care services accessibility. Probing technique was used to ensure all relevant information about access to health care among people with physical disability in Muhanga district.

Data analysis and ethical consideration

Quantitative data was entered using ODK, exported to SPSS version 21 for analysis. Descriptive statistics such as means and standard deviations for continuous variables and counts and percentages for each categorical variable was calculated. Score will be used to classify participants as having access to health care or not in Muhanga district.

Four questions were asked and each question have been scored 1 and 0 as marks. Participants who will be scored 4 as marks (Score=4) in total will be considered as having access to health care in Muhanga district while a participant who will be scored less than 4 marks(score<4) in total will be considered as not having access to health care services in Muhanga district. Chi-square test was applied to determine statistical association between independent and health care access among people with physical disability.

P-values less than 0.05 were considered significant. After the variables that was show association was exclusively undergo further analysis using regression analysis for testing the strengthen of association. In addition, tables and graphs were used to present data. Multivariate analysis was also performed in order to find remained constant of relationship between factors and inaccessibility to health care services without intervening effects.

The transcripts from the interviews served as the unit of analysis for qualitative analysis. To ensure data completeness, all transcripts were cross-checked. Interviews will be recorded, transcribed, and translated from Kinyarwanda to English. Transcripts were first thoroughly read while taking notes on them.

Latent and manifest content analysis techniques were used; Latent analysis refers to what the text talks about and entails in-depth interpretation of the text's underlying meanings, whilst manifest content analysis refers to the analysis of the obvious visual components. After reading over each transcript, codes were generated.

Responses with related codes were reclassified under an overarching theme or sub-theme. A matrix was created and individual matrices were reviewed until an agreement is reached. The descriptive intent of the respondents was then determined. In the final report writing, descriptive quotes that reflected the major themes were chosen and incorporated.

The Institutional Review Board Ethics Committee of Mount Kenya University provided its ethical approval. The Mount Kenya University (MKU) School of Postgraduate Studies and the Muhanga District Authorization Letter were consulted for approval to proceed with the project. Additionally, study

participants were made aware that the data would only be used for research reasons and that they had the ability to decline participation or withdraw without it having an impact on their practices. Concerns about confidentiality were also made clear to all study participants. All study participants gave their verbal and written consent after receiving thorough explanations. To guarantee data security and respondent anonymity, code was utilized.

Results

This section regards to present and discuss on demographic characteristics of respondents, presentation of findings on the predetermined objectives including objective one which was to (i) determine the level of health care access among people with physical disability in Muhanga district,(ii) to identify individual factors associated with health care access among people with physical disability in Muhanga district (iii) to identify institutional factors associated with health care access among people with physical disability in Muhanga district (iv)To determine Perceptions on access to health care among persons with disability. The respondents were composed of 129 participants including 45.7% of females and 54.3% of males. The mean age (in years) of respondents was 38.77 while the mean age of females was 37.97 and mean age of males was 39.44.

Socio-Demographic of respondents

Table 1: Socio-demographic Characteristics of Respondents

| Variable | Frequency | Percent |
|--------------------------|-----------|---------|
| Age category | | |
| <18 | 8 | 6.2 |
| 18-30 | 42 | 32.6 |
| >30 | 79 | 61.2 |
| Marital status | | |
| Single | 35 | 27.1 |
| Married | 76 | 58.9 |
| Divorced/widowed | 18 | 14 |
| Education level | | |
| No schooling | 19 | 14.7 |
| Primary | 76 | 58.9 |
| Secondary and University | 34 | 26.4 |
| Occupation | | |
| Salaried | 11 | 8.5 |
| Business/trading | 31 | 24.0 |
| Agriculture and others | 87 | 67.5 |

| | | |
|-------------------------|-----|------|
| Religion | | |
| Catholics | 81 | 62.8 |
| Protestants | 41 | 31.8 |
| Muslims and others | 7 | 5.4 |
| Residence | | |
| Rural | 125 | 96.9 |
| Urban | 4 | 3.1 |
| Ubudehe category | | |
| Category 1 | 30 | 23.3 |
| Category 2 | 41 | 31.8 |
| Category 3 and 4 | 58 | 44.9 |

Source: Researcher 2022

Table 1 showed the 32.6% were between 18 and 30 years old while 61.2% of participants were above 30 years old. Regarding marital status, 58.9% of participants were married and 27.1% were single status while 14% were divorced and widowed. Moreover, education status was analyzed and the table 1 showed 58.9% were studied primary level, 26.4% studied secondary and university while 14.7% have never attended school. As far as occupation status was concerned, 67.5% were in agriculture and others, 24% were in business/trading and only 8.4% were salaried. 62.8% and 31.8% were catholic and Protestants respectively while 5.4 % were Muslims and others. Furthermore, 96.9% resided in rural area. In addition, 44.9.4% were in category 3 and 4 of Ubudehe category, 31.8% were in category 2 and 23.3 were in Ubudehe category 1.

Presentation Findings

Health care access among people with physical disability in Muhanga district

Access to health care services was analyzed to plot the proportion of people with disability in Muhanga district. Participants who will be scored 4 as marks (Score=4/4) will be considered as having access to health care in Muhanga district while a participant who will be scored less than 4 marks (score<4: 3/4, 2/4, 1/4/ 0/4) will be considered as not having access to health care services in Muhanga district.

Table 2: Accessibility to health care access among people with physical disability in Muhanga district

| Access to health service | Frequency | Percent |
|---------------------------------|------------------|----------------|
| Yes | 31 | 24.0 |

| | | |
|--------------|------------|------------|
| No | 98 | 76.0 |
| Total | 129 | 100 |

Source: Researcher 2022

Table 2 shows that the respondents who have full access to health services was estimated to 24% (n=31) while a high frequency of respondents reported to have inaccessibility to health care services was estimated on 76%(n=98).

Individual factors associated with health care access among people with physical disability in Muhanga district.

Individual factors analyzed here included lack of insurance, lack of information about health services, lack of person to accompany people with disability, lack of transport to health facility.

Table 3: Individual factors associated with health care access among people with physical disability in Muhanga district.

| Variable | Access to health care services | | χ^2 | p-value |
|----------------------------------------------------|--------------------------------|-----------|----------|---------|
| | YES | No | | |
| No insurance | | | 0.001 | 0.974 |
| Yes | 8(24.2) | 25(75.8) | | |
| No | 23(24.0) | 73(76.0) | | |
| Lack of transport from home to health facility | | | 4.366 | 0.037 |
| Yes | 15(18.3) | 67(81.7) | | |
| No | 16(34.8) | 30(65.2) | | |
| Lack of person to accompany people with disability | | | 0.427 | 0.514 |
| Yes | 9(20.9) | 34(79.1) | | |
| No | 22(26.2) | 62(73.8) | | |
| Lack of information about health services | | | 0.004 | 0.952 |
| Yes | 9(23.7) | 29(76.3) | | |
| No | 22(24.2) | 69(75.80) | | |

Source: Researcher 2022

Table 3 showed the results of individual factors that have effects on access to health service delivery. Chi-square test was performed to test a possible associating between lack of insurance and access to health services for people with disability in Muhanga district and the results were that $\chi^2=0.001$, $p=0.974$. to test the possible association between lack of transport from home to health facility and access to health services for people with disability in Muhanga district, the

chi-square test was cross-tabulated and the results were that $\chi^2=4.366, p=0.037$. Regarding lack of person to accompany people with disability to health facility and its relationship with access to health service Chi-square test was $\chi^2=.427, p=0.514$. In addition, lack of information about health services and its association with access to health services for people with disability in Muhanga district was tested using Chi-square test and the results showed that the $\chi^2=0.004, p=0.952$.

After performing Chi-square test to test the association between individual factors and access to health services for people with disability, the findings showed that there was a statistical association between lack of transport from home to health facility and access to health services for people with disability in Muhanga district ($\chi^2=4.366, p=.037$).

Institutional factors associated with health care access among people with physical disability in Muhanga district.

Institutional factors analyzed also included high cost of care, suitability of health facility, readable signs, distance from home to clinic, accessible high beds, accessible tables and chairs, qualified professional.

Table 4: Institutional factors associated with health care access among people with physical disability in Muhanga district

| Variable | Access to health care | | χ^2 | p-value |
|------------------------------------|-----------------------|----------|----------|---------|
| | YES | No | | |
| High cost of care | | | 5.861 | .015 |
| Yes | 13(16.7) | 65(83.3) | | |
| No | 18(35.3) | 33(64.7) | | |
| Unsuitability of health services | | | 11.607 | .001 |
| Yes | 5(8.8) | 52(91.2) | | |
| No | 24(34.3) | 46(65.7) | | |
| Lack of medical equipment | | | 9.210 | .002 |
| Yes | 4(8.7) | 42(91.3) | | |
| No | 27(32.5) | 56(67.5) | | |
| Readable signs | | | 2.892 | 0.089 |
| Yes | 2(9.5) | 19(90.5) | | |
| No | 29(26.9) | 79(73.1) | | |
| Distance to health facility | | | .307 | 0.579 |
| Yes | 10(21.3) | 37(78.7) | | |
| No | 21(25.6) | 61(74.4) | | |
| Waiting area with comfortable seat | | | .379 | 0.538 |
| Yes | 8(20.5) | 31(79.5) | | |

| | | | | |
|--------------------------------------------------|----------|----------|-------|-------|
| No | 23(25.6) | 67(74.4) | | |
| Given priority in waiting | | | 1.556 | 0.212 |
| Yes | 6(16.7) | 30(83.3) | | |
| No | 25(27.2) | 67(72.8) | | |
| Toilets used by persons with disability | | | 7.048 | 0.008 |
| Yes | 0(0.0) | 19(100) | | |
| No | 31(28.2) | 79(71.8) | | |
| Disabled parking used by persons with disability | | | 3.804 | 0.051 |
| Yes | 0(0.0) | 11(100) | | |
| No | 31(26.3) | 87(73.7) | | |
| Wheel chair available | | | 5.516 | 0.019 |
| Yes | 1(4.5) | 21(95.5) | | |
| No | 30(28.0) | 77(72.0) | | |
| Accessible high beds | | | 1.330 | 0.249 |
| Yes | 2(12.5) | 14(87.5) | | |
| No | 29(25.7) | 84(74.3) | | |
| Qualified health care providers | | | .674 | 0.411 |
| Yes | 16(28.1) | 41(71.9) | | |
| No | 15(21.7) | 54(78.3) | | |

Source: Researcher 2022

Table 4 in this study showed the results from analysis of the association between institutional factors and access to health care services for people with disability in Muhanga district. Chi-square test was cross-tabulated to test association between cost of services and access to health care services for people with disability in Muhanga district and the chi-square results was $\chi^2=5.861$, $p=.015$. Again, the association between Unsuitability of health services and access to health care services for people with disability was tested using chi-square and the results showed $\chi^2=11.607$, $p=.001$. Moreover, Lack of medical equipment and its association with access to health care services for people with disability was also tested using chi-square test which was found to be $\chi^2=9.210$, $p=.002$. Distance to health facility and waiting area with comfortable seat were also analyzed using chi-squared test to find out the possible association the results revealed $\chi^2=.307$, $p=.579$ and $\chi^2=.379$, $p=.538$ respectively. Furthermore, chi-square test was used to

analyze the possible association between Readable signs and access to health care services for people with disability in Muhanga district and the results showed chi-square test results of $\chi^2=2.892, p=.089$

Association between disabled parking used by persons with disability and toilets used by persons with disability and access to health care services for people with disability was tested using chi-square test and results were $\chi^2=3.804, p=.051$ and $\chi^2=7.048, p=.008$ respectively. In addition, chi-square test was $\chi^2=5.516, p=.019$ as result of test of association between wheel chair available and access to health care service in Muhanga district.

chi-square test results between accessible high beds and access to health care services for people with disability was $\chi^2=1.330, p=.249$. Finally, the result of chi-square tested for measure association between qualified health care providers and access to health care services for people with disability showed $\chi^2=.674, p=.411$.

The findings in this study, revealed that high cost of care ($\chi^2=5.861, p=.015$), unsuitability of health services ($\chi^2=11.607, p=.001$), lack of medical equipment ($\chi^2=9.210, p=.002$), toilets used by persons with disability ($\chi^2=7.048, p=.008$), wheel chair available ($\chi^2=5.516, p=.019$) were statistically associated with access to health care services among people with disabilities in Muhanga district. Furthermore, other factors tested including readable signs, distance to health facility, waiting area with comfortable seat, given priority in waiting, disabled parking used by persons with disability, qualified health care providers, accessible high beds were not statistically associated with access to health care services among people with disabilities in Muhanga district.

Table 5: Intervening variable and access to access to health care services

| Health facility level | Access to health services | | χ^2 | <i>p-value</i> |
|-----------------------|---------------------------|----------|--------------|----------------|
| | Yes | No | | |
| Health post | 5(38.5) | 8(61.5) | 1.519 | .678 |
| Health center | 14(23.3) | 46(76.7) | | |
| Hospital | 8(22.2) | 28(77.8) | | |

Specialized facility 4(23.5) 13(76.5)

Source: Researcher 2022

Analysis of association between intervening variables and access to health services among persons with disabilities using chi-square the results showed that chi-square $\chi^2=1.519, p=.678$. The findings revealed there was no statistical association between health facility level and access to health services among persons with disabilities in Muhanga district ($\chi^2=1.519, p=.678$).

Table 6: Strengthen of relationship between individual and instructional factors and access to health care among people with disabilities.

| Factors associated with access to healthcare services | | Access to health care services | | OR | 95% C.I. for EXP(B) | | p. value |
|-------------------------------------------------------|-----|--------------------------------|----------|------------|---------------------|--------|--------------|
| | | YES | NO | | Lower | Upper | |
| Lack of transport | Yes | 15(18.3) | 67(81.7) | .868 | .288 | 2.619 | .0802 |
| | No | 16(34.8) | 30(65.2) | Ref | | | |
| High cost of care | Yes | 13(16.7) | 65(83.3) | 8.267 | 1.894 | 36.080 | 0.005 |
| | No | 18(35.3) | 33(64.7) | Ref | | | |
| Unsuitability of health care | Yes | 5(8.8) | 52(91.2) | 17.378 | 3.436 | 87.891 | 0.001 |
| | No | 24(34.3) | 46(65.7) | Ref | | | |
| lack of equipment | Yes | 4(8.7) | 42(91.3) | 6.676 | 1.340 | 33.268 | 0.021 |
| | No | 27(32.5) | 56(67.5) | Ref | | | |
| Toilets used by persons with disability | Yes | 0(0.0) | 19(100) | 24525 | .000 | . | 0.998 |
| | No | 31(28.2) | 79(71.8) | Ref | | | |
| wheel chair availability | Yes | 1(4.5) | 21(95.5) | 1.764 | .170 | 18.303 | 0.634 |
| | No | 30(28.0) | 77(72.0) | Ref | | | |

Source: Researcher 2022

Table 6 showed that high cost of care, unsuitability of health care, and lack of equipment was positive and significant predictors of inaccessibility to health care services among people with disabilities in Muhanga district. Persons with disabilities in Muhanga district had access to health care services more than 8.3 times if cost of health care services is not relatively expensive (OR=8.267, 95%CI, 1.894-36.080). Furthermore, Persons with disabilities in Muhanga district had access to health care services less than 17.9 times if health facilities do not have continuity of health care services (OR=17.378, 95%CI, 3.436-87.891). Furthermore, persons with disabilities in Muhanga district had access to health care services less than 667.6% if health facilities do not have required medical equipment (OR=6.676, 95% CI, 1.340-33.268). The study results suggest the lack of services in risk could be as small as 134% and as large as 3326.8%.

Briefly, the analysis was done using binary logistic regression analysis. The findings revealed that high cost of care (OR=8.267, 95%CI, 1.894-36.080), unsuitability of health care, (OR=17.378, 95%CI, 3.436-87.891) and lack of equipment (OR=6.676, 95% CI, 1.340-33.268) were positive and significant predictors of inaccessibility to health care services among people with disabilities in Muhanga district.

Perceptions on access to health care among persons with disability

Perceptions on access to health care among patients with disability were investigated in this study and key informant interviews were conducted. Four key informants were purposively selected based on the fact that they were in a position to provide inputs on this study. Key informants included person responsible of people with people with disability at sector level President of each organization, In charge of social affairs at district level and Nurse at Kabgayi district hospital. The two main open ended questions asked were about to know how a key informant perceive access to health care services among people with disability in Muhanga district in general and describe challenges of accessibility to health care services among people with disability in Muhanga district in general. Many KIs revealed that access to health care services was not easy and transports was highlighted as one of reason behind because many people with disabilities are from villages where roads were not good and no access to easy transport means. For example KI2 stated KI1 “First of all, access to health care services is difficult for people with disabilities because many of them are from the village where the means of transports are not favorable for them for example you hear that a person with disability who have an orthopedic replacement get difficulty to use motorcycle or other public transport due to lack of transport fees and /or the person live very far from bus station” again some others reason

of not having access to health care services among persons with disabilities was some specialized health care services that are not covered by mutual insurance. Some services were covered by such kinesitherapy, in patients and outpatients consultations and others like prosthesis were not covered by mutual insurance. KI2's statement showed the opinion "KI1 some services are accessible for people with disability like kinesitherapy because they present disability level card, orthopedic services and very basic services but specialized services are mostly inaccessible due to the fact that many use mutual insurance while it does not cover most of specialized services" regarding challenges of accessibility to health care services among people with disability in general, different key informants turned the ideas to mutual insurance that do not cover specialized services, lack of continuity of health care services. for example in a statement provided by KI5, the key informant mentioned "another challenge for people with disability is that there is no continuum of some health care services because specialized health providers are not available 24/24 hours. And work some hours in week like 1 to 2 days per week and the person with disability require to wait until the health care provider will be available (KI4,2022) while other key informants mentioned mutual insurances such as KI3 "People with disability who use mutual insurances arrive at health for treatment. When it requires to a transfer to specialized level, mutual insurance does not cover health care services that they are supposed to benefit. At this moment a person with disability is requested to pay him/her self bills to get the necessary health care services".

Key informants mentioned many others challenges faced by people with disability lack of aluminum crutches, lack of health care providers specialized in sign language and stigma and discrimination. The following statements stated by almost all key informants demonstrated the perceived challenges as noted in interviews. KI2 "Aluminum crutches is also a serious problem for people with disability because they are very expensive and many persons with disability are not capable to by them. It is urgent problem that need to be addressed. KI5 "as there are no health care providers that understand and utilize signs language, it is a huge problem for person with disability because some may be not able to tell health care providers the complains they have and health care providers are not able to ask the person with disability which complaints the people with disability present. At the end of the day can be treated the symptoms not presented during consultation. KI6" family members' attitudes and perceptions that lead to stigma and discrimination of people with disability where family member hides the patients and are not able to go to health facility even if they need health care. Sometime some may prematurely die

because did not have timely access to health care services. so, sensitization need to be intensified in order to avoid discrimination and stigma associated with disability among person with disability”.

Discussion

This study focused on to determine the proportion of people with disabilities who have access to health care services and individual and institutional factors associated with health care services among people with disabilities. Among individual factors predetermined factors were analyzed including lack of insurance, lack of information about health services, lack of person to accompany people with disability, lack of transport to health facility while institutional predetermined factors analyzed included high cost of care, suitability of health facility, readable signs, distance from home to clinic, accessible high beds, accessible tables and chairs, qualified professional. Respondents who have full access to health services was estimated to 24% (n=31) while a high frequency of respondents reported to have not access to health care services was estimated on 76%(n=98). The findings were lower from that found by in China where the prevalence rate of healthcare service use in Chinese elderly with disabilities was 36.6% (Guo et al., 2015). Even though the findings showed that there was a statistical association between lack of transport from home to health facility and access to health services for people with disability in Muhanga district ($\chi^2=4.366$, $p=.037$), Surprisingly, the strengthen of association using odd ration revealed that lack of transport from home to health facility was positive but not a significant predictor of access to health services for people with disability. The findings differ from the study conducted by Harrison in their study on Access to health care for people with disabilities in rural Malawi: what are the barriers. Researchers found out that cost of transport was important barrier to accessibility to health care among people with disability in Malawi

The findings in this study, revealed that high cost of care ($\chi^2=5.861$, $p=.015$), unsuitability of health services ($\chi^2=11.607$, $p=.001$.), lack of medical equipment ($\chi^2=9.210$, $p=.002$), toilets used by persons with disability (fisher exact=.007), wheel chair available (fisher exact=.025) were statistically associated with access to health care services among people with disabilities in Muhanga district. Meanwhile, there was a similar the findings from this study and these from the study conducted by Alkawai [14] which showed that Over 51.3% were unsatisfied with wheel-chair services, and nearly 45% were unsatisfied with toilet facilities for the physically disabled. Over 52% were unsatisfied with parking, 49.8% with the waiting area while the two factors

(parking and the waiting area) that were found important by Alkawai and Alowayyed, in this study there was no statistical association between both parking and the waiting area and access to health care services among people with disabilities in Muhanga district. Harrison also found the slightly similar findings where qualitative data revealed that cost of drugs and services, Insufficient health care resources, are main barrier among people with disability in Malawi.

Persons with disabilities with high-cost challenges were 8.3 times more likely to experience inaccessibility of health care services than these without high cost challenges (OR=8.267, 95%CI, 1.894-36.080). Furthermore, Persons with disabilities with unsuitability of health care services were 17.4 times more likely to experience inaccessibility of health care services than these with witnessed continuous health services (OR=17.378, 95%CI, 3.436-87.891). Lack of equipment in health facilities was 6.7 times more likely to contribute to inaccessibility of health care services than health facilities with appropriate equipment (OR=6.676, 95% CI, 1.340-33.268). this was particular of this study where strengthen of relationship was also analyzed to provide clear clarification of the relationship between high-cost challenges, unsuitability of health care services and lack of equipment and accessibility to health care service in Muhanga district because surprisingly there were no others studies that tried to quantify the relationship. Quantitative data findings also corroborated with quantities findings even though some additional thoughts that were not found to in quantitative findings were noted. Most key informants noted that it was not easy to access health care services in Muhanga district which can be justified by in quantitative findings only 24% statistically reported to have access to health care services while unfortunately 76% had no accessibility to health care service. Factors associated with inaccessibility to health services found in quantitative analysis including unsuitability of health care, high cost of care were also mentioned in key informants' interviews and were highlighted as the many challenges faced by person with disabilities and hinder the access to health care services.

Conclusion

Throughout this thesis it was argued that accessibility of health services among people with disabilities is a point of critical concern, cost of health care, lack of equipment and unsuitability of health care are factors associated with inaccessibility of health services among people with disabilities. Initially the main concerns at the start of this study where three main questions include (i) Do people with disabilities have access to health care services among people with disabilities in Muhanga district? (ii)What are the individual factors associated with health care

access among people with disability Muhanga district? And (iii) what are the institutional factors associated with the level of health care access among people with physical disability in Muhanga district? And what are perceptions of health care providers on access to on health care services and challenges among people with physical disabilities in Muhanga district? Along with this study the above four questions were answered whereby the findings tells the readers that only 24% of people with disability have access to health care services. Moreover, regarding individual factors, lack of transport was found to be hindrance to health care services accessibility among people with disabilities in Muhanga district. In addition, institutional factors that hinder accessibility to health care factors include high cost of health care services, unsuitability to health care services and lack of equipment that facilitate the equitable provision of health care services to people with disabilities. Regarding perceptions of health care providers on access to on health care services and challenges among people with physical disabilities in Muhanga district, findings showed that transport, lack of medical equipment, lack of specialized health care providers were among the problems faced people with disabilities

Thus, inaccessibility to health care services in Muhanga district is critical and need to be addressed through developing the interventions related to high cost of health care, lack of equipment in health facilities and unsuitability of health care in health facilities.

Recommendation

Health facility

To ensure the suitability of provision of health care services for people with disability

To advocate for availability of essential equipment for facilitating quality health services for people with disability.

To provide less expensive medicines that treat the same condition in order to reduce high cost spent to health care services for people with disability.

Muhanga district

To ask health care providers if they can switch to generic medicines in order to reduce the high cost associated inaccessibility to health care services.

To support micro-activities (small income generating activities) aiming at increasing people with disabilities' economic capacity in order to be able to pay health services related bills

To advocate for additional working hours for provision of continuum of health care services for people with disability

To facilitate for availability of essential equipments for facilitating quality health services for people with disability

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