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Original Article

Barriers to Community Reintegration for People with Spinal Cord Injury in Rwanda: A Qualitative Study

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Abstract

Background
The incidence of spinal cord injury varies significantly across different countries, with certain regions in Africa reporting higher rates compared to other parts of the world. Spinal cord injury is a chronic condition that leads to various impairments and limitations in activity participation during community reintegration. The study aimed to explore the barriers to community reintegration for people with SCI living in Rwanda.

Methodology
A phenomenological qualitative design was used. Fifteen individuals, were purposively selected for diversity and interviewed telephonically. Interviews were audio-recorded and transcribed, saturation occurred at the twelfth participant. Data were thematically analysed.

Results
Four themes and Nine corresponding sub-themes emerged; psychosocial challenges (emotional distress and suicidal thoughts, loneliness and social marginalization), physical health issues (chronic pain and secondary, health complications), economic barriers (expensive medical services, costly daily living, and high transportation costs), and environmental barriers and accessibility challenges (physical environment and built accessibility environment barriers).

Conclusion
This study explored the barriers, psychosocial, physical, economic, and environmental, faced by individuals with spinal cord injury (SCI) in Rwanda during community reintegration. It highlights the importance of collaborative action from individuals, government bodies, and NGOs to improve access to rehabilitation, foster inclusion, and offer critical insights to guide future policies and advocacy for people with SCI.

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Keywords: Barriers, spinal cord injury, community reintegration, Rwanda

Introduction

Spinal cord injury is one of the long term conditions that leads to disability as a result of not only functional impairments but also different contextual factors.[1] A recent study puts the global incidence of SCI at 10.5 per 100,000 people.[2] There is a gap in reporting incidences among low income countries; however, available data puts it at 12.7 per million people.[3] A systematic review conducted in sub-Saharan Africa revealed that the incidence of spinal cord injury varied significantly, from 13 million people annually in Botswana to 75.6 million people annually in South Africa.[3]

Despite the variations in incidence in Africa, the trend is rising and in some countries higher than in the developed world.[3] A recent epidemiological study in Rwanda puts the annual incidence at 22.2 per million people.[4]

Due to advancements in technology, responsive built infrastructure and health care system in High Income Country (HIC) has facilitated community reintegration of people with SCI. However, in Low-Medium Income Countries (LMICs), Spinal Cord Injury (SCI) individuals experience multiple barriers in an attempt to participate in everyday life situations.[5] Reintegration into the community for individuals with spinal cord injury involves addressing a range of physical, social, and mental perspectives.[5] A recent study carried out in Rwanda in 2024 evaluated the psychosocial reintegration of people with SCI in the Rwandan community, showing poor psychosocial reintegration.[6] However, this study evaluated psychosocial parameters only. Our study aimed to explore barriers to community reintegration for people with SCI living in Rwanda. This study revealed the challenges faced by people with spinal cord injuries in Rwanda as they transition from the hospital back into their community.

Methods

Study design

The study used a phenomenological qualitative approach to gain a detailed understanding of the barriers from the perspective of community reintegration of the participants.[7] This design was preferred because it allows researchers to explore data without pre-conceived notions, leading to rich, nuanced insights and the potential for generating new theories.

Study setting

The research was carried out in two districts in Rwanda: Gasabo, located within Kigali city. Gasabo District has fifteen administrative sectors; five are situated in urban settings while ten are situated in rural setting. Kayonza, comprising twelve sectors, is located in Rwanda’s Eastern Province, a region that includes rural, peri-urban, and urban communities.[8,9] These settings were chosen because most of the time after injury, Spinal Cord Injury(SCI) survivors will move from purely urban settings because of the cost of living in urban towns; however, they will not move into deep rural settings because of frequent visits to health services and running small businesses in towns. Most of study participants were residing in rural set up.

Study population and selection criteria

The study participants were selected by retrospectively examining the residential locations of the participants through their medical records from two health facilities that provide sub-acute rehabilitation services. These facilities included Gahini District Hospital and Rehabilitation Center, and the “Home de la Vierge des Pauvres” (HVP)–Gatagara Orthopaedic and Rehabilitation Hospital. These health facilities are among Rwanda's big rehabilitation hospitals, where people with spinal cord injuries are treated after being stabilised in referral, teaching hospitals, and other hospitals located in different regions of the country.[10]

The study population were all patients diagnosed with SCI upon admission to the forementioned hospitals or referred with magnetic resonance imaging (MRI) results confirming SCI. Patients whose hospital records show Rwanda contacts. Patients aged eighteen (18) years and above and one year after sustaining SCI. Individuals with complete files that include age, at least one telephone contact, and willing to participate.

Sampling methods and sample size

This study used a purposive sampling method to recruit participants based on the aforementioned inclusion criteria. Purposive sampling was preferred in order to cater for diversity among participants for example different injury levels, severity, age and gender. Retrospectively, the study identified forty(n=40) participants; twenty-five(n=25) did not meet inclusion criteria, and the rest fulfilled inclusion criteria (n=15). Figure 1 shows how the study sample was obtained from the study settings. The eligible participants were fifteen however data saturation occurred at the twelfth interview therefore study sample was twelve participants.[11] Data analysis occurred concurrently with data gathering, and recruitment was concluded when no new themes surfaced during the analysis.

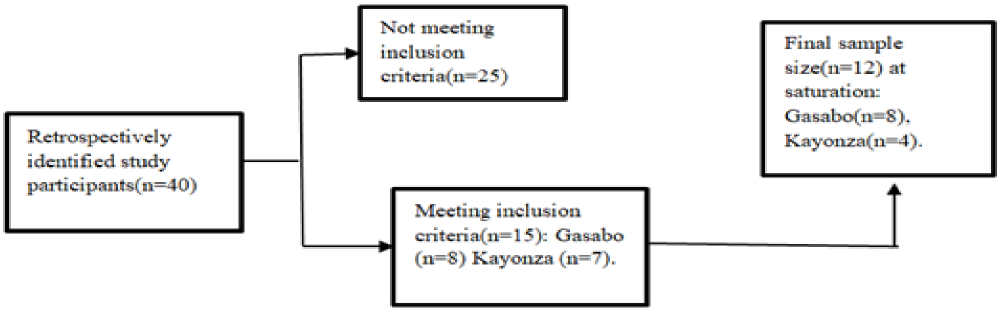

Figure 1. Participants' recruitment

Data collection methods and procedures

The interview guide was designed to capture the experiences of individuals living in the community after SCI. It was designed based on the study objectives, literature review and the consensus of the research team. The questions in the interview guide were framed broadly to allow the individuals to speak about the topics that were important to them. It consisted of the following broad questions: (1) Describe your life experience before the injury, (2) In what ways has the injury had an effect on your life? (3) Describe your typical daily life experience; Consider the negative and positive aspects. (4) How do you manage your daily life? (5) Can you describe the role of your family in your daily life? (6) What kind of attitudes do you encounter from your family and society?

First author (NJ) contacted participants before actual data collection/interviews to explain the purpose of the study and procedures. Potential participants were informed that there were no right or wrong answers in the interviews and they could withdraw at any time without giving justification or any penalties. Prospective participants could ask any questions about the study, and those who agreed to participate provided verbal consent before the actual interviews were conducted.

A semi structured interview guide was employed to initiate data collection, facilitating the exploration of in depth insights grounded in each participant's individual experience.Participants were encouraged to elaborate their experience of living with SCI in the community. The interviewer maintained the consistency of each interview by commencing with the same core questions from the interview guide, ensuring that all participants had equal opportunity to share their perspectives in depth.

Probing questions were used when necessary to enrich the discussion. All interviews were conducted in Kinyarwanda.

Each interview was carried out by NJ who had no prior relationship with the participants. The interviews were conducted via telephone and audio recorded. Field notes were taken during the interview to capture contextual details and preliminary impressions that could enhance data interpretation. Additional notes were made during the data analysis phase, particularly while reviewing and reflecting on the transcripts, to deepen understanding and support theme development. Data collection continued until saturation on the twelfth participant. Each interview lasted between 45 and 60 minutes and was conducted by NJ.

Data analysis

Data analysis employed an inductive thematic analysis approach, rooted in qualitative techniques and reinforced by collaborative coding methods. Two authors NJ and NK transcribed the first interview captured in audio format in Kinyarwanda. MV thoroughly examined the transcript, which was verified against the original audio recording to guarantee data accuracy.

NJ, NF JK and DG independently translated the first Kinyarwanda transcript into English. The authenticated transcript was subsequently shared with MK, for independent review and collaborative interpretation. Thereafter, NJ, aided by JK and DG, carried out interviews and transcription simultaneously. All transcripts were shared with MK, all authors read the transcripts several times and shared notes every after review. Saturation occurred at the twelfth participant. This constant interaction with the transcript allowed for familiarity with the text content.

Interviews and data analysis were carried out simultaneously. After agreement on the operational definition of barriers and their attributes, and code frame then the transcript was uploaded into ATLAS.ti version 12. ATLAS.ti is a qualitative analysis software that enables collaborative coding and thematism.

The inductive thematic analysis was in six stages: (1) Data familiarization: Transcripts were examined multiple times by the researchers (NJ, NF, MK & MV) to immerse researchers in the data and achieve a comprehensive understanding. (2) Initial codes were generated by NJ and MK, and significant sections, phrases, and quotations were selected. Open coding was utilized to encompass various viewpoints on barriers to community reintegration. The code frame was enhanced to guarantee clarity and uniformity. (3) Searching and examining themes was conducted by NJ and MK; similar codes were categorized and subsequently consolidated into overarching themes. Themes were evaluated for consistency and pertinence to the research aim. (4) Defining and naming themes carried out by NJ and MK, each subject was distinctly articulated and delineated. Special emphasis was placed on identifying factors that posed barriers or challenges to community living for individuals with spinal cord injury (SCI). (5) A complete report was generated following in-depth discussions and consensus between NJ, MV and MK.

Methodological rigor

Trustworthiness of the results was improved by reviewing the transcripts multiple times, simultaneous data collection and analysis. The study used methods of data collection and analysis that was previously used in similar studies. Peer review helped the study to improve through the study period. The study protocol was validated and approved by university review board. Barriers to community reintegration is a contextual variable assessed from the respondent perspective therefore cultural relevance is important, all authors are Rwandan citizen who masters the participants' experience. Part of the research team MK and MV are experienced qualitative researchers who supported in peer review and briefing.

Ethics approval

Ethical clearance was obtained from the Institutional Review Board (IRB) of the University of Rwanda College of Medicine and Health Sciences (CMHS/IRB/498/2023).

Permissions to access health facilities records of the study participants were also obtained from the study settings. Researchers explained the aims and objectives of the study to participants and their families, and any raised questions were addressed. Participants' names were not disclosed in any research material; instead, codes were used. Participants were told that participation was voluntary and they could withdraw at any stage.

In addition, the study participants were assured that audio recordings that the researcher took would not be disclosed anywhere or to any person. It was only used for this study. Furthermore, the Declaration of Helsinki principles on human research were adhered to.[16]

Findings

Demographic characteristics of the participants

The data saturation was determined at the twelve-study participants as the data analysis was concurrently done with the data collection.

Table1. Demographic characteristics of the participants

P ID	Sex	Age	Level of injury	Years Since injury	Family members	Education	Employment status	Mobility aid
P1	Female	43	Paraplegia	7	10	Advanced diploma	Employed	Wheelchair
P2	Male	58	Tetraplegia	1	7	Primary	Unemployed	Wheelchair
P3	Male	55	Paraplegia	10	1	Secondary	Employed	Wheelchair
P4	Male	32	Paraplegia	1	4	Primary	Unemployed	Wheelchair
P5	Male	30	Paraplegia	4	3	Primary	Unemployed	Wheelchair
P6	Male	33	Paraplegia	3	4	Secondary	Unemployed	None
P7	Male	44	Paraplegia	3	3	Primary	Unemployed	Crutch
P8	Female	44	Paraplegia	4	4	Masters	Unemployed	Wheelchair
P9	Male	27	Paraplegia	3	3	Secondary	Unemployed	Wheelchair
P10	Female	42	Tetraplegia	3	2	Primary	Unemployed	None
P11	Male	54	Tetraplegia	4	5	Secondary	Unemployed	Crutch
P12	Male	45	Tetraplegia	3	7	Primary	Unemployed	Wheelchair
Mean(±Std)		42.25(±10.2)		3.83	4.41			

P: participant, ID: participant identification number, Std: standard deviation

Of the study participants 75% (N=9) were male and 25% (N=3) were female. The mean age was 42.25, SD=10.16, the age range of participants was 27-58. In relation to the level of injury a big proportion of the sample presented with paraplegia67% (n=8) the rest had tetraplegia 33% (n=4). The average years since injury was 3.8years, most recent injury occurred a year preceding the data collection while the long standing case was 10 years. The years since injury ranged from 1 to 10. The employment status showed Two participants reported being employed as retailers near running small businesses near their home while the rest had no known employment (n=9) . The study participants with mobility aids were ten (n=10), eight with a wheelchair and two with a crutch, while two study participants reported no mobility aid. Furthermore, three(n=3) participants have residence in an urban area and nine (n=9) in a rural area (Table 1).

Barriers to community reintegration for people with Spinal cord injury

The study findings generated four themes and nine corresponding sub-themes namely: Psychosocial challenges (emotional distress and suicidal thoughts , loneliness and social marginalization), physical health issues (chronic pain and secondary health complications), economic barriers (expensive medical services, costly daily living and high transportation costs),Environmental barriers and accessibility challenges (physical environment barriers and built accessibility environment barriers) (Table2).

Table 2. Sub-themes and themes

Sub-themes	Themes
1.1 Emotional distress and suicidal thoughts 1.2 Loneliness and social marginalization	**Theme 1** Psychosocial challenges
2.1 Chronic pain 2.2 Secondary health complications	**Theme 2** Physical health issues
3.1 Expensive medical services 3.2 Costly daily living 3.3 High transportation costs	**Theme 3** Economic barriers
4.1 Physical environment barriers 4.2 Built accessibility environment barriers	**Theme 4** Environmental barriers and accessibility challenges

The details of the table showing sub-themes and themes are discussed below.

Theme 1: Psychosocial challenges

This theme presents the negative psychosocial factors expressed by the study participants as follows: emotional distress and suicidal thoughts, loneliness and social marginalisation.

1.1 Emotional distress and suicidal thoughts

Study participants reported on emotional distress and suicidal thoughts as they countered negative thoughts such as feeling worthless, loss of hope and worries about the future. They expressed that these limiting psychosocial behaviours restrict the opportunities to initiate and plan for the future; thus, they are depressed in their everyday life.

"… I usually get the feeling in my thoughts of losing my life." [P6, P10]

"I sometimes hate my life due to pain and anger." [P5]

"I feel hopeless because I am sitting home from morning till evening, thinking how I will be like other people." [P11]

1.2 Loneliness and social marginalization

The study participants experienced loneliness and social marginalisation. They reported having difficulty conversing with other people around at home as they faced social isolation and discrimination. They are also marginalised as society saw them as a burden and as incapable people in the community. Participants 1, 3, and 8 reported that societal attitudes toward individuals with spinal cord injuries often portray them as helpless and incapable. This perspective marginalizes these individuals, overlooking their potential and what they can achieve with their remaining abilities.

"…I lose the people to talk to because they are no people to visit me at home".[P1]

"People around me, tell me that I'm helpless and incapable of doing anything." [P3, P8,]

Theme 2: Physical health issues

The study participants showed that they experienced chronic pain and secondary health complications encountered in everyday community engagement.

2.1 Chronic pain

According to reports, the primary health concern raised by many participants was chronic pain. The pain limits participation in everyday life at home and in the community. Participants 1,7,10, and 12 described experiencing persistent daily pain that frequently disrupts their routine activities. The pain interferes with sleep, limits participation in household activities, and makes it difficult to remain seated in a wheelchair for extended periods. They constantly switch between lying in bed and sitting in the chair for short intervals. They reported that this continual movement due to pain is stressful and exhausting.

> *"I have pain that sustain every day and usually interrupt my everyday activities, like now the arms feel too much pain, the shoulder feels much pain and also the catheter is causing me the pain".*[P12]
> "*I everyday have severe pain that should not be managed by painkillers, so I am often alone in the living room, and many times I went to bed because of pain. That's why I don't get a chance to meet while cooking or doing the laundry" … this pain limits me to sleep at night …*[P1]
> *"I feel the severe pain when I have the catheter and it causes me to swell so I hated it but I also had the bedsores but they gave me the body oil that apply on the butts before wearing the pampa so at the moment there are no bedsores as I use that body oil"* [P10]
> *"The day is full of hardships and diseases, as I always feel the pain" [P7]*

2.2 Secondary health complication

The study participants showed bedsores, dizziness, and fatigue, which occasionally restrict daily activities and participation in everyday life activities. Participants 1,3,4 and 6 reported experiencing bedsores, which significantly limited their ability to participate in daily activities.

> *"I sometimes have the bedsores because my sensation is completely lost the sensation."* [P4]
> *"I am not able to care myself the bed sores so I used to come and live nearby the hospital so that I can get the proper care."* [P3]
> *"I have the bedsores on the butts because I sit long time."* [P6]
> *"I sometime have dizziness, feeling fatigued and constipation."* [P1]

Theme 3: Economic barriers

The theme explained the financial barriers during the community reintegration in the form of expensive medical services, cost of living expenses and high transportation costs.

3.1 Expensive medical services

This study indicated that the cost of medical services is significantly high, primarily because medical insurance does not cover certain services, including assistive devices, extended hospital stays, and rehabilitation services. Additionally, during their hospital stay, patients are required to pay for essentials and other hygiene-related needs, further increasing the overall cost., SCI individuals opt not to seek rehabilitation services due to these financial burdens, as expressed by study participants.

> *"I stopped seeking rehabilitation services because of the high cost."* [P1]
> *"…. getting medical services is difficult as the payment is expensive".*[P4, P10]

3.2 Costly daily living

The cost of living poses a significant barrier to reintegration into the community for individuals with SCI. Daily necessities, including hygiene equipment and other essentials, require money, and many of these individuals are unemployed, further exacerbating their financial challenges. Participant 10 highlighted the significant challenge of obtaining necessities, which often compounded over time. This issue was particularly problematic as it added to other costly needs, such as medical care and assistive devices.

> *"It is difficult to get the everyday basics to survive, such as food and sanitary equipment at home, because they are expensive as they are accumulatively needed."* [P10]

3.3 High cost of transportation

Participants highlighted the high cost of transportation as a significant challenge. Many individuals with SCI reported that they rely on renting or hiring private cars for travel, which is expensive. They often need to rent these vehicles independently and require assistance from another person to help them get in and out of the car. Consequently, they mentioned that the expense of private transportation places a substantial financial strain on individuals with spinal cord injuries during community reintegration.

> *"… getting to remote places requires private transport…".* [P2]
> *"When I need to reach different public places like markets, banks, community centres…,*

> *it requires me to take a private car even if it is very expensive, and I also need a helper to board and disembark".* [P1]

Theme 4: Environmental barriers and accessibility challenges

The study also revealed the physical environmental barriers and accessibility challenges to accessing public infrastructure.

4.1 Physical environment barriers

Geographically, Rwanda is a mountainous country with steep slopes, such geographical regions present with stony surface as such participants described barriers inherent in natural environment that limit community mobility. The reported physical environmental barriers include uneven surfaces, gravels and steep slopes. These barriers prevent wheelchair users from navigating the community and reaching different places in order to participate in community activities. Participants reported difficulties with uneven surfaces on pathways leading to public places. These irregular surfaces hindered their ability to navigate and move effectively using a wheelchair.

> *"…there are the stairs towards the public buildings…".* [P8]
> *"The paths towards some public spaces have uneven surfaces, and small paths."* [P7]
> *"The public buildings have the confined spaces of toilet and their offices." [P6, P3]*
> *"When I push my wheelchair, I struggle because the roads are uneven and steep. It takes a lot of energy to move around."* [P1]
> *"There is the uneven compound, steepy places, muddy pathways so my Wheel chair cannot walk on that paths."*[P10]

4.2 Built accessibility environment barriers

These are due to construction plans that do not put into consideration physical disabilities of members of the society consequently limiting access to public and house hold buildings. These are essentially challenging if they are structural and design shortcomings of public buildings and facilities. Participants emphasized that even when infrastructure existed (e.g., ramps), it was poorly designed and unusable, thereby restricting access to essential services. This lack of accessibility to services has a human right implication for the community more so for persons with disabilities like spinal cord injury persons.

> *"…I cannot climb the ramps using the wheelchair because they look under-standards as they are very steep".* [P8]
> *"It is not easy to manoeuvre using a wheelchair on steep paths which is common in public building, so I always need somebody to go with for support. Wheelchair cannot manoeuvre up the stairs, so you ask someone to lift you as there are stairs at the entry door."* [P5]

Discussion

This qualitative study aimed to explore the barriers for people with spinal cord injury during community reintegration using a qualitative phenomenological approach. The four themes that were generated from the study were: psychosocial challenges, physical health issues, economic barriers, and environmental accessibility barriers. Collectively, these findings highlight the complex interplay of emotional, medical, financial, and physical environment accessibility, emphasizing the need for holistic interventions that address both individual and systemic barriers.

The demographic characteristics of the study participants reflected the information reported, and it was found that the gender distribution in this study reported a higher proportion of male participants, 3:1, which aligns with findings from other studies on spinal cord injury (SCI). For instance, studies have shown that males are more frequently affected by SCI, often due to their higher involvement in high-risk activities and occupations.[17] The average age of 42 is also in line with other studies that show that while SCI can happen to people of any age, it usually affects younger and middle-aged adults more frequently.[18]

The study's findings that paraplegia (67%) predominates over tetraplegia (33%) are in contrast with larger epidemiological patterns seen in SCI communities, which showed that tetraplegia is more highly reported than paraplegia. According to the National Spinal Cord Injury Statistical Center,[18] tetraplegia is more common than paraplegia, although the proportions can vary based on the cause and context of injuries.

This study revealed that individuals living with spinal cord injury experienced emotional distress, suicidal ideation, and feelings of loneliness, underscoring the profound psychological burden that accompanies life after injury. Emotional distress was closely linked to the disruption of daily routines and the loss of independence, while suicidal ideation reflected the depth of despair some participants faced in adapting to new realities. In addition, loneliness emerged as a consequence of social isolation and reduced opportunities for meaningful engagement within the community.In a similar study conducted by Craig et al [19] revealed that individuals with spinal cord injuries have issues with various negative psychosocial behaviours such as thoughts of suicide, emotional distress, a sense of worthlessness, hopelessness and worries about the future. The study participants claimed that they think they can lose their lives as long as they express dislike for life. Furthermore, being home from morning to evening increased their nervousness, resulting in a loss of hope and anxiety about the future. These psychosocial barriers interfere with the participants' day-to-day lives by making it difficult for them to take initiative, plan for the future, and participate in activities at home and in the community.

This study revealed that participants experienced social marginalization as noted in the studies conducted by Simpson et al., undertaken.[20] and Hammell,[21] These studies demonstrated that social isolation was one of the most notable psychosocial problems among people with spinal cord injuries. As a result, the participants experienced a loss of socialisation with friends at home, noting that visits from friends diminished. They observed that friends began to view them as incapable of contributing, leading to perceptions of their ineffectiveness. Thus, they encountered difficulties in social interactions and also felt marginalised in society and were also incapable. This stigmatization impacted the employment opportunities and inclusive community engagement but also severely affect the psychosocial life.[22]

The study discovered that the chronic pain and secondary health complications are important physical health issues. Comparable to the study conducted by Djkers et al [23] found that chronic pain is a major limiting factor in activity performance during community reintegration for individuals with spinal cord injuries. This issue affects both males and females, as well as those with paraplegia and tetraplegia. The chronic pain observed in this study may result from discontinuation of physical exercises at the rehabilitation facility, poor sitting posture, and the use of old or unsuitable wheelchairs and assistive devices. Participants reported that pain limits and disrupts their engagement in daily activities and overall lifestyle, thereby reducing their quality of life. Moreover, this study found that secondary health complications, such as fatigue, dizziness, constipation and bed sores, are occasionally barriers to people with spinal cord injury during participation and social interaction in the community. Similarly, the study conducted by Jacinthe et al,[24] found that the comorbidities after spinal cord injury vary depending on the individual. Still, it may include body ulcers, constipation and other associated complications. The rise in secondary complications for people with spinal cord injuries undermines their quality of life by making active involvement in life more difficult. As a result, engagement in various tasks is limited during community reintegration, lowering quality of life.

The study found that the economic barriers include the high costs of medical services, daily living expenses, and transportation. This study discovered that the cost of medical services is high because medical insurance does not cover specific services, such as assistive devices, long-term hospitalization or rehabilitation treatments. Similar to the study conducted by Kemal,[25] which showed the rehabilitation process for spinal cord injuries is lengthy, costly, and tiring, making it difficult to cover the medical expenses associated with life after injury. As a result, some individuals may discontinue medical treatment such as rehabilitation services, leading to additional complications. Adding to that, persons with spinal cord injury are required to pay for necessities and sanitary needs during their hospital stay, further increasing their financial burden. This is in line with the study titled surviving spinal cord injury in low income countries, carried out by Øderud,[26] highlighted that people in low income countries with spinal cord injuries face financial challenges that limit their ability to obtain the basics in their daily lives, even if the cost of those basics is not too costly. These people live in poverty as long as they are unemployed and have a very limited source of income, and they must pay for medical services and other necessities accumulatively.

In line with this study's findings report that the majority of people with spinal cord injury are unemployed with limited sources of income and mostly live in poverty. Thus, the cost of sanitary equipment and necessities is considerable, making it difficult to meet basic needs. Transportation for people with spinal cord injuries threatens their financial capabilities because they rely on expensive private transportation, highlighting a significant problem encountered by those with spinal cord injuries (SCI). This finding is consistent with other studies highlighting this population's economic cost of transportation.[27–29] According to this study conducted by Ghodsi et al,[28] transportation needs of individuals with spinal cord injuries differ significantly from those of people without such injuries. They require specialised vehicles that can accommodate their needs. While modified cars are expensive in high-income countries, they are also costly in low-income countries, where this population often lives in poverty.[28] Due to insufficient public transportation options and their usually inaccessibility in LMICs, persons with SCI rely on private cars to travel to remote locations and access healthcare facilities. The cost of renting a private car for these purposes is high, particularly because it is rented individually to cover both the journey and return, placing a considerable strain on their finances.

The study highlighted physical environmental constraints and barriers to accessing public infrastructure. The physical environmental barriers reported include the uneven surfaces and stairs. This is in line with the study conducted by Hossain,[30] reported that stairs, slopes, and path irregularities hinder the participation of individuals with spinal cord injuries in community activities, particularly for those who use wheelchairs. The irregularities in paths and roads restrict both community and home mobility. While people with spinal cord injuries residing in urban areas face fewer challenges compared to those in rural areas,[30] This study found that urban environments still present significant barriers. Contrary to other findings, participants in this study reported environmental obstacles in urban settings, as city designs often fail to accommodate wheelchair users and individuals with special needs. These constraints are notably present in public places and buildings.

The accessibility of the buildings and other public places revealed the critical barriers to accessing them. These barriers included the under-standard ramps, which are steep, confined rooms, such as offices and toilets. Thus, people with spinal cord injury find it difficult to access the services delivered in public places as a result of the inaccessible infrastructure. Consistent with the study titled Inaccessibility Experienced by People with Spinal Cord Injury carried out by Paiano et al,[31] found that the participants experienced constraints when reaching out for services in public places. This occurs when individuals face difficulties maintaining independence and autonomy in daily activities during community reintegration, such as using public restrooms and navigating entrances and exits in public buildings.

Conclusion

This study plays a pivotal role in thoroughly examining the multifaceted challenges faced by individuals with spinal cord injury (SCI) within the Rwandan community context. These challenges encompass psychosocial struggles, physical health complications, economic constraints, and barriers to environmental accessibility. Together, they highlight a significant gap in the reintegration process for people with SCI, underscoring the need for targeted interventions. Addressing these issues requires a coordinated effort across multiple sectors. At the individual level, there is a pressing need to raise awareness about the right to access rehabilitation services and to combat discrimination. At the community level, efforts should focus on improving accessibility and eliminating environmental barriers that hinder participation and limit access to essential services. Government institutions and non-governmental organizations must also step in to tackle socioeconomic and psychosocial challenges, aiming to enhance this population's overall quality of life through affordable medical services. Ultimately, this study is a foundational contribution to the body of literature on the lived experiences and barriers encountered by individuals with SCI in Rwanda, offering critical insights for policy development, advocacy, and inclusive community planning.

Strengths and limitations of the study

The study employed a phenomenological approach, allowing for deep exploration of participants' lived experiences with spinal cord injuries. With an average of 3.8 years post-injury, participants provided informed perspectives shaped by long-term adaptation and challenges. Participants were drawn from areas across Gasabo and Kayonza districts, offering a varied view of experiences within these settings. However, findings are specific to individuals living in Gasabo and Kayonza areas, excluding other regions of Rwanda. The exclusion of participants from different regions may limit the applicability of results to broader national contexts. The study concentrated on identifying barriers and challenges, leaving coping strategies unexplored as an area recommended for future research.

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Authors contribution

NJ developed research proposal, collected data, analysed data and prepared manuscript.MK and MV monitored and supervised the whole process of the research proposal up to manuscript preparation by providing the inputs and necessary comments to make the report better.GD, FN and JK contributed in data analysis, manuscript preparation and writing skills through proof-reading the manuscript.

Competing interest

The authors declare no competing interests

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