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Challenges of Rehabilitation and Community Reintegration for People Living with Spinal Cord Injuries in Rural Areas of Limpopo Province-South Africa

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Abstract: ***Background and Purpose: People Living with Spinal Cord Injury PLWSCI are facing numerous barriers and limitations, especially in rural areas, where rehabilitation resources are limited. There is a dearth of rehabilitation centres in the Limpopo Province, which might impact negatively on the rehabilitation and community integration outcomes for PLWSCI in this region. Aim: To determine how PLWSCI are integrated with their communities in rural area of Limpopo. Objective of the Study: To describe the challenges facing PLWSCI in rural areas regarding rehabilitation and community integration. To identify the physical barriers of the rehabilitation for PLWSCI. Methodology: This study used a convergent parallel mixed method design. This Method consists of quantitative and qualitative data are collected, analysed, and mixed in a single study. Quantitative data were generated and collected regarding the rehabilitation and community integration challenges of PLWSCI using the Spinal Cord Injury Community Reintegration Measure (SCICRM) tool. Qualitative data were collected through focus group discussions (FGDs). Results: Quantitative results show that 37% of the respondents were fully reintegrated. Moderate reintegration was above average (54.4%), while 5.7% were minimally integrated, and 3.9% failed to reintegrate into their communities. The rehabilitation teams' home visits were further rated as "never happened" (51%) and "rarely happened" (14.3%). Patients who received a home visit from their rehabilitation team were more likely to fully reintegrate into their community, in this case, 75%. Of those who did not receive any home visits, only 39% managed to fully reintegrate into their communities. The qualitative findings, which is based on information-rich interviews with participants, indicated an urgent need for the implementation of a rehabilitation programme to enhance a successful and better community reintegration for PLWSCI. The qualitative results also highlighted the importance of home visits and following up on the patients after they have returned to their communities. The qualitative findings were presented according to six themes that were also divided into several sub-themes. Conclusion: Rehabilitation is the bridge between the SCI and successful community integration. A comprehensive rehabilitation programme implemented by a multidisciplinary team should enhance the successful reintegration of PLWSCI.***

Keywords: Spinal cord injury; Rehabilitation; Community Reintegration; Program development People Living with Spinal Cord Injuries

1. Introduction

Spinal cord injury (SCI) implies a drastic change in the quality of life of an individual (Benavente, Palazón, Tamayo, Morán, Alaejos & Alcaraz 2003: Abraham & Brown 2016) and the impact of SCI is devastating to the individual and family (Possley et al., 2012). Patients who have had an SCI undergo extensive rehabilitation, as it is extremely important for the long-term well-being of individuals with disabilities (Stuifbergen & Becker 2001). Rehabilitation programmes for PLWSCI aim to give them as much independence as possible and perfect integration at a later stage. Rehabilitation is the healthcare provided to people with permanent or temporary disabilities to help them overcome their disabilities. Proper rehabilitation involves the effective community integration of a person with the SCI (Possley et al., 2012). Rehabilitation and community integration are necessary to return the person with an SCI to play his/her role in the community as an effective, independent, and important person (Benavente et al., 2003).

Rehabilitation for the patient should start at the hospital and focus on the formulation of a rehabilitation plan, based on functional goals by the level of injury (Forchheimer & Tate 2014). The ideal outcome might not always be achieved for each patient because individual outcomes vary, despite similar levels of injury (Bick 2011). These variations are related to age, sex, and medical complications. Preparation for discharge is crucial to allow a smooth transition back home.

There have been advances in SCI rehabilitation such as wheelchair technology, functional electric stimulation, and pressure sore prevention technology. Special cars have now also been designed for PLWSCI (Lezzoni, Killeen & O'Day 2006). Advancements in rehabilitation over the past two decades have improved the quality of life of PLWSCI regarding independence, health, and the number of people surviving with an SCI (Charlifue & Gerhart 2004). This situation is enhancing community integration for the increased number of SCI individuals in the community (Krause 2010). This advancement, however, might not necessarily have the same positive outcomes in rural settings such as the Limpopo Province due to the scarcity of rehabilitation centres in this province.

Community reintegration after hospitalisation has emerged as an important goal of rehabilitation, given the current emphasis on cost containment of inpatient care and the need for a decreased length of stay at hospitals (Krause 2010; Tate & Forchheimer 1998).

The community integration process varies, as this process depends on several factors such as the economic status of the patient and the economic situation of the country in general. This affects the availability of the rehabilitation facilities the individual needs, such as physical environment, social factors including culture, the political system, and the healthcare system of the country, and individual factors such as timing of the injury versus age, severity of the disability, and secondary complications (Lau, Chi & McKenna 1998).

2. Research Problem

Globally, PLWSCI are facing numerous barriers and limitations, especially in rural areas where rehabilitation resources are limited. In South Africa, the 2011 census (Statistics South Africa, 2011) revealed that education and employment opportunities are the main challenges faced by PLWSCI. Disabled persons in Limpopo's rural areas have inadequate access to transport, health, and other basic services, making them vulnerable to the poverty trap and its associated vices (Statistics South Africa, 2011). During the 2011 Physiotherapy Forum in Limpopo, people with disabilities were unable to participate in the forum due to the inaccessibility of the venue.

Despite the fact that there is a marked difference between the urban and rural settings in South Africa, there is a dearth of rehabilitation centres in the Limpopo Province, which might impact negatively on the rehabilitation and community integration outcomes for PLWSCI in this region

Aim

To determine how PLWSCI are integrated with their communities in rural area of Limpopo

Objective of the study

To describe the challenges facing PLWSCI in rural areas regarding rehabilitation and community integration

To identify the physical barriers of the rehabilitation for PLWSCI In rural area of Limpopo

3. Methodology

Study setting

This study was conducted in the Limpopo Province, which is South Africa's most Northern Province and is situated within the great curve of the Limpopo River. It is the fifth largest of the country's nine provinces. Limpopo Province takes up 10.2% of the country's land area with a population of 5.4 million people (South Africa Info 2009).

Figure 1: Map of the Limpopo Province in South Africa

The provincial Polokwane Mankweng Hospital Complex is the only provincial and referral hospital for SCIs, as the Spinal Cord Unit is based in the Polokwane Hospital. Rehabilitation for PLWSCI is done at the Physiotherapy Department in both hospitals as a joint venture with the Occupational Therapy Department. Patients are seen once a month in each of the hospitals.

Study population

In this study, the population comprised PLWSCI who reside in rural areas of the Limpopo Province.

Study approach and designs

This study utilised a mixed research methodology. A mixed methodology approach consists of a set of designs and procedures in which both quantitative and qualitative data are collected, analysed, and mixed in a single study (Seekamp, Harris, Hall & Craig 2010).

This study used a convergent parallel mixed method design. The researcher collected quantitative and qualitative data concurrently and analysed the two data sets separately (Creswell 2008). The combinations of qualitative and quantitative methods involve the strengths of both methods to answer research questions (Pasick et al., 2009).

4. Data Collection Methods and procedure

Qualitative and quantitative data were collected. Qualitative data were collected through focus group discussions (FGDs). The focus group discussions were held at the boardroom in Polokwane hospital, Limpopo province. All the discussions were documented by a video camera. A local professional occupational therapist was present during all the discussions for language interpretations.

Quantitative data were collected from the participants using the Spinal Cord Injury Community Reintegration Measure (SCICRM) tool. The SCICRM tool (questionnaire) has been used by Maleka (2011) in Limpopo province for stroke patients and was developed to suit the SCI patients. A copy of the questionnaire was translated into Sepedi and translated back into English to validate the translation. Participants were interviewed at Polokwane hospital and centenary house depending on the convenience of the participant. The developed measure included the nine indicators that should be evaluated to determine the level of community reintegration (McColl et al., 2001). The nine indicators that are used to determine the content of the questionnaire were as follow:

1) Section A: Demographic data of the patient
2) Section B: Orientation (five questions)
3) Section C: Acceptance (four questions)
4) Section D: Conformity (five questions)
5) Section E: Close and diffuse relationships (six questions)
6) Section F: Living situation, work, and education (five questions)
7) Section G: Independence (five questions)
8) Section H: Productivity (five questions)
9) Section I: Leisure (five questions)
10) Section J: Rehabilitation (four questions)

Qualitative data analysis

The analysis of the FGDs started with the transcription of the information from the videotape recording to produce a manuscript. A comparison was then made with the notes taken during the discussion to verify accuracy. Transcribed interview texts were preceded according to discrete steps for inductive, qualitative, and thematic analysis. This process involves the creation of codes, categories, and themes (Fischer 2010). Quantitative data

The target population is very small; therefore, a convenience sampling technique was employed to generate the statistical data needed for the analysis from the available target group, namely PLWSCI residing in rural Limpopo. The inclusion criteria designed for this purpose further targeted PLWSCI residing in rural areas of Polokwane. These patients received rehabilitation on two Tuesdays every month at the two spinal cord rehabilitation centres in the Pietersburg and Mankweng hospitals. Furthermore, an additional 15 respondents were to be included from Centenary House in Polokwane, which accommodates PLWD from various parts of Limpopo. Due to the closure of the spinal cord rehabilitation centre at the Mankweng hospital, all available 35 SCI patients, 20 from the Pietersburg spinal cord rehabilitation centre, and 15 from Centenary House were interviewed using the developed SCI community integration measure (SCICIM) questionnaire.

Quantitative data analysis

Maleka (2011) developed a four-point scale to judge whether a given patient with a physical disability integrated well with the community he/she lived in after being injured. Maleka (2011) suggested the following scoring scheme:

Happenings of the event	**Score (Value)**
Never happens	0
Rarely happens	1
Sometime happens	2
Always happens	3

Total scoring was 44 x 3 = 132

Patient score = total score ⁄ 132 x 100%

The scores can be used to determine and interpret the proportion (percentage) of patients opting for each score for the same happening. They can also be used to determine an average score percentage out of the expected total under "always happens". Maleka's (2011) method sets a norm to determine whether a given patient reintegrated well into the community based on the average percentage scores. Results are interpreted to provide feedback to the patients and for professional judgment by placing the patients' scores on the following scale.

An average score of:

- 80% and above indicates full reintegration;
- 60% to 79% indicates moderate reintegration;
- 41% to 59% indicates minimal reintegration; and
- 40% and below indicates no reintegration.

All the data gathered were entered into a Microsoft Excel spreadsheet and transported for analysis using the Statistical Package for Social Sciences (SPSS) v22.0. The frequency distribution was calculated. Additionally, inferential statistics were calculated, and associations were determined using Chi-square. The results that were used to develop a rehabilitation programme that has all the components were found from both the qualitative and quantitative components of phase 1 of the study.

Validity

This study focused on face and content validity to validate the research instrument. The questionnaire was made as simple and as clear as possible. To ensure that all areas of the research were covered, each question in the questionnaire was related to the objectives of the study.

Content validity in this study was enhanced by submitting the questionnaire to the researcher's supervisors, who are content experts and examined all possible questions. The questionnaire, therefore, was pre-validated tools that were designed and tested in the South African context, and therefore, were used as is.

Reliability

In this study, test-retest reliability was administrated to achieve reliability (Shuttleworth & Wilson 2009). In this study, the questionnaire was piloted using selected participants from Centenary House to ensure that the questions were not misinterpreted or that participants react differently each time they take such a test.

Triangulation for the qualitative aspect of the study

Triangulation was achieved through the quantitative assessment of community reintegration and related factors measured, combined with cross-verification of the results of the three FGDs, observations, and use of experts.

Pilot study

A pilot survey to test the reliability and consistency of the instrument was conducted prior to the main data collection. This provided an accurate simulation for the time needed to complete the interviews. The pilot study included 10 SCI patients who resided in Centenary House; these patients were not included in the main study sample. The findings from the pilot study were used to adjust the final questionnaire according to the input from the pilot survey.

During the pilot study, it was noticeable that the participants were wearied from detailed questions about the organisation giving grants. Post the pilot study, the questions were adjusted to only one question. The question was if the participant receives a grant or not, and it had to be answered by a Yes or No response only.

Bias

Sampling bias was considered carefully during the selection process of the group for the focus group interviews. The researcher carefully represented the entire community component. This research eliminated procedural bias by avoiding pressuring participants. Participants were free to participate in this research and had the right to discontinue the interviews at any stage without providing any reasons. Bias can arise during the research process; however, this study was piloted with a small group of participants prior to the main study to eliminate bias.

Ethical considerations

This study received ethical approval from the Ethical Committee of the University of Limpopo's Turfloop Research Ethics Committee (TREC) before the commencement of the study. Prior to data collection, permission to conduct the study was also gained from the Provincial Health Department in Limpopo.The fundamental ethical principles were considered in this study, namely respect for autonomy, beneficence, non-maleficence, and justice.

5. Results

Quantitative data results

Demographic profile of the participants

Thirty-five (35) individuals with an SCI participated in this study, of which more than half (57%) were interviewed in hospital and the remainder (43%) in the disability home in Polokwane (Centenary House). The age of the participants ranged from 25 to 59 years, with the mean and median of 36.1 ± 7.6 and 34 (interquartile range (IQR): 10) years, respectively.

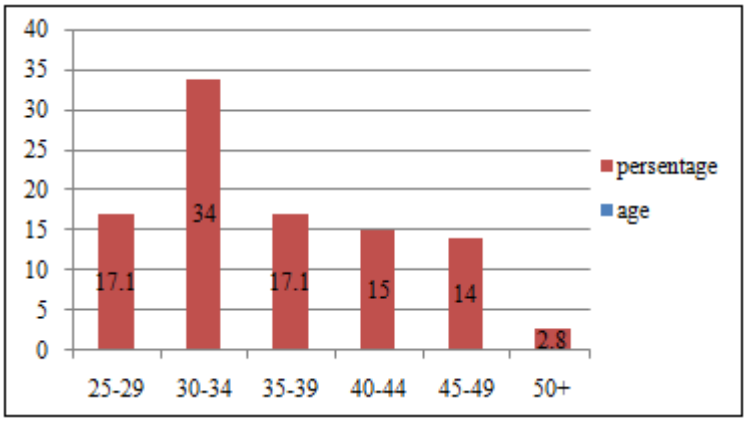

Figure 2: Demonstrates the age distribution of the respondents with a third (34%) falling within the age group 30 to 34 years and the least was 50+ years

Table 1: Education, race and grant status of respondents (n = 35)

Variables		Frequency	Percentages
Education	Secondary	9	26
	Tertiary	16	46
	Unspecified	10	.28
Race	Blacks	32	91.4
	Whites	3	8.6
Receive Grant	Yes	25	71
	No	10	29

Challenges faced by people living with spinal cord injury regarding rehabilitation and integration into the community

Primary data were generated and collected regarding the rehabilitation and community integration challenges of PLWSCI using the SCICRM tool (Maleka 2011; McColl et al., 2001), which was discussed at length in Chapter 3. Table 4.2 shows the results of the SCICR tool using Maleka's (2011) four-point scale to judge whether a given a patient with an SCI was successfully reintegrated into the community after his/her injury.

Table 2: Results of the SCICR tool

AG	AGG	RAC	GEN	LOC	INJTYPE	B	C	D	E	F	G	H	K	L	SCR	SCR%	RE-INTEGR
39	3	B	F	HOS	Paraplegia	15	12	15	18	15	13	13	15	10	126	95	Full
31	2	B	F	HOS	Paraplegia	15	11	12	17	14	12	13	15	11	120	91	Full
44	4	B	F	HOS	Paraplegia	15	9	9	14	13	14	10	11	6	101	77	Mod
25	1	B	M	HOS	Paraplegia	15	9	11	14	10	10	10	8	5	92	70	Mod

AG	AGG	RAC	GEN	LOC	INJTYPE	B	C	D	E	F	G	H	K	L	SCR	SCR%	RE-INTEGR
30	1	B	M	HOS	Paraplegia	15	8	9	14	12	15	9	10	9	101	77	Mod
40	3	B	F	HOS	Monoplegia	15	12	15	18	15	15	13	11	4	118	89	Full
34	2	B	M	HOS	Paraplegia	15	10	11	15	14	12	11	8	6	102	77	Mod
40	3	B	M	HOS	Monoplegia	15	12	15	18	15	14	11	11	4	115	87	Full
38	3	B	F	HOS	Monoplegia	15	12	14	18	15	15	13	13	5	120	91	Full
30	1	B	M	HOS	Tetraplegia	4	4	2	12	6	2	4	4	4	42	32	No
46	4	B	M	HOS	Paraplegia	7	4	4	13	10	10	10	10	8	76	58	Min
29	2	B	M	HOS	Paraplegia	10	7	8	14	11	10	10	10	6	86	65	Mod
33	2	B	F	HOS	Paraplegia	15	10	11	14	10	15	10	7	6	98	74	Mod
28	1	B	M	HOS	Paraplegia	15	12	12	16	14	12	9	6	6	102	77	Mod
30	1	B	M	HOS	Paraplegia	15	8	10	14	10	10	10	6	3	86	65	Mod
46	4	B	M	HOS	Paraplegia	15	9	12	17	10	9	9	11	5	97	73	Mod
35	2	B	M	HOS	Paraplegia	15	12	11	15	13	9	8	11	2	96	73	Mod
31	2	B	M	HOS	Paraplegia	15	10	6	11	13	14	13	9	7	98	74	Mod
26	2	B	M	HOS	Paraplegia	15	8	10	14	10	10	9	10	8	94	71	Mod
28	2	B	M	HOS	Paraplegia	15	12	11	17	13	15	13	15	9	120	91	Full
39	3	B	F	CEN	Paraplegia	12	12	13	18	15	12	8	15	4	109	83	Full
31	2	B	M	CEN	Paraplegia	6	5	11	18	6	15	3	8	4	76	58	Mod
59	4	W	F	CEN	Paraplegia	15	12	15	18	15	15	9	11	0	110	83	Full
30	1	B	M	CEN	Paraplegia	15	11	15	17	15	15	15	13	9	125	95	Full
31	2	W	F	CEN	Paraplegia	15	11	15	18	15	15	15	12	5	121	92	Full
47	4	B	F	CEN	Paraplegia	14	12	12	18	15	12	8	15	5	111	84	Full
45	4	B	M	CEN	Tetraplegia	12	9	6	18	12	12	3	15	6	93	70	Mod
33	2	B	M	CEN	Paraplegia	9	12	9	18	15	12	5	15	4	99	75	Mod
48	4	W	M	CEN	Paraplegia	13	12	12	18	15	13	9	14	3	109	83	Full
37	3	B	F	CEN	Paraplegia	8	11	10	17	12	13	2	15	4	92	70	Mod
41	3	B	F	CEN	Tetraplegia	6	6	8	15	3	6	6	7	4	61	46	Min
28	2	B	M	CEN	Paraplegia	6	12	12	10	5	15	12	8	3	83	63	Mod
33	2	B	F	CEN	Paraplegia	14	7	3	8	12	12	3	15	6	80	61	Mod
38	3	B	F	CEN	Paraplegia	15	11	15	15	14	15	8	12	2	107	81	Full
40	3	B	M	CEN	Paraplegia	14	12	12	15	14	12	8	15	2	104	79	Mod

A= Age *G=Gender* *D= Conformity* *G=Independence L=Rehabilitation*
G= Age group *B= Orientation* *E= Close and diffuse relationship* *H= Productivity*
KSG= Total *R=Race*
C=Acceptance *F= Living situation* *K=Leisure SCR= Score* *REINTI = Reintegration type* *LOC= Location*

6. Community reintegration

Table 4.3 shows that 37% of the respondents were fully reintegrated. Moderate reintegration was above average (54.4%), while 5.7% were minimally integrated and 3.9% failed to reintegrate into their communities.

Table 3: Percentage of community reintegration

Level of Integration	Frequency	Per Cent (%)
Full Reintegration	13	37
Moderate Reintegration	19	54.4
Minimal Reintegration	2	5.7
No Reintegration	1	3.9
Total	35	100

Rehabilitation team's home visit rate

Participants rated home visits by the rehabilitation team to SCI patients as extremely poor. Table 4.4 indicates that two-thirds (66%) of SCI patients rated the rehabilitation team a zero-rating. The rehabilitation teams' home visits were further rated as "never happened" (51%) and one to "rarely happened" (14.3%). This is a clear indication of the need to introduce a suitable rehabilitation programme.

Table 4: Rehabilitation team followed sci patients' health condition until discharged (levering cross-tabulation)

Home Visit Score	Full Reintegration	Minimal Reintegration	Moderate Reintegration	No Reintegration	Total
Never Happens (0)	7	1	9	1	18
Rarely Happens (1)	1	0	4	0	5
Sometime Happens (2)	2	1	5	0	8
Always Happens (3)	3	0	1	0	4
Total	13	2	19	1	35

Qualitative data analysis

The qualitative results presented in this study emerged from data analysis using Tesch's open coding method following eight steps described by Creswell (2008)

Saturation was achieved related to the major themes and all sub-themes that were confirmed through the identification of more verbatim quotes or excerpts from the transcription used in the data analysis, as well as six themes and their sub-themes that emerged during data analysis using Tesch's open coding qualitative data analysis method as described by Creswell (2008). The findings are supported by direct participants' excerpts and existing literature themes and subthemes were presented in the below table:

Table 5: Themes and sub-themes reflecting the challenges faced by healthcare professionals dealing with the rehabilitation of SCI patients in the Limpopo Province, South Africa

Main Themes	*Sub-Themes*
Challenges experienced by healthcare professionals caring for patients with SCIs	Caring for SCI patients were viewed as a difficult role that poses problems at multiple levels of care Lack of material and human resources is problematic during the provision of care to patients Lack of adherence to treatment protocols for the management of patients with SCIs Existing lack of skills and shortage of healthcare professionals to care for patients outlined as a challenge at multiple levels Existing hospital policies a challenge towards proper management and access of care to patients Lack of training and dialogue programmes for healthcare professionals pose difficulty for enhancement of care skills Lack versus existence of an outreach programme, call system, outpatient care, and home visits problematic Lack of communication among professionals a hindrance towards provision of quality care
Healthcare practices for caring for SCI patients by healthcare professionals	Lack of rehabilitation programme resulted from non-performance of operations in the context of the study Existence of limited rehabilitation activities appreciated and encouraged Existence of daily care for the patients by specific healthcare professionals organised by the team Various roles played by healthcare professionals The importance of existing multidisciplinary team meetings; meetings with patients and families Existing booking systems at multiple levels for patients Existing precautions taken during provision of care
Experiences of healthcare professionals related to caring for patients with SCIs	Tales of experiences related to the absence of a rehabilitation programme for spinal cord in SCI injury patients Provision of care not limited to SCI patients only Appreciation of each other skills, as healthcare professionals and integration of care Existing referral systems for patients to different healthcare professionals and facilities Explanation of treatment, management, and care for SCI patients that focus on the acute period
Complications resulting from lack of rehabilitation programmes for SCI patients	Patients' physical and psychological impairments resulting from lack of rehabilitation programmes Patients' exposure to complications due to lack of rehabilitation programmes Lack of healthcare professionals' skills outlined as risk resulting in patients' complications
Suggestions related to aspects that might lead to the provision of quality care to patients with SCIs	Significance to outline a specific period to start with rehabilitation of SCI patients The importance of additional human and enough material resources was outlined Importance of full assessment of the patients by different healthcare professionals explained A need for training courses for management, treatment, and care for patients with SCIs A need for a special unit with specialist and community rehabilitation centres emphasised The importance of home visits
Experiences of patients with SCI patients as observed by healthcare professionals	Existence of self-stigmatisation portrayed by patients Existing changes at various levels of patients' life observed A need for regaining importance for life desired by patients Challenges experienced by patients at various levels of life observed

The findings revealed that the rehabilitation team and the healthcare professionals in Limpopo are facing mixed challenges in treating and rehabilitating SCI patients. Some professionals verbalised that they are the only rehabilitation team in Limpopo and specifically Polokwane (Pietersburg hospital). This situation created extra challenges and a more strenuous work environment. Participants were still providing positive feedback about the possibility of producing acceptable rehabilitation outcomes for the PLWSCI in the Limpopo Province because they are still working as one team. The difficult roles that professionals play and pose problems at multiple levels of care were outlined by one physiotherapist:

7. Discussion

Description of the challenges facing PLWSCI in the province regarding rehabilitation and integration into the community

Globally, physical independence, mobility, occupation, social integration, economic self-sufficiency, limited community resources, and access to medical and social services were the main challenges facing rehabilitation and community reintegration for PLWSCI (Burns & O'Connell 2012; Charlifue & Gerhart 2004). The transition from acute rehabilitation to home is especially critical because people are confronted with many obstacles as they attempt to resume participation in the community (Charlifue & Gerhart 2004). For the majority, rehabilitation is "some form of exercises" rather than a multidisciplinary team approach.

Others do not consider a complete SCI worthy of any active management and rehabilitation (Rathore et al., 2012).

The challenges faced by PLWSCI differed between developed and low-resource countries (Burns & O'Connell 2012). In developed countries, the delivery of emergency and acute care is immediate, following an SCI. In many low-resource countries, it is rare for an individual with an acute SCI to be immobilised in the field and transported by trained personnel (Rathore et al., 2008). Around the world, there is a noticeable delay between injury and presentation to the spinal unit (Burns & O'Connell 2012; Rathore et al., 2008).

In South Africa, the situation is much better compared to other African countries as patients are most likely to receive proper transportation by ambulances in most South African regions (Joseph et al., 2013). The public-funded healthcare system that cares for approximately 80% of South African citizens provides general care to survivors of SCIs. Rehabilitation as an integral part of healthcare services has been neglected in South Africa, with no disease-specific policy plans outlining quality indicators (Joseph 2016). However, a starting point for the discourse on rehabilitation is South Africa's own National Rehabilitation Policy that emphasises equal opportunities, the ability to participate socially, and integration back into society (Joseph et al., 2013).

In the current situation policies are formulated in institutions so that they can guide performance, but the findings revealed that the existing policies do not guide how the SCIs can be managed, and the accessibility of the care by the patients have not been spelt out. This point of view was verified in the following excerpt from a participant:

"*In this hospital, we don't operate spinal cord injury patients, that is why we don't have [a] proper rehabilitation programme for the spinal cord injuries patients*".

Another participant supported this opinion:
"Also, the orthopaedic doctors they just come during their round and while they are taking rounds they write their notes (continue treatment) and they go; they don't know the impact that falls on the nurses who work for 12 hours because they need protocols that could guide them in taking care of these patients."

This study found that professionals were experiencing challenges due to the absence of a rehabilitation programme in the province. The rehabilitation programme was absent because there was no spinal unit for the SCI patients in all of Limpopo; therefore, the patients needed to be transferred to Gauteng to receive operations.

A team leader said:
"First of all, I would like to mention a very important point that we don't have spinal cord unit here in this hospital, so we don't have rehabilitation specifically for the spinal cord injury patients. This team is[a]rehabilitation team for all orthopaedic cases, including spinal cord injury patients. The spinal cord injury patient usually admitted at ward N and ward O (the orthopaedic wards) that is why they were able to receive our service. This group found the head of orthopaedic department to help his patients. In this hospital, we don't operate spinal cord injuries; we used to send them to George Mukhari Hospital (Medunsa). We can't comment on that (operating spinal patients) because we are not the human resources and we are not management of the hospital..."

Irshad et al (2011) found that the main interest of most patients with a low educational level was "their ability to walk again", resulting in patients going from one place to another in search of a cure for the SCI. The cures offered and attempted by the patients in Pakistan include stem cell transplants (from China), ozone therapy, hyperbaric oxygen therapy, alternative and complementary medicine (including Ancient Greek and Arabic medicine, homoeopathy, and acupuncture), along with spiritual healing (Irshad et al., 2011).

Considering all the facts discussed, the current study utilised McColl et al.'s (2001) nine indicators for successful rehabilitation and community integration combined with Maleka's (2011) study. CIMs were used to determine the level of reintegration for PLWSCI after rehabilitation.

This study found that only 37% of the respondents are fully reintegrated. The fact that moderate reintegration is just above the average (54.4%) indicates that the existing rehabilitation is short of impact and needs to be uplifted by introducing a rehabilitation programme that could enhance reintegration. These findings are similar to that reported in other studies. Mothabeng (2007) found that the participant satisfaction with their community participation was 20%. Using multiple regressions, Mothabeng (2007) found that satisfaction with community participation accounts for 50% of the variance.

The overall low percentage of community integration in this study might be due to the absence of proper rehabilitation and poor follow-up of the patients in their communities. This finding supports the findings of Burns and O'Connell (2012) who mentioned the disparities between the developing and developed world's capacity to deliver the rehabilitation service to PLWSCI.

In this study, patients who received a home visit from a rehabilitation team were more likely to fully reintegrate into their community, in this case 75%. Of those who did not receive any home visits, only 39% managed to fully reintegrate. This result showed the contribution of the home visit factor in successful rehabilitation. The findings of the study highlighted the necessity of professionals' home visits to the patient before and after discharge. Home visits play is important in providing the bridge between the hospitalisation period and community integration (Charlifue & Gerhart 2004).

This study revealed that healthcare professionals who deal with SCIs do not have outreach programmes to visit the patients at their homes. The healthcare professionals did not attend a workshop for the last two years due to the financial situation in the province. An Occupational therapist said:

"*… (mmm) let me tell you something. The only time we received a workshop here on rehabilitation was in 2014. After that, we never received or held any workshop in this hospital*

Rehabilitation services for PLWSCI should shift even more from hospital rehabilitation to the community. The goals of community integration are to restore, achieve, or maintain physical or cognitive function or occupational performance in persons with disabilities (Welage & Liu 2008). Family members and caregivers in their own environment within the community should be trained to take responsibility for the patient (Charlifue & Gerhart 2004). There are several benefits of home visits by the rehabilitation team to the patient's community. These benefits include shortening the length of hospital stay, provides service convenience to clients, promotes better therapy effectiveness, and offers greater relevance for patients to integrate back home and into the community (Welage & Liu 2008).

8. Physical barriers to the rehabilitation for PLWSCI in rural areas of Limpopo Province

PLWD in rural areas suffer frequently inaccessible services and infrastructure limitations (National Institute on Disability and Rehabilitation Research 2010; Trupin 2003) and have fewer advanced education supports than their counterparts without disabilities (Eldar 2001). Many people with disabilities in rural areas do not have modifications, assistive technology, or the vehicles necessary to function optimally at work and at home (Grinstein-Weiss & Curley 2003; Putnam & Tang 2005). PLWD need and want to acquire assets to facilitate increased independence (Lezzoni et al., 2006). Evidence suggests that PLWD perceive healthcare, homes, and businesses as less accessible to them in rural communities than in urban settings (United States Department of Labor 2011).

PLWSCI require not only initial medical care and rehabilitation but also ongoing access to wheelchair-friendly environments and appropriate home care, equipment, transport, employment, and financial support. The management of PLWSCI, therefore, is complex, involving many healthcare professionals, organisations, and government services (Harvey 2016).

The findings of this study showed that one of the challenges of treating SCI patients is the patients' physical and psychological impairments resulting from a lack of rehabilitation centres and programmes. The physical and psychological impairment complications were outlined by a physiotherapist:

"One of the challenges is accepting the condition, most of these patients don't accept the idea that they will not be able to walk again or using their legs again. Actually, it is like stigma for them and lack of rehabilitation makes things worse. Let us say the first problem or challenge that [is] facing us is [the] psychological effect of the injury which needs rehabilitation which doesn't exist."

A social worker supported this opinion:

"Regarding the acceptance of the situation either by the patient or the community, by the way, this matter is having bilateral ends, like I mean the acceptance by the patient himself and the acceptance of the community to the patient, and here the role of the local social worker and psychologist and all other therapists during the rehabilitation period. Lack of acceptance of the condition required presence of psychologist and social worker within the rehabilitation team to overcome this matter; besides, other practitioners must also help toward overcoming the physical and psychological impairments."

The above result was also supported by other quantitative result from a comparison made between two groups of participants. The first group comprised PLWSCI who still receive extra rehabilitation sessions at the hospital after they were discharged, while the other group comprised residents from the disability house in Polokwane. A comparison was made to discover the physical barriers of the rehabilitation for PLWSCI in rural areas of the Limpopo Province.

The results indicated no statistically significant difference in the items between the two groups ($p < 0.05$,) regarding acceptance. There was a significant difference between the two groups regarding be "able to care for your livestock", "able to teach children home keeping tasks", "satisfied with your ability to physically assist someone", and "I feel like a part of this community" ($p < 0.05$).

There was no statistically significant difference in "able to move around in your home", "able to feed yourself", and "able to move around uneven/hill area and satisfied in your family and community" ($p > 0.05$). In this study, the participants showed satisfactory independence, orientation, and acceptance of the situation. In the sub-acute stage and before discharge from the hospital, patients should exercise all types of probable mobilisation suitable to their level of injury (Schwartz et al., 2011). At the end of the sub-acute stage, the patient should be adept to functional goals such as sitting and standing and should be prepared to transfer and balance, or a wheelchair, dressing, and transfers. Initially, the goal is for successful movements. Patients who can tolerate sitting can begin to push up with static and dynamic balance training to transfer to the wheelchair and use it (Diong et al., 2012). Wheelchairs, walkers and crutches are used for out of bed transferring of patients. The wheelchair is the most important tool for SCI patients to be mobile and participate in social life.

There was a significant difference between the two groups regarding satisfaction with communication with people around them, with visitors, with help or support that they received from family and friends, and with their ability to solve family and friends' problems ($p < 0.05$). Regarding the living situation, there was a significant difference between the two groups regarding "I like where I'm living now" and "able to get to the clinic and/or hospital" ($p < 0.05$).

This result showed that PLWSCI in the disability house are more satisfied with communication than their counterparts who stay in their home community. The patient's family

support is crucial, and the family should be part of all decisions concerning patients from the early rehabilitation phases at the hospitals (Emerich et al., 2012). Family support and meeting with people with the same condition should lead to a better community reintegration (Emerich et al., 2012; Furlan et al., 2010). The most important expectations in the chronic phase or phase to return home are ensuring the maximum independence related to the level of the patient's injury, integration of the patient to society, and teaching the importance of the family's role (Baslo 2013). In addition, house modifications are important for patients with SCI to have independent activities of daily living. Adequate insulation must be provided at home (Baslo 2013).

Results regarding productivity showed no significant association in "able to collect at a communal water tap", "able to wash dishes, clothes, etc.", "able to cook a meal for your family", and "able to work in your garden/yard/field" ($p > 0.05$), while "I've something to do in the community" shows a significant difference between the two groups ($p < 0.05$). The participants from the disability house are more productive than other participants.

There was no statistically significant association between "spending leisure time and to have fun in spare free time", "able to do an activity for self-enjoyment or relaxation", "able to go shopping in town", and "able to do any physical activity such as playing any sport" between the two groups ($p > 0.05$). However, the mean score of participants from Centenary House was significantly higher than the counterpart regarding "able to go out with friends or watch a soccer match at the stadium".

One of the important features of this period is restoring the patient's psychological and emotional state because of the high incidence of depression in patients during the first six months (about one out of three patients) (Lee & Mittelstaedt 2004). Depression is not a natural process experienced after SCI but a complication that needs to be treated.

9. Conclusion

The rehabilitation team should find the patient's role in society. Successful rehabilitation allows SCI patients to be more social, to use their own functions and skills for creative jobs, and to deal with psychological and physical problems.

10. Recommendation

Acknowledging the absence of sufficient specialised rehabilitation centres and the seriousness of the implications thereof, it is recommended to design an effective rehabilitation programme to enhance proper community reintegration, and it should be the priority of everyone in the rehabilitation field and community.

11. Limitations

There are additional issues that deserve attention to improve tools and knowledge affecting the management of SCI. These issues are summarised as follows:

- Limited ability to address true quality of life for PLWSCI socially and economically;
- Measurements of other important aspects of function, including the interplay between spasticity, pain, and motor and sensory functions are at an even earlier stage of rehabilitation; and
- There are concerns regarding the potential for any treatment to produce heightened neuropathic pain.

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