

**THE FACTORS INFLUENCING COMMUNITY REINTEGRATION OF TRAUMATIC
SPINAL CORD INJURY PATIENTS IN A SOUTH AFRICAN POPULATION**

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ABSTRACT

Spinal cord injury (SCI) is a devastating condition that is associated with permanent disability and decreased life expectancy. Regaining life roles pertaining to living situations, relationships and lifestyle are important for an individual who sustained a SCI. Thus, community reintegration as the main goal for rehabilitation of has been viewed by researchers as vital. The overall aim of the study is to investigate the factors associated with community reintegration after a traumatic spinal cord injury. The study utilized a mixed methods approach, specifically the sequential strategy. For the quantitative component of the study, data was collected from individuals who sustained a traumatic spinal cord injury residing in the Cape Metropolitan region in the Western Cape. Self-administered questionnaires to determine the factors predicting community re-integration namely were used and included the Sydney Psychosocial Reintegration Scale- 2 (SPRS- 2) and the Community integration Questionnaire (CIM). For the qualitative data collection, the sample included individuals who took part in the quantitative component who were willing to participate. No “a priori” sample size was calculated and data collection continued until saturation was reached. Quantitative data was captured and analysed using the Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics were used to summarize the data and was presented using frequency tables expressed as percentages, means and standard deviations. Inferential statistics were used to determine the associations between socio-demographic characteristics, self-efficacy and both psychosocial and community reintegration. The qualitative data was transcribed and categorized into emerging themes. Ethical approval was received was all the relevant authorities. Confidentiality was maintained throughout the study and trustworthiness was ensured by maintaining credibility and confirmability. A total of 102 participants participated in the quantitative part of study and had a

mean age of 37.6 years. The highest proportion (58.8 %) of individuals were classified as paraplegic, and 43.2% of injuries occurred due to motor vehicle accidents. The demographic information and the two scales produced very strong significant results utilizing the student t-test the SPRS- 2 and employment status ($p = 0.00$); CIM and level of injury ($p= 0.000$), residential status ($P= 0.000$). In the correlation analysis utilizing Pearsons correlation the SPRS- 2 was significant with age ($p=0.021$; $r= 0.228$), year of injury ($p= 0.007$; -0.266), CIM ($p= 0.000$; $r= 0.527$). CIM was significant with age ($p= 0.014$; $r= 0.243$), year of injury ($p= 0.001$; $r= -0.316$). The Qualitative themes included perceptions and attitudes of people; mobility aid; gangsterism/ crime; self-improvement; secondary complications; reliance on primary caregivers; transportation. With increased age and time of injury higher scores were observed in the measures. This could suggest that the older the participants the longer they have been living with their injury and could have had more time to adjust and adapt to their new life circumstances. To most of the participants increasing their education/ skill level and obtaining gainful employment seemed to be one of their main goals that they would wish to achieve.

Community reintegration for TSCI is a very complex and multi-faceted phenomenon. Despite tremendous life altering injuries a sense of hope and optimism and a very strong sense of survival and coping mechanisms are vital to successful adaptation. The fear of crime and violence, inability to navigate the terrain due to inappropriate wheelchairs or weakness and lack of caregiver support also resulted in a huge impact on these TSCI individuals to become reintegrated into their communities. Unfortunately violence, access to transport and appropriate wheelchair prescription seemed to be a reoccurring theme. These issues can only be addressed with improved government intervention and policy.

DECLARATION

I hereby declare that “**The factors influencing community reintegration of traumatic spinal cord injury patients in a South African population**” is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources used or quoted have been indicated and acknowledged by complete references.

Meghan Leigh Olckers



Signature..... **November, 2017**

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Witness.....

Professor Julie Phillips

DEDICATION

The author dedicates this thesis to her family and friends, who have played a fundamental part in the completion of this thesis.



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ACKNOWLEDGMENTS

The author thanks everyone who played a role in completing this thesis, with special thanks to the following people:

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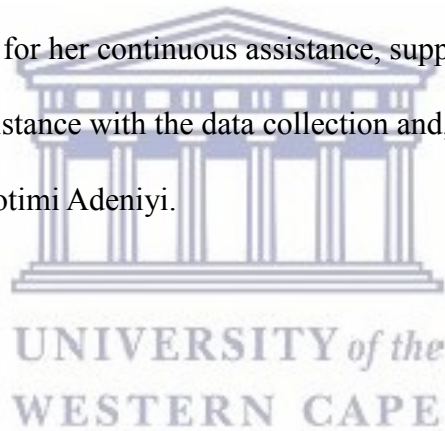



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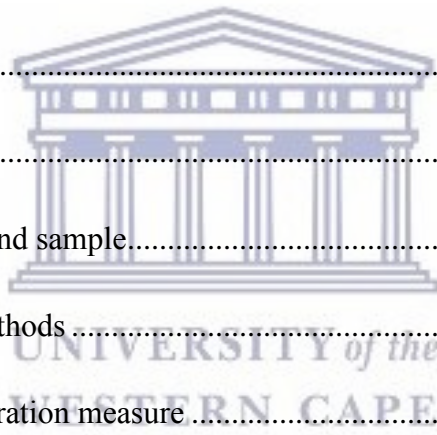
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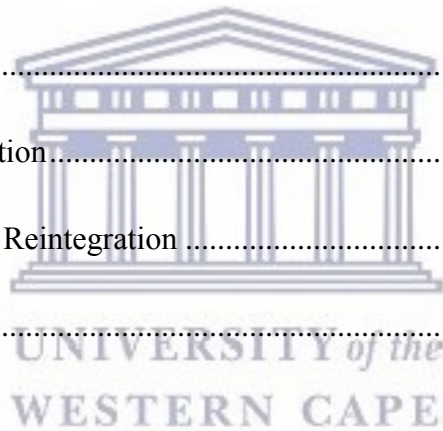


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CHAPTER ONE

INTRODUCTION

1. Introduction

In this chapter the background information regarding spinal cord injuries (SCI) and specifically traumatic spinal cord injuries (TSCI) are provided. The impact of a spinal cord injury on an individual's daily functioning, social interactions and community life are highlighted. The problem statement is stated indicating the need for community reintegration of an individual sustaining a traumatic spinal cord injury. This chapter also includes the overall aim and specific objectives of the study. In addition the terms used in the thesis are defined.

1.1 Background to the study

A spinal cord injury (SCI) is a devastating condition and is associated with permanent disability and decreased life expectancy (Rahimi-Movaghar et al., 2013). Traumatic Spinal Cord Injury (TSCI) as the name implies occurs as a result of a traumatic event such as a motor vehicle accident (MVA), fall or violence (WHO, 2013; Nwadinigwe, Iloabuchi, Nwabude, 2003). Spinal Cord Injury (SCI) can further be categorised into complete or incomplete loss of motor function and sensation of the cervical, thoracic, lumbar- sacral segments and other body regulation processes, the latter resulting in the loss of bladder and bowel control (International Standards for Neurological Classification of Spinal Cord Injury, 2011).

Decreased life expectancy associated with sustaining a spinal cord injury, according to the World Health Organisation (WHO), can be two to five times greater than an individual without a SCI (The World Health Organisation, 2013). This organisation further states that the worst survival rates post SCI occur in middle to low income countries and it is associated with significant

individual and social costs (WHO, 2013). It results in decreased economic participation and school enrolment. TSCI usually affects young and healthy individuals and this condition further creates immense physical and psychological suffering to the individual and families (Zinman et al., 2014; Lidal, Huynh, & Biering-Sørensen, 2007). These life adjustments dynamically change as individuals' age (Scelza et al., 2007).

Sustaining a spinal cord injury leads to major life adjustments with regard to living situation, relationships and lifestyle. Therefore regaining life roles after a SCI is important and for people with TSCI living in the community- establishing a view of themselves as valuable and able post SCI is of importance (Whalley & Hammell, 2007). According to Jang, Wang and Wang (2005) the goal of rehabilitation for those who sustained a TSCI is to assist them in ensuring their adjustment to life after TSCI by empowering them and their families with the skills and resources necessary for reintegration into their community. The main aim of rehabilitation is precisely as stated above: for these patients to achieve successful community reintegration (Groah et al., 2012; Jang, Wang & Wang, 2005; Forchheimer & Tate, 2004). Successful community integration can be defined as 'being part of the mainstream of family and community life, fulfilling normal roles and responsibilities and being an active and contributing member of one's social groups and society as a whole' (Dijkers, 1998).

Research has indicated that the level or severity of injury does not indicate whether a patient with a TSCI will adjust well but rather that their coping strategies influence their adjustment (Zinman et al., 2014). Similarly Anzai, Young, McCallum, Miller and Jongbloed (2006) have shown that complex social factors, not injury severity, leave certain individuals and not others vulnerable to

long term institutionalization after TSCI. Pollard & Kennedy (2007) conducted a study which point towards a link between coping strategies of individuals with TSCI and depression. Furthermore, if an individual with a TSCI presented with anxiety and depression at 12 weeks post injury the same was seen at 10 year post TSCI. Depressive states leading to suicides has been reported to be higher in SCI Individuals when compared to the general population (Kennedy et al., 2010). Miller (2009) stated that a patient's ability to cope with life changes, i.e. a high self-efficacy, allows them to have superior problem solving skills and therefore be more successful in managing changes. Miller (2009) and Hampton (2004) also noted that a high sense of self efficacy had little to do with functional limitations but more to do with participation factors such as employment.



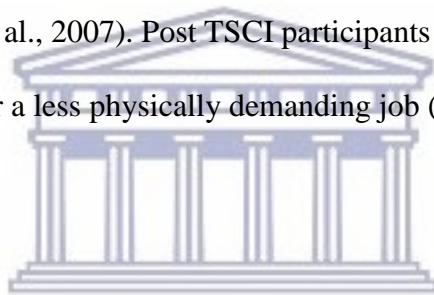
Various factors are associated with community reintegration of individuals with a TSCI. According to (Donnelly & Eng, 2005) pain has been found to have a negative impact on community reintegration initially and same can be said for 6 months of community living (Müller et al., 2012). Secondary complications after a TSCI also influences community reintegration the quality of life of individuals. Secondary complications related to TSCI includes issues such as loss of motor, sensory control and or autonomic impairments, chronic pain, urinary tract infections, fractures, pressure ulcers, bowel problems and depressive disorders (Munce et al., 2014; Müller, Peter, Cieza, & Geyh, 2012; Kennedy et al., 2010; Kennedy, Taylor, & Hindson, 2006; Creswell, 2003) Research has indicated that the prevalence of secondary complications and care giver dependence increases per years post TSCI (Cieza et al., 2010). In lower income countries SCI deaths still occur due to preventable secondary complications, this is not seen as the leading cause of death in higher income countries (Nwadinigwe, Iloabuchi,

Nwabude, 2003). Secondary complications can result in psychological and physical barriers posing a serious threat to community integration (Kennedy et al., 2010).

Issues such as accessibility in both societal and the physical environment also has a large impact on successful community reintegration (Scelza et al., 2007). Some of the environmental barriers affecting community reintegration have been highlighted and these include the built and natural environment, community member attitude and transport (Lysack, Komanecky, Kabel, Cross, & Neufeld, 2015). Even though many studies emphasised the environmental issues that negatively affect community reintegration, evidence suggests that these environmental factors have a lesser impact on community integration when compared to self-esteem, family support, and informational support and coping styles (Song, 2005). Researchers have shown that governmental policies and decreased access to health care also affected reintegration especially in SCI Individuals who were wheelchair bound (Lysack et al., 2015).

Other factors influencing community reintegration include decrease in leisure time, studying, employment and participation in sporting activities (Kennedy et al., 2010). Lidal et al. (2007) confirmed that productive employment is a corner stone in adulthood and an important contributor to a meaningful and successful life. Gainful employment plays an essential role in community reintegration and adapting to the life altering changes that occur post TSCI (Cieza et al., 2010). Employment other than having the obvious financial, social and political benefits also helps to improve activity, self-esteem, life satisfaction and general sense of well been post TSCI (Lidal et al., 2007; Meade et al, 2004). Employment is therefore of great importance as research mentioned previously noted that the factors associated with employment are important for coping post SCI and resulting in improved community reintegration. Maede et al. (2004) and Anderson,

Krajci & Vogel (2003) have also found a positive association for gainful employment as being a predictor of community reintegration. Employed individuals with TSCI reported little hindering factors to employment (Fiedler et al, 2002). Although, those unemployed ranked transportation as the number one factor, this was shown to also hinder community reintegration (Fiedler et al, 2002). Some other hindering factors to employment was discrimination and mobility impairment the latter was also related to other factors such as depression, low self-esteem and an increase in secondary complications (Fiedler et al, 2002). Many studies have indicated that employment trends post SCI remains low but there is some evidence that suggests that employment rates increase over years post SCI (Lidal et al., 2007). It is then shown to sharply decrease at around the 40 year old decade (Lidal et al., 2007). Post TSCI participants often never returned to the same employment and opted for a less physically demanding job (Tomassen, Post & van Asbeck, 2000).



It is therefore clear that factors in both the physical and social environment are of importance where community reintegration is concerned. Effective and long term rehabilitation of individuals with a SCI is therefore essential in order to help them to successfully reintegrate into their respective communities. Researchers have stated that community reintegration results in life satisfaction, a sense of competence and promotes better overall adjustment and improves individuals' quality of life. Therefore, new research regarding participation/ community reintegration post disability will be 'invaluable for research and practice' (Lysack et al., 2015).

1.2 Problem statement

Spinal cord injuries result in an enormous impact in an individual's life (Charlifue & Gerhart, 2004). These injuries usually occur when individuals are in their early adulthood, therefore when they are establishing careers, attending schools or starting families (Zinman et al., 2014; Lidal et al., 2007; Charlifue & Gerhart, 2004). The main goal of rehabilitation is to ensure that community reintegration is successful. The rapid advancement in the medical and rehabilitation management in the last few decades have resulted in a longer life expectancy of individuals with SCI and with the longer life expectancy community reintegration becomes a crucial aspect of rehabilitation (Hammel, 2004). Very little literature exists regarding community reintegration of individuals who have sustained a SCI in the Western Cape, South Africa, and therefore information regarding the needs of individuals once discharged is needed.



1.3 Research Questions

1.3.1 What are the factors influencing community reintegration of TSCI Individuals in a South African population?

1.3.2 What are the experiences of individuals with a TSCI with regards to community reintegration?

1.4 Aim of the Study

To investigate the factors associated with community reintegration after a traumatic spinal cord injury.

1.5 Objectives

1.5.1 To determine the psychosocial reintegration of individuals with TSCI (i.e. Occupation activities, interpersonal relationships, living skills)

1.5.2 To determine the community reintegration of individuals with TSCI (i.e. participation, individual sense of belonging in the community)

1.5.3 To explore the experiences related to psychosocial and community reintegration of people with a TSCI.

1.6 Definition of terms

Spinal cord injury (SCI): Results in irreversible neurological impairment of the sensory, motor and/or autonomic nervous systems (Noonan et al, 2012). SCI can be categorised into complete or incomplete loss of motor function and sensation of the cervical, thoracic lumbar- sacral segments and other body regulation processes, the latter resulting in the loss of bladder and bowel control (International Standards for Neurological Classification of Spinal Cord Injury, 2011).

Traumatic Spinal Cord Injury (TSCI): occurs as a result of a traumatic event such as a motor vehicle accident (MVA), fall or violence (Nwadinigwe, C. U., Iloabuchi, T. C., Nwabude, 2003).

Community Integration: 'being part of the mainstream of family and community life, fulfilling normal roles and responsibilities and being an active and contributing member of ones' social groups and society as a whole' (Dijkers, 1998).

Quality of life QoL: 'a person-oriented outcome parameter and a multidimensional construct, which considers the subjective evaluation of objective living conditions in different areas of life' (Fuhrer, 2000).

The International Classification of Functioning, Disability and Health (ICF): consists of Body Functions, Body Structures, Activity and Participation limitations, contextual factors such as personal and environmental factors (WHO, 2001).

1.7 Abbreviations used in the thesis

ADL	Activities of daily living
ASIA	American Spinal Injury Association
CI	Confidence interval
CIM	Community Integration Measure
CHART	Craig Handicap Assessment and Reporting Technique
ICF	International Classification of Functioning Disability and Health
MVA	Motor Vehicle Accident
NTSCI	Non- traumatic Spinal Cord Injury
PTSD	Post Traumatic Stress Disorder
QASA	Quadpara Association of South Africa
QoL	Quality of Life
SCI	Spinal Cord Injury
SPRS-2	Sydney Psychosocial Reintegration Scale- 2
SPSS	Statistical Package for Social Sciences
TBI	Traumatic Brain Injury
TSCI	Traumatic Spinal Cord Injury
UTI	Urinary Tract Infection
WHO	World Health Organization

1.8 Outline of the Chapters

Chapter 1 provided a background to the study. The chapter provides background information with regards to the impact of sustaining a spinal cord injury on an individual. The impact of a traumatic spinal cord injury on community reintegration is also outlined. In addition, the problem statement, aim and objectives of the study are stated. The chapter ends of by providing an outline of the thesis.

Chapter 2 presents a comprehensive review of the literature. Literature regarding the factors influencing reintegration into communities once a spinal cord injury is sustained, is reviewed. The theoretical framework used in the study, i.e. the International Classification of Disability is outlined.

Chapter 3 consisted of the methods used to meet the objectives of the study. This chapter outlines issues such as the research setting, the design of the study, the methods used to collect data and the analysis of the data. In addition the ethics pertaining to the study is outlined.

Chapter 4 presents the results of the statistical analysis of the quantitative data. The results are complimented with tables and figures.

Chapter 5 outlines the results of the qualitative data analysis. The emerging themes are illustrated with verbatim quotes.

Chapter 6 provides an overall discussion of the results of both quantitative and qualitative data. The results found in this study is compared to the salient literature.

Chapter 7 summarises the thesis and provide conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter an overview of the literature with regards to the prevalence and incidence of spinal cord injuries. In addition literature regarding community reintegration and the factors influencing it, is reviewed. The chapter ends with the conceptual framework used for the study, i.e. the International Classification of Functioning Disability and Health (ICF)

2.2 Overview of SCI

Spinal cord injury (SCI) can be described as causing 'irreversible neurological impairment of the motor, sensory and/or autonomic nervous systems' (Santos et al., 2013). It results in the most psychologically distressing and physically impairing conditions known to mankind (Kwon, 2004). According to Kwon et al. (2004) spinal cord injuries can occur due to a variety of forces that are great enough to result in the failure of the osteoligamentous spinal column. These forces can be axial load, distraction, flexion, extension and rotation. In the most severe cases the result will be permanent and complete damage to the spinal cord. WHO (2013) identified the medically accepted groups of SCI as being traumatic spinal cord injuries (TSCI) and non-traumatic spinal cord injuries (NTSCI). Traumatic spinal cord injuries as the name implies occurs as a result of trauma e.g. a fall, road traffic injuries and violence (WHO, 2013; Nwadinigwe, Iloabuchi, Nwabude, 2003). Non traumatic occurs due to an underlying medical condition e.g. spina bifida, tumour and infectious diseases (WHO, 2013; Nwadinigwe, Iloabuchi, & Nwabude, 2003). Furthermore, the international standards according to the American Spinal Injury Association (ASIA) states that the SCI can be categorized as being either incomplete or complete (Grossman, Frankowski, Burau, & Toups, 2012). Whether a SCI has been diagnosed as being complete or

incomplete neither diagnosis is less serious and can still result in severe impairments. A SCI is diagnosed as complete if there is no sensory and motor function at S4–S5. Incomplete SCI result in some sensory and or motor function that is preserved below the level of injury this includes the lowest sacral segments S4-S5 (WHO, 2013).

The type or extent of the injury or non-traumatic cause will determine the symptoms of the spinal cord lesion, but they can consist of loss of motor control or sensory function of the upper limbs, trunk and lower limbs. This may also include the loss of autonomic regulation of the body. This impacts heart rate, breathing, blood pressure, bowel and bladder control, temperature control and sexual function. Usually the higher the level of the spinal cord the lesion the more severe the range of impairments will be (WHO, 2013). Within the literature NTSCI are reported to have relatively few publications in comparison to TSCI (New, Cripps & Bonne Lee, 2014). In the reported cases involving NTSCI paraplegia presented more often than tetraplegia in developed and developing countries. Developed countries tended to have a higher proportion of cases with degenerative conditions and tumors causing NTSCI. However, in developing countries there was a higher proportion of infections, notably tuberculosis and HIV, although tumors were also reported as major cause sharing a similarity with developed countries (New, Cripps & Bonne Lee, 2014). This result of tuberculosis and HIV being one of the highest causes of NTSCI is not surprising as HIV/AIDs, armed conflict and other forms of violence, road traffic accidents and tuberculosis presents as a significant risk to premature death with in the 15-40 age group in Sub Saharan Africa (Rao, Lopez, & Hemed, 2006).

SCI has an enormous effect on an individuals' life, some of the changes that can occur are paralysis, loss of bladder and bowl functioning secondary complications also occur such as UTI,

pressure sores, pain (Kennedy, Lude, & Taylor, 2006; Forchheimer & Tate, 2004; Weaver et al, 2001). TSCI individuals will also need to adjust to a different lifestyle physically and emotionally (Charlifue & Gerhart, 2004). These secondary complications can intensify the experience of being disabled resulting from a SCI by negatively affecting independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005). Individuals who have sustained a SCI also show a pattern referred to as ‘premature aging’ this is due to the earlier onset of health conditions usually associated with age. These conditions can include cardiovascular disease and diabetes. They can also present with an increase in frequency or severity of a number of health conditions (Hitzig, Eng, Miller, Sakakibara, 2011). Secondary Complications have been found to be combated by care giver support. This support provides emotional and physical support which directly leads to increased self-management and a reduction in secondary complications and can act as a contributor that leads directly to increased self-management by SCI individuals (Munce et al. 2014). These secondary complications can be prevented and treated but despite this it still remains a significant burden at an individual level and for a health care system as it can be expensive in terms of limited health-care resources (Munce, Wodchis, Guilcher, Couris et al. 2013). Unfortunately, despite the preventable and manageable nature of these secondary conditions the leading causes of death in developing countries for individuals with TSCI is as a result of these secondary complications (WHO, 2011)

2.3 Epidemiology of spinal cord injuries

Knowledge regarding the epidemiology of spinal cord injuries are essential for focussing on prevention campaigns worldwide. The epidemiology of spinal cord injuries have been studied extensively in the last few decades. The following section will provide a review of the literature

pertaining to the epidemiology of spinal cord injuries and focus particularly on the incidence/prevalence and the causes thereof.

2.3.1 Prevalence/ incidence

Over the past 40 years the epidemiology of TSCI has been studied extensively yet reliable data is still unavailable for much of the world, although more reliable data is needed the research available suggests that South Africa, Brazil, Bulgaria, China and Iran have the highest reported incidence (Hagen, 2013). The information is corroborated by the WHO states that there is no reliable data for the prevalence of SCI (WHO, 2013). The estimates stand at 40 to 80 incidents per million of a population (WHO, 2013). Worldwide occurrence of SCI is around 250 000 to 500 000 annually (WHO, 2013). The WHO stated that up to 90% of the occurrences are related to traumatic incidences (WHO, 2013). In developed countries such as the Netherlands they reported the incidence of TSCI as being 14.0 per million per annum and TSCI surviving the acute phase was 11.7 per million per annum (Nijendijk, Post, van Asbeck, 2014). The incidence rate for the Netherlands was lower than that of Western Europe which was 16 per million per annum (Lee, Cripps, Fitzharris, Wing, 2014). Other Countries in Western Europe such as Spain reported an incidence rate of 12.1 per million population which only included survivors and 26.3 per million population in Norway this figure is quiet high in comparison as it consists of all reported cases including those that died due to their injuries (van den Berg, Castellote, Mahillo-Fernandez, de Pedro- Cuesta, 2011; Hagen et al. 2010). The researchers who collected the data for the Netherlands noted that the figures are estimations as they were limited by some hospitals refusing to participate and discharge letters not containing sufficient information (Nijendijk, Post, van Asbeck, 2014). In the United States of America incidence was reported as 25 to 59 new cases per million population. However, this data is over a decade old and according to DeVivo

(2012) no new data exists. The 2006/ 2007 age-adjusted incidence of TSCI was 33.6 per million for Thessaloniki and 19.6 per million for Stockholm. This incidence rate was calculated for individuals older than 15 years of age who survived for at least 7 days post-trauma (Divanoglou & Levi, 2009). A more recent study conducted in Stockholm, Sweden over the period of 1 May 2014 and ended on 31 October 2015 reported the incidence rate at 19.0 (95% CI: 14.0–25.1) this shows that the incidence rate in Stockholm, Sweden has remained stable over the past decade. The researches went further to state that this relatively stable incidence rate over time is also in line with other Western European countries (Joseph et al. 2017). Fitzharris, Cripps & Lee (2014) utilizing fractional polynomials to estimate and better explain the observed TSCI incidence in each of the 31 studies focusing on incidence rate conducted from 1990 onwards with two exceptions made for articles from Sub Saharan Africa from 1988. They utilized this method to predict the estimated incidence rate of TSCI this can be made for each country using reported population. In total, population data was known for 178 countries with 2007 population data being used. This formula had 95% confidence intervals ranging from lower to upper confidence levels. In their results they reported the incidence levels of Americas as 23 (95% CI: 13–32); Europe 25 (95% CI: 12–32); Western Pacific 27 (95% CI: 13–36); Eastern Mediterranean 24 (95% CI: 16–35); Southeast Asia 27 (95% CI: 25–29); Africa 20 (95% CI: 13–26) and globally at 23 (95% CI: 13–30) per million persons in 2007. These incidence rates are reported for a mixture of developing and developed countries in the above mentioned areas. The researchers noted that their formula for calculating the estimated incidence is only as robust as the studies upon which it is based. A likely explanation for the limitation is that the model used known incidence and population data from only 31 studies that were set in only 17 countries, and only 10 representing national estimates. None of the studies were set in small island populations. The continent of origin of the present study is Africa and the rates incidence rates for Africa was calculated

utilizing fractional polynomials to be 20 (95% CI: 13–26) per million in 2007 (Fitzharris, Cripps, Lee, 2014). As the researches stated the accuracy of the estimation is based on the quality of the original articles. This is interesting as a thorough literature search conducted by Draulans, Kiekens, Roels & Peers (2011) resulted in that no trustworthy data that was found concerning the prevalence and incidence of spinal cord lesions in Sub Saharan Africa. A recent review focusing only on developing countries estimated the incidence rate as 2.1–130.7 per million (Rahimi-Movaghar et al. 2013). More recently, in Sub Saharan African developing counties such as Botswana reported an incidence of 13 per million population was reported (Löfvenmark et al. 2015) and research conducted by Joseph et al. (2015) in City of Cape Town region which is situated in the Western Province of South Africa the area to which the present study is focusing on, stated annual incidence was 71.3 per million (95% CI: 53.9–94.3) in 2014. This incidence rate was reported to be one of the highest rates globally (Joseph et al. 2015). This incidence rate was an estimation and limited due to inclusion of only those 18 years and above and those individuals utilizing the government-funded healthcare system which consists of 75% of the population. The data collection was done via TSCI individuals who were hospitalized within the catchment area. Their inclusion criteria also included survival for at least 7 days post trauma. Therefore this incidence rate is an estimate only for TSCI individuals utilizing the government funded health care system and who were over 18 within the catchment area and not the total TSCI cases for the area. Adding to this Draulans, Kiekens, Roels & Peers (2011) stated that the studies of prevalence and incidence of spinal cord lesions in Sub Saharan Africa always took place in the context of a hospital and none of them provided a survey of all admissions over the entire country. They stated correct data can only be obtained when the admission information of the entire country are available and at the same time, the numbers of individuals who never reached the hospital, can be estimated. However, Joseph et al. (2015) research still provided

valuable insight as it is a pioneering study in the City of Cape Town which was prospective, population-based design. If one looks at the varying rates of the incidences of TSCI it can be explained as that there seems to be no set standard for assessing incidence and methodological inconsistency is a major factor to the varying rates observed.

2.3.2 Aetiology

According to the WHO most of the SCI occur due to preventable mechanisms such as falls, motor vehicle accidents (MVA) or violence (WHO, 2013). Within developed Countries the leading causes of TSCI in the United States are due to motor vehicle crashes followed by falls. TSCI related to violence peaked in the United States around the 1990s and have subsequently decreased since then. TSCI due to falls are on the increase and it is the leading cause of injury with the population group aged above 45 year (Devivo & Chen, 2011). In the Netherland the leading causes of traumatic spinal injuries was due to falls. Falls accounted for 53% of the TSCI occurring in 2010; followed by road traffic accidents (21.6%); sports related injuries (14.1%) and violence accounted for only 1.6% of the causes of injury (Nijendijk, Post, Asbeck, 2014). In Switzerland they conducted a study utilizing SCI individuals living within the community and of the total participants the top three causes of SCI was also due to falls, accounting for 21%; sports injuries accounted for 19.6% and traffic accident accounted for 18.6%. Of their study sample 13.7% of the sample had NTSCI (Geyh et al. 2012). Within the greater Thessaloniki region consisting of Central and Western Macedonia, Greece and the greater Stockholm region consisting of Stockholm County and Gotland County, Sweden an incidence study for TSCI was conducted for the 2006/2007 period of the sample. In Thessaloniki there were 81 consenting cases and 47 in Stockholm. The majority of the causes for the TSCI occurring in Thessaloniki was due to transportation (51%) then in descending order falls (37%); work related (20%);

iatrogenic and sport related (4%); assault and other (2%). Within Stockholm the primary cause was due to falls (47%) then in descending order transportation (23%); sport related injuries (17%); work related (11%); other (6%); iatrogenic (4%) and finally assault (2%) (Divanoglou & Levi, 2009). A more recent incidence study conducted in Stockholm, Sweden reported the causes of TSCI and according to the new data ranking of most to the least occurring causes remained stable. However, they reported an increase in the prevalence of falls and transportation and a decrease in the rest of the causes: falls (58%); Transport (40%); sport (2%); assault and other (0%) (Joseph et al. 2017). In Australia and New Zealand causes for TSCI were very similar the majority of the TSCI occurred due to land transport 52% and 54% respectively followed by falls 29% and 24% respectively sport related injuries 8% and 11% respectively and no violent causes were reported for Australia but it accounted for 2% in New Zealand (Lee, Cripps, Fitzharris, Wing, 2014). Japan had almost equal percentages for land transport (44%) and falls (42%) as the main reasons for TSCI. Within developing countries such as Sub-Saharan Africa it was reported to have the highest proportion of violence-related SCI in the world (38% of all cases of SCI) the use of firearms is one of the most common causes TSCI and other sharp objects that were used resulting in TSCI (WHO, 2013). In Saudi Arabia and Qatar debatably semi developed countries have the highest reported proportional rates of TSCI caused by land transport accidents in the world 85% and 72%, respectively. Within Brazil 39% of TSCI were due to falls and 31% due to land transport and 16% due to violence and 14% due to sport related activities. China and Pakistan had similar outcomes for causes for TSCI with falls accounting for 50% and 63% respectively. Followed by land transport 22% and 24% and violence 1% and 7% respectively (Lee, Cripps, Fitzharris, Wing, 2014). In a South African study conducted in Cape Town focusing on the incidence and aetiology of TSCI of the sample the main cause of injury was assault (59.3%), then transportation (26.3%) and falls (11.7%) one sport-related injury, two

work-related and one due to self-harm (Joseph et al. 2015). Within the assault category gunshots accounted for 52%, 33% due to stab wounds and 15% resulted from interpersonal violence involving blunt trauma. TSCI caused by assault was significantly higher ($p=0.03$) in males (63%) than in females (38%). Assault together with falls were the leading causes of TSCI in females (Joseph et al., 2015). Assault accounted for the greatest cause of TSCI in the age categories 18–30 and 31–45, whereas both transportation and falls was the main causes in the 46–60 and ≥ 61 age groups (Joseph et al., 2015).

There appears to be a trend within developed countries where falls and land transport accidents resulting in TSCI is the leading cause of TSCI. TSCI as a result of violence appears to be consistently low throughout developed countries. TSCI resulting from land transport is stable or decreasing in developed countries. This is in contrast to developing countries where it appears to be increasing (Lee, Cripps, Fitzharris, Wing, 2014). Violence also has higher rates within developing countries. Although, higher rates of violent related causes have also been reported for North and South America, Middle East and Southern Africa and the high rates of gunshot injuries are present in the Brazil and USA and South Africa reportedly the world's highest proportion (Lee, Cripps, Fitzharris, Wing, 2014; Hart & William, 1994). In more recent research interpersonal violence in Cape Town was still the highest cause of TSCI and gunshot wounds accounted for more than half of the types of interpersonal violence (Joseph et al. 2015). In comparison to other Sub-Saharan African countries the high rates of stab wounds and gunshot wounds appear to be a unique South African issue (Joseph et al. 2015; Draulans, Kiekens, Roels, Peers, 2011). Other developed countries such as Greenland in Western Europe also reported a high rate of violence such as self-harm resulting in TSCI. With a high prevalence of attempted suicide and this was also noted in Scandinavian Countries. The potential explanation for a stable or decrease in road traffic causes for TSCI in developed countries could be due to better roads,

mandatory driving training and licensing, safer cars and transit- rail transportation alternatives. Developing countries would have poorer infrastructure in comparison, lack of resources and budget could also lead to less enforcement and regulation and a poor safety culture. Higher rates of falls in developed countries could be due to the older population and the higher rates of falls in the elderly due to balance issues (Lee, Cripps, Fitzharris, Wing, 2014).

2.3.3 Demographic Information

According to the WHO men are 2:1 times more likely to sustain a SCI and in some cases this ratio has been shown to be much larger (WHO, 2013). Woman are more likely to sustain a SCI in the age bracket 15-19 and the again at the age of 60+. Whereas men are more likely to sustain a SCI around 20-29 and then again at ages 70+ (WHO, 2013). In developed countries such as the United States of America the in 2005- 2008 the age at injury for SCI was 37.1 years. According to the research it is predicting that the age of injury is increasing over time and will continue to increase in the United States. In the United States and Norway males had higher rates of SCI with regards to the male to female ratio. However, over time the rate of female SCI is rising and will continue to do so. This and the increasing age of SCI have the common explanation that the main cause for TSCI remains falls and within the elderly falls are more likely reason for TSCI to occur and the rate between males and females are more even (Devivo, 2012). In the Netherlands the male to female ratio is 2.9:1 (Nijendijk, Post, Asbeck, 2014). This relatively even ratio could be due to average age of the sample being 62 years old with the main cause of injury being falls this is in alignment to research conducted by Devivo (2012). In the United States incomplete injuries rose from 46.4% to 51.3% from the 1970s to 2000 (Devivo, 2010). Similar findings of an increase in incomplete lesions was also noted in Australia and Finland. As indicated previously, Australian projections reported an increase in incomplete tetraplegia. The percentage of complete

injuries is also on the decline in Finland (Ahoniemi et al. 2008; O' Connor, 2005). In the Netherlands the percentage of incomplete lesion was 62% of the study sample (Nijendijk, Post, Asbeck, 2014). This is also in line with other research from other developed countries.

Within Sub Saharan Africa the male–female ratio is much higher than in non-traumatic causes. The rates of males remain higher to females in both forms of SCI. The average age group with the highest proportion of TSCI was 28- 38 age group. Paraplegia presented more than tetraplegia 65.4 and 34.6% and complete lesion presented more than incomplete 69.8% and 30.2 % respectively. (Draulans, Kiekens, Roels, Peers, 2011). Research conducted in Cape Town, South Africa revealed that the male to female ratio was 5.9:1 and the gender-specific incidence rates were 130.3 (95% CI: 109.2–155.3) and 21.2 (95%CI: 13.8–32.4) With age at time of injury the mean age at the time of spinal injury occurred at 33.5 years \pm 13.8 and the 18-30 age category accounted for the majority of their sample (78 individuals; 54%) C1–8 was most common levels of injury accounting for 53.1% of their sample followed by thoracic area 38.6% and lastly lumbar and sacral accounting for 8.3%. Within the sample 39.3% of participants were motor-sensory complete. Although, within the cervical thoracic and lumbar regions the only region to present with a higher level of complete injuries occurred in the thoracic region (Joseph et al., 2015). When comparing research previously done for Sub Saharan Africa and more specific and recent research conducted in Cape Town the target area of the present study the age category with the highest proportion of TSCI and the higher male to female research is in line with previous research. The higher rates of incomplete to complete is in contrast to the prior research. A possible explanation for this is that this research is more recent and medical practices have advanced leading to improved management and outcomes of TSCI (Devivo, 2012)

The older and aging in the age at injury with SCI is increasing in the United States and in other developing countries this is in contrast to the relatively younger age of injury for developing countries. This could be due to the lower rates of violence that frequently occur among the younger age groups there are also other factors such as the average age of the population of the country and the cause specific incidence rates could also have an impact. Such as falls being more prevalent in the older population and more prominent in developed countries (Devivo, 2012).

2.3.4 Mortality

According to the WHO (2013) the mortality after sustaining a SCI is highly dependent on the quality and time taken to receive medical care and the method of transport used to get the individual to be hospitalized. The mortality rate is also greatly increased given the severity and level of SCI. In a recent review conducted by Muller, Peter, Cieza, Geyh (2012) It was shown that increased social support combating rates of mortality the risk was shown to have decreased by 14% with every unit increase in reciprocal social support.

None the less mortality rates remain the highest within the first year after injury and remain higher than the general population by more than 2-5 times. As TSCI individuals age this increases the likelihood of hospitalization and increased mortality (Devivo, 2012). Individuals who have sustained a SCI also show a pattern referred to as 'premature aging' this is due to the earlier onset of health conditions usually associated with age. These conditions can include cardiovascular disease and diabetes. They can also present with an increase in frequency or severity of a number of health conditions (Hitzig, Eng, Miller, Sakakibara, 2011). Secondary complications remain the leading cause of death among SCI individuals in lower income countries which differs to that of higher income countries (WHO, 2013). Within the United

States of America mortality rates at younger ages are generally low, but as individuals age it increases rapidly especially for those older than 60 years with more severe injuries. This trend has been reported for other developed countries (Devivo, 2012; Lidal et al. 2007; Frankel, 1998). The most frequent reported causes of death might assist in understanding the lack of progress in the life expectancy post SCI. Medically considerable progress has been made in combatting chronic conditions such as cancer, heart disease and cerebrovascular disease, these are reported to be the leading causes of death in the general United States population. It was reported that the majority of deaths post SCI are caused by acute events some examples include: respiratory failure, pneumonia, pulmonary embolus, septicemia and other infective diseases and external causes including unintentional injuries, suicide and homicide (DeVivo, 2012). Over a period of 10 years the mortality rates of United States was 16.2%; Canada reported 10.7% and Australia reported 14.3% (Krause, Zhai, Saunders, Carter, 2009; O'Connor, P. J. 2005; Hu, Mustard, Burns, 1996).

Within the first year post SCI developing countries have the highest mortality rates with particular reference to Sub Saharan African countries (Lee, Cripps, Fitzharris, Wing, 2014; Nwadinigwe, Iloabuchi, Nwabude, 2003). In Sub Saharan Africa, Nigeria reported mortality rates at 17.5-26% during hospitalization; 7.5% for Zimbabwe and Sierra Leone reported 29%. In Botswana the mortality rate was 20% prior to being to a SCI rehabilitation centre the mean survival rate of these individuals was 28 days (Löfvenmark et al. 2015; Gosselin, Coppotelli, 2005; Igun, Obekpa, Ugwu, Nwadiaro, 1999; Levy et al. 1988). The higher rates of mortality for developing countries in the acute TSCI setting could be due to limited access to healthcare especially to intensive care units or specialized spinal cord intensive care units (Löfvenmark et al. 2015).

2.4 Community Reintegration following spinal cord injuries

Sustaining a spinal cord injury (SCI) is devastating and is associated with permanent disability and decreased life expectancy (Rahimi-Movaghar et al., 2013). Post TSCI affects result in extreme life changes as they will need to re-identify ones sense of self, adapt to all the enormous, changes that can include the loss of bladder and bowel function, motor and sensory function. This can include basic skills such as feeding, dressing and leaning to be mobile around ones house and community. Throughout all these changes the main goal identified by researchers post SCI is to achieve community reintegration (Charlifue & Gerhart, 2004; Forchheimer & Tate, 2004). Successful community integration can be defined as ‘being part of the mainstream of family and community life, fulfilling normal roles and responsibilities and being an active and contributing member of one’s social groups and society as a whole’ (Dijkers, 1998).

2.4.1 Factors influencing community reintegration

According to Krause (2009) four major problems arose with SCI individuals living in the community:

- 1) Psychological problems e.g. stress, loneliness and depression

Psychological issues such as anxiety and depression were seen to be associated with higher levels of pain (Norrbrink Budh, Hultling, Lundeberg, 2005). Depression in SCI was seen to be associated with increased hospitalization, medical expenses and secondary complications (Craig et al. 2009). Secondary complications include but is not limited to pain and according to this research it shows a connection between psychological problems and health problems. These are two of the major problems associated with SCI individuals’ community living. This is supporting the use of the ICF framework in guiding the understanding of community reintegration as a gap in any area of the ICF can result in reduced participation (Rauch et al.

2011). In this case it would involve the personal factors and impairments effecting participation.

2) Health problems e.g. pain;

Health problems will include all secondary complications. This would also include pain and as mentioned above impairments and personal factors are linked with participation factors.

Increased pain was associated with decreased community integration (Donnelly & Eng, 2005). The Secondary complications related to SCI can intensify the experience of being disabled resulting from a SCI by negatively affecting independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005).

3) Environmental problems e.g. accessibility

Environmental problems can include mobility and equipment such as the wheelchairs, transport and home assistance (Silver et al., 2012). Wheel chairs were reported to pose as the biggest perceived barrier to participation (Chaves et al. 2004). Other environmental issues such as transport was also associated with decreased community reintegration (Wehman 2000).

4) Dependency and control issues.

Dependency is likely to increase as SCI individuals' age, as aging has been associated with an increased likelihood of hospitalization and being discharged into a nursing home. Family support and satisfaction was also found to improve social integration (Erosa et al., 2014).

The above will be discussed in further detail below utilizing the ICF framework.

2.5 Conceptual framework of the study: international classification of disease disability and function (ICF) impact on SCI rehabilitation

The ICF can assist in providing a universally accepted and comprehensive framework to describe and classify disability, functioning and health in people with all kinds of conditions and diseases, including SCI (Post et al. 2010). In the present study the ICF will be utilized as it provides medical professionals with a tool that is internationally accepted and allows for in-depth classification and description of disability, functioning and health (WHO, 2001). The ICF can provide a starting point to assist in defining the problems associated with functioning and disability within a SCI population (Cieza et al., 2010). According to the ICF, problems associated with disability can involve Participation in life situations, Activities, Body Functions and Body Structures. Contextual factors are also included as environmental and personal factors (WHO, 2001). In the ICF all these items are interconnected and influence each other (WHO, 2001). This is important as the definition of community reintegration includes the idea of participation (Dijkers, 1999), with the main goal of SCI rehabilitation been to ensure community reintegration (Cieza et al., 2010; Charlifue & Gerhart, 2004).

The ICF is an effective tool to assist health professionals to identify problem areas and assist in identifying various combinations of factors such as personal factors and environmental factors that increase or decrease participation in physical. The three dimensions that influence the health of individuals with disabilities with or without chronic conditions include: activities at the person level; body functions and structures at the organ level and participation at the person-in-society level. Each of these areas are influenced by environmental factors such as accessibility issues and personal factors motivation. This all jointly affects the individuals experience post SCI. A gap in any area of the ICF can result in reduced participation (Rauch et al. 2011). As mentioned before community reintegration includes the concept of participation. Therefore, the ICF

framework will be utilized below to allow for categorising and explanation of factors influencing community reintegration in TSCI.

2.5.1 Participation factors influencing community reintegration

Employment is considered to be among one of the most important participation activity for adults, it is also considered one of the key indicators of social reintegration (Lidal et al., 2007). Employment is also essential for long-term participation within a community (Kirchberger et al., 2010). Miller (2009) indicated that hours of paid labour were positively associated with interacting with others and completing tasks. Successful adjustment post SCI according to a large amount of evidence was linked to social interaction and employment (Kennedy et al., 2010). Employment has been linked with improved life satisfaction, improved sense of well-being, improved self-esteem and decreased depression (Hess, Meade, Forchheimer, Tate, 2004). In a review conducted by Lidal et al. (2007) the main barrier to employment was transportation other barriers included in this review where secondary complications, discrimination and or negative attitudes of employer and society, environmental barriers and lack of work experience, education and or training. Employment was also found to be positively correlated to improved community reintegration. Other factors such as involvement in sport was shown to be beneficial for males and females in attaining higher levels of reintegration in comparison to those who were inactive (Anneken et al., 2010). With regards leisure activities, mobility and productivity there was an increased likelihood of SCI individuals of obtaining this with higher levels of social support, more support from peers and reciprocal relationships (Muller, Peter, Cieza, Geyh, 2012). Geyh et al. (2012) conducted a multi-centre cross sectional study consisting of 102 SCI individuals living in the community in their results they reported that the level of participation was stronger correlate with self-esteem ($r= 0.61$) and self-efficacy ($r= 0.54$) in comparison to pain, health

conditions, social support and coping styles. Participation also seemed to not be influenced by age, gender, completeness or level of injury. Donnelly & Eng (2005) showed in their results that pain has an impact on community reintegration. These secondary complications such as pain and other conditions can intensify the experience of being disabled resulting from a SCI by negatively affecting independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005). This is important as the definition of community reintegration includes the idea of participation (Dijkers, 1999).

2.5.2 Body Functions and structure (Impairments) influencing community reintegration

One of the leading causes of death in developing countries for individuals with TSCI is as a result of secondary complications (WHO, 2011). Secondary complications can be defined as ‘physical or psychological health conditions that are influenced directly or indirectly by the presence of a disability or underlying physical impairment’ (Groah et al., 2012). The prevalence of complications such as autonomic dysreflexia, pressure ulcers, heterotopic ossification, obesity, bladder- and bowel disorders, upper-extremity pain, spasticity, cardiovascular and respiratory problems and assistance with activities of daily living increases as years of injury increases (Liem, 2004). High levels of pain were shown to be related to high levels of depression, anxiety and poor quality sleep (Norrbrink Budh, Hultling, Lundeberg, 2005). According to Ravenscroft, Ahmend, Burnside (2000) pain was found to be more difficult to manage more so than loss of sensory and motor function. Donnelly & Eng (2005) showed in their results that pain has an impact on community reintegration initially and same can be said for 6 months of community living, 86% of the patients complained of living with pain 6 months after reintegration. Pain and weakness was also shown to increase in the first year of community living (Silver, Ljungberg, Libin, & Groah, 2012). Craig et al., 2013 conducted a study researching the association of

chronic pain of the 70 adults 92.8% complained of chronic pain of which 51.4% of the participants complained of the pain been distressing. Participants with chronic pain are 9 times more likely to suffer from chronic fatigue (Craig et al., 2013). These secondary complications can intensify the experience of being disabled resulting from a SCI by negatively affecting independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005). However, secondary complications have been found to be combated by care giver support. This support provides emotional and physical support which directly leads to increased self-management and a reduction in secondary complications and can act as a contributor that leads directly to increased self-management by SCI individuals (Munce et al. 2014). Higher levels of self-efficacy also proved to combat the negative effects of depression, pain and chronic fatigue on community reintegration and improving self-efficacy should be viewed as a vital prognostic variable for the outcome of rehabilitation (Craig et al., 2013). When looking at paraplegia and tetraplegia. People with paraplegia were found to be slightly more effective problem solvers and communicators than individuals with tetraplegia it was also found that acting assertively decreased according to the higher level of the SCI. Although, level of injury was found to not impact participation factors (Muller, Peter, Cieza, Geyh, 2012). Furthermore, literature states that the level or severity of injury does not indicate whether a patient with a TSCI will adjust well but rather their coping strategies influence their adjustment (Zinman et al., 2014).

2.5.3 Activity Factors influencing community reintegration

Patients with good to average wheel chair mobility was found to have higher social quality of life, they were found to be more involved in sport and have higher rates of employment (Anneken et al., 2010). According to Krause, Reed & McArdle (2010) ambulatory status is correlated with better health. Increased functional ability was linked to improved community

reintegration by improved activity in social interests and mobility even in the long term (Erosa, Berry, Elliott, Underhill, & Fine, 2014). This relationships results in improved life satisfaction and overall quality of life (Erosa et al., 2014). Activity factors including that of dressing, transferring and other activities might require the assistance of care givers depending on the independence or level of functioning of the SCI individual. Qualitative research reported that of their sample a theme that emerged was the significant role of caregivers in providing physical support. Some examples of this support included bathing, dressing, housework, meal preparation and activities of daily living as well as assistance with the monitoring, prevention and/or management of Secondary complications (Munce et al. 2014). By assistance of care givers with activity related activities such as prevention of secondary complications and mobility issues to name a few will in turn will assist in improving community integration by improving independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005). By assistance with overcoming environmental barriers such as transport will also assist in improving community reintegration (Lysack et al. 2015). Not only the support but satisfaction with the social support was associated with functional independence (Muller, Peter, Cieza, Geyh, 2012). In addition, social support was also found to have the largest impact on community reintegration (Suttiwong, Vongsirinavarat, Chaiyawat, & Vachalathiti, 2015)

2.5.4 Environmental Factors influencing community reintegration

The environmental barriers for SCI individuals returning to the community can be listed as including but not exclusively consisting of mobility and equipment; activities of daily living (ADLs); need for knowledge; health insurance; environmental and home assistance; transport (Silver et al., 2012). With regards to mobility and equipment Chaves et al. (2004) stated that wheelchairs were perceived to be the most frequently mention barrier to participation.

Although, included in this section is also complications that can arise from immobility wheel chair maintenance and mobility issues such as transfers (Silver et al., 2012). Wehman (2000) made note of environmental barriers such transport negatively effecting community reintegration. Lysack et al., (2015) conducted a study consisting of 136 North American SCI participants of these participants they rated their top 5 environmental barriers in order from the greatest impact as being the natural environment, government policies, transportation, availability of health care services, and attitudes at home. The less problematic environmental barriers where business policies, prejudice, getting help at work/school, and negative attitudes at work/school. The results that the built environment, natural environment and transportation caused major difficulties for SCI individuals are closely mirrored other literature findings. Lower economic statuses also lead to greater environmental barriers (Lysack et al., 2015). The results of the effects of environmental barriers on community participation remained low although the authors stated that the measurement tools are not sufficient to have competently assessed this multi-faceted relationship between environmental barriers and community reintegration and the tools never intended to be used to explore the participants' experience of community integration. Kronenberg & Pollard (2005) highlighted that resolving environmental barriers and community reintegration issues require social and health policies to allow for long term solutions.

2.5.5 Personal Factors influencing community reintegration

According to Charlifue & Gerhart (2004) community reintegration is dependent on the SCI individuals willingness to be involved the community and also the communities willingness to accept the SCI individual. In a British sample Charlifue & Gerhart (2004) found that community reintegration declined with age although this was considered to be normal depending on whether the patient reported satisfaction with their levels of community reintegration and reported

satisfaction in life. This finding however is contradicted in research conducted in Thailand where having being injured at a younger age and been older resulted in greater community reintegration. Social support was also found to have the largest impact on community reintegration (Suttiwong, Vongsirinavarat, Chaiyawat, & Vachalathiti, 2015). As TSCI individuals age this increases the likelihood of hospitalization, increased mortality, increased probability of being discharged into a nursing home and overall decreased functional outcomes (Devivo, 2012).

According to Craig, Tran, & Middleton (2009) a minority of SCI individuals will experience depressive psychological problems. With Post & van Leeuwen (2012) reporting 20-30% of SCI Individuals showed signs of clinically significant depression, it was shown that depression increases secondary complications, hospitalization and increased medical expenses (Craig et al., 2009; Nwadinigwe, Iloabuchi, Nwabude, 2003). In a Systematic review conducted by Craig, Tran & Middleton (2009) they calculated the mean value of significant depressive symptoms in 10 studies and found that it affect 25-30% of the SCI Individuals living in the community. Craig, Tran, Lovas & Middleton (2008) found that of a sample of 33 most of the patients living in their communities for 6 years SCI Individuals had 7 times more chance of developing psychological morbidity than controls and 18.2% of SCI Individuals had levels of negative mood states comparative to psychiatric disorder or severe psychopathology compared with 3% in the able-bodied controls. Anxiety disorder on average can developed in 13-40% of SCI Individuals (Chung, Preveza, Papandreou, Prevezas, 2006). Kennedy & Evans (2001) found that post-traumatic stress disorder (PTSD) effect woman more than men and found that 44% of 62 SCI Individuals met the criteria for PTSD. Craig et al. (2013) and Stanford et al. (2007) discovered that pre-morbid psychological or psychiatric disorders are likely to impact negatively on community reintegration. Although, self -efficacy and self-esteem has been repeatedly mentioned

in literature as being a buffer allowing for improved coping mechanisms, improved mental health and decreased secondary complications post SCI. Other personal factors such as social support are also of importance to successful community reintegration. Mortality rates, mental and physical health have been to be related to the rate of social support. (Geyh et al. 2012). Social support provides physical and emotional support which has a direct impact on improving self-management in SCI individuals (Munce et al. 2014). In addition, a review conducted by Muller, Peter, Cieza, Geyh (2012) social support showed correlations to decreased morbidity, improved health decreased incidences of disability related and health problems. Including secondary conditions. Three articles included in this reviews reported the relationship between hospital admissions, length of hospital stay and doctors' visits as being inconsistent. In all 10 cross sectional studies included in the review the evidence of the relation between social support and functioning is consistent. With regards to social support and functioning and integration individuals who have more social support, more support from peers and reciprocal relationships had an increased likelihood of being productive, mobile and interested in leisure activities. SCI individuals' functional independence was associated with their satisfaction with social support received. Social and emotional support was linked to better psychological and social functioning. The important social support source was often mention as the SCI individuals family. Other personal factors such as self-esteem and self-efficacy was researched by Geyh et al. (2012) as potential predictors to participation with a Swiss study sample. The study consisted of 102 SCI participants living in the community between 6 months to 5 years. They utilized a bivariate Pearsons correlation coefficient and found that self-efficacy ($r= 0.54$) and self-esteem ($r= 0.61$) where highly correlated to participation factors within their sample and overall the strongest correlation to participation. Self-esteem and self-efficacy were even shown to be stronger

correlates of participation than the symptoms of pain, depressive symptoms, health conditions, anxiety symptoms, coping styles, social support or sense of coherence.

Other personal factors such as family satisfaction was found to facilitate improved social integration (Erosa et al., 2014). Having a higher level of education was also consistently associated with improved outcomes after sustaining a SCI, in particular with regards to occupational areas (Krause et al., 2010).

2.6 Summary

The above chapter has highlighted the research available with regards to traumatic spinal cord injury and community reintegration. It has provided an explanation of SCI and problems associated with the injury. The ICF was utilized to provide a structure to explain how TSCI Individuals are affected by their injury by activity limitations participation restrictions impairments environmental and emotional factors. This was all used to demonstrate the multi-faceted influences on community reintegration after TSCI. Researchers have stated that community reintegration results in life satisfaction, a sense of competence and promotes better overall adjustment and improves individuals' quality of life. Therefore, new research regarding participation/ community reintegration post disability will be 'invaluable for research and practice' (Lysack et al., 2015). Furthermore, very little literature exists regarding community reintegration of individuals who have sustained a SCI in the Western Cape, South Africa, and therefore information regarding the needs of individuals once discharged is needed.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides an overview and rationale for the methods used in this study. The research questions that guided the study is repeated, followed by a description of the research setting where the study was conducted. The research design chosen for the study and the rationale for that is provided. A description of the participants for both the quantitative and qualitative components are given. In addition the methods of data collection, data analysis and the ethics guiding the study is provided.

3.2 Research Questions

The study was guided by the following two research questions:

What are the factors influencing community reintegration of TSCI patients in a South African population?

What are the experiences of individuals with a TSCI with regards to community reintegration?

3.3 Research setting

The study was conducted in the Cape Metropolitan area of the Western Cape Province, South Africa. The approximate population size in the Cape Metropolitan Area is 3.7 million on a 2440km² landscape (www.statssa.co.za). The only specialized provincial spinal cord injury unit (Grootte Schuur hospital) in the Western Cape is situated in Cape Town. However due to limited resources (number of beds/placements) at the acute SCI unit, patients are accepted on a referral basis. Other non-specialized referral hospitals in the Cape Metropolitan area also manage TSCI

for an interim period until a placement becomes available at the specialized unit. These hospitals include a tertiary hospital (Tygerberg hospital) and three secondary hospitals.

3.4 Research design

The design of this study was a mixed methods design, which can be defined as the combined use of both quantitative and qualitative research methods. The sequential strategy of mixed methods specifically was used. With this strategy, the qualitative and quantitative components are planned and implemented after the other and answer related aspects of the same overarching research questions (Teddlie & Tashakkori, 2011). It has been stated that the collection and analysis of both quantitative and qualitative data in a single research study provides a better understanding of a problem (Creswell, 2014). The benefits of integrating Quantitative and Qualitative data is that it maximizes the strengths and decreases the weaknesses of each type of data (Creswell, Klassen, Clark, & Smith, 2011). The quantitative data was collected by means of self-administered questionnaires to determine the psychosocial and community reintegration while the qualitative data was collected by means of individual interviews to explore further the factors that influence community reintegration.

3.5 Data collection methods

The study population, sampling and procedures and data analysis will be described for the quantitative and qualitative phases separately.

3.5.1 Quantitative phase: To determine the psychosocial reintegration and community reintegration of individuals with a TSCI

3.5.1.1 Study population and sample

The sample consisted of individuals who sustained a traumatic spinal cord injury, residing in the Cape Metropolitan region in the Western Cape, above the age of 18 years. Individuals were identified through the Quad-Para association of South Africa (QASA). QASA provides training, housing and support to individuals who sustained a traumatic spinal cord injury in South Africa and has offices in each province. Approximately 300 individuals listed on the QASA database. Using the Yamane formula, it was calculated that approximately 170 individuals should be approached for participation in the study. Through QASA an invitation to participate in the study was sent to 170 individuals of which 108 accepted the invitation, yielding a 64% response rate.

3.5.1.2 Data collection methods:

Quantitative data was collected with an electronic self-administered questionnaire. The questionnaire consisted of 3 sections. In the first section demographic information such as gender, marital status, level of education, race, employment and cause of injury was requested. The next sections included two scales, i.e. the Sydney Psychosocial Reintegration Scale- 2 (SPRS- 2) and the Community Integration Measure (CIM). Research has recommended that more than one measure is to be used to determine community integration as the phenomenon of

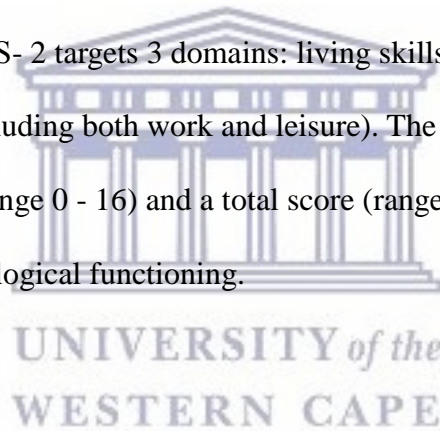
community integration is a multifaceted (De Wolf, Lane-Brown, Tate, Middleton, & Cameron, 2010). These will be described below:

3.5.1.2.1 Community Integration Measure (CIM)

This is a patient centred questionnaire measuring an individual's sense of belonging in the community based on personal beliefs, perceptions and attitudes (Minnes, Carlson, McColl, Nolte, Johnston, & Buell, 2003). The measure was developed on a theoretical model derived from interviews with moderate to severe brain injuries individuals living in the community (McColl et al., 1998). The CIM has been validated to measure community reintegration following SCI (De Wolf et al., 2010). The CIM has been shown to be internally consistent (alpha = 0.78) and a valid measure (concurrent validity $r = 0.47$, $P < 0.001$) (De Wolf et al., 2010). Construct validity of this measure has been established among several impairment groups. Internal consistency is excellent (Cronbach alpha $\alpha = 0.85$) (Lysack et al., 2015). It was suggested in De Wolf et al (2010) that the CIM could potentially be addressing the cognitive aspect of community reintegration which is not addressed by the SPRS- 2 or the Craig Handicap Assessment and Reporting Technique (CHART). The CIM is a 10 item scale and each item is graded on a 5 point rating scale ranging from 'always agree' to 'always disagree'. Examples of the statement in the CIM includes 'When you participate in leisure activities do you usually do this alone or with other?' and 'How often do you travel outside the home?' This results in a single summary score (range 10-50) which is the un-weighted sum of the 10 items. The higher score would indicate superior integration (De Wolf et al., 2010).

3.5.1.2.2 Sydney psychosocial reintegration scale- 2 (SPRS-2)

This scale was originally designed to measure the psychosocial reintegration after a traumatic brain injury (TBI). The SPRS-2 has shown good psychometric properties within the TBI population. Although, according to De Wolf et al. (2010) the SPRS-2 is an easy to administer reliable method to aid in the understanding of community reintegration within a SCI population too. The SPRS- 2 reliability, validity and sensitivity to change while measuring community reintegration in people with SCI have also been tested in comparison with CHART. The SPRS- 2 concurrent validity showed significant correlation coefficients with CHART ($r = .47, P < .001$) (De Wolf et al., 2010) and according to Tate et al. (2012) has a high internal consistency coefficient of $\alpha = 0.87$. The SPRS- 2 targets 3 domains: living skills, interpersonal relationships and occupational activities (including both work and leisure). The SPRS- 2 consists of 12 items resulting in 3 domain scores (range 0 - 16) and a total score (range 0-45). The higher scores would indicate superior psychological functioning.



3.5.1.3 Data analysis

Data was captured and analysed using the Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics summarized the data and is presented using frequency tables and expressed as percentages, means and standard deviations. Inferential statistics were used to determine the associations between socio-demographic characteristics (such as gender, level of injury, employment status, marital status and residential type) and psychosocial and community reintegration. Student t- tests and one way analysis of variance (ANOVA) was used to determine the relationships between different variables. Alpha level was set at 0.05.

3.5.2 Qualitative phase: To explore the experiences related to psychosocial and community reintegration of people with a TSCI.

3.5.2.1 Population and sampling

Participants for this phase of the study were purposively selected from those who completed the self-administered questionnaires in the first phase of the study. No “a priori” sample size was calculated but 15 participants were selected initially. However, data collection continued until saturation was reached. Participants with both quadriplegia and paraplegia; males and females were selected.

3.5.2.2 Data collection methods

Qualitative data was collected through individual interviews. After the invitation to participate in this phase of the study was accepted and consent was provided, participants were visited by the researcher at a suitable venue as indicated by them. In depth interviews were conducted to gain an understanding of the factors associated with community reintegration of each participant. Permission to audio-tape the interviews were obtained before the interviews started. Interviews lasted for approximately 40-60 minutes and ended when no new information was gained.

3.5.2.3 Data analysis

The data analysis began with the transcription of the information from the audio tape recordings to produce manuscripts. A comparison were made with the researchers’ notes taken during the interviews and the manuscripts to verify the accuracy. Transcripts were read several times by the researcher, with the emphasis on the emergence of themes. Throughout the readings, notes were made and the data was coded in the themes, followed by the creation of broad categories. As

many headings as possible were made to describe all the aspects of the content. After the deviation of the themes an independent researcher was asked to read the transcripts and generate themes. Lists of the researcher and independent researcher was compared.

3.5.2.3.1 Trustworthiness of the qualitative data

Trustworthiness can be defined as how true and rigorous the data collected is (Heffner, 2011).

Guba (1981) proposes four criteria that should be considered in order to proffer trustworthiness by qualitative researchers. These criteria are: credibility (in preference to internal validity), transferability (in preference to external validity or generalisability), dependability (in preference to reliability) and confirmability (in preference to objectivity).

Credibility was maintained via discussions with facilitators who are familiar with the research question and gain feedback on the summarized data (Lincoln and Guba, 1985). Themes arising were noted by the supervisor and the researcher. Then these themes were compared by the researcher and the supervisor any discrepancies were discussed and conclusions were drawn (Creswell et al., 2011). When this process was completed the transcripts were made available and reviewed by the available participants to confirm the findings. To assess the transferability of the findings, methods employed in data collection, data analysis and interpretation were properly described. In addition, several of data analysis documents are available which gives others researchers the ability to transfer the findings of this study to other research projects. To address the dependability, the research design and its implementation, the operation details of data gathering and reflective appraisal of the thesis were reported in details (Shenton, 2004). *Confirmability* was ensured via transparency of all methods, this prevented bias of the interpretation of data (Lincoln & Guba, 1985). An audit trail is also be available consisting of all

research steps e.g. initial data collected and all processes involved in processing of data (Lincoln & Guba, 1985).

3.6 Ethics

Permission and ethical clearance for the study was obtained from the relevant ethics committee at the University of the Western Cape (UWC) (Appendix A). The study was conducted according to ethical practices pertaining to the human subjects as specified by the faculty of Community and Health Sciences Research Ethics committee. The purpose of the study was clearly explained by the researcher to the participants. The participants received an information sheet in their mother tongue, English (Appendix B), Afrikaans (Appendix C) or isiXhosa (Appendix D). Signed written informed consent or verbal recorded consent was obtained from all participants. Participation in the study was voluntary. The participants were informed that they can withdraw at any stage with no repercussions. All Participants were treated with respect and dignity. Identification code using numbers was used on data forms to ensure anonymity. During the reporting of qualitative results, pseudonyms were used to disguise the true identity of the participants. Information obtained from the participants was for the study only and it will be handled with confidentiality. Pseudonyms will be used to protect participant's identities when the results are published. Minimal perceived risks were expected in the study. However, if participants were affected by the study and they experience questions to be traumatic, the participants were referred to a counsellor for management. The findings of the study will be made available to all the relevant stakeholders.

3.7 Summary

This chapter provided an overview of the methods that were used to meet the objectives of this study. All aspects pertaining to the research setting, the design, study sample, data collection methods and ethics were addressed. The next chapter will outline the results obtained from the statistical analysis of the quantitative data.



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CHAPTER FOUR

QUANTITATIVE RESULTS

4.1 Introduction

In this chapter the results of the data analysis which attempt to answer the first two objectives of the study will be presented. The chapter describes the socio-demographic profile of the study sample, psychosocial reintegration and community reintegration. The data is summarized in tables and supplemented with figures.

4.2 Description of study sample

This study sample consisted of 102 individuals (n= 102) with a mean age of 37.6 years (SD=12.2). More than three-quarters (78.4%, n=80) of the sample were males and 21.6% (n=22) were females. As summarized in table 4.1, 65.7% (n=67) of the study sample have never been married, 59.8% completed secondary school and/or some post school qualification, while 40.2% were employed either full-time or on part-time basis. As far as their injuries were concerned, 41.4% (n=42) presented with tetraplegia and 58.8% (n=60) with quadriplegia. The cause of injury was a motor vehicle accident for 43.2% (n= 44) and violence such as gunshot, stabbing or assault for 37.3% (n=38).

Table 4.1: Socio-Demographic characteristics of the study sample (n=102)

<i>Variable</i>	<i>Frequency (n)</i>	<i>Percentage (%)</i>
Gender		
Male	80	78.4
Female	22	21.6
Age		
19-29	31	30.4
30-39	32	31.4
40-49	22	21.6
50-59	11	10.7
60-70	6	5.9
Race		
Black	42	41.2
White	26	25.5
Coloured	31	30.4
Asian	3	2.9
Other	0	0
Level of Injury		
Paraplegia	60	58.8
Tetraplegia	42	41.2
Cause of the Injury		
Car/motorcycle accident	44	43.2
Violence related causes	38	37.2
Fall	6	5.9
Other	14	13.7
Anti-Depressant Medication		
Yes	34	33.3
No	68	66.7
Residence		
House	31	30.5
Flat	13	12.7
Townhouse/semi/cluster	3	2.9
Room/flatlet	1	1
Retirement village	3	2.9
Informal dwelling	24	23.5
Nursing care facility	26	25.5
Other	1	1
Marital Status		
Never Married	67	65.7
Married	18	17.6
Separated	7	6.9
Divorced	10	9.8
Education		
Some Primary schooling	5	4.9
Completed Primary	3	2.9
Some Secondary	33	32.4
Completed Secondary	23	22.5
Post grade 12 certificate	21	20.6
Tertiary (Degree)	17	16.7
Employment		
Employed	41	40.2
Full Time	23	56.1
Part time	18	43.9
Unemployed	61	59.8
Retired	6	9.8
Disability grant	44	72.2
Student	10	16.4
Other	1	1.6

As summarized in table 4.1, males accounted for 78.4% of the total TSCI within this study population. The age group with the most TSCI in this study population were 30-39 of age and accounted for 31.4% and the lowest was the 60-70 age group which accounted for 5.9% of the

sample. The majority of the sample presented with Paraplegia 58.8 % and tetraplegia accounted for 41.2%. Majority of the injuries occurred due to car/motor vehicle accidents (43.2%) and the lowest was due to falls (5.9%). Within cause of injury due to violence related causes can be subdivided into gunshot wound (n= 20; 19.6%); stabbing (n= 15; 14.7%); assault (n= 3; 2.9%). Other causes include rugby injury (n=8; 7.8%) and diving (n=6; 5.9%).The majority of the sample reported to not be utilizing anti-depressants (66.7%). The majority of the population have never been married (65.7%). The lowest reported to be separated (6.9%). Some secondary education was the highest level of education for the majority of the sample (32.4%). Unemployment was seen to be higher in comparison to unemployment (59.8% vs 59.8%) with the largest portion of the unemployed individuals relying on disability grants (72.2%).

4.3 Psychosocial reintegration of study sample

Psychosocial reintegration of the study sample was measured with the Sydney Psychosocial Reintegration Score (SPRS-2). This 12 items instrument targets three psychosocial domains namely: occupational activities (both work and leisure), interpersonal relationship and living skills. The SPRS- 2 three domains range from 0-16 each and the total score range from 0-48 with higher score indicating better psychosocial functioning.

Table 4.2: Mean Scores of SPRS- 2 items (n= 102)

<i>Items</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Current work</i>	2.17	± 1.5
<i>Work skills</i>	2.34	± 1.4
<i>Leisure</i>	2.18	± 1.4
<i>Organising activities</i>	2.45	± 1.3
<i>A: Spouse or partner: has the relationship changed post injury.</i>	2.65	± 1.5
<i>B: No spouse or partner: ability to create and maintain a romantic relationship</i>	1.63	± 1.4
<i>Family</i>	2.50	± 1.5
<i>Friends and other people</i>	2.40	± 1.6
<i>Communication</i>	2.86	± 1.5
<i>Social skills</i>	2.70	± 1.4
<i>Personal habits</i>	2.93	± 1.3
<i>Community travel</i>	1.86	± 1.6
<i>Accommodation</i>	2.21	± 1.6

The highest mean score was reported to be personal habits (2.93 ±1.3). The lowest was no spouse or partner therefore the ability to create and maintain a romantic relationship (1.63 ±1.4).

Table 4.3: SPRS-2 Domain scores for study sample (n=102)

<i>SPRS-2 domain</i>	<i>Mean</i>	<i>Standard deviation</i>
<i>Occupational Activity</i>	2.29	± 1.4
<i>Interpersonal relationships</i>	2.60	± 1.5
<i>Living Skills</i>	2.26	± 1.5
<i>SPRS-2 total Score</i>	28.37	± 13.4

The Interpersonal relationships domain reported the highest mean score of the sample (3.44 ±1.4). The mean for the total SPRS-2 score was 40.56 ±13.3.

Table 4.4: Comparison of SPRS- 2 domains and gender (n=102)

<i>SPRS-2 DOMAIN</i>	<i>Male</i>	<i>Female</i>	<i>Student T Test</i>
<i>Occupational Activity</i>	10.88 ±4.8	9.6 ±5.2	0.175
<i>Interpersonal Relationships</i>	11.34 ±5.3	10 ±4.5	0.177
<i>Living Skills</i>	11.22 ±5.0	9.74 ±4.3	0.120
<i>SPRS-2 Total score</i>	31.13 ±13.2	27.55 ±12.7	0.130

As evident from table 4.4, males had higher mean scores in all three domains than females. The difference in mean scores for males and females were however not significant ($p>0.05$)

Table 4.5: Comparison of SPRS-2 domains level of injury (n= 102)

<i>SPRS- 2 DOMAIN</i>	<i>Paraplegia</i>	<i>Tetraplegia</i>	<i>Student T Test</i>
<i>Occupational Activity</i>	10.70 ±4.7	10.50 ±5.3	0.804
<i>Interpersonal Relationships</i>	10.76 ±4.8	11.48 ±5.6	0.374
<i>Living Skills</i>	10.44 ±4.6	11.56 ±5.3	0.157
<i>SPRS- 2 Total score</i>	29.76 ±12.3	31.20 ±14.4	0.479

As evident from table 4.5, all domains excluding occupational activity revealed Tetraplegic individuals had higher mean scores than Paraplegic individuals. The difference in mean scores for Tetraplegic and Paraplegic were however not significant ($p>0.05$)

Table 4.6: Comparison of SPRS- 2 domains employment status (n= 102)

<i>SPRS- 2 DOMAIN</i>	<i>Employed</i>	<i>Unemployed</i>	<i>Student T Test</i>
<i>Occupational Activity</i>	12.74 ±4.4	9.18 ±4.5	0.000
<i>Interpersonal Relationships</i>	12.50 ±4.3	10.07 ±5.3	0.003
<i>Living Skills</i>	12.27 ±4.4	10.00 ±4.9	0.003
<i>SPRS- 2 Total score</i>	34.91 ±11.6	27.30 ±12.7	0.000

Individuals who were employed had significantly higher mean scores than those unemployed in all three domains of the SPRS- 2. The difference in the mean score between employed and unemployed showed a significant result ($p < 0.05$).

Table 4.7: SPRS- 2 domains comparing part time and full time employment (n= 102)

<i>SPRS- 2 DOMAIN</i>	<i>Full time</i>	<i>Part time</i>	<i>Student T Test</i>
<i>Occupational Activity</i>	14.04 ±4.1	11.97 ±3.9	0.018
<i>Interpersonal Relationships</i>	12.91 ±4.8	11.86 ±3.7	0.347
<i>Living Skills</i>	12.58 ±4.8	12.00 ±3.9	0.606
<i>SPRS- 2 Total score</i>	36.55 ±12.3	33.17 ±10.2	0.221

When comparing full-time and part-time employment, those with full-time employment had significantly higher mean scores (17.55, SD=4.1) in the occupational activity domain than those with part-time employment (14.96, SD=3.9) ($p < 0.05$). No significant difference was found between those full-time and part-time employed for the remaining two domains, i.e. interpersonal relationships and living skills ($p > 0.05$).

Table 4.8: SPRS- 2 domains comparing marital status (n= 102)

<i>SPRS- 2 DOMAIN</i>	<i>Married</i>	<i>Never Married</i>	<i>Student T Test</i>
<i>Occupational Activity</i>	11.82 ±4.8	10.16 ±4.9	0.118
<i>Interpersonal Relationships</i>	12.18 ±5.3	10.78 ±5.1	0.203
<i>Living Skills</i>	12.00 ±4.3	10.78 ±5.2	0.255
<i>SPRS- 2 Total score</i>	33.75 ±13.8	29.57 ±13.4	0.116

As evident from table 4.3.7, all domains married individuals had higher mean scores than never married individuals. The difference in mean scores for married and never married were however not significant ($p>0.05$)

Table 4.9: Comparison of SPRS- 2 domains residential type (n=102).

<i>SPRS- 2 DOMAIN</i>	<i>House</i>	<i>Informal Dwelling</i>	<i>Student T Test</i>
<i>Occupational Activity</i>	12.02 ±4.5	8.94 ±4.9	0.004
<i>Interpersonal Relationships</i>	13.32 ±3.8	9.17 ±4.7	0.000
<i>Living Skills</i>	13.18 ±3.2	8.10 ±4.1	0.000
<i>SPRS- 2 Total score</i>	35.76 ±9.8	24.56 ±11.9	0.000

As evident from table 4.9, living in a house had higher mean scores in all three domains than living in an informal dwelling. The difference in the mean score between living in a house and informal dwelling showed a significant result ($p<0.05$).

4.4 Perceived Community Reintegration of the study sample

Perceived community reintegration of the study sample was measured by the community integration measure instrument (CIM) which is a 10 items scale of participation and measures a person's sense of belonging in the community. The responses are made on a 5- point rating scale from "always agree" to "always disagree". The CIM results in a single summary score (range 10-50) with a higher underweight sum of 10 items, with higher score indicating better reintegration into the community.

Table 4.10: Mean Scores of CIM items (n= 102)

<i>Item</i>	<i>Mean</i>	<i>Standard deviation</i>
<i>Feelings of belonging in the community</i>	3.39	± 2.3
<i>Knowing the way around the community</i>	3.67	± 2.3
<i>Community rules</i>	3.51	± 1.5
<i>Community acceptance</i>	3.68	± 2.4
<i>Independence within the community</i>	3.16	± 1.5
<i>Living area</i>	3.39	± 1.5
<i>Relationships within the community</i>	3.69	± 1.4
<i>Communication in the community</i>	3.84	± 1.4
<i>Community activities</i>	3.37	± 1.4
<i>Productive community activities</i>	3.05	± 1.4

As evident from table 4.4.1 the highest mean score was communication in the community (3.84 ±1.4). The lowest mean score was productive community activities (3.05 ±1.4)

Table 4.11: Association between CIM and selected variables.

<i>Variable</i>	<i>CIM Total Score</i>	<i>Significance (Student T-Test)</i>
Gender		
<i>Male</i>	36.71 ± 10.8	0.002
<i>Female</i>	28.05± 13.7	
Level of Injury		
<i>Paraplegia</i>	30.92 ± 12.1	0.000
<i>Tetraplegia</i>	40.45± 9.2	
Employment Status		
<i>Employed</i>	37.29 ± 11.6	0.089
<i>Unemployed</i>	33.20± 11.9	
Type of Employment		
<i>Full Time</i>	41.27 ± 9.8	0.023
<i>Part Time</i>	32.94± 12.4	
Marital Status		
<i>Married</i>	34.44 ± 12.1	0.788
<i>Never Married</i>	35.31± 12.2	
Residential Type		
<i>House</i>	41.77 ± 6.7	0.000
<i>Informal Dwelling</i>	28.17± 13.0	

As shown in table 4.4.2, males had a significantly higher mean CIM score than females (36.71 vs 28.05) ($p < 0.05$). In addition individuals with tetraplegia, had a significantly higher mean score than paraplegia with regards to level of injury (40.45 vs 30.92) ($p < 0.05$). Significantly higher mean scores were also noted for full time and part time employment (41.27 vs 32.94) ($p < 0.05$) and living in a house and an informal dwelling (41.77 vs 28.17) ($p < 0.05$). Higher mean scores were also noted between employment and unemployed (37.29 vs 33.20) and never married and married (35.31 vs 34.44) however these had no significant difference ($p > 0.05$).

4.5 Correlation investigations

The correlation investigations will be conducted utilizing the Pearsons co- efficient the table below represents how the size of a correlation coefficient will be interpreted according to the ‘rule of thumb’ (Hinkle, Jurs & Wiersma, 2003).

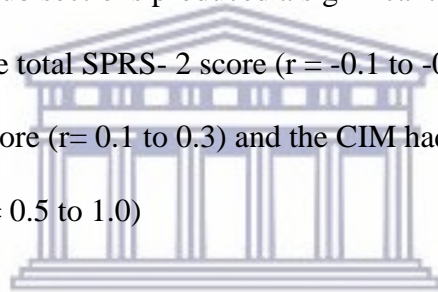
Table 4.12 Interpretation of Pearsons co- efficient

Size of Correlation	Interpretation
0.90 to 1.00 (- 0.90 to -1)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to – 0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to – 0.50)	Low positive (negative) correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible correlation

4.5.1 Table 4.13: SPRS- 2 total score

	<i>Pearsons co-efficient (r)</i>	<i>Significance</i>
<i>Age</i>	0.228	0.021
<i>Year of Injury</i>	-0.266	0.007
<i>CIM</i>	0.527	0.000

4.4.1 In the above table all the sub sections produced a significant finding. Year of injury had a small negative association to the total SPRS- 2 score ($r = -0.1$ to -0.3). Age had a small positive association with the SPRS- 2 score ($r= 0.1$ to 0.3) and the CIM had a large positive association with the SPRS- 2 total score ($r= 0.5$ to 1.0)



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4.5.2 Table 4.14: CIM total score

	<i>Pearsons co-efficient (r)</i>	<i>Significance</i>
<i>Age</i>	0.243	0.014
<i>Year of Injury</i>	-0.316	0.001
<i>SPRS- 2</i>	0.527	0.000

4.4.2 In the above table all the sub sections produced a significant finding. Year of injury had a medium negative association to the total CIM score ($r = -0.3$ to -0.5). Age had a small positive association with the CIM score ($r= 0.1$ to 0.3). The SPRS- 2 score had a large positive association with the CIM total score ($r= 0.5$ to 1.0)

CHAPTER FIVE

QUALITATIVE RESULTS

5.1. Introduction

This chapter contains the results of the content analysis of the semi-structured interviews which attempted to answer the third objective of the study, namely to explore the challenges related to psychosocial and community reintegration of people with a TSCI.

5.2 Description of the sample

The sample for the qualitative part of the study consisted of 7 individuals of which 2 were females and 5 males. The mean age of the study sample was 27.9 ± 6.8 . Tetraplegia presented in 14.3% (1 individual) and paraplegia accounted for 85.7% (6 individuals). These characteristics are summarized in table 5.1.

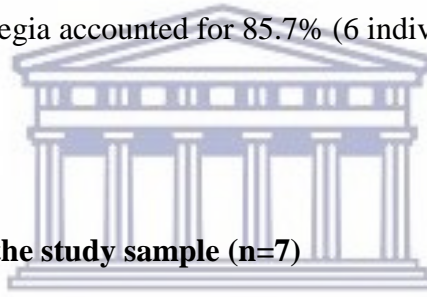


Table 5.1: Characteristics of the study sample (n=7)

<i>ID</i>	<i>Age</i>	<i>Gender</i>	<i>Level of Injury</i>	<i>Race</i>	<i>Dwelling Type</i>	<i>Employment Status</i>	<i>Marital Status</i>
<i>P1</i>	37	Male	Paraplegic	Black	Informal Dwelling	Employed	Married
<i>P2</i>	35	Male	Paraplegic	Black	House	Unemployed	Never Married
<i>P3</i>	20	Male	Paraplegic	Black	Informal Dwelling	Unemployed	Never Married
<i>P4</i>	21	Male	Paraplegic	Coloured	House	Employed	Never Married
<i>P5</i>	24	Female	Tetraplegic	Black	Informal Dwelling	Unemployed	Never Married
<i>P6</i>	26	Female	Paraplegic	Coloured	House	Unemployed	Never Married
<i>P7</i>	32	Male	Paraplegic	Black	Informal Dwelling	Unemployed	Never Married

5.3 Themes

The two pre-determined themes were psychosocial reintegration and community reintegration.

The analysis of the data produced sub-themes under these and are summarized in table 5.2 below.

Table 5.2: Themes divided into categories

<i>Main Theme</i>	<i>Sub- Themes</i>
<i>Psychosocial reintegration</i>	Perceptions and attitudes of people
	Focussing on improving self
	Communication
	Reliance on primary caregivers
	Secondary Complications
<i>Community Reintegration</i>	Mobility aid posing as a barrier
	Gansterism/ crime posing as a barrier
	Transport
	Environment

5.3.1 Psychosocial reintegration

5.3.1.1 Theme 1: Perceptions and attitudes of people

During the interviews, several of the participants drew attention to the fact that the perceptions and attitudes of others, i.e. both family and friends, have an effect on their psychosocial reintegration. Both positive and negative views were expressed. Some of the participants highlighted how they noticed an immediate change in others' perceptions after their injury and how this had a negative influence on them. This sentiment is illustrated with the quote below:

“People here used to be normal” P3

“My cousins do not help me at all.....” P1

Others however highlighted that the attitudes of their immediate family did not change at all as shown below:

“They are still the same (friends)” (5)

Positive experiences and attitudes were also expressed as experienced by some of the participants:

“They are still the same (friends)” P5

And: *“I have a lot of friends currently... You know what they say that “when days are dark friends are few” mine when days were dark my friends were actually more. I have never been alone you know. I am always surrounded with people you know! No attitudes towards me at all.” P2*

5.3.1.2 Theme 2: Focusing on improving self

In many instances the participants are very focused on ways of improving themselves and achieving more. In some situations improving their level of education and training. In some cases they would be reluctant to want to be involved in a romantic relationship due to the distraction factor as quoted below:

“I used to have one (girlfriend) but now I don't think it is good for me... it's going to be a distraction for me... I want to focus on myself” P3

And: *“I do not have a matric and I wish to have matric and I will have matric” P2*

Religion also seemed to play a part in self-improvement resulting in a more positive lifestyle as shown below:

“but now I have changed, I've grown up and a lot of things have happened and I'm focusing on getting better than being in a relationship” P6

Rehabilitation also showed to be beneficial for improving independence. This was reported below:

“It made me strong you see (physiotherapy) so I can cook for myself, I can wash myself you see” P1

The participants also wanted to improve their life by gain employment:

“now for a job I would like to do something like work or go out or do something” P6

And: *“It will help me to get a job because I do not have someone to pay my bills” P5*

And: *“I wish I had a job” P1*

5.3.1.3 Theme 3: Communication

In the interviews the participants preferred visiting friends and family or having family and friends visiting them. This brought enjoyment and happiness to them. This sentiment is illustrated in the quote below:

“I am just sitting here chatting that’s all we do” P5

And: *“no, I don’t go to my friends, it is them that comes to me” P4*

And: *“sometimes if I feel like going out then I go outside and sit and talk to her or sometimes she comes in to me and then she will come sit here by me” P6*

5.3.1.4 Theme 4: Reliance on primary caregivers

The interviews revealed that reliance on primary care gives was noted for mobility and transfers. In some participants they complained of needing to be reliant on others as seen in the below quote:

“wherever I go ill need someone to push me I can’t go by myself...they have to lift me, transport and take me to the hospital as I can’t do anything by myself” P5

And: *“I do not like depending on someone else that is another sickness you know!” P2*

Whereas some had accepted this:

“he wash me and he feeds me my food, I can’t eat by myself” P7

And: *“I can do other things you see, but other things, I can’t reach as like on top in the wardrobe, like in the fridge if I want to take something I can’t reach you see but I am trying my best” P1*

In some instances this reliance factor could also negatively impact on community reintegration due to the participant not wanting to make a nuisance or a liability of themselves:

“I’m too scared it will be too much effort (enter shops, shopping malls and going with her child to the park)...I feel like I am a burden to other people” P6

What was noticed was that participants often withdrew to the security of their family and preferred the company of their immediate family:

“But I like been around my family you know, they are like family to me” P3

Relationships with some participants’ family that was previously poor improved post injury as quoted below:

“ya, before the accident I was very distant but now you see it is getting better and I foresee it getting even better in the future” P4

5.3.1.5 Theme 5: Secondary Complications

Secondary complications was expressed by some participants as a concerning factor to them during the interviews. These included loss of bladder control and pain. This decreased willingness to engage with society. This sentiment is illustrated below:

“It had a huge impact, yes, like sometimes I didn’t want to go out but it has gotten better and it did effect my social ability because I do part time DJ’ing and entertainment events.... I didn’t have that same ability and the confidence to walk up to people and speak over mikes I lost that ability” P4

And: *“If I get back pain and getting to the vehicle and out its working on my back and I don’t like it because of the operation (lumbar fusion) I am so scared I’ll get hurt” P6*

Weakness and loss of endurance were also complaints that arose an inability to return to sport, hobbies and socializing with friends as noted below:

“I’m not allowed to, like I’m not fast enough I can’t keep up with the pace and I can’t keep up any more like with the people before the accident there were a lot of things that changed and ‘DJ’ing requires a lot of physical work... set up and the break up...I am not able to carry things anymore so I just do the actual DJ’ing” P4

And: *“I would like to go outside if I can push myself” P5*

And: *“my hands are weak that is the problem you see. I can’t eat nicely that’s a problem but I try to feed myself” P7*

There was also a report of their current condition resulting in anxiety in relationships

“And right now I don’t know if I should be in a relationship being in this condition as well. Think about trying to have sex and that and I didn’t try it it has been 2 years now being in this condition as well and I’m too nervous ...And being in a marriage in this condition I’m still nervous and shy” P6

5.3.2 Perceived Community Reintegration

5.3.2.1 Theme 6: mobility aid posing as a barrier

Through the interview problems posed with the use of a wheel chair. The wheelchair was reported to hinder their ability to move around their own place of residence due to terrain, etc.

This in turn would potentially hinder their ability to participate as noted below:

“No I can’t go outside because here the ground is here there is a lot of grass and the wheelchair can’t go here” P5

And: *“someone must help me to turn here because we don’t have like a big house we live in a flat” P6*

5.2.2.2 Theme 7: Gansterism/ crime posing as a barrier

When asked of some of the factors as to why participants are reluctant to or not willing to move around there community many gave the response that the high levels of crime, gangersism and

violence was there primary reason for not leaving there houses. This sentiment can be viewed in the quotes below:

“I am living in a small community and there is a lot of gangsterism around here... I don't want to go outside, no” P3

And: *“you know where I stay many violence is starting to happen now, the shooting and the stuff and I don't want to go out” P6*

People living in the community were reported to be good people but the danger because of gangsterism was concerning:

“I'm not feeling safe or comfortable ya” P4

And: *“I am scared of my life and even for my 4 year old daughter you see!” P1*

Crime in the community also prevented community movement:

“I was once a victim of being mugged so I am now scared to move around in the community” P2

5.3.2.3 Theme 8: transportation

Access to transport was mentioned during the interviews as a factor in not been able to gain employment. The dial- a-ride transport for the disabled was also bought up by many participants as not been able to assist them due to waiting lists. This sentiment can be seen below:

“It is not even a matter of having a job but you can't even get at work because of no transportation it's useless” P2

And: *“I applied for dial- a- ride but I couldn't get it because too many people are waiting” P6*

And: *“the job I applied for... according to the job I need to get transport” P6*

The need for transportation also resulted in financial burden as it was noted to be more expensive for disabled people to travel:

“I do not understand I am struggling because I am using R2500 per month for transportation” P1

And: *“I am paying more than normal fee for public transport I do not understand why maybe it’s because I am disabled, maybe because I am in the wheelchair” P2*

The financial burden resulted in increased anxiety as seen below:

“we are struggling, people who are disabled hey! We are struggling” P1

Transportation was also one of his most limiting factors:

“I am very strong I can go anywhere but the problem is transportation” P1

5.3.2.4 Theme 9: Environment

The environment according to the interviews mostly affected participants’ movement around there community but not their ability to access shops and hospitals / clinics as noted below:

“no I can’t go outside because here the ground is here there is a lot of grass and the wheelchair can’t go here” P5

And: *“But then the streets are not good. If I get out of the car it is difficult to move around with the wheelchair” P2*

Lack of space in the participants’ house also posed as a problem for mobility:

“someone must help me to turn here because we don’t have like a big house we live in a flat... I do get help its just pushing me here by the step here it’s not such a high step but I’m just scared that if I do it here by myself P6

The colder weather also made leaving the house less likely:

“if it’s going to be cold then I won’t go” P6

There was also notes on the lack of community activities in their immediate environment. This was the response of this participant when questioned:

“Um, no not really in my immediate community” P4

5.3 Summary of the chapter

This chapter has outlined the main themes and sub divisions that arose in the Qualitative data.

The Qualitative data and the Quantitative data findings will be discussed in depth in the discussion chapter.



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CHAPTER SIX

DISCUSSION

6.1 Introduction

In this chapter the Quantitative and Qualitative results will be discussed with regards to their influence on the understanding of psychosocial and community reintegration. The findings in this study will be compared with the salient literature in these areas.

6.2 Demographic Profile

The Quantitative sample consisted of 78.4% males the ratio of males to females were 3.63:1 this finding is in line with international literature stating that men are 2:1 times more likely to sustain a SCI (WHO, 2013) and more specific Cape Town data stating 5.9:1 (Joseph et al., 2015).

Although, this value is larger than what these finding were. The age group with the most TSCI in this study population were 30-39 of age and accounted for 31.4% and the lowest was the 60-70 age group which accounted for 5.9% of the sample. This is in line with Joseph et al. (2015) who noted that the mean age at the time of spinal injury occurred at 33.5 years \pm 13.8. The majority of the injuries in the present sample occurred due to car/motor vehicle accidents (43.2%) and the lowest was due to falls (5.9%). WHO (2013) stated that MVAs and falls were the top causes of TSCI. Although, in Cape Town violence then MVAs were the leading causes and falls accounted for the lowest cause of TSCI (Joseph et al., 2015). Within cause of injury due to violence related causes can be sub divided into gunshot wound (n= 20; 19.6%); stabbing (n= 15; 14.7%); assault (n= 3; 2.9%). This finding is in line with recent Cape Town literature were gunshots accounted for 52%, 33% due to stab wounds and 15% resulted from interpersonal violence involving blunt trauma (Joseph et al., 2015) Unemployment was seen to be higher in

comparison to unemployment (59.8% vs 59.8%) with the largest portion of the unemployed individuals relying on disability grants (72.2%).

The Qualitative sample 5 where male and 2 where female totalling a total of 7 interviews. 6 of the participants were diagnosed with paraplegia and 1 with tetraplegia. Racial demographics included 5 of the participants where black and 2 where coloured. A total of 4 of the participants lived in an informal dwelling and 3 lived in a house. Only 1 of the participants were employed and all the participants have never been married.

6.3 Psychosocial reintegration

Psychosocial reintegration of the study sample was measured with the Sydney Psychosocial Reintegration Scale (SPRS-2). This scale utilizes a 0- 4 point rating scale and with higher scores indicating higher psychosocial reintegration. It targets 3 domains: living skills, interpersonal relationships and occupational activities (including both work and leisure). The SPRS-2 focuses on the psychosocial aspect of reintegration (Brooks et al., 2014; Tate, Simpson, Lane-Brown, et al., 2012).

Of the mean scores of the quantitative sample (n= 102) the highest mean score was reported for personal habits (2.93 ± 1.3) and the lowest was scored in the no relationships sections (1.63 ± 1.4): the ability to create and maintain a romantic relationship. This finding can be supported and clarified if one looks at the qualitative data:

“And right now I don't know if I should be in a relationship being in this condition as well. Think about trying to have sex and that and I didn't try it, it has been 2 years now being in this condition as well and I'm too nervous because I don't try it I also don't want to have sex before marriage and then I also don't want him to get married to me while in this condition. And being in a marriage in this condition I'm still nervous and shy” P6.

The living skills could have been the highest mean score due to care giver support. In the Qualitative data section the participants reported high level of support as seen in this quote:

“he wash me and he feeds me my food, I can't eat by myself” P7

Literature also supports reintegration is also improved with increased time post-injury and is likely to be facilitated by friends or family members (Song, 2005). Within the qualitative data all the participants' immediate family relationships remained strong and also were reported to have improved. Although each individual had their own different experiences with their relationships with friends and extended family some reported no changes and others reported these changes to be quiet severe to the point that they excluded themselves from this social aspect. This aspect of relationships seemed to be specific to each individual. None the less literature states that social support was also found to have the largest impact on community reintegration (Suttiwong, Vongsirinavarat, Chaiyawat, & Vachalathiti, 2015).

Furthermore, the participants reported reliance on their primary care givers. Only one of the participants reported not needing any assistance within his ALDs. All the other participants had varying rates of assistance and this was dependent on their functional level. Some of the participants community participation was effected due to the guilt associated with becoming what they considered to be a burden on their primary care givers. The above sentiments

“wherever I go ill need someone to push me I can't go by myself...they have to lift me, transport and take me to the hospital as I can't do anything by myself” P5;

“he wash me and he feeds me my food, I can't eat by myself” P7;

“I can do other things you see, but other things, I can't reach as like on top in the wardrobe, like in the fridge if I want to take something I can't reach you see but I am trying my best” P1

Research of SCI individuals' functional independence was associated with their satisfaction with social support received and individuals who have more social support, more support from peers and reciprocal relationships had an increased likelihood of being productive, mobile and interested in leisure activities (Muller, Peter, Cieza, Geyh, 2012). Therefore the guilt expressed can hinder productivity mobility and act as a hindering factor to psychosocial integration.

Community participation was also reported to be hindered due to secondary complication such as pain, loss of bladder control, decreased self-esteem and weakness.

“It had a huge impact, yes, like sometimes I didn't want to go out but it has gotten better and it did effect my social ability” P4

is what this participant noted due to decreased bladder and bowel control and a large scar occurring from his accident weakness was also reported as impacting psychosocial reintegration

“I would like to go outside if I can push myself” P5.

This weakness reported by participant 5 also links into how psychosocial reintegration impacts directly on community reintegration as the weakness results in environmental and the mobility aid barrier to community movement. Increased functional ability was linked to improved community reintegration by improved activity in social interests and mobility even in the long term (Erosa, Berry, Elliott, Underhill, & Fine, 2014). These secondary complications can intensify the experience of being disabled resulting from a SCI by negatively affecting independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005).

Other factors such as employment status was found to produce significant results within all the subsections of the SPRS- 2 and the total score ($p= 0.000$). This result mirrors the finding of a

substantial amount if the recent literature available on factors associated with community reintegration post TSCI. Employment is also essential for long-term participation within a community (Cieza et al., 2010). Employment was also a goal some of the qualitative sample would like to achieve:

“now for a job I would like to do something like work or go out or do something” P6

“It will help me to get a job because I do not have someone to pay my bills” P5

“I wish I had a job” P1

only in one domain of the SPRS-2 produced a significant finding with regards to full time and part time employment, namely the occupational Activity domain ($p= 0.018$) within the interpersonal relationships and living skills produced no significant results. This finding is not surprising as one would expect to find significant results for the Occupational activity in which the questions revolve around work related activities. This result for the SPRS- 2 also indicates that employment in itself impacted on the results regardless of hours of paid labour.

The level of injury was found to have a non-significant result (SPRS-2: total score $p = 0.479$). This is in line with literature stating that the level or severity of injury does not indicate whether a patient with a TSCI will adjust well but rather their coping strategies influence their adjustment (Zinman et al., 2014).

Within marital status none of the results for the SPRS-2 domains produced significant findings nor the SPRS-2 total score ($p = 0.116$). This could indicate that this is not a significant factor with regards to psychosocial reintegration. Another possible explanation for this finding could be that the majority of the study sample report to have never been married (65.7%) and only 17.6% to have been married. This small sample could have an impact on the results drawn from this sample. All of the SPRS-2 domains produced very strong significant results when comparing the two separate dwelling types i.e. house and an informal dwelling. The SPRS-2 interpersonal

relationships; living skills and the total score ($p = 0.000$) and the occupational activity score ($p = 0.004$). This information is multi-faceted as living in an informal dwelling would indicate lower socio economic status and also the consideration of the ground type would be that of a more rural environmental setting in comparison those who would be living in a house. This idea is supported by Lysack et al (2015) who stated that lower economic statuses also lead to greater environmental barriers.

Year of injury and the SPRS-2 was found to be significant ($p = 0.007$). The Pearson's coefficient for the SPRS-2 ($r = -0.266$). This showed to be a negligible correlation (0.00 to 0.30). This indicates that as the SPRS-2 increased the year of injury decreased. This result would suggest that psychosocial reintegration improves as the individual has had more time living with the TSCI. This finding is supported by research in Thailand that reported having been injured at a younger age and being older resulted in greater community reintegration (Suttiwong et al., 2015). This suggests that as the participants' age and the longer they have lived with the injury they could have potentially adapted well and therefore have improved psychosocial community reintegration levels. Another possible explanation could be found in other literature that states as SCI individuals age so does their dependence of caregivers (Cieza et al., 2010). With increased caregiver support it could lead to improved reintegration by promoting independence, productivity/ employment, mobility, dignity and long-term health (Post & Noreau, 2005). Other aging factors were reported in the results by utilizing the Pearson's correlation test age was found to be significantly correlated to the SPRS-2 ($p = 0.021$). The SPRS-2 ($p = 0.021$) and the Pearson coefficient ($r = 0.228$) indicating a significant relationship between the 2 variables with a negligible positive association ($r = 0.1$ to 0.3). Therefore, according to the results in this study as age increases so will the SPRS-2 measure. This could be due to the fact that the older the participants the longer they have been living with their injury and could have had more time to

adjust and adapt to their new live situation and circumstances. This is supported by the correlation below.

When correlation analysis was utilized between the separate scales the CIM total score and the total score of the SPRS-2 showed significant results ($p = 0.000$). It should be noted that the Pearson's co-efficient ($r=0.527$) indicated a large positive association ($r= 0.5$ to 1.0) between the two scales. They also showed a positive relationship to each other therefore increased in the CIM total score would result in increased SPRS-2 score. Although, Pearson's co-efficient ($r = 0.527$) indicating that slightly over half the variation between these two variables have been accounted for and that does not allow for exact predictability between these two variables. This would not be considered surprising when one reflects on the subject to which the tests are testing, namely: community reintegration. This concept as literature shows is multi-faceted (Dijkers, 1998). Therefore, one can draw from these results that psychosocial reintegration and community reintegration have a positive association to each other. The greater the CIM score one would expect a greater score in the SPRS-2 domains and total score. To clarify, the SPRS-2 higher scores would indicate superior psychological reintegration within occupational activity; interpersonal relationships and living skills and higher scores in the CIM would indicate greater individual's sense of belonging in the community based on personal beliefs, perceptions, attitudes and superior community reintegration. Although, the r value indicated a large positive association value it does not allow for us to predict exact levels of association but it should not be considered negligible as just above 50% of the variation is still a good result due to the multifaceted nature of community reintegration.

6.4 Perceived community reintegration

Perceived community reintegration of the study sample was measured by the community integration measure instrument (CIM) which is a 10 items scale of participation and measures a person's sense of belonging in the community. The responses are made on a 5- point rating scale with higher score indicating better reintegration into the community. The CIM has been validated to measure community reintegration following SCI (De Wolf et al., 2010).

The highest mean scored by the sample was communication in the community (3.84 ± 1.4). The lowest mean score was productive community activities (3.05 ± 1.4). This mirrors the statement made in the qualitative data section

“Um, no not really in my immediate community” P4

When the participant was questioned about community activities. Significant differences were found in the gender categories ($p=0.002$), males had higher mean scores in comparison to females. Level of injury produced significant results in the CIM ($p= 0.00$). This was not in line with a literature in which it stated that level of injury was not a good predictor to adjustment post SCI (Zinman et al, 2014). The researcher suggested the physical aspect required to be independent through moving around the community could be more challenging for individuals suffering from tetraplegia in comparison to paraplegia. It could also be due to inappropriate wheelchair prescription for the terrain in which the participants reside in as this would limit their ability to independently wheel themselves in there outside environment and increase reliance on primary care givers. This statement can therefore be supported by the qualitative findings:

“wherever I go ill need someone to push me I can't go by myself...they have to lift me, transport and take me to the hospital as I can't do anything by myself” P5.

This significant result of level of injury could have been due to the nature of the questioning in the CIM as it addresses community movement, activities that they can participate in that are productive and also community independence (Minnes et al, 2003). This physical aspect required to be independent through moving around the community could be more challenging for individuals suffering from tetraplegia in comparison to paraplegia. It could also be due to inappropriate wheelchair prescription for the terrain in which the participants reside in as this would limit their ability to independently wheel themselves in there outside environment and increase reliance on primary care givers. In the literature increased functional ability was linked to improved community reintegration by improved activity in social interests and mobility even in the long term (Erosa et al., 2014).

The CIM however produced a non-significant result with regards to employment ($p= 0.089$) a possible reason for this could be explained by De Wolf et al (2010) who stated that the CIM could potentially be addressing the cognitive aspect of community re integration which is not addressed by the SPRS-2 which produced a significant finding in this variable. A significant results between part time and full time employment types was found in the CIM ($p = 0.023$) this result does not contradict the previous finding but provides us with the responses of those individuals in the sample who are employed. This result would indicate that employment status and type of employment leads to improved community reintegration. One can think that having paid labour would improve one's financial status and having an improved financial status can allow for better self-esteem, independence access to paid transportation and meaningful activities. Ly-sack et al (2015) stated that lower economic statuses also lead to greater environmental barriers in SCI individuals. This idea is also applicable with regard to residential types. The CIM produced very strong significant results when comparing the two separate dwelling types i.e. house and an informal dwelling ($p= 0.000$). This information is multi-faceted as living in an informal

dwelling would indicate lower socio economic status and also the consideration of the ground type would be that of a more rural environmental setting in comparison those who would be living in a house. Furthermore, research has indicated that there is an increase in health problems and a decrease in quality of life and function if a SCI individuals is experiencing severe financial difficulties (Fekete, Siegrist, Reinhardt, Brinkhof, 2014). This research supports the finding of lower financial status is linked with quality of life and function all of which involve the concept of community reintegration.

Of the themes produced by the Qualitative results only one of the participants failed to mention that one of the main reasons they were reluctant to go out into their community was due to the high crime levels or violence in their area safety for themselves and their family also seemed to play a role. This type of information could not have been discovered utilizing only the

Quantitative results. This was also listed as the primary barrier to community reintegration “

I am living in a small community and there is a lot of gangsterism around here... I don't want to go outside, no” P3 and “you know where I stay many violence is starting to happen now, the shooting and the stuff and I don't want to go out” P6.

According to research interpersonal violence in Sub Saharan Africa and in Cape Town was still the highest cause of TSCI and gunshot wounds accounted for more than half of the types of interpersonal violence (Joseph et al. 2015; WHO, 2013). In comparison to other Sub- Saharan African countries the high rates of stab wounds and gunshot wounds appear to be a unique South African issue (Joseph et al. 2015; Draulans, Kiekens, Roels, Peers, 2011). A national study in South Africa reported the second leading cause of death was due to violence related injuries (Seedat et al. 2009). This research coupled with the Qualitative finding of this present study shows a link between crime such as gangsterism and violence as factor posing as a barrier to community reintegration with in Cape Town, South Africa.

Other barriers such as environmental barriers namely transportation also proved to be quite a barrier to acquiring gainful employment. A disabled transportation initiative such as dial-a-ride was also mentioned by participants as being unobtainable due to the high volume of individuals using the transport and the long waiting lists. The transportation also increased anxiety and financial pressure on participants as they struggled to find employment and attend learner ships due to transport. This finding is in agreement with Lidal et al. (2007) who conducted a review that discovered that transportation was the primary barrier to gaining employment and transportation was also viewed as a barrier to community reintegration. Wehman, (2000) noted environmental barriers such transport negatively effecting community reintegration.

Most of the participants also modified their activities that they would participate in according to what they could functionally achieve. For example many participants preferred to stay in their house or outside on their verandas and talk with their friends. This however could also be related to the fear of moving out in their community due to violence, lack of transport or as some participants mentioned due to their wheelchair. This could also be an adaption in their habits to suit their functional abilities. Chaves et al., (2004) stated that wheelchairs were perceived to be the most frequently mention barrier to participation. Some complaints were that the wheelchair was inappropriate to navigate the terrain outside of their houses and some complained that the wheelchair was too large and they could not negotiate it within their houses without assistance. The inappropriate wheelchair prescription as mentioned above could also provide an explanation as to a result in the quantitative results chapter. In the significance testing between level of injury and the CIM that produced a significant finding ($p= 0.014$).

Other factors such as year of injury and the CIM ($p= 0.001$) produced a significant finding. The Pearsons co efficient for the CIM ($r= -0.316$) having a medium negative association ($r= -0.3$ to -0.5). This indicates that the as the CIM increase the year of injury decreased, this was also found

to be true with the SPRS-2. This result would suggest that psychosocial and community reintegration improves as the individual has had more time living with the TSCI. This finding is supported by research in Thailand that reported having being injured at a younger age and been older resulted in greater community reintegration (Suttiwong et al., 2015). This suggests that as the participants' age and the longer they have lived with the injury they could have potentially adapted well and therefore have improved psychosocial and community reintegration levels. The factor of age Utilizing the Pearsons correlation test age was found to be significantly correlated to the CIM ($p= 0.014$). The CIM ($p= 0.014$) and a Pearson coefficient of ($r = 0.243$) indicating a negligible positive association ($r= 0.1$ to 0.3). Therefore, according to the results in this study as age increases so will the SPRS-2 and the CIM measure. This could be due to the fact that the older the participants the longer they have been living with their injury and could have had more time to adjust and adapt to their new live situation and circumstances. This is supported by the correlation below.

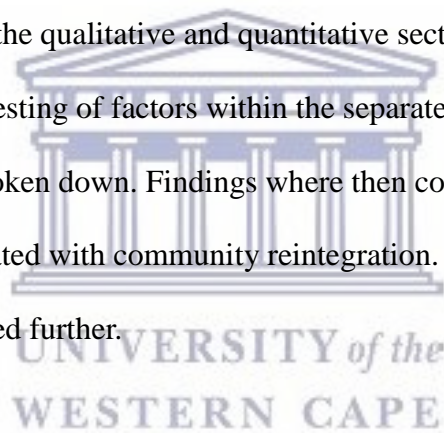
When correlation analysis was utilized between the separate scales the CIM total score and the total score of the SPRS-2 showed significant results ($p = 0.000$). It should be noted that the Pearsons co- efficient indicated a large positive association ($r= 0.5$ to 1.0) between the two scales. They also showed a positive relationship to each other therefore increased in the CIM total score would result in increased SPRS-2 score. Although, Pearsons co efficient ($r = 0.527$) indicating that slightly over half the variation between these two variables have been accounted for and that does not allow for exact predictability between these two variables. This would not be considered surprising when one reflects on the subject to which the tests are testing, namely: community reintegration. This concept as literature shows is multi-faceted (Dijkers, 1998).

Therefore, one can draw from these results that the greater the CIM score one would expect a greater score in the SPRS-2 domains and total score. To clarify the SPRS-2 higher scores would

indicate superior psychological reintegration within occupational activity; interpersonal relationships and living skills and higher scores in the CIM would indicate greater individual's sense of belonging in the community based on personal beliefs, perceptions, attitudes and superior community reintegration. Although, the r value indicated a large positive association value it does not allow for us to predict exact levels of association but it should not be considered negligible as just above 50% of the variation is still a good result due to the multi-faceted nature of community reintegration.

6.5 Summary

In this chapter the results from the qualitative and quantitative section of the present study have been discussed the significant testing of factors within the separate scales and the correlations of the scales themselves where broken down. Findings where then compared to literature available on the subject of factors associated with community reintegration. Themes drawn from the 7 qualitative interviews are discussed further.



CHAPTER SEVEN

CONCLUSION

7.1 Introduction

In this chapter the present studies results and discussion will be highlighted and final conclusions will be drawn. The Finding between the Quantitative and Qualitative results will be integrated.

7.2 Summary

The participants expressed fear of moving around their environment and it was also highlighted and this could be a reason as to why residential type produced a significant result. Although, the significant result produced for residential type could have multiple explanations. As TSCI participants' dwelling in informal settlements are more likely to have higher levels of poverty and violence. The outside environment in a rural setting will also be a hindering factor for TSCI if they do not have the correct wheelchair to navigate the terrain. According to research lower economic statuses was linked between having increased environmental barriers within TSCI population and included in the top 5 reported barriers was the natural environment and transportation (Lysack et al., 2015).

This barrier was reported within the qualitative literature. According to the qualitative literature only one individual was reporting to be independent. All the other participants had very high levels of dependence on care givers. The perceived level of caregiver support was not addressed in this study and that presents us with a major limiting factor within this study. The participants also reported feeling of being a Burdon on their caregivers and this in turn resulted in guilt and exclusion. This would potentially lead to decreased community reintegration due to the level of care giver dependence that was reported. The type of wheel chair utilized by the TSCI individual was also not addressed in the present study and this is also an area that should be included in

future research.

The CIM was significantly associated to the SPRS-2 when utilizing the Pearsons correlation ($p = 0.000$) and it also had a large positive association ($r = 0.527$). The SPRS-2 would indicate superior psychological functioning and community reintegration (Tate, Simpson, Lane-Brown, et al., 2012). Therefore, as an increase in the CIM is seen the SPRS- 2 score will also increase.

Therefore, the CIM indicates in this present study the participants cognitive sense of belonging in the community based on personal beliefs, perceptions and attitudes are positively associated with the participants' levels of self-efficacy (Minnes, Carlson, McColl, Nolte, Johnston, & Buell, 2003).

Demographic factors such as level of injury only produced a significant result with CIM mobility this significant result could have been due to the nature of the questioning in the CIM as it addresses community movement, activities that they can participate in that are productive and also community independence (Minnes et al., 2003). This result could indicate that mobility issues or functional ability would impact community reintegration. Community participation was also reported to be hindered due to secondary complication such as pain, loss of bladder control, decreased self-esteem and weakness. The participants reported reliance on their primary care givers. Some complaints were that the wheelchair was inappropriate to navigate the terrain outside of their houses and some complained that the wheelchair was too large and they could not negotiate it within their houses without assistance.

All of the scales produced very strong significant results when comparing the two separate dwelling types i.e. house and an informal dwelling. SPRS-2 ($p = 0.000$); CIM ($p = 0.000$). This could be indicating a very strong link between economic statuses or possible environmental issues such as terrain as mentioned above.

Participants were reluctant to go out into their community was due to the high crime levels or violence in their area safety for themselves and their family. Most of the participants also modified their activities that they would participate in according to what they could functionally achieve. For example many participants preferred to stay in their house or outside on their verandas and talk with their friends. This however could also be related to the fear of moving out in their community due to violence, lack of transport or as some participants mentioned due to their wheelchair.

Transportation also proved to be quiet a barrier to acquiring gainful employment. Employment was found to be significant with the SPRS-2 but not the CIM. It could due to the CIM potentially addressing the cognitive aspect of community re integration which is not addressed by the SPRS-2 (De Wolf et al., 2010). This result would indicate that employment status and type of employment leads to improved community reintegration. One can think that having paid labour would improve one's financial status and having an improved financial status can allow for better self-esteem, independence access to paid transportation and meaningful activities. Lysack et al., (2015) stated that lower economic statuses also lead to greater environmental barriers in SCI individuals.

As the measurement tools increase the year of injury decreased. This was seen at a greater level for the CIM in comparison to the SPRS- 2. This result would suggest that community reintegration improves as the individual has had more time living with the TSCI. This finding is supported by research in Thailand that reported having being injured at a younger age and been older resulted in greater community reintegration (Suttiwong et al., 2015).

From the results of this study it would seem to be in line with research in that community reintegration for TSCI is a very complex multi-faceted phenomenon.

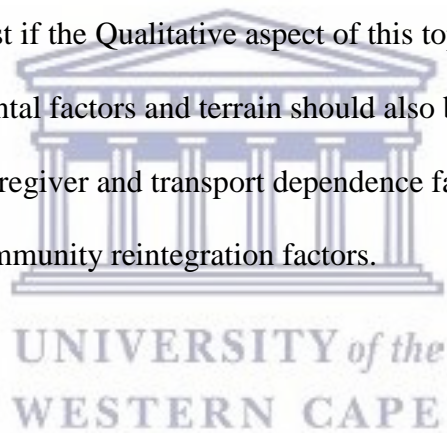
7.3 Conclusion

Although the TSCI participants in this present study had tremendous life altering injuries they all had a sense of hope and optimism and a very strong sense of survival and coping mechanisms despite their challenges. This is vital to successful adaptation post TSCI. Then as seen with only one participant from the qualitative research he was almost entirely independent within his functioning and ADLs he had access to transport and was employed but stated that crime and violence was his major issue and fear. This fear of crime and gangsterism was the continuous issue brought up by all but one of the Qualitative participants as being their main reason for not wanting to move around their community. Most of the participants seemed to be very driven to improve their circumstances. Intimate relationships were often put aside to obtain this goal. To most of the participants increasing their education/ skill level and obtaining gainful employment seemed to be one of their main goals that they would wish to achieve. This is not surprising to find as employment is considered to be among one of the most important participation activity for adults (Lidal et al., 2007). It is also associated with successful adjustment after sustaining a TSCI (Kennedy et al., 2010). The inability to navigate the terrain due to inappropriate wheelchairs or weakness and lack of caregiver support also resulted in a huge impact on these TSCI Individuals to become reintegrated into their communities. Unfortunately violence, access to transport and appropriate wheelchair prescription seemed to be a reoccurring theme. These issues can only be addressed with improved government intervention and policy. This statement is supported Kronenberg & Pollard (2005) who highlighted that resolving environmental barriers and community reintegration issues require social and health policies to allow for long term solutions.

7.4 Recommendations

This study is limited in the respect that it cannot infer causation due to the use of correlation analysis. It cannot predict any long term outcomes to community reintegration either due to the cross sectional nature of the study. Continually repeated in the literature is the impact of depression and care giver support on community reintegration. This study did not assess the impact of those relationships. Therefore, it is recommended that further research on this topic should involve hypothesis testing on cause and effect of relationships related to community reintegration. This should be coupled by a longitudinal design and include the impact of primary care giver support and depression. It is further recommended that mix methods be utilized as a wealth of knowledge will be lost if the Qualitative aspect of this topic is over looked.

Wheel chair type vs environmental factors and terrain should also be assessed as it could provide insight on reasons other than caregiver and transport dependence factors that can limit community movements and community reintegration factors.



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UNIVERSITY of the
WESTERN CAPE

DEPARTMENT OF RESEARCH DEVELOPMENT

01 February 2016

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:
Ms M Solomons (Physiotherapy)

Research Project: Factors influencing community reintegration of traumatic spinal cord injured patients in a South African population.

Registration no: 15/7/90

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*



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APPENDIX B

INFORMATION SHEET (Participants).

Project Title: THE FACTORS INFLUENCING COMMUNITY REINTEGRATION OF TRAUMATIC SPINAL CORD INJURY PATIENTS IN A SOUTH AFRICAN POPULATION

What is this study about?

This is a research project being conducted by Meghan Solomons at the University of the Western Cape.

We are inviting you to participate in this research project because you have sustained a traumatic spinal cord injury and you are now back in the community after rehabilitation. The purpose of this research project is to get a better understanding of the factors involved in community reintegration within a traumatic spinal cord injury patient.

What will I be asked to do if I agree to participate?

After signing a consent form you will be asked to spare little of your time and meet with researchers at your time and place of convenience. As a participant, you will be asked to fill in a form that seeks your socio-demographic information such as: age, gender, occupation, marital status, level of the injury and time of the injury. In addition, the form will be also seeking your views on the community reintegration, quality of life and your self- efficacy following traumatic spinal cord injury. The researcher and research assistant will be available to answer any question that you might have concerning the project. The filling of this form might last at least 30 minutes. Small group discussion known as focus group discussion will be also conducted with only few purposely selected participants as well as their family members/ care givers. During the focus group discussion, participants are able to express their experiences, challenges and suggestions for community reintegration programme following traumatic spinal cord injuries.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, the surveys will not contain information that may personally identify you. All the data will be stored in password protected files on computer. Identification codes of personal details will be displayed on data forms. For coded identifiable, your name will not be included on the surveys and the other collected data. A code will be placed on surveys and other collected data. Through the use of an identification key, the researcher will be able to link your survey to your identity. Only the researcher will have access to the identification key. If we write a report or an article about this research project, your identity will be protected. All the participants who agree to be part of focus group will sign a confidentiality agreement that each individual will refrain from disclosing any information outside the focus group.

What are the risks of this research?

All human interactions and talking about self or others carry some amount of risks. However, we will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator and policy makers learn more about community reintegration following traumatic spinal cord injuries. We hope that, in the future, other people might benefit from this study through improved understanding of community reintegration following traumatic Spinal cord injuries. It is hoped that this project may help as a baseline information to improve service delivery of traumatic spinal cord injury individuals.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by Meghan Solomons, *Physiotherapy department* at the University of the Western Cape. If you have any questions about the research study itself, please contact

Meghan Solomons Email : meghanolckers@gmail.com

Or

Professor Julie Phillips

University of the Western Cape

Tel: 021 959 3661

Email: jphillips@uwc.ac.za



Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department:

Doctor Nondwe Mlenzana

Tel: 021 959 2542

Email: nmlenzana@uwc.ac.za or,

Dean of the Faculty of Community and Health Sciences:

Professor José Frantz

University of the Western Cape

chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.



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APPENDIX C

INFORMATION SHEET (Participants).

Project Title: THE FACTORS INFLUENCING COMMUNITY REINTEGRATION OF TRAUMATIC SPINAL CORD INJURY PATIENTS IN A SOUTH AFRICAN POPULATION

Wat is hierdie studie oor?

Dit is 'n navorsingsprojek deur Meghan Solomons gedoen aan die Universiteit van die Wes-Kaap. Ons is u nooi om deel te neem in hierdie navorsingsprojek omdat jy 'n traumatise rugmurg beserings opgedoen en jy is nou terug in die gemeenskap na rehabilitasie. Die doel van hierdie navorsing is om die faktore wat verband hou met die gemeenskap herintegrasie na 'n traumatiese rugmurg beserings te ondersoek.

Wat sal ek gevra word om te doen as ek saamstem om deel te neem?

Na sing 'n toestemmingsvorm jy sal gevra word om bietjie van jou tyd te spaar en ontmoet met navorsers by jou tyd en plek van gerief. As 'n deelnemer, sal jy gevra word in 'n vorm wat jou sosio-demografiese inligting soek soos in te vul: ouderdom, geslag, beroep, huwelikstatus, vlak van die besering en tyd van die besering. Daarbenewens sal die vorm ook op soek na jou mening oor die gemeenskap herintegrasie, lewensgehalte en jou self doeltreffendheid volgende traumatiese rugmurg beserings. Die navorsers en navorsingsassistent sal beskikbaar wees om enige vraag wat jou dalk met betrekking tot die projek beantwoord. Die vul van hierdie vorm kan duur ten minste 30 minute.

Sal my deelname aan hierdie studie vertroulik gehou word?

Die navorsers onderneem om jou identiteit en die aard van jou bydrae te beskerm. Om jou anonimiteit te verseker, sal die opnames nie inligting wat jou persoonlik kan identifiseer bevat. Al die data sal gestoor word in 'n wagwoord beskerm lêers op rekenaar. Identifikasie kodes van persoonlike besonderhede sal vertoon word op data vorms. Vir gekodeerde identifiseerbare, sal jou naam nie ingesluit word op die opnames en die ander versamelde data. 'N Kode sal op opnames en ander versamel data geplaas word. Deur die gebruik van 'n identifikasie sleutel, sal die navorsers in staat wees om jou opname skakel na jou identiteit. Slegs die navorsers sal toegang tot die identifisering sleutel het. As ons 'n verslag of 'n artikel oor hierdie navorsingsprojek te skryf, sal jou identiteit beskerm word.

Wat is die risiko's van hierdie navorsing?

Alle menslike interaksies en praat self of ander voer 'n paar bedrag van risiko's. Ons sal egter nogtans sulke risiko's te minimaliseer en tree vinnig om jou te help as jy enige ongerief, sielkundige of andersins tydens die proses van jou deelname aan hierdie studie ervaar. Waar nodig, sal 'n gepaste verwysing gemaak word na 'n geskikte professionele vir verdere hulp of intervensie.

Wat is die voordele van hierdie navorsing?

Hierdie navorsing is nie ontwerp om jou persoonlik te help, maar die resultate kan help om die ondersoeker en beleidmakers leer meer oor gemeenskap herintegrasie volgende traumatiese rugmurg beserings. Ons hoop dat, in die toekoms, kan ander mense voordeel trek uit hierdie studie deur middel van verbeterde begrip van gemeenskap herintegrasie volgende traumatiese Rugmurgbesering. Daar word gehoop dat hierdie projek kan help as 'n basislyn inligting om dienslewering van traumatiese rugmurg

besserings individue te verbeter.

Moet ek in hierdie navorsing en mag ek ophou deelneem te eniger tyd?

Jou deelname aan hierdie navorsing is heeltemal vrywillig. Jy kan kies om nie deel te neem nie. As jy besluit om deel te neem in hierdie navorsing, kan jy ophou deelneem op enige tyd. As jy nie besluit om deel te neem in hierdie studie of as jy ophou deelneem op enige tyd, sal jy nie gestraf word of verloor enige voordele waarop jy anders kwalifiseer.

Wat gebeur as ek vrae het?

Hierdie navorsing word gedoen deur Meghan Solomons, departement Fisioterapie aan die Universiteit van die Wes-Kaap. Indien u enige vrae oor die navorsingstudie self, kontak Meghan Solomons

E-pos: meghan.solomons@gmail.com

Of Professor Julie Phillips

Universiteit van die Wes-Kaap

Tel: 021 959 3661

E-pos: jphillips@uwc.ac.za

Indien u enige vrae met betrekking tot hierdie studie en jou regte as 'n navorsingsdeelnemer of indien u enige probleme wat jy ondervind het met betrekking tot die studie rapporteer, kontak:

Hoof van die Departement:

Dokter Nondwe Mlenzana

Tel: 021 959 2542

E-pos: nmlenzana@uwc.ac.za of,

Dekaan van die fakulteit van die Gemeenskap en Gesondheidswetenskappe: Professor José Frantz

Universiteit van die Wes-Kaap

chs-deansoffice@uwc.ac.za

Hierdie navorsing is goedgekeur deur die Universiteit van Komitee Senaatskomitee en Etiekkomitee van die Wes-Kaap se.



IINKCUKACHA ZENGCACISO (Abathathi-nxaxheba).

Isihloko seProjekthi: IINKCUKACHA EZIFUNDISA UKUNYULWA KOLUNTU
KWENKCUKACHA YEZICWANGCISO ZENKQUBO YENKQUBO YENKQUBO YOKWENZA
IMISEBENZI YABANTU ABANTU ABANTU ABANTU ABANTU ABASEMZANTSI AFRIKA

Yintoni esi sifundo?

Le projekthi yophando eyenziwa nguMeghan Solomons kwiYunivesithi yeNtshona Koloni. Siyakumema ukuba uthathe inxaxheba kule projekthi yophando kuba uye walulimaza umonakalo wentambo yomgudu kwaye ubuye uhlala emva koluntu emva kokuvuselelwa. Injongo yolu phando kukuphanda izinto ezinxulumene nokuhlaziywa komphakathi emva kokulimala kwentambo yomgudu.

Ndiya kucelwa ukuba ndenze ntoni ukuba ndivuma ukuthatha inxaxheba?

Emva kokucula ifomu yokuvuma uya kucelwa ukuba ungalondolozisi ixesha elithile kwaye udibane nabaphandi ngexesha lakho nendawo elula. Njengoko uthatha inxaxheba, uya kucelwa ukuba ugcwalise ifom efuna ulwazi lwakho loluntu noluntu: iminyaka, ubulili, umsebenzi, isimo somtshato, izinga lokulimala kunye nexesha lokulimala. Ukongezelela, ifom iya kukhangela iimbono zakho ngokuphindaphindiwe koluntu, umgangatho wobomi kunye nokuzinyameka kwakho emva kokulimala kwentambo yomgudu. Umphandi kunye nomncedisi wophando uya kufumaneka ukuphendula nayiphi na umbuzo onokuyenza malunga neprojekthi. Ukuzaliswa kwale fomu kunokuhlala ubuncinane imizuzu engama-30.

Ngaba ukuthatha inxaxheba kwam kulesi sifundo kuya kugcinwa kuyimfihlo?

Abaphandi bazama ukukhusela ubuni kunye nobume begalelo lakho. Ukuqinisekisa ukungabonakali kwakho, uphando aluyi kuqulethe ulwazi olunokuzifumanisa ngokwabo. Yonke idatha iya kugcinwa kwiifayile ezikhuselweyo ngekhompyutha kwikhompyutha. Iikhowudi zokuchonga iinkcukacha zomntu ziya kuboniswa kwifom yedatha. Ukufumana ikhowudi echongiweyo, igama lakho aliyi kufakwa kwiiphando kunye nolunye ulwazi oluqokelelweyo. Iikhowudi iya kufakwa kwiiphando kunye nolunye ulwazi oluqokelelweyo. Ngokusebenzisa i-key identification, umphandi uya kukwazi ukudibanisa uphando lwakho kubunikazi bakho. Nguye kuphela umphandi oza kuba nokufikelela kwinqhosha lokuchonga. Ukuba sibhala ingxelo okanye inqaku malunga nale projekthi yophando, ubume bakho buya kukhuselwa.

Ziziphi iingozi zale phando?

Zonke iintsebenziswano zabantu kunye nokuthetha ngabanye okanye abanye bathatha ubuninzi beengozi. Nangona kunjalo, siya kunciphisa ingozi enjalo kwaye senze ngokukhawuleza ukukunceda ukuba unamava, unengqondo okanye ngenye indlela ngexesha lokuthatha inxaxheba kulolu phofu. Xa kuyimfuneko, ukuhanjiswa okufanelekileyo kuya kwenziwa kwiprofetsi efanelekileyo ukuze uncediswe olunye okanye uncedo.

Ziziphi iingenelo zale phando?

Olu phando aluklanyelwe ukukunceda wena, kodwa iziphumo zinokunceda umphandi kunye nabenzi bomgaqo-nkqubo bafunde kabanzi malunga nokubuyiswa komphakathi emva kokulimala kwentambo yomgudu. Siyathemba ukuba, kwikamva, abanye abantu banokuzuza kulolu phofu ngokuqonda okuphuculweyo kokubuyiswa komphakathi emva kokulimala kwentambo yomtya. Kuthemba ukuba le projekthi inokukunceda njengolwazi olusisiseko sokuphucula ukunikezelwa kwenkonzo yomntu onobungozi obunzima bomnxeba.

Ingaba kufuneka ndibe kuloluphando kwaye ndingamyeka ukuthatha inxaxheba nanini na?

Ukuthatha inxaxheba kwakho kule phando ngokuzithandela ngokupheleleyo. Unokukhetha ukuba ungathathi nxaxheba kukho konke. Ukuba uthatha isigqibo sokuthatha inxaxheba kulolu cwaningo, unokuyeka ukuthatha inxaxheba nanini na. Ukuba uthatha isigqibo sokuba ungathathi nxaxheba kule sifundo okanye ukuba unqamle ukuthatha inxaxheba nangaliphi na ixesha, awuyi kuhlawulwa okanye ulahlekelwe nayiphi na inzuzo apho uyafaneleka.

Kuthekani ukuba ndinemibuzo?

Olu phando luqhutywa nguMeghan Solomons, isebe lePhysiotherapy kwiYunivesithi yeNtshona Koloni. Ukuba unemibuzo malunga nokuhlola ngokwayo, nceda uqhagamshelane

Meghan Solomons

I-imeyili: meghan.solomons@gmail.com

Okanye

UProfesa uJulie Phillips

KwiYunivesithi yeNtshona Koloni

Inombolo: 021 959 3661

I-imeyili: jphillips@uwc.ac.za

Ngaba unayo nayiphi na imibuzo malunga nale sifundo kunye namalungelo akho njengomdla-nxaxheba okanye ukuba unqwenela ukubika nayiphi na ingxaki oye wahlangabezana nayo ngokumalunga nophando, nceda qha ga mshelana:

INTloko yeSebe:

Ugqirha uNondwe Mlenzana

Inombolo: 021 959 2542

I-imeyili: nmlenzana@uwc.ac.za okanye,

UMlawuli weCandelo loLuntu kunye neSayensi yezeMpilo:

UProfesa José Frantz

KwiYunivesithi yeNtshona Koloni

Chs-deansoffice@uwc.ac.za

Olu phando luvunyiwe yiKomidi yeNtshona Koloni yeNkcazo yoPhando kunye neKomiti yeeNtetho.



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APPENDIX E

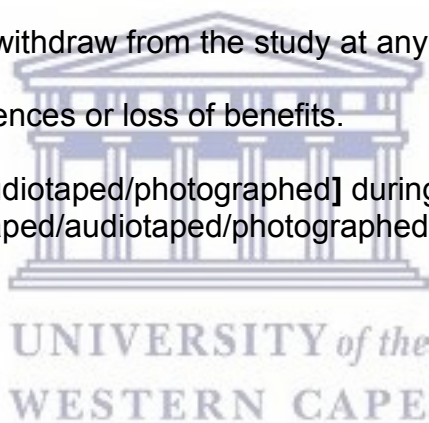
CONSENT FORM

Title of Research Project: Factors influencing community reintegration of traumatic spinal cord injured patients in a South African population?

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

- I agree to be [videotaped/audiotaped/photographed] during my participation in this study.
 I do not agree to be [videotaped/audiotaped/photographed] during my participation in this study.

(Tick appropriate option)



Participant's name.....

Participant's signature.....

Date.....

Toestemmingsvorm

Projek titel: die faktore wat COMMUNITY herintegrasië traumatiese rugmurg beserings pasiënte in 'n Suid-Afrikaanse

bevolking Hierdie navorsingsprojek is aan my verduidelik in 'n taal wat ek verstaan. My deelname aan hierdie navorsingsprojek is heeltemal vrywillig. Al my vrae oor die navorsingsprojek is beantwoord aan my tevredenheid.

Ek verstaan dat my persoonlike besonderhede sal bekend gemaak word wanneer my antwoorde of onderhoude te berig oor en ek het geen besware teen my antwoorde of onderhoude wat in die openbaar verskyn.

Naam van deelnemer:

Getuie:

Handtekening van deelnemer:

Datum:

Indien u enige vrae aangaande hierdie studie het of enige probleme wat u ervaar het wil aanmeld kan u die studie koördineerder kontak:

Studie Koördineerder: Julie Phillips

Universiteit van Wes-Kaapland

Privaat sak X17, Belville 7535

Telefoon: (021)959-2542

Fax: (021)959-1217

Email: jphillips@uwc.ac.za

Ifomu leMvume

Isihloko seProjekthi: IINKCUKACHA EZIFUNDISA UKUNYULWA KOLUNTU
KWENKCUKACHA YEZICWANGCISO ZENKQUBO YENKQUBO YENKQUBO YOKWENZA
IMISEBENZI YABANTU ABANTU ABANTU ABANTU ABANTU ABASEMZANTSI AFRIKA

Le projekthi yophando ichazwe kum ulwimi owuqondayo.

Ukuthatha inxaxheba kwiprojekthi yophando ngokuzithandela ngokupheleleyo. Yonke imibuzo yam malunga neprojekthi yophando iye yaphendulwa ukunyaniseka kwam.

Ndiyaqonda ukuba iinkcukacha zam ezizodwa aziyi kutyhilwa xa iimpendulo zam okanye iingxoxo-ndlebe zithe zabikwa kwaye andinakho ukuchasa iimpendulo zam okanye iingxoxo-ndlebe zipapashwa esidlangalaleni.

Igama le nxaxheba: _____

INgqina: _____

Isayinwa somthatha inxaxheba: _____

Umhla: _____

Ukuba unemibuzo malunga nale sifundo okanye nayiphina ingxaki ofuna ukuyichazela ukuhlangabezana nayo unokuqhagamshelana nomququzeleli wophando:

Umququzeleli woFundo: uJulie Phillips

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